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PORTS AND CITIES  
OF THE WORLD

Commercial Encyclopedia Series

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# PORTS & CITIES *of the* WORLD'

One of a Series of Standard  
Commercial Encyclopedias  
on the Actual and Potential  
Markets of the World

FOURTH PUBLICATION

Comprising

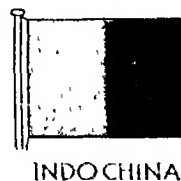
Africa. Egypt.  
India. Ceylon

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## PREFACE

THE extremely favourable reception accorded to previous publications on China, Japan, other Eastern Countries, and South America has encouraged the compilers to enter upon the production of a number of volumes under the title of "Ports and Cities of the World," the fourth of which, embracing Africa, Egypt, India and Ceylon, is now on issue. Although bearing a title dissimilar to that of earlier works, the present one (while giving marked prominence to ports and cities) has all the best characteristics of those publications, and forms another of the series of this company's "Commercial Encyclopedias," which, by virtue of their many practical features, represent a unique departure in commercial literature.

With the growth of competition in international commerce the necessity for a closer acquaintance with the history, peoples, climatic conditions, administrative details and commercial requirements of countries in other parts of the world has become obvious to all whose outlook and business are other than merely local.

An intimate knowledge of the world's markets and lengthy contact with the opinions of merchants abroad, especially with regard to their difficulty in securing effective co-operation from connections overseas, have long made clear to the compilers of this publication the great disadvantages under which the manufacturer, without the opportunities of travel, must of necessity labour. The aim of this work is, therefore, to maintain a medium for the interpretation of existing conditions in distant countries, for the needs of which the manufacturer is called upon to provide.

Brevity and facile reference being first essentials, the information is here presented under logical sections, which are again divided into sub-sections and brief paragraphs, the latter in alphabetical order. This arrangement is assisted by a summary of contents introductory to each section and a complete index at the end of the book, whilst the cover provides the key to a thumb index scheme which carries a differently colored set of tabs for each country. Finally, a brief but reliable business directory is included in each section, thus particulars of Shipping, Railway and other Transport Companies accompany the general information on "Transport"; other appropriate business enterprises follow either "Commerce," "Industries, or the leading Cities" and so on in like manner, serving the dual purpose of defining the commercial status of the countries, which is best gauged by the number and importance of the business institutions, and introducing firms of good standing with whom business connections can be made with confidence.

The inclusion of illustrated descriptions of selected enterprises, certainly the most representative ever published in connection with the commerce of the countries covered on the present occasion, is, as in the previous publications, a feature of this volume, as evidence of the great part played by individual organisations in the development of Africa, Egypt, India, and Ceylon, not only in foreign trade, but in the promotion of numerous agricultural, pastoral, mining and other industrial enterprises, in the improvement of ports and cities, and indeed in every field of activity.

The life of the compendium justifies its production in this elaborate form, inasmuch as ninety per cent. of the information is of a basic character, as applicable to the position five years hence as to that of to-day. The comparative statistics, covering representative periods and illustrating the financial positions, foreign trade, production quantities and values, the ratio of progress in land and sea transport, and the consequent development of natural resources, have a vital bearing on the next five years, and are of as much importance to the business man as a knowledge of political history is to the politician.

Failing an actual visit, the illustration is the best means by which an impression of conditions can be obtained. The pictures here reproduced are for the most part only such as present aspects of commercial significance, and show the various patterns in the business fabric of the different countries.

Observation has shown that these volumes, placed in any reading room, either general or strictly commercial, attract the immediate attention of nine out of ten visitors. This, of course, has an important bearing on the publicity value of the Series. In this connection stress must be

laid on the distinction between nominal and "reader" circulation, since in virtue of the long period of usefulness and special character of these publications the effectiveness of the distribution cannot be calculated in relation to the number published. The circulation of a trade or technical journal as a parallel example--may be much lower than that of a popular paper, but its publicity appeal, confined to members of particular trades or professions for whom the information has special significance, is necessarily higher. The circulation of a valuable medium like "Ports and Cities of the World," produced at great cost, is obtained by personal canvass of merchants of standing who are interested in the countries under review, while there is a further and wide distribution among commercial institutions, steamers, hotels, clubs, etc., where an important reading public is formed.

The information is presented as far as possible without comment. Comparative statistics and other data clearly indicate to what extent the countries treated of in this publication are markets of immediate and prospective importance. That they are rich in fertile soil, have boundless

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*It has come to our knowledge that certain individuals are utilising volumes of the Commercial Encyclopedia Series for canvassing purposes in connection with a compilation which they promise will conform in all respects to the sample shown. They either expressly represent that the books have been produced by them, or, by silence on the point, leave this to be assumed. In so far as they may be successful in this practice they are obtaining money under false pretences. While we are always ready to encounter the genuine competition of firms canvassing on books produced by themselves independently, notice is given that any person or persons making piratical use of our publications or any part thereof will be prosecuted.*

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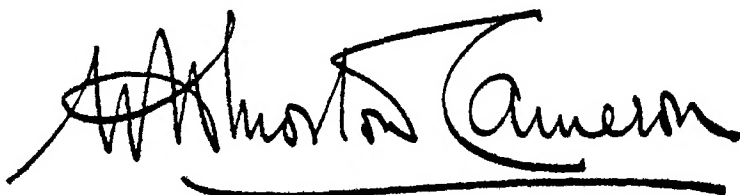
*The task of producing books of this character is one of exceptional difficulty, and, therefore, the most acceptable evidence of capacity to compile and deliver a volume lies in the examples of past work. Good intentions alone are not sufficient, unless, indeed, it is made clear to those who are invited to become subscribers that these are all the prospective publishers have to offer as guarantee of their ability to fulfil the contract.*

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productive capacity, and industries of almost unlimited expansion are plain statements of fact, yet it must be borne in mind that many of their resources remain in large measure undeveloped, still awaiting the constructive forces that only labour and capital can supply.

In conclusion, it may be remarked that the book represents a lengthy period of conscientious endeavour, and, notwithstanding inevitable sins of omission and commission, the publishers feel it not immodest to claim that no other work offers at once so extensive and so intensive a survey of life and commerce in the countries under review.

For the Globe Encyclopedia Company :



A handwritten signature in dark ink, reading "Arthur Cameron". The signature is written in a cursive style with a large, sweeping initial "A" and a long, horizontal flourish extending to the right.

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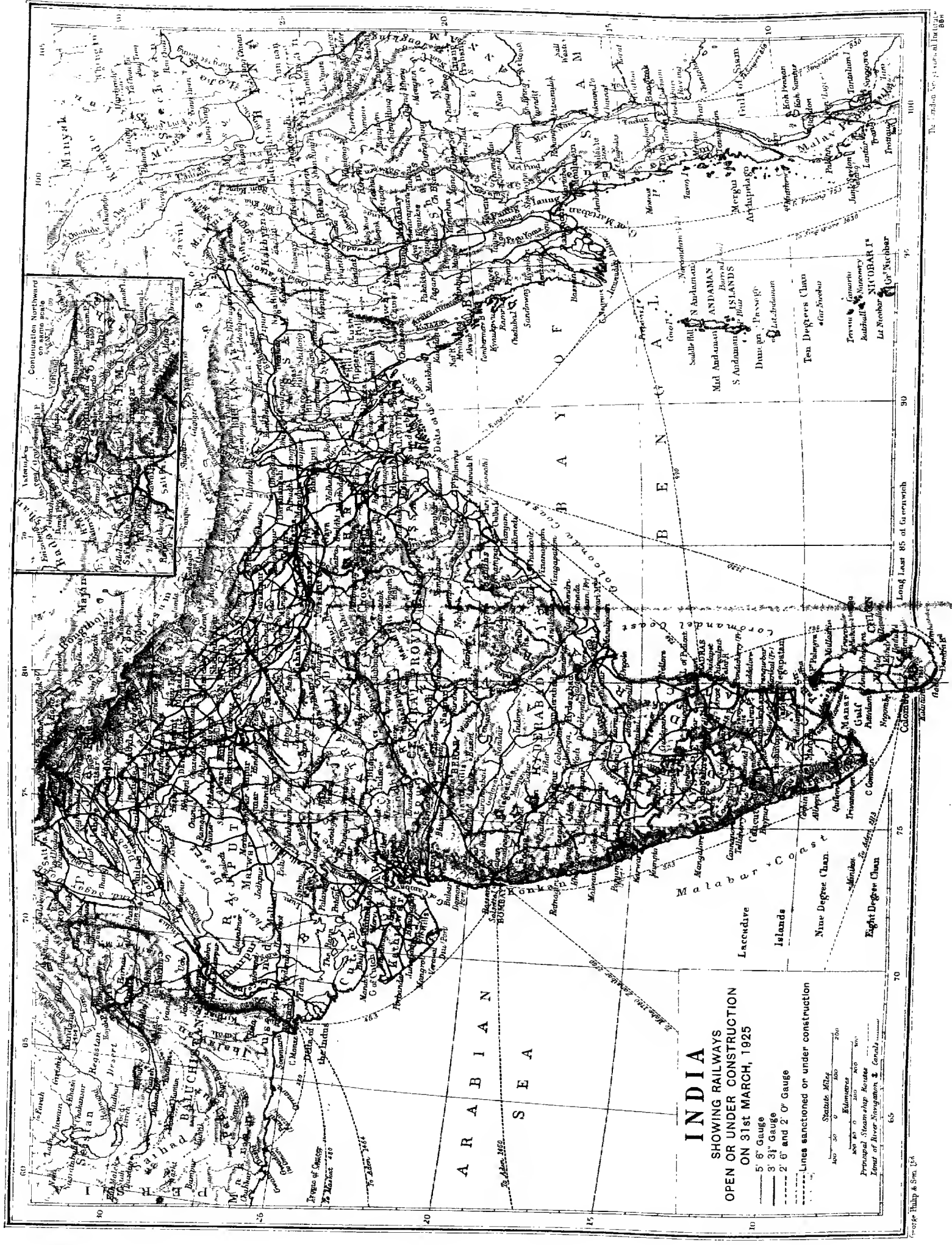
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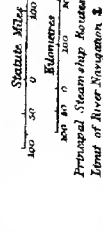


# INDIA

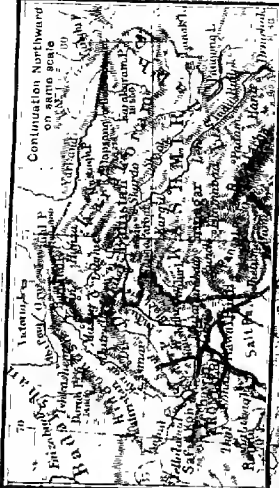
SHOWING RAILWAYS  
OPEN OR UNDER CONSTRUCTION  
ON 31st MARCH, 1925

- 5' 6" Gauge
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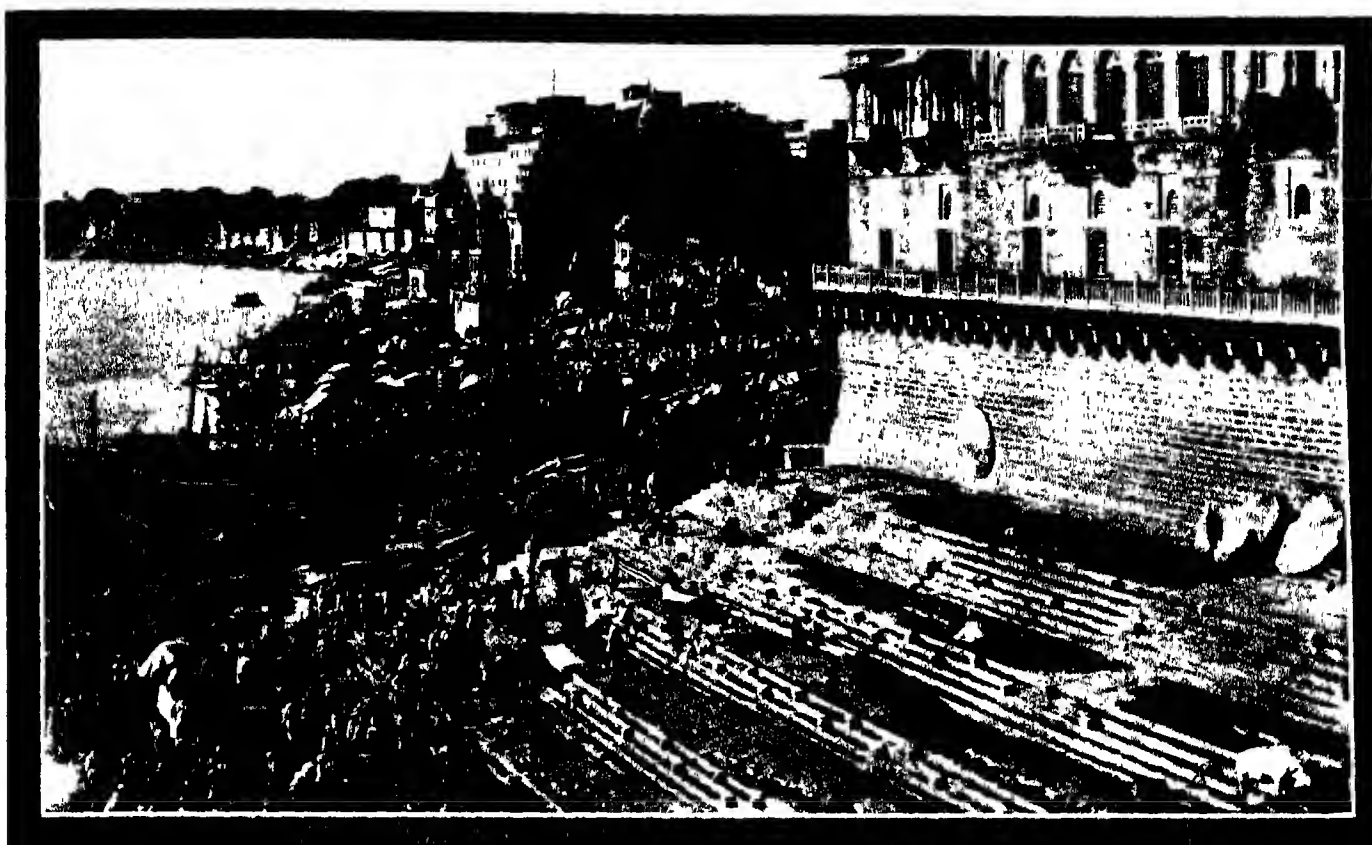
Lines sanctioned or under construction



Principal Steamship Routes  
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DASASWAMEDHI BATHING GHAT, BENARES, ON THE EAST INDIAN RAILWAY

# INDIA

## PHYSICAL GEOGRAPHY

### CLIMATE

### GEOLOGY

### FAUNA

### FLORA

#### PHYSICAL GEOGRAPHY



INDIA (whose name is derived from the Sanskrit term for the River Indus—'Singhar') lies in the central peninsula of Southern Asia and is, after China, the most populous country in the world. It has for its natural boundaries the range of the Himalaya mountains on the north, which separates it from Tartary, China and Tibet; the Suliman mountains on the west, which divide it from Afghanistan; and on the east the hill ranges which border upon Burma and the Bay of Bengal. From the mouth of the Brahmaputra on the eastern side and of the Indus on the western side the two coasts, east and west, incline towards the same point and meet at Cape Comorin, thus producing the form of an inverted triangle.

The outstanding feature of this vast region is its diversified surface and scenery. India has, indeed, been styled 'an epitome of the whole earth'—consisting as it does of mountains far above the level of perpetual snow, broad and fertile plains bathed in intense sunshine, and wastes and impenetrable forests. Its natural geographical divisions are the Himalayas, the sub-Himalayan ranges, the plains of the Ganges and the Brahmaputra, the basin of the Indus, the highlands of Hindustan, the Vindhya and Satpura ranges, and the peninsula south of those ranges. These divisions may also be more conveniently grouped under the four main headings of the region of mountains, the region of plains, the region of table lands and the coast strips.

**AREA.**—The area of India is 1,805,332 square miles, made up of 1,094,300 square miles of territory in the British provinces and 711,032 square miles belonging to the Indian States. British India is thus distributed—

Province	Area in Square Miles
Ajmer-Merwara	2,711
Andamans and Nicobars	3,113
Assam	53,015
Baluchistan	51,228
Bengal	70,843
Bihar and Orissa	53,101
Bombay	123,621
Burma	233,797
Central Provinces and Berar	99,876
Coorg	1,582
Madras	142,260
North-West Provinces	13,419
Punjab and Delhi	100,430
United Provinces	166,295
<b>Total</b>	<b>1,094,300</b>

The largest of the Native States and Agencies are, in square miles, Rajputana (128,987), Kashmir (84,258), Hyderabad (82,608), Baluchistan States (80,410), and Central India and Gwalior (77,888).

**COAST LINE.**—There are two marked differences between the coast line of India and that of any other country. The first is that it is broken by very few inlets of the sea, and the second that it has only a small number of islands along it. The sea washing the coasts of India is very shallow, and the shores are usually flat and sandy. As a result, such inlets and straits as exist are of very little consequence. The most important of the inlets are the Ranns of Cutch, the Gulf of Cutch, the Gulf of Bombay, the Backwaters of Cochin and Malabar, the Palk Strait, the Gulf of Manaar, the Pulicat, Kolar and Chikla lakes on the east coast, and the inlets of the mouths of the Ganges.

**ISLANDS.**—The chief islands geographically connected with India are Ceylon, the Andaman, Nicobar, Laccadive and Maldiva Islands, but neither Ceylon nor the Maldivas have any political connection with India. The islands of Bombay and Salsette, which form Bombay harbour, are small but important, as they protect the shipping of this port from the storms and monsoons of the Arabian Sea.

**MOUNTAINS.**—The mountain ranges of India may be divided into four great groups—that is to say, the Himalayas, the Trans-Himalayas, the Western Offshoots, and the Eastern Offshoots. Of these, the Himalayas are made up of three roughly parallel ranges. The inner one, sometimes called the Zaskar Range, begins at the peak of Nanga Parbat, and runs in a great sword-like curve to the north-east corner of Assam. It lies in the embrace of two rivers, the Indus and the Brahmaputra. The main, or outer range, runs south of and roughly parallel to the inner range. At their western end these two ranges open out and enclose the valley of Kashmir and the Wular lake. The outermost or sub-Himalayan range is not high, and is in some places separated from the outer range by wide valleys. The Himalayas, with an average height of 10,000 feet, form the loftiest range in the world and they contain the tallest measured peak, Mount Everest, which is  $5\frac{1}{2}$  miles high. All the rain that falls on the Himalayas, whether on their northern or southern slopes, is carried by rivers into India. The Trans-Himalayan ranges consist of the great Hindu-Kush range, striking south-west into Northern Afghanistan, and three minor ranges, all on the west. On the east there are the eastern half of the Hindu-Kush and the great Kwen-lun range, forming the northern limits of Kashmir; the great Karakoram or Mustagh range, sloping more to the southwards, and the Kailas or Gangri mountains, running south-east across the middle of Kashmir, to the north of the Indus. On the north the Himalayas and the Trans-Himalayas form the edge of the great table-land of Tibet, on the west they send offshoots southwards, separating India from the great Iranian table-land (Afghanistan, Baluchistan, and Persia). These offshoots are the Safed-Koh range, south of the Kabul River, the Suliman ranges running nearly north and south, and the Kirthar mountains, stretching in parallel ranges almost down to the sea near Cape Monze. At their easternmost point the Himalayas suddenly fold round and turn south in parallel ranges.

**PLAINS.**—Thus is the region of the great Indo-Gangetic plain, or simply the "Plains," which lies at the foot of the Himalayas and their western and eastern offshoots. It includes the valleys of the Indus and its tributaries, of the Ganges and its tributaries, and of the Brahmaputra. At its western end it rests on the Arabian Sea in the Indus Delta, and at its eastern end on the Bay of Bengal in the Ganges Delta. The whole of

this plain region is alluvial—that is, its soil consists of fine mud and sand washed down by the three great rivers and their tributaries, and spread on the low-lying land. It is very fertile and very deep, extending downwards from 500 to 1,000 feet. The region is also extremely flat, which makes the rivers flow slowly, thus fertilising the country thoroughly and affording easy waterways and irrigation channels. It contains more than one-third of the land area of India proper, and nearly two-thirds of the population.

**RIVERS.** The river system of India may be briefly summarised as follows. The Indus in the north-west with a course of 900 miles, after issuing from the Himalayas, drains with its four famous affluents the Sutlej, the Ravi, the Chenab and the Jhelum about 300,000 square miles, and empties into the Arabian Sea. In the north-east the Ganges, with the Jumna and other tributaries, and the Brahmaputra and Meghna—all of which join in the Delta—drain about 500,000 square miles. Owing to their virtual amalgamation in Bengal it is difficult to assign a length to the courses of these rivers, which empty into the Bay of Bengal. The Satpura (about 100,000 sq. m.) is drained by the Nerbudda and the Tapti, the former having a course of 500 miles, the latter of 400 miles, and both flowing west into the Gulf of Cambay, a branch of the Arabian Sea. The remaining area (600,000 sq. m. out of a total of 1,500,000) consists of the Deccan and the Peninsula. It is drained by the following rivers: Mahanadi, with a course of 520 m.; Godavari, 808 m.; Kistna, 800 m.; Tungabhadra, 400 m.; Pennar, 350 m.; and Kaveri, 470 m. There are many other rivers which cannot be particularised here. Among them may be mentioned the Hooghly and the Gumti, Calcutta being situated on the former and Lucknow on the latter, both belong to the Gangetic system.

## CLIMATE

In a country extending over 26 degrees of latitude, one extremity of which runs far into the torrid zone and the other terminates in a range of mountains rising high above the line of perpetual snow—a country embracing lowland plains, elevated plateaus and Alpine regions—the climate must needs be extremely varied. India, indeed, may be said to have a different one in different places, and in each of these places it changes at certain periods. The whole country has three well-marked seasons: the cold, the hot and the rainy. This characteristic applies without distinction to all parts, even to the Himalaya region, which has otherwise a climate like that of the European Riviera.

**COLD SEASON.**—The cool months in India are November, December, January and a part of February. During this period the mean temperature averages about 30° lower in the Punjab than in Southern India. In the Punjab, the United Provinces and Northern India generally the climate resembles that of the European Riviera, with a brilliant cloudless sky and cool dry weather. This is the time for the tourist to visit the country. In South India it is warmer on the west coast than on the east, and the maximum temperature is found round the headwaters of the Kistna. Calcutta, Bombay and Madras all possess the more equable climate that is induced by proximity to the sea, but the first-named enjoys a cooler season than that which is found in the other presidency towns, while its hot season is more endurable.

**HOT SEASON.**—The hot season begins officially in the Punjab on March 15, and from that date there is a steady rise in the temperature, induced by the fiery rays of the sun upon the baking earth, until the break of

the rains in June. During this season the interior of the peninsula and northern India are excessively hot, the contrast of temperature is not between northern and southern India, but between the interior and the coast districts and adjacent seas. The greater part of the Deccan and the Central Provinces are included within the hottest area, though in May the highest temperatures are found in Upper Sind, north-west Rajasthan and south-west Punjab. At Jacobabad, on the Baluchistan frontier, the thermometer sometimes rises to 125° in the shade.

**MONSOON SEASON.**—The south-west monsoon currents usually set in during the first fortnight of June on the Bombay and Bengal coasts, and give more or less general rain in every part of India for the next three months. But this distribution of rainfall is very uneven. On the face of the Western Ghats and on the Khasi Hills overlooking the Bay of Bengal, where the mountains catch the mass of vapour as it rises off the sea, the rainfall is enormous. At Cherapungji, in the Khasi Hills, it averages upwards of 500 inches in a year, and generally on the seaward face of the Ghats it is over 100 inches. A few miles inland, however, it falls to about 25, and some parts of Sind receive only 3 inches of rain in the year. Altogether, about 90 per cent. of the rain of India falls in the summer monsoon, and on it the prosperity of five-sixths of the country depends. In September its force begins rapidly to decline, and in its place springs up a gentle, steady north-east wind which gradually extends over the Bay of Bengal and is known as the north-east monsoon. The months of October and November form a transition period between the monsoon and the cold season. The most unhealthy period of the year follows immediately after the rains, when malaria is prevalent especially in northern India.

**STORMS.** During the monsoons there are heavy cyclonic storms, which are particularly fierce on the west coast. Owing to these the few harbours have to be closed except the protected port of Bombay. In March, April and May small rainstorms occur in Bengal, known as "north-westers."

**TEMPERATURE.** The following are the annual mean temperatures at a few of the coast, hill, plains and plateau stations of India. The figures in parentheses are those of the elevation in feet—

**COAST STATIONS.** Karachi (19), 77.6; Bombay (37), 79.3; Madras (22) 81.8.

**HILL STATIONS.** Darjeeling (7,376), 52.7; Simla (7,224), 55.1; Murree (6,333), 58.0; Ootacamund (7,327) 57.3; Srinagar (5,204), 53.3.

**PLAINS STATIONS.**—Calcutta (21), 77.9; Patna (183), 77.1; Allahabad (309), 77.3; Lucknow (368), 76.6; Meerut (738), 74.4; Delli (718), 77.1; Lahore (702), 74.7; Hyderabad (Sind), (96), 70.9; Amudabad (163), 82.1.

**PLATEAU STATIONS.** Nagpore (1,025), 79.6; Poona (1,840), 75.9; Hyderabad (Deccan), (1,690), 78.5; Bangalore (3,021), 72.8.

## GEOLOGY

The most striking feature of the geology of India, which has been exhaustively investigated, is the difference between the rocks of the Peninsula proper and those of the countries lying beyond the great Indo-Gangetic alluvial plain. Research has proved that, at a period geologically recent, the present peninsula of India was a triangular island, bounded on each side by the eastern and western Ghats and converging to Cape Comorin, while the base of the triangle was formed by the Vindhya mountain range,

from which an irregular spur, forming the Aravalli mountains, extended northwards, between the northern shore of this island and a hilly country, which is now the Himalaya mountains, ran a narrow ocean strait. The bed of this strait became covered with debris from the adjacent Himalayas on its northern shore, and with this debris there were entombed and preserved many and various animal remains. The present condition of the country in Northern India has been produced by a subsequent upheaval of the land, so that what was once the ocean strait forms now the northern plains of India, the long, nearly level, valley in which flow the Ganges and the Indus. Besides this, a great upheavement along the line of the Himalayas has elevated a narrow belt of the plains into the Siwalik Hills (determined to be of Tertiary age) and has added many thousand feet to the height of the Himalayas. Facts, indeed, tend to the conclusion that India had one long geological term and one protracted fauna, which lived through a period corresponding to several of the tertiary periods of Europe.

**CHIEF SYSTEMS**—The principal geological formations in India are known as the Bundelkhand System, the Vindhayan System, the Gondwana System and the Dekhan Trap.

**BUNDEKHAND SYSTEM**—The oldest rock known to exist in India is the Bundelkhand gneiss. It is exposed over a roughly triangular area lying between Kueer, Gwahar and the southern part of the Lalitpur district. Two other areas of gneiss occur in the peninsula, but they are supposed to be of an age posterior to the gneiss of Bundelkhand. This is of a remarkably simple and uniform composition, while that of the south and east of the peninsula is much more complex, and contains many extraneous minerals, among which are the gold of the Wynaad and the immense depths of magnetic iron ore that occur in many parts of the country.

**DEKHAND TRAP**—The great horizontal sheets of what is known as the Dekhan Trap, which overlie the cretaceous rocks of Bagh and are overlaid in turn by the Eocene beds of Gujarat, form the largest accumulation of volcanic rock known in the world. The trap extends in the north and south direction from Belgam to Nannuch, and spreads from Kathiwar on the west to Amarakantak on the east, covering every kind of rock from the Bundelkhand gneiss to the most recent cretaceous formations, and in parts of the Western Ghats it is more than 4,000 feet thick. Many casts of marine shells, zoophytes and other minerals have been discovered in various parts of the trap.

**GONDWANA SYSTEM**—Resting in hollows of the ancient gneiss or the Vindhayan rocks are found the first fossiliferous strata of the Indian peninsula—those of the Gondwana system, or the Indian coal measures. These rocks extend in patches from West Bengal through South Bihar and the Nerbudda Valley to Cutch; they are also found in the valley of Godavari and as far south as Madras. A small outlier of the same series has also been discovered at the base of the Himalayas, near Darjeeling, almost the only instance of a peninsula rock occurring in the extra-peninsula area. In the Gondwana system are the coal-bearing strata of Karharbari and Damuda. These are economically the most important of the Indian strata, though they cover a very small area compared with that occupied by the Vindhayan rocks or the Bundelkhand gneiss.

These coal-bearing strata contain numerous plant remains and a few skeletons of terrestrial animals belonging to the amphibia,

but no trace of any marine fossils has yet been discovered in them.

**VINDHAYAN SYSTEM**—The most widely distributed series of stratified rock found in India is known as the Vindhayan system, and extends from Sassceran and Rotasgarh on the Son to the border of Mewar and from Agra to the Nerbudda valley, with several outlying patches in Southern India. All the diamonds found in India seem to be derived from a pebble bed at the bottom of the Vindhayan series, but these diamonds occur simply as water worn pebbles, so that their original matrix is still unknown. A strange feature of the Vindhayan rocks is that they are totally devoid of fossils; this is accounted for either by the fact that the rocks named were deposited before the beginning of life on the globe, or that there was something inimical to life in the composition of the water in which these rocks were formed.

## FAUNA

India provides the zoologist with a wide and very diversified range of fauna—wild tame and domestic. Certain of the wild animals, when tamed, become extremely useful for domestic purposes, and others, though properly speaking never tamed, are trained for use in hunting.

**ANIMALS**—Of the animals wild in their natural state, the elephant is perhaps entitled to first place. It differs widely from the African branch of the family, the most noticeable outward variation being the smallness of its ears. It is, however, far more docile, intelligent, and useful to man. Easily tamed, it is just as easily trained, and is frequently used for transport and other work. In the colour and quality of its mane, and in its size and strength, the Indian lion compares unfavourably with the African. It also lacks the dark line down its spine, and other trivial differences serve to emphasize the distinction between the two varieties. It is very rarely found now, and the shooting of one in 1926 attracted public attention.

In the tiger India possesses the most powerful of all carnivora. Brave to a degree, it is far more dangerous when attacked than any lion, and is responsible for an enormous amount of damage yearly, both to human beings and to cattle and other stock. Tiger hunting, usually carried out from the howdahs of trained elephants, is one of the royal sports of India. In the leopard—especially the larger, yellower race of leopards in the hills—this country has the advantage over Africa, where the animal is comparatively small and dark. Even finer in appearance than the leopard of the hills, owing to its dense, pale fur, but not really quite so large, the snow leopard or ounce is much less often brought to bag, for it seldom ranges far below the Himalayan snow-line, where it preys upon the wild mountain sheep. India possesses two types of rhinoceros, the greater and the less, but it would appear that both types are doomed to extinction, except where rigorously preserved as interesting survivals of the past. The wild boar provides hunting that is always exciting and often dangerous, while more European in conception is the deer-stalking of such grand stags as the barasingha of Kashmir, the still larger sambur of central and southern India, and, in diminishing series, the swamp, spotted, barking, hog, musk and mouse deer—the last a tiny animal, standing scarcely a foot high. Besides the deer there are five antelopes, one gazelle—the dainty chikara—and a number of fine wild goats, sheep, and cattle. Herds of gigantic wild cattle, with almost the bulk of elephants, the gaur and the gayal, roam

at large in the eastern forests, while the wild buffalo, differing little from the domestic variety, and often interbreeding with it, ponderously brings up the rear of India's wonderful procession of big game. Of the smaller mammals, the squirrel, which feeds in the roads regardless of traffic as ubiquitously and impudently as the London sparrow, is most noticed by Europeans. Muskrats, with their unpleasant odour, monkeys and mongooses all go to swell the heterogeneous collection, not forgetting the jackal, the most universally hated beast in India.

**BIRDS**—That the birds of India attract more attention than the mammals is not surprising, seeing that they consist of over 1,700 kinds, the majority not being rare and the commonest conspicuous for large size, beautiful colouring, striking habits, or strange voices. Most interesting, perhaps, are some of the common birds, such as the vultures waiting in silent, ghoulish rings about the Towers of Silence in Bombay, and the ubiquitous flocks of pariah kites which are for ever wheeling and screaming in the air. High above the kites float the sovereign eagles, and, ennobled by distance, the wide-winged vultures. There are thirty kinds of tits, forty varieties of laughing thrushes, ninety different babblers, fifty variations of bulbuls, one hundred and ten warblers, fifty types of flycatchers, twelve nuthatches, and thirteen swallows. Still there are some that stand out from the multitude, such as the familiar green parrot, the red shouldered parakeet of the hills and the myna. For sheer beauty the blue jay is certainly pre-eminent, and another feathered jewel is the common small bee-eater, with the sun bird next in order. India has an immense list of game birds, including peafowl, sand grouse, pheasants, quail and partridges. Besides the water fowl, there are six kinds of bustards, as many of snipe and twenty of plovers, also a large variety of pigeons, making a list of almost infinite variety.

**FISHES**—No less than 351 genera and 1,418 species of fishes inhabiting Indian waters have been enumerated. About 300 of these species are fresh water kinds, living in rivers, brooks, ponds, tanks or marshes. Another large group of fishes inhabits the brackish waters of estuaries, creeks and lagoons, and some are migratory, like the salmon and the common cod in Europe, passing part of their existence in the sea and part in fresh water. All the common tropical sharks and rays are found on the Indian coasts, the former including the ferocious hammer-headed sharks (*Zygæna*), with their extraordinary T-shaped heads, and the saw fishes, which attain a length of 10 feet or more. The great eagle rays, or 'devil fish,' said to reach a breadth of 18 feet and other smaller rays are occasionally captured off the coast. Eels and cat fishes are common, and the carps are numerous and generally edible. The herring family is well represented in the Indian seas, and the hilsa is especially fine flavoured. Several species of anchovy also occur on the coasts and in the estuaries. Red mullet, bream, tunny and a sort of smelt are numerous. Several kinds of perch and eels inhabit the rivers and ponds, and mention must be made of the ophichthidæ (called murrel in Northern India), the travelling fish of India, which, possessing an amphibious respiration, is able to move from one pond to another as necessity or fancy dictates. Jugglers carry them about in order to assist in their performances, while so great is their vitality that the saleswomen cut portions off them while still alive for disposal to purchasers, who will give only a decreased price when life has ceased to exist.



**INSECTS.**—Insects are very numerous throughout India, the genera being largely those of tropical climates. Beetles are common everywhere, as are ants and ichneumons. Many are industrially and commercially useful, as galls, which are employed in dyeing and tanning, and the cochineal insect. There are many varieties of silkworm and interesting insects are the mantidæ, or praying insects, and the scavenger beetle. Others, as locusts, stag-beetles, field and house bugs, the coffee-bug, the bakoh and many weevils, are injurious to crops.

**REPTILES.**—In reptiles India is rather unpleasantly rich, there being at least three kinds of venomous snakes which are justly dreaded, the slender krait, the hooded cobra, and the desert saw-viper (*Echis carinata*). A bite from any one of these means almost certain death. Others are equally deadly but seldom encountered, such as the aggressive king cobra or hamadryad and a black and yellow banded sea snake. Compared with these, the python or rock snake, even when thirty feet long is harmless, although very alarming when disturbed by accident. In addition, there are the harmless rat-snake and the green tree-snake. Even more frightful than the venomous snakes are the huge estuarine crocodiles of eastern India. These monsters, often thirty feet in length, never hesitate to attack a human being. There are also the more common short and long-nosed crocodiles, the former, although dangerous, usually feeding on the smaller animals, and the latter exclusively on fish. Lizards, monitors (miscalled "iguanas" by the natives), and frogs are multitudinous in variety and in number.

## FLORA

Unlike many other large geographical areas, India is remarkable for having no distinctive botanical features peculiar to itself. It differs conspicuously in this respect from such countries as South Africa and Australia. Nearly half the country is tropical, though none of it is equatorial, and a part is not only temperate, but cold, accordingly the vegetation varies greatly.

Where moisture is plentiful, as in the valley of the Ganges, it is superabundant. The delta of the Ganges, called the Sunderbans, is covered with dense jungle, full of the largest wild animals and the excessive vegetation renders most of the mouths unnavigable. There are many similar tracts of extensive forest and jungle. On the Coromandel coast, on the other hand, the heat, which reaches 100° or 120° F., destroys vegetation, and the delta of the Indus, from the south east of the Punjab to the Rann or great salt marsh of Cutch, forms a huge sandy desert, continuous over the river with the desert of Baluchistan and with a wide band stretching across the whole continent of Asia to Central Africa.

In the various altitudes of the Himalayas the forms of vegetable life belonging to all the different climates from tropical to polar are to be found. These heights, as well as the Western Ghats, are magnificently wooded, and the forest and jungle flora of India may indeed be said to be the most noteworthy feature of its vegetable growth.

**FLOWERING PLANTS.** India is by no means a country of flowers, and is said to be singular in that there is an almost complete absence of local plants. There are few other countries in which the vegetation of the more accessible parts presents so little floral beauty or such short seasons of bloom. A great number of British flowering plants have become acclimatised and many North African, Arabian and even Australian forms occur. The most conspicuous flowers in the plains and on the lower slopes are those of the *cyperaceæ*, *labiata*, *amaranthaceæ*, *convolvulaceæ* and *acanthaceæ*. The mountainous regions of the Himalayas contain an immense number of European and Persian plants, and here the *rhododendron*, *monotropa*, *pedicularis*, *corydalis*, *nicotia*, *carex*, *lonicea*, *primula*, *cerasus*, *spiræa* and *violinum* attain their maximum degree of development. Many species of beautiful orchids and flowering ferns are abundant in the tropical forests and the curious pitcher plants are also a noticeable feature.

**FORESTS.** These are described in considerable detail in the section devoted to

"Agriculture." The principal forests are on the western coast of the Peninsula, in the country above the Ghats in Kanara, the Annamallay and Pulney Hills, the country to the east of the Salwin River in Martaban, Pegu and Tenasserim, British Sikkim, Oudh and the Punjab. The chief species of forest trees are the conifers (cedar, pine and fir), the oak, elm, maple, plane, ash, ebony, teak, banyan, sandalwood, mango, bamboo, sal, sissu and palms, the latter including the date, palmyra, betel-nut and other varieties. The deodar, which is indigenous to the mountains of Afghanistan and the north-west Himalayas, is nearly allied to the Atlantic cedar and to the cedar of Lebanon. The *ficus elastica*, yielding rubber is found along the foot of the Himalayas from Sikkim to Assam and more sparingly at the foot of the Khastia and Cachar hills. The teak, pine and evergreen forests of Burma are commercially very valuable.

**FRUITS.** European fruits abound in India, and among the indigenous may be mentioned the mango, plantain, pomegranate, citron, date, almond, grape, pineapple and tamarind. The Khasmuri valley is famous for European fruits such as apples, peaches and grapes. Mulberry trees are grown, on the leaves of which silkworms are fed.

**INDUSTRIAL PLANTS.** Though India is not specially noted for its purely decorative plants, its supply of plants and trees which have been and can be turned to valuable use for industrial purposes is surpassed by few countries in the world. Of tropical products, tobacco, sugar, cinchona, pepper, coffee and spice-trees of all kinds abound. Rice has from time immemorial been the staple food of the country. Jute is one of India's most valuable commercial products, and indigo, oilseeds, and poppies are other industrial plants of great importance. Upon the Indian tea-plant has been built up an enormous industry, and the gardens of Assam and the lower slopes of the Himalayas are one of the features of the country. The plants belonging to the more temperate zones, such as wheat, maize, barley, millets, pulses and vegetables, are also successfully cultivated.

# HISTORY

THE orthodox Hindu begins the history of India more than 3,000 years before the birth of Christ with the war waged on the banks of the Jumna between the sons of Kurn and the sons of Pandu, but the modern commentator prefers to omit many of these remote centuries and to take B.C. 600, or thereabouts, as his starting point. At that time much of the country was covered with forest, but the Aryan races, who entered India from the north, had established in parts a form of civilisation far superior to that of the aboriginal savages, and to this day there survive cities, like Benares, founded by those invaders. In like manner, the Dravidian invaders from an unknown land, who overran the Deccan and the southern part of the Peninsula, crushed the aborigines, and at a much later period were themselves subdued by the Aryans. Of these two civilising forces, the Aryan is the better known, and of the Aryan kingdoms the first of which there is authentic record is that of Magadha, or Bihar, on the Ganges. It was in or near this powerful kingdom that Jainism and Buddhism had their origin, the fifth King of Magadha, Bimbisara by name, being the friend and patron of Gautama Buddha. This king was a contemporary of Darius, King of Persia (B.C. 521 to 485), who

annexed the Indus valley and formed from his conquest an Indian Satrapy which paid as tribute the equivalent of about a million sterling. Detailed history, however, does not become possible until the invasion by Alexander in B.C. 326.

## B.C. 326-A.D. 1000 : INDIA BEFORE THE MOHAMMEDAN INVASION.—BUDDHISM AND BRAHMANISM

Alexander the Great, the "Conqueror of the World," having invaded India from the north-west corner in B.C. 326, crossed the Indus, defeated Porus at the battle of Hydaspes, and subdued the whole basin of the Indus and its tributaries—that is to say, the modern provinces of the Punjab and Sind. Beyond this his influence was not felt in the main portion of the country. He stayed 19 months in India, but his early death in B.C. 323 was the signal for a revolt against his officers, the leader of which was Chandragupta, an illegitimate member of the royal family of Magadha, whose memorable reign ended in B.C. 297. After him, Asoka, the founder of Buddhism as a national religion, is a prominent figure in Indian history. He was himself a convert to Buddhism and the greatest sovereign that ever propagated that faith. This notability established something approaching an empire,

his original kingdom being in the lower valley of the Ganges. There followed invasions by the Bactrians and Scythians, but for some centuries before Christ Buddhism in faith and civil government prevailed over India. Meanwhile it had spread to the neighbouring regions—Ceylon, Burma, Tibet, China, and even Afghanistan. But while the faith endured in those territories, in India it gradually yielded to the old Hinduism, which should now be called Brahmanism. Before it fell, Buddhism raised many architectural monuments in various provinces which still attest its greatness and culture. Simplicity and purity of faith were its original characteristics, and were probably maintained throughout its Indian career, however much they may have become overlaid by superstition elsewhere.

The modern Hindu era dates from the reign of the Brahmanist King Vikramaditya, in the sixth century A.D. This is the period which has in western phrase been called the Renaissance of Hinduism. The Sanskrit language was revived for both the drama and descriptive poetry, and there were laudable strivings after knowledge in astronomy, medicine and other sciences. For four full centuries (politically a period of chaotic anarchy) the Brahman caste held its own, and the Brahmanic system was established



all over India. The end of this period is marked by the splendours of the rule of the Rajputs, one of whom could boast that he had conquered all the country from the Vindhayas to the Himalayas including Delhi, already a fortress one hundred years old.

**A.D.1000-A.D.1756: THE MOHAMMEDAN CONQUEST—RISE AND FALL OF THE MOGUL EMPIRE.**—The wave of Mohammedan invaders that eventually swept over the country first touched India, in Sind, less than a hundred years after the death of the Prophet in A.D.632. But the first real contact was when, in 1001, Mahmud of Ghazni entered through the passes of the Suliman Mountains, capturing places so far apart as Multan, Kanauj, Gwahar and Somnath in the Punjab. From this time onward the history of India can be fully understood from abundant materials, though the details are intricate. Several Mohammedan dynasties in succession established themselves at Delhi, others at Mandhu in the Vindhayas, at Ahmedabad on the west coast, and at five places in the Deccan, of which the two most famous are Golconda and Bijapur. Thus almost all India fell under Mohammedan dominion.

About the year 1200 the Mongol, Genghis Khan, devastated the north western part of the country. Succeeding Mongol invasions were repelled by the Indian Mohammedans, but in 1397 the Tatar Timur, or Tamerlane, advanced to Delhi and proclaimed himself Emperor of India. This title lapsed for a while, till in 1525 his descendant Babur revived it and became the first to bear the title of the Great Mogul. His descendants subdued one by one most of the Mohammedan States in the upper half of India, and became emperors in reality, but the southern States preserved a semi-independence. Babur's grandson, Akbar the Great, made this empire effective with the aid of a Hindu minister, Todur Mal. He was, perhaps, the greatest sovereign that India has ever seen, for, by introducing religious toleration, he succeeded in consolidating into one empire no less than fifteen separate kingdoms. It was his grandson Shah Jahan, who built the most famous and beautiful of all tombs, the Taj Mahal, as well as the fort, palace and Jumna Masjid at Delhi. In the cataclysm which followed the death of Aurangzebe, Shah Jahan's successor, and the setting up of the Mahrattas four fresh Mohammedan empires came into existence—those of the Nawab Wazir of Oudh, of the Nizam of Hyderabad in the Deccan, of the Nawab of the Carnatic, and of Hyder Ali and Tippoo at Seringapatam in Mysore, all of which were later to acquire a sinister prominence. After the fall of the Mogul empire, about the middle of the 18th century, the Mahrattas ruled over the greater part of the country. It appeared for a time as if they might once more establish a Hindu empire, but the year 1761 witnessed the complete overthrow of their power in the battle of Panipat.

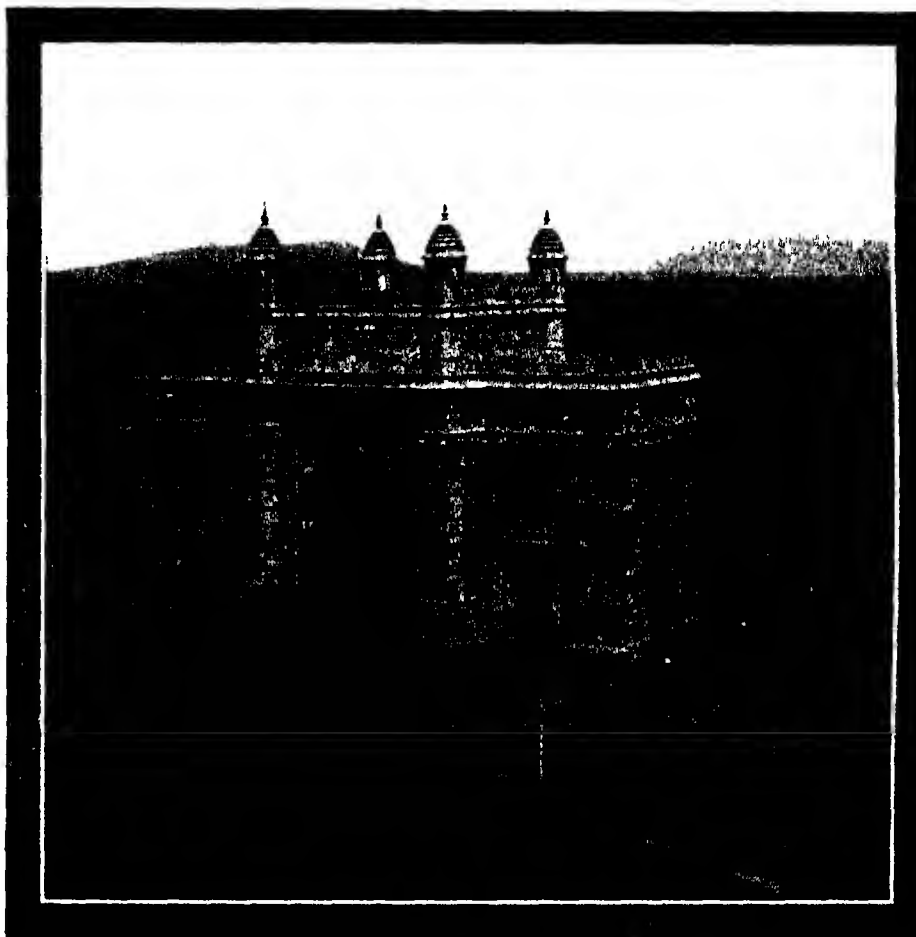
**THE EUROPEAN SETTLEMENTS.**—It is necessary at this point to go back a little, in order to mention the voyage of the Portuguese navigator, Vasco da Gama, to India in 1498 and the consequent European settlement which occurred in several parts of the country. The Portuguese for a long period controlled practically the whole of the west coast except Bombay, then only a small place. Their headquarters were at Goa, on the coast south of Bombay, which became a town and a harbour of the first rank in the 18th century, and which still remains a Portuguese possession. For more than sixty years they carried on a lucrative trade with no considerable rivals. In 1580,

however, the union of Portugal with Spain under Philip II decided the fall of their commercial power in the East, the Dutch capturing one by one the best of their possessions in the outlying Indies while in India proper their power declined to a minimum. Here, for many years, the rival claims of France and England were to make history and eventually to determine the future of an empire.

English and French settlements had followed in the wake of the Portuguese, the English East India Company having been formed in 1600. It acquired valuable property at Surat, Ahmedabad, Agra and Patna, and by the end of the 17th century its activities had developed to an amazing extent at Bombay and Calcutta. The French East India Company operated from Pondicherry

by his capture and subsequent defence of Arcot. The third war, known as the Seven Years' War (1756-63), was marked by the surrender of Pondicherry and resulted in the defeat of French ambitions in Southern India.

**1756-1856: THE CONSOLIDATION OF BRITISH RULE CIVIL AND WARREN HASTINGS SOCIAL REFORM—AFGHAN, SIKH AND BURMESE WARS.** About this time important events took place in Bengal. Siraj-ud-Dowlah Nawab of Bengal in 1756 besieged Calcutta with a large army, when it was evacuated so suddenly by the English that a considerable part of the garrison was left behind. There was no alternative but to surrender, and 146 prisoners were thrust into the common prison of the garrison, a room 18 ft. square with two small windows



THE GATEWAY TO INDIA AT BOMBAY.

having secured a strong position in Southern India, which had become independent of Delhi and was divided into three large States—Hyderabad, Tanjore and Mysore—and a number of petty States under local chieftains. In 1742 the Governor of the French settlement was Duplex. Soon after his arrival England and France went to war in Europe, the contest being extended to their settlements in India. Pondicherry was attacked and Madras was captured by the French, but was immediately claimed by the Nawab of the Carnatic, whose army was defeated by the French at San Thomé. The treaty of Aix-la-Chapelle (1748) restored Madras to the British. The fighting had shown the Indian powers the value of European troops, and this was again demonstrated in the next French war (1750-54), when Robert Clive achieved enduring fame

by his capture and subsequent defence of Arcot. The third war, known as the Seven Years' War (1756-63), was marked by the surrender of Pondicherry and resulted in the defeat of French ambitions in Southern India. **1756-1856: THE CONSOLIDATION OF BRITISH RULE CIVIL AND WARREN HASTINGS SOCIAL REFORM—AFGHAN, SIKH AND BURMESE WARS.** About this time important events took place in Bengal. Siraj-ud-Dowlah Nawab of Bengal in 1756 besieged Calcutta with a large army, when it was evacuated so suddenly by the English that a considerable part of the garrison was left behind. There was no alternative but to surrender, and 146 prisoners were thrust into the common prison of the garrison, a room 18 ft. square with two small windows

censured him, though admitting that he did render "great and meritorious services to his country."

**WARREN HASTINGS AND HIS SUCCESSORS**—The victory of Plassey gave to England the dominion of Bengal and Bihar, the two most populous provinces in the whole country. Within sixty years, that is by 1818, the East India Company became the master of India as far as the Indus basin, but not in the Punjab or in Sind. It had thus acquired the whole basin of the Ganges and the coast districts on both sides of the peninsula, and there was no longer fear of any European rival. The Great Mogul, now powerless, was under its charge at Delhi. The States of Mysore, Oudh and Hyderabad (Deccan) were its dependent allies. These were the years of the extension and consolidation of what was to become known as the British Raj.

The administration of Warren Hastings, Clive's immediate successor as Governor and later the first Governor-General of Bengal, was marked by a thorough reorganisation of the Civil Service and by attempts at financial reform, in carrying out which he incurred the odium of exacting forced contributions and of receiving bribes, being finally acquitted on all the charges brought against him after a seven years' trial before the House of Lords. His successors, Cornwallis, Wellesley (during whose administration the battles of Assaye, Algaum, Algaud and Laswari were fought), and the Marquis of Hastings, each in his own way added to the tale of British dominion, notably by the acquisition, after the death of Tipponu Iib, of what is now virtually the whole of the Madras Presidency and the bringing under British rule of the Native States of Poona, Baroda, Gwalior, Indore and Nagpur. By 1828 there was a Pax Britannica throughout India, after centuries of internal war and revolution, and even Nepal, the one Himalayan State which had been capable of waging a sustained war against British forces, was at peace with England.

**WARS (BURMESE, AFGHAN AND SIKH)**—The rule of Lord Amherst, who succeeded Lord Hastings, was made memorable by the first Burmese war, ending in an acquisition of territory which was the beginning of a new dominion across the waters of the Bay of Bengal. There was then an important development of social reform under Lord William Bentinck until 1835, but in 1838 it was decided to set up a native sovereign in Afghanistan under British protection as a means of guarding the north-west frontier. This led to the first Afghan war, after which the British evacuated that territory, the first check in a victorious career of eighty years since Plassey. There remained still unconquered the basin of the Indus—i.e. Sind and the Punjab, the former was won under Lord Ellenborough, the latter under Hardinge and Dalhousie after severe fighting in two wars, in which the Sikhs were the aggressors. Then at length it was said that not a shot could be fired in anger throughout India without the consent of the British Government. Under Lord Dalhousie also a second war broke out with the Burmese, the result of which extended British dominion over the delta of the Irrawaddy. That administrator accomplished many great reforms and left his mark on India, founding the Public Works Department, initiating the railways and postal and telegraphic system, and completing the great Ganges Canal. It has been said that his passion for change carried him too far, and critics of his policy have sometimes attributed to it not a few of the causes of the Mutiny.

#### 1856-1862: THE MUTINY—END OF EAST INDIA COMPANY'S RULE

Lord Canning, the son of Canning, the great English statesman, became Governor-General in 1856 on the retirement of Lord Dalhousie. He was destined to watch over India during a great crisis that threatened to overthrow British government, to render Lord Dalhousie's fine work fruitless, and at one blow to send the country back into the state of anarchy from which it had so recently emerged. In 1857 the sepoys of the Bengal army mutinied and all the valley of the Ganges from Delhi to Patna rose in rebellion.

**CAUSES OF THE MUTINY**—Many causes have been assigned by historians for the mutiny. Probably the immediate provocation was the greased cartridges that were served out with the new rifle issued to the Bengal troops. But behind that were the facts that the failure of the Afghan campaign had destroyed the legend of British invincibility, that certain chiefs near the scene of the first outbreak were labouring under a sense of wrong (real or supposed), that the annexation of Oudh by Dalhousie was very unpopular among the Mohammedans, that the Brahmans were too numerous in the ranks, and (perhaps the prime fundamental cause) that the native forces were much too large relatively to the European. There was at the outbreak only one European soldier to six sepoys, the British troops having recently been reduced in number.

**DELHI (SIEGE OF)**—It was on May 10, 1857, that the native portion of the garrison at Meerut near Delhi, rose in mutiny, cut down a few Europeans, and marched straight way to Delhi, where it was joined by the native troops there and the city mob. The rebels set up as Emperor the titular Great Mogul, Bahadur Shah, who dwelt in the ancestral palace under British protection and proclaimed the restoration of the Mogul Empire. This event was rapidly followed by the revolt of almost the whole native army of the Bengal Presidency (160,000 strong), the armies of the Bombay and Madras Presidencies were but slightly affected. Of the Bengal army only seven battalions of regular troops remained loyal, but a large part of the irregular troops was staunch to the British Raj. Not only Hindus but Mohammedans also, were in active revolt, and the mutiny quickly spread through the North-West Provinces and Oudh into Lower Bengal. Risings in the Punjab were put down by Sir John Lawrence and his subordinates, who armed the Sikhs and with their help reduced the sepoys, while Lawrence was subsequently able to send a strong force of Sikhs to aid in the siege of Delhi.

This siege began on June 8, when Sir Henry Barnard occupied the Ridge outside the town. It dragged on until in August Sir John Nicholson (Lord Roberts' "*beau ideal* of a soldier and a gentleman") arrived with reinforcements from the Punjab. In the meantime the rebel force in the city was constantly increased by the addition of fresh bodies of mutineers, attacks were frequent and the losses heavy, cholera and sunstroke took a big toll on the Ridge, and when the final attack was made in September the besieging army could only parade 4,720 infantry, of whom 1,960 were Europeans. The arrival of siege guns made it possible to advance the batteries on September 8, and by the 13th a breach was made. On the following day, over the ruins of the Kashmir Gate blown in by Horne and Salkeld, the city was entered and Nicholson formed up his troops within the walls, but by nightfall the British, with a loss of 1,200

killed and wounded, had only secured a foothold. Six days' street fighting followed, and Delhi was won, but the gallant Nicholson was killed at the head of a storming party. Bahadur Shah was taken prisoner, and his two sons were shot by Captain Hodson.

**MASSACRE OF CANNOR**  
**SIEGE OF LUCKNOW**—At Cawnpore the Europeans were besieged by Nana Sahib of infamous memory, the adopted son of the late Peshwa. Their position being open and almost indefensible after holding out for twenty-two days the garrison surrendered only on a guarantee that the women and children should have a safe conduct as far as Allahabad. As soon as the surrender had taken place Nana Sahib gave the order to fire, and every man, woman and child was murdered. Their bodies were thrown down a well just before Sir Henry Havelock arrived with the relief force. He defeated the Cawnpore mutineers and then marched to relieve Lucknow, which had held out since July 2 against tremendous odds. Havelock's force was too small to raise the siege and was itself invested, Lucknow not being finally delivered until Sir Colin Campbell arrived in November. The relief of Lucknow broke the back of the rebellion, British columns being now able to march across the plains and stamp out the remainder of the mutiny. Oudh was reduced and in Central India Sir Hugh Rose waged a brilliant campaign against the disinherited Rance of Jhansi, who died at the head of her troops, while Tantia Topi was finally crushed by another British General Lord Napier, between Agra and Gwalior. In 1859 the Oudh mutineers were swept over the frontier into Nepal and the mutiny was at an end.

**TRANSFERS OF INDIA TO THE CROWN**—The terrible events of 1857 had aroused the British nation to a full sense of the responsibility of governing India. Up to this time the Government of India, carried on by the East India Company, was subject to two controlling bodies in England. These were first the old Court of Directors, and second the Board of Control, a body established by Pitt's Act of 1784 further to control the Company. The rule was that the Court of Directors submitted despatches and instructions to the Board of Control, which altered them if it was not in agreement. This arrangement was the cause of many delays and frequent irritation, from which the Government of India suffered. In 1858 an Act was passed in the British Parliament which transferred the governments, territories and revenues of the East India Company to the Crown. By that Act India was to be governed by, and in the name of, the Sovereign through a Secretary of State, assisted by a Council of fifteen members. At the same time the Governor-General received the title of Viceroy. The European troops of the Company, numbering about 24,000 officers and men, were amalgamated with the British Army and the Indian Navy was abolished. Peace was proclaimed in July 1859, and the concluding years of Lord Canning's Viceroyalty were marked by many important reforms. From this time also date the customs system, income tax, licence duty and State paper currency of India. Canning died in 1862, immediately after he had relinquished the Viceroyalty to Lord Elgin, who lived only a few months after his arrival in the country.

**1862-1878: RECONSTRUCTION PERIOD**—Elgin was succeeded as Viceroy in 1862 by Sir John Lawrence (afterwards Lord Lawrence), the "Saviour of the Punjab," who before he retired had passed

through every grade in the Service, from an Assistant Magistracy to the Viceroyalty. Lawrence reorganised the Indian military system, reconstructed the Indian Army and created the Irrigation Department. During his Viceroyalty two severe famines occurred, and a serious commercial crisis threatened the tea industry of Bengal. Lord Mayo, who succeeded Lawrence, created an Agricultural Department and introduced the system of Provincial Finance, thus fostering the impulse to local self-government. He was murdered by a convict in the Andaman Islands in 1872. During Lord Lytton's tenure of office (1877-80) the visit of the Prince of Wales (King Edward VII) aroused unprecedented enthusiasm for and loyalty to the British Raj and further encouragement was given to the growth of this spirit when, at a durbar of great magnificence held on January 1, 1877, Queen Victoria was proclaimed Empress of India. The worst famine that India had ever known occurred in 1877-78, no less than eight crores of rupees having to be spent in importing grain. The loss of life was estimated at 5½ millions.

**1878-1894 : SECOND UGHIAN WAR - THE RUSSIAN MENACE - LEGISLATION** - It was about this time that the affairs of Afghanistan and the growing influence of Russia in that country became prominent. The Amir Sher Ali, was found to be intriguing with the latter country and that fact, coupled with his repulse of a British mission, led to the second Afghan war. British armies advanced up the Khyber Pass, the Kurram Valley and the Bolan Pass, and gained all the important vantage points of Eastern Afghanistan. The murder of the British Resident, Sir Louis Cavagnari, at Cabul in 1879 necessitated the occupation of that city and Kandahar by British forces, a campaign made memorable by Sir Frederick (afterwards Earl) Roberts' famous march. Lord Ripon became Viceroy of India in 1880, while in the following year the Self-Government Act was passed and the Vernacular Press Act repealed. During Lord Dufferin's Viceroyalty (1884-88) Upper Burma was annexed and Kashmir became a protected State of the Indian Empire. Over the Peshawar incident (a collision between Russian and Afghan troops) in 1885 war between Great Britain and Russia was narrowly averted, but the incident drew attention to a menace that was to be felt for nearly a generation more; it also served to win from the Princes of India a unanimous offer of troops and money in case of need. That offer bore fruit under the next Viceroy, Lord Lansdowne, when the present system of Imperial Service troops was organised. In 1891 a rising took place in the State of Manipur, whose Rajah was dethroned in consequence, and in 1892 the passing of Lord Cross's Act increased the size of the Legislative Councils as well as the number of non-official members thereof. Other useful legislation concerned social and domestic reform among the Hindus, the closing of the Indian Mints to the free coinage of silver, and large schemes for the construction of railways, roads and irrigation works.

**1895-1899 : CHITRAL AND TIRAH CAMPAIGNS** - From 1885 onwards the attention of the Indian Government had been devoted increasingly to the north-west frontier. In 1893 the frontiers of Afghanistan and British India were defined by a joint agreement between the two Governments, known as the Durand Agreement. This brought Chitral under British influence, and in 1895 an expedition was necessary in order to eject hostile chiefs in favour of candidates amenable to British influence. Two years

later the Waziris, Swatis and Mohmands attacked the British positions in Malakand, and the Afghans closed the Khyber Pass, leading to the military operations known as the Tirah Campaign, in which 10,000 troops were employed and over 1,000 officers and men were lost. This was a heavy burden on the finances of India which was increased by the serious and widespread famine of 1896-97 and by the appearance in the country of bubonic plague. The methods taken to prevent the spread of that disease led to rioting in Bombay, and elsewhere to the appearance in the vernacular press of seditious articles which made it necessary to tighten the law dealing with such matters.

**1899-1905 : LORD CURZON'S VICEROYALTY** - When Lord Curzon became Viceroy in 1898 he reversed the policy of his predecessors on the north-west frontier which had given rise to the Tirah Campaign, withdrew outlying garrisons in the tribal country, substituted for them tribal militia and created a new North-west Frontier Province for the purpose of introducing consistency of policy and firmness of control upon that disturbed border. In many other respects, too, his Viceroyalty was one of the most memorable in the history of India, as he brought to his work an increasing energy and a personal example of strenuous activity. In the first year of office he passed the Act which in accordance with the recommendations of the Fowler Commission practically fixed the value of the rupee at 1s. 4d. while in 1900 a Gold Reserve Fund was created. Further, he reformed the systems of education and police, laid down a comprehensive scheme of irrigation, improved the leave rules and the excessive report-writing of the Civil Service, established agricultural banks and emphasised the position of the Feudatory Chiefs by founding the Imperial Cadet Corps to give a military education to the sons of ruling and aristocratic families. In 1903 the accession of King Edward VII was proclaimed in a splendid Durbar, while in the same year Lord Curzon was re-appointed to a second term of office, and in the following year the expedition to Lhasa first involved the Forbidden City to European gaze. The chief act of Lord Curzon's second tenure of power was the partition of Bengal and the creation of the new province of Eastern Bengal and Assam - a reform which was designed to remove the systematic neglect of the trans-Gangetic areas of Bengal, but which provoked bitter and prolonged criticism. In 1905 a controversy with Lord Kitchener, the Commander-in-Chief, as to the position of the Military Member of the Council, led to the Viceroy's resignation and he was succeeded by Lord Minto.

**1905-1914 : UNREST IN BENGAL - NORTH-EAST FRONTIER - VISIT OF THE KING-EMPEROR** - The new Viceroy quickly found himself face to face with the most serious troubles that British rule had encountered in India since the Mutiny. For many years the educated class among the natives had been clamouring for itself a larger share in the administration and had organised a political party which, under the name of the National Congress, held annual meetings at Christmas in one or other of the large cities of the Peninsula. This class also exercised a wide influence through the press, vernacular and English, especially among young students. There is no doubt, too, that the adoption of western civilisation by the Japanese and their victorious war with Russia had set in motion a current of thought through all the peoples of the East. Though not the cause of the trouble which

arose, the partition of Bengal, which was resented by Bengali agitators as an insult to their country, was utilised to foment disaffection. Outside the Presidency attempts to quell that disaffection by the ordinary law were fairly successful, but in Bengal a 'Swadeshi' movement sought to boycott British goods, while the accompanying of assassination and bomb-throwing necessitated the passing of special Acts to meet the situation, viz. an Explosives Act, a Prevention of Seditious Meetings Act and a Criminal Law Amendment Act.

Legislation, however, was not only repressive large steps being taken to extend representative institutions. In 1907 a Hindu and a Mohammedan were appointed to the Secretary of State's Council and in 1909 a Hindu was appointed for the first time to the Viceroy's Council. The Indian Councils Act of 1909 carried this policy farther by reconstituting the Legislative Councils and conferring upon them wider powers of discussion. Lord Minto's viceroyalty was further distinguished by the conclusion between Great Britain and Russia of a far-reaching agreement on questions relating to Persia, Afghanistan and Tibet and also for punitive expeditions against the Lakka Khels and the Mohmands on the North-west Frontier.

**VISIT OF THE KING-EMPEROR** - Sir Charles (afterwards Lord) Hardinge was appointed to succeed Lord Minto in 1910. In November 1911 the King Emperor and the Queen visited India and held the Coronation Durbar at Delhi on December 12. At the close of the Durbar His Majesty announced the transfer of the Seat of Government from Calcutta to Delhi and the creation of a Governorship of Bengal, as well as of a new Lieutenant-Governorship of Bihar and Orissa. This latter announcement involved the reversal of the partition of Bengal and the disappearance of Eastern Bengal and Assam as a separate province. On December 23, as he was making his ceremonial entry into Delhi as the new capital, Lord Hardinge was severely wounded by a bomb. There was serious rioting at Cawnpore in 1913, and further trouble in the following year with a number of Sikh emigrants who had returned from Canada. The sequel, revealed in the two conspiracy trials at Lahore, showed that the 'Ghadr' conspiracy (or mutiny) was widespread and had been consistently encouraged by Germany.

**1914-1918 : INDIA AND THE WORLD WAR - MESOPOTAMIAN CAMPAIGN - THE MONTEAGUE REPORT** - The magnificent response made by India to the needs of the Empire during the Great War is a matter of world history. 'Nothing has pleased me more,' ran the King Emperor's message read by the Viceroy (Lord Hardinge) to the Legislative Council on September 8, 1914, 'than the passionate devotion to my Throne expressed both by my Indian and English subjects and by feudatory princes and chiefs of India, and their prodigal offers of their lives and their resources in the cause of the Realm.' On the motion of an Indian member, the Council unanimously affirmed its unswerving loyalty, promised unflinching support to the British Government, and offered on behalf of the people of India to share in the cost of the War. The Council reflected the attitude of the country; controversy was suspended, the martial classes eagerly responded to the call to arms, and lavish offers of help poured in from the rulers of native States.

So satisfactory was the general situation in India at that time that the Indian Government was able to release most of the British

troops, the flower of the Indian army, the best of the artillery, and large quantities of ammunition. In September 1914 a force of 70,000 men was sent to France. By the end of 1915 India's contribution amounted to nearly 80,000 British and 210,000 Indian officers and men. The expeditionary forces sent from India to France, Gallipoli, Egypt and East Africa passed on arrival to the control of the Home Government, and the responsibility of the Indian Government for them was thereafter confined to replacing losses by fresh drafts and providing supplies.

**MESOPOTAMIAN CAMPAIGN** — It was otherwise with the expedition sent to Mesopotamia, the control and management of which until 1916 were left to the Government of India. In the judgment of the Mesopotamia Commission which afterwards investigated the conduct of the expedition this delegation of responsibility was unfortunate. The expedition had at first a very limited objective, being sent to occupy Basra in the event of Turkey declaring war. Its scope was gradually enlarged until by September 1915 a series of successes brought it within striking distance of Bagdad. Then followed the advance on that city, the failure of the attack on the Turkish position at Ctesiphon, the disastrous retreat on Kut el Amara, and the capitulation of the besieged British force under General Townshend on April 29, 1916. That the expedition was badly managed there can be little doubt, but its earlier defects were afterwards repaired by a series of defeats inflicted on the Turks and the capture of Bagdad by Sir Stanley Maude.

In all the theatres of war the total casualties sustained by Indian troops were 61,308 dead and 79,850 wounded.

**MONTAGU REPORT (IHL)** — In 1917 Mr. Montagu, who had succeeded Mr. (afterwards Sir) Ansten Chamberlain as Secretary of State, carried out the latter's intention of visiting India. Lord Chelmsford was then Viceroy, and the result of that visit and of the exhaustive inquiries and conferences that were held was shown in the following year, when a report was issued containing what is known as the joint scheme of reform evolved by the Secretary of State and the Viceroy (See later under 'Administration'). In 1917 also compulsory military service for British subjects of European origin, including Anglo-Indians, was instituted, and commissions in the Indian Army were granted to Indians for the first time.

**1919-1920: THE ROWLATT ACT — ECONOMIC AND POLITICAL UNREST — AFGHAN WAR — GOVERNMENT OF INDIA ACT** — Shortly after the issue of the Montagu Report, another report, which was to have a great bearing upon future events, was issued by the Special Committee of Inquiry, over which Mr. Justice Rowlatt presided, into seditious crime in India. That report and the legislation which followed in consequence of it, together with the announcement of the proposed reform scheme, led to a renewal of political discussion and agitation, which had to a great extent been in abeyance during the early days of the War. Prolonged strikes occurred in Bombay and elsewhere, the gravity of the industrial and economic problem which, like all other countries, India had to face after the War having been increased by the ravages of an influenza epidemic, which is supposed to have caused 6,000,000 deaths during the winter months of 1918-1919. In spite of the storm aroused by the nationalist press and politicians, the Government proceeded with its Bill, which, however, was passed only by the official majority. Mr. M. K.

Gandhi, a well-known social and religious reformer, revered throughout the Bombay Presidency as an ascetic and holy man, initiated a *Sataggraha* or passive resistance movement which his followers quickly developed into open sedition. On March 30, 1919, the mob came into collision with the police at Delhi, and on April 13 the tragedy of Amritsar occurred.

**AMRITSAR** — In Amritsar (Punjab) banks and other buildings had been pillaged and burnt, while Europeans were murdered. The civil officers, finding themselves powerless to cope with the mobs in possession of the city, called upon the military to restore order. General Dyer, the officer commanding, deemed it necessary in the course of his operations to disperse forcibly an unlawful assembly held in the Jallianwala Bagh. Nearly 400 persons were killed by the fire of the troops, and probably three that number wounded. His action aroused intense indignation among Indians of all shades of political opinion and became the subject of most bitter controversy. Other incidents, such as injudicious orders and degrading punishments awarded by officers administering martial law, the general severity with which the latter were inflicted and the heavy sentences passed, together formed material for an impassioned attack by the Nationalist Party on the policy and conduct of the Punjab Government. Nor was this bitter feeling allayed by the appointment of the Hunter Committee to inquire into the disturbances connected with the Rowlatt legislation.

**AFGHAN WAR** — Exaggerated reports of the Amritsar and other riots and of the effect of the Rowlatt Act found their way into Afghanistan leading the new Amir, Amanullah, to the mistaken conclusion that an invasion of India might prove a solution of his domestic troubles. That it failed was due largely to the prompt mobilisation of Indian troops, the passage of the Khyber Pass, the occupation of Dacca and the bombing by aeroplanes of Kabul and Jalalabad. In June 1919 the Amir reluctantly accepted the conditions of armistice offered by the Indian Government and on August 8 a treaty of peace was signed. In 1919-20 a punitive expedition into Waziristan entailed severe fighting both the Wazirs and Mahsuds holding out with great obstinacy and skill.

**GOVERNMENT OF INDIA ACT** — In December 1919 the scheme of constitutional reform became law by the passing of the Government of India (Amendment) Act. Its importance was signalled by the King Emperor's proclamation of December 23, which dealt in eloquent and arresting language upon the political advancement conferred on the Indian peoples, authorised the Viceroy to extend the royal clemency to political offenders in the fullest measure compatible with public safety, and announced that the Prince of Wales would visit India to inaugurate the new Constitutions. Unfortunately racial feeling and excitement still continued to manifest itself. The publication of the Hunter Report and of the correspondence between the Government of India and the Secretary of State regarding its findings, as well as the subsequent debates in the British Parliament, renewed the bitterness and indignation which the Amritsar proceedings had aroused throughout India. Mr. Gandhi, who had associated himself with the grievances of the Indian Mohammedan community with regard to the terms imposed upon Turkey by the Allies and the question of the Kalifat, proclaimed in 1920 a new policy of non-co-operation, which, while it failed to attract definitely the middle and upper

classes, certainly relaxed the sense of law and order among the masses.

Owing to reasons of health the Prince of Wales' visit was postponed from 1920 to 1921, and H. R. H. the Duke of Connaught came out to inaugurate the Council of State and Legislative Assembly at Delhi. At the end of 1920 Lord Chelmsford's arduous but successful tenure of office came to an end and he handed over the Viceroyalty to Lord Reading.

**1921-1926 LORD READING'S VICEROYALTY — GENERAL IMPROVEMENT** — A remarkable chapter in the history of Viceroys and Governor Generals of India opened in April 1921 with the accession of Lord Reading to office and closed early in 1926 with his departure from Bombay. The former Lord Chief Justice of England, who in his boyhood had run away to sea and worked his passage to India before the mast found himself faced by a disquieting outlook and a formidable task. The great experiment of the Reforms had to be carried out with the help of the educated classes of India, a work requiring mutual confidence and good will; the shadow of Amritsar clouded the relations between the Government and its subjects at every turn, while Mr. Gandhi's agitation in favour of passive resistance was accompanied by outbreaks of riotous violence and there was a dangerous recrudescence of communal feeling among Mohammedans and Hindus. Despite these obstacles Lord Reading's viceroyalty proved to be one of steady improvement. At the end of his term of office the policy of non-co-operation adopted by the Swarajist Party was on its last legs, the Reforms were working smoothly in all but two provinces (Central Provinces and Bengal), the Sikh problem which had threatened to be an acute one, was honourably solved, the Budget showed a surplus in spite of the abolition of the vexatious cotton excise, and the Indianization of the essential services was proceeding satisfactorily.

**LEADING EVENTS** — Briefly summarised, the leading events of Lord Reading's viceroyalty were the visit of the Prince of Wales to India in the autumn of 1921, when attempts to boycott celebrations in his honour signally failed, the arrest and imprisonment of Mr. Gandhi in 1922, the adoption of a definite policy of protection by the formation of the Tariff Board in the same year, the elevation of Burma to the dignity of a Governor's Province in 1923, the elections for the Legislative Assembly and the Provincial Councils in 1924, in which the Swarajists increased their representation everywhere, as a result of which they were able to frustrate the working of Dyarchy in Bengal and the Central Provinces, the death of Mr. C. R. Das, the Swarajist leader in 1925, and the gradual collapse of the non-co-operative movement. In the last-named year the first railway electrification scheme in India was inaugurated in Bombay, and in Madras the Mettur-Cauvery irrigation project, by which 300,000 acres will be brought under cultivation, was commenced. In 1926 the cotton excise duty was repealed, and the Khyber Pass Railway was opened. Viscount Reading (created Earl of Reading on his return to England) left India in April 1926, and was succeeded in the viceroyalty by Lord Irwin of Kirby Underdale, who had previously held a post in the Home Government as Minister of Agriculture. His tenure of office was early marked by bitter conflicts between Hindu and Mohammedan communities in many cities, but, on the whole, general conditions in the summer of 1926 showed a distinct tendency towards improvement.

# PEOPLES

## POPULATION

### POPULATION

THE last census of the population of India was taken on March 18, 1921 the figure returned for the whole of the Empire being 318,942,480 as against 315,156,396 at the census of 1911. The population of British India was 247,003,293 or 77 per cent., and that of the Federative States and Agencies 71,939,187 or 23 per cent of the total. This number is spread over 1,805,332 square miles so that India with an area about half that of the United States has a population almost three times as large.

The following table shows the distribution of population by Provinces and States at the two last censuses.

Province, State or Agency	1911	1921
Ajmer-Merwara	501,305	195,271
Andamans and Nicobars	20,450	27,086
Assam	6,714,200	7,606,230
Baluchistan	114,112	420,618
Bengal	45,182,005	10,605,536
Bihar and Orissa	34,480,511	31,002,180
Bombay (Presidency)	10,600,266	10,348,210
Bombay	16,130,666	16,012,342
Sind	3,513,135	3,279,377
Aden	46,105	56,500
Bruma	12,115,217	13,212,192
Central Provinces and Berar	13,916,158	13,912,700
Coorg	174,970	163,838
Delhi	413,347	488,188
Madras	41,405,401	42,318,985
North West Frontier Province	2,196,933	2,251,310
Punjab	10,578,573	20,685,024
United Provinces of Agra and Oudh	46,807,490	15,375,787
Total Provinces	243,933,178	247,003,293
Assam State (Manipur)	346,222	381,016
Baluchistan States	420,291	378,877
Baroda State	2,032,798	2,126,522
Bengal States	822,565	896,926
Bihar and Orissa States	3,945,209	3,959,560
Bombay States	7,388,051	7,409,120
Central India (Agency)	6,129,019	5,097,023
Central Provinces States	2,117,152	2,066,900
Gwalior State	3,227,961	3,186,075
Hyderabad State	13,374,676	12,471,770
Kashmir State	3,158,126	3,320,518
Madras States	4,811,841	5,460,312
Mysore State	5,806,193	5,978,892
North-West Frontier Province (Agencies and Tribal Areas)	1,622,094	2,825,136
Punjab States	4,212,794	4,416,036
Rajputana (Agency)	10,530,432	9,844,384
Sikkim	87,920	81,721
United Provinces States	1,189,874	1,134,881
Total, States and Agencies	71,223,218	71,939,187
Total, India	315,156,396	318,942,480

## EMIGRATION SPORT

**CASTE SYSTEM.** The caste system (*castus*—purity of breed), which is a potent factor in the national life of India, does not appear to have been a part of the Aryan religion originally. It arose subsequently with a religious sanction which is still maintained, and it is noteworthy that its operation has held sway through all the religious, social and political changes of 3000 years.

The term "caste" is applied to the separate sections of the Hindu races who themselves usually employ the word *jati* or *jat* meaning birth or descent. Caste is the first institution of Hindu society which forces itself upon the attention of the stranger; all a man's actions from the cradle to the grave are regulated by it, and so widespread is its influence that, though originally a purely Hindu institution it has come to exercise a considerable influence over Mohammedans as well.

In ancient Hindu writings four great divisions were recognised—the Brahman, or learned, the Kshatriya, or warrior, the Vaisya, or merchant, and the Sudra, or labourer (all others being *Mlecha* (pariah)). But in practice at the present day the minute differences of race of native country, of avocation and of religion are sufficient to form differences of caste in most of which no man may lawfully eat with any individual of any other caste, or partake of food cooked by him, or marry into another caste family, but he may be his friend, his master, his servant or his partner.

### CEREMONIAL OBSTACLES

The caste ideas of ceremonial uncleanness are very peculiar. A Hindu visitor to a European house changes all his clothes and uses the secretions of the cow on his return home from the visit, or on being visited by a European has the floor spread with fresh cow-droppings. Every workman is clean in his own trade, but no Hindu will use any article of earthenware which a *Mlecha* has "polluted" by his touch; all earthen vessels are immediately broken, and brass or copper utensils are scourged with sand to free them from impurity. There are places where water is given to the natives as they walk along the road. Small brass pots are kept for the caste people, but there is no pot kept for the pariah, who must catch water in his mouth from a long hollow bamboo.

If a *Jam* come into contact with an out-caste, he, like the Hindu, touches fire or water to purify himself. If a Sudra Hindu ask a drink of a Brahman, it will be given in a brass vessel but from a distance, the Brahman stretching forward and placing the pot between them. It is similarly returned, but before receiving it back water is poured over to purify it. Not one of the helot races may enter the house of a Hindu, but he will stand at a distance and shout out his message.

**DENSITY OF POPULATION.** Over the whole of India the population per square mile averages 177, the mean density in the British Provinces being 226 and in the States 101. If the districts (and small States) are taken as a unit and the cities are excluded, the mean density ranges between a minimum of 1 and a maximum of 1,882 per square mile. The largest figures of density are Delhi (873), Cochin (720), Aden (706), Bengal (592), Bihar (566),

## LABOUR PRESS

Travancore (526), Oudh (507), and United Provinces (438). The lowest figures are returned by Baluchistan States (4), Andamans and Nicobars (8), Baluchistan (8), and Kashmir State (40).

**FOREIGN POPULATION.** The number of persons resident in India who were born outside the Indian Empire was 603,526 at the last census. Of these 274,000 were born in Nepal, 116,000 in the British Isles, 108,000 in China, and 48,000 in Afghanistan.

**GROWTH OF POPULATION.** The following table shows how the total population of India grew between the census of 1872 and that taken in 1921.

YEAR	POPULATION	VARIATION PER CENT SINCE PREVIOUS CENSUS
1872	206,192,360	
1881	253,896,330	23.2
1891	287,314,671	13.2
1901	294,361,056	2.5
1911	315,156,396	7.1
1921	318,942,180	1.2

The real increase in the population since 1872 that is during 49 years is estimated at about fifty-four millions, or 26.1 per cent., the figures for the first census having been not nearly so accurate as those of the later enumerations. The decade 1881-1891 which was free from any exceptional calamity is usually considered to have been a period of fairly normal progress. Every other decade has witnessed some special disaster, for instance, a severe famine in Southern India checked the increase in the decade 1872-1881 while the decennium 1891-1901 was dominated by the great famines of the closing years. Growth in Northern and Western India was checked in the succeeding decade by plague and in 1918 the total mortality from the influenza epidemic was certainly not less and was probably more than twelve and a half millions.

**LANGUAGES.** India has no less than 222 vernacular languages of extraordinary variety. The languages spoken by 316,056,000 persons at the last census are grouped in seven families. The principal are Western Hindi (spoken by 96,714,000 persons), Bengali (40,205,000), Telugu (23,601,000), Marathi (18,798,000), Tamil (18,780,000), Punjabi (16,231,000), Rajasthani (12,681,000) after which come Oriya, Kanarese, Gujarati, Burmese, and Malayalam. Hindustani, a dialect of Hindi, has become the literary language of Hindustan, and is the *lingua franca* of India. English is understood by many.

**OCCUPATIONS.** Occupation was recorded for 316,055,231 persons in 1921. India is essentially an agricultural country, agriculture proper supporting 224 millions out of the first named total, or 71 per cent of the population of the Empire. If to this be added the pastoral and hunting occupations, the percentage is raised to 73. Industries support 10 per cent of the population, but the bulk of these are engaged in unorganised industries connected with the supply of personal and household necessities and the simple implements of work. Organised industries occupy only 1 per cent of the population. In trade and transport, on which not more than 6 per cent and 2 per cent respectively depend, a not inconsiderable number are connected with the disposal of the various kinds of agricultural products.



The administration and protection of the country engage only 4,825,470 persons, or 1½ per cent of the population, and the remainder are supported by domestic miscellaneous and unproductive occupations. The following are the figures for the different means of livelihood:—

Pasture and Agriculture	229,045,019
Fishing and Hunting	1,607,331
Mines, Quarries, Salt, etc.	542,053
Industry	33,167,018
Transport (including postal telegraph and telephone services)	4,331,054
Trade	18,114,022
Army and Navy, Air Force and Police	2,181,597
Public Administration	2,643,882
Professions and Liberal Arts	5,020,571
Domestic Service	4,570,151
All others	14,831,933
<b>Total</b>	<b>316,055,231</b>

**RACES.** When the census of 1901 was taken an exhaustive and painstaking report was drawn up on the racial divisions of the Empire. The whole population of India is therein considered to be divided into seven distinct racial types: the Turco-Iranian type, represented by the Baluch, Brahmin and Afghans of the Baluchistan Agency and the North-West Frontier Province; the Indo-Aryan type occupying the Punjab, Rajputana and Kashmir, and having as its characteristic members the Rajputs, Khatri, and Jats; the Scytho-Dravidian type of Western India, comprising the Malirattas, the Kunbis and the Coorgs; and the Aryo-Dravidian type found in the United Provinces, in parts of Rajputana and in Bihar, represented in its upper strata by the Hindustani Brahmin and in its lower by the Chamar. The fifth type is the Mongolo-Dravidian of Bengal and Orissa, comprising the Bengal Brahmins, the Kavastis, the Mohammedans of Eastern Bengal, and other groups peculiar to this part of India. The sixth type is the Mongoloid of the Himalayas, Nepal, Assam and Burma, represented by the Kanets of Lahoul and Kulu, the Lepchas of Darjeeling, the Limbus, Munims and Gurungs of Nepal, the Bodo of Assam, and the Burmese. Seventh and last comes the Dravidian type, extending from Ceylon to the valley of the Ganges and pervading the whole of Madras and Mysore and most of Hyderabad, the Central Provinces, Central India and Chota Nagpur. Its most characteristic representatives are the Paniyas of the Southern Indian hills and the Santals of Chota Nagpur. This is probably the original type of the population of India, now modified to a varying extent by the admixture of Aryan, Scythian and Mongoloid elements.

**RELIGIONS.**—Hinduism, or Brahmanism, is the religion of the great majority of the people, and Mohammedanism comes next. Of the 318,942,480 inhabitants of India, British and Feudatory, at the census of 1921, 216,734,586 were Hindus, 68,735,233 Mohammedans, 9,774,611 Aboriginal Pagans, 11,571,268 Buddhists (almost all in Burma), 1,178,596 Jains, 101,778 Parsees (chiefly in Bombay), and 21,778 Jews. Excluding Indian States, there were in Bengal 25,210,802 Mohammedans to 20,206,859 Hindus, in the Punjab 11,444,321 Mohammedans to 6,579,260 Hindus and 2,294,207 Sikhs, and in Bihar and Orissa 3,690,182 Mohammedans to 28,166,459 Hindus. The Christians in British India numbered 3,027,881, those in Indian States and Agencies 1,726,183. Buddhism at one time prevailed very generally throughout India, it is now confined to Bengal, Sikkim and Burma.

**SEX DISTRIBUTION.** In the whole of India there is an excess of males over females, the figures being respectively 163,905,554, and 154,946,926, or 945 females to every 1,000 males.

Marriage in India is almost universal owing to religious obligations. The movement against infant marriage and enforced widowhood is gaining ground. There were in 1921 over 26,834,000 widows in India.

**SOCIAL CUSTOMS.** Four-fifths of the population of India are affected largely by the caste-system already described as being partly at least connected with the popular religion. A religious sanction in some degree attaches to infant marriage or child marriage, with all classes, also to the seclusion of women and to the prohibition of the remarriage of widows in the upper and middle classes. In practice the women of the masses are not secluded, but, on the contrary, appear everywhere and work out of doors; they re-marry too, if in widowhood. The burning of widows (suttee or sati) on the funeral pyres of their husbands has long been suppressed by the criminal law under British rule. Polyandry is found only among a few of the aboriginal tribes. Polygamy is sanctioned but not enjoined; it is, of course, confined to those who can afford to maintain more than one wife. In practice, the masses of the people are monogamist. In all classes the marriage expenses, arising chiefly from the offerings made to the priesthood, are so expensive as frequently to cause embarrassment to families. Many of the social customs above indicated are regretted and deprecated by modern reformers as being injurious to the national progress, and efforts for reformation are constantly being made. The laws of inheritance, dower and divorce, women's property, adoption, partition, and other social matters are held to have a quasi-religious sanction, and are generally observed in the courts of justice under British rule, both for Hindus and Mohammedans. Three criminal practices have been severely dealt with by the British Government—female infanticide, arising from the presumed exigencies of caste; the murderous and treacherous Thuggee connected with the Goddess of destruction; and the Meriah or human sacrifices by some of the hill-tribes.

**URBAN POPULATION.**—The total urban population of India in 1921 was 32,418,776, or 10.2 per cent of the total. It was distributed among 2,313 places, of which 35 have populations of 100,000 and over, 54 populations between 50,000 and 100,000, and 199 populations of from 20,000 to 50,000. A study of the statistics of population for India reveals the fact that the medium-sized country towns are gradually decreasing in extent, while there is a general growth of the larger cities under the influence of commercial and industrial development.

Following are the figures of population for the most important cities and towns:—

TOWNS	POPULATION	TOWNS	POPULATION
Calcutta (with suburbs)	1,327,547	Allahabad	157,220
Bombay	1,175,914	Mandalay	148,917
Madras	526,911	Nagpur	145,193
Hyderabad	404,187	Srinagar	141,735
Rangoon	341,902	Madura	138,894
Delhi	304,420	Bareilly	129,459
Lahore	281,781	Meerut	122,609
Ahmedabad	274,007	Trichinopoly	120,422
Lucknow	240,566	Jaipur	120,207
Bangalore	237,496	Patna	119,976
Karachi	216,883	Sholapur	119,581
Cawnpore	216,436	Dacca	119,450
Poona	214,796	Surat	117,434
Benares	198,447	Ajmer	113,512
Agra	185,532	Jubbulpore	108,793
Amritsar	160,218	Peshawar	104,452
		Rawalpindi	101,142

**VILLAGE SYSTEM.**—This is an important factor in the rural life of the Hindus, and from them has been adopted by the Mohammedans. A village does not merely mean a collection of houses, but corresponds to a township or a parish. It is an area of some hundreds or thousands of acres according to circumstances, and is under the administration of hereditary functionaries, the principal of whom is the *patel* (head-inhabitant), a small local magistrate who superintends the affairs of the community, settles disputes and attends to the rural police and the collection of taxes. Among the other functionaries may be mentioned the accountant and notary (*khannum* or *patwari*) who keeps a register of the produce and the names of proprietors, draws up all deeds of sale, transfers, etc.; the Brahmin, or village priest, the schoolmaster, and the watchman. Besides these almost every village has its astrologer, smith, carpenter, potter, barber, and bard, all of whom are rewarded out of the produce of the village-lands. Under this simple form of municipal government the inhabitants of the country have lived from time immemorial. The boundaries of the village have been but seldom altered, and though the villages themselves have been sometimes changed, and even desolated by war, famine and disease, the same name, the same limits and families have continued for ages.

## EMIGRATION

The total number of Indians resident overseas, according to the latest available returns, is nearly two and a quarter millions. Of these, the largest number (750,000) are emigrants to Ceylon, nearly 500,000 of whom are employed on the tea and other estates. In the Federated Malay States there are 305,000, in Mauritius 265,000, in the Union of South Africa 162,000, in British Guiana 125,000, in Trinidad 122,000, and in the Straits Settlements 105,000. British Malaya has about 62,000, Mozambique 35,000, and Kenya Colony 25,000.

Emigration for the purposes of labour dates from the beginning of the 19th century. From 1800 onwards Indians crossed the Bay to the Straits Settlements to work on the sugar, spice, tapioca and coconut plantations of Penang, and this intercourse was allowed to continue for many years without regulation. The abolition of slavery in British colonies in 1834 gave the first great impetus to the movement, the sugar planters of Mauritius at once turning to India as their best recruiting ground, and between 1834 and 1837 at least 7,000 recruits were obtained from Calcutta. The first Emigration Act was passed in 1837, under which emigration was allowed to Mauritius, British Guiana and Australia, but this was suspended in the following year, and subsequent Acts tightened the control under which emigration was permitted to Mauritius, Jamaica, Trinidad, British Guiana, the French Colonies, Ceylon, the Straits Settlements, and South Africa. The indentured system, into which many abuses had crept, was abolished in 1919, emigration to certain French colonies and to Natal having previously been discontinued.

Indian emigration questions have, during the last few years, come very largely into public notice, the status of Indians in the Empire generally being one in which the Indian public now takes a keen interest. It is no longer possible to deal with the treatment of Indian labour apart from other classes of Indian emigrants and travellers. In several colonies and dominions considerable Indian communities have sprung up, which, although composed largely of the descendants of indentured labourers, are

themselves free and lawfully domiciled citizens of the countries in which they are settled, but have not yet been placed on a footing of legal, social, political and economic equality with the rest of the population. The issues round which public interest mainly centres are (a) the control of emigration, (b) the rights of Indians to admission to other parts of the Empire, and (c) the rights and disabilities of Indians domiciled overseas.

**CONTROL OF EMIGRATION.**—So far as unskilled labour is concerned, the Government of India has assumed absolute powers of control. Emigration is only allowed to Ceylon, Malaya and Mauritius under specified terms and conditions, which, after approval by each Chamber of the Legislature are notified by the Governor-General in Council. Recruitment must be by licenced persons under the control of their respective Governments and full facilities are given to emigrants to return to their homes on account of ill health, unsuitable work or unjust treatment. The position now is that the Government of India has vested the Chambers of the Legislature with complete power to decide to what countries emigration shall be permitted and to decide its conditions, and has bound itself to be guided in its policy by Indian public opinion. Skilled labour is of course more able to take care of itself, and, subject to certain necessary safeguards, is at liberty to emigrate to any country in the world which does not restrict such immigration.

**INDIANS OVERSEAS (POSITION OF).**—The policy accepted by the self-governing dominions of the British Empire has been stated as follows:

"(1) It is an inherent function of the Governments of the several communities of the British Commonwealth, including India, that each should enjoy complete control of the composition of its own population by means of restriction on immigration from any of the other communities.

"(2) British citizens domiciled in any British country, including India, should be admitted into any other British country for visits, for the purpose of pleasure or commerce, including temporary residence for the purpose of education, such right shall not extend to a visit or temporary residence for labour purposes or to permanent settlement.

"(3) Indians already permanently domiciled in the other British countries should be allowed to bring in their wives and minor children on condition (a) That not more than one wife and her children shall be admitted for each such Indian, and (b) that each individual so admitted shall be certified by the Government of India as being the lawful wife or child of such Indian."

The first paragraph of the above resolution has regularised the various restrictions on immigration which the self-governing Dominions have, from time to time, adopted, and which, without expressly differentiating against Indians, are in practice used in order to check Indian immigration, the objections to which are stated to be not racial or political but economic. Indian public opinion is at present mainly concerned with the question as it affects the Crown Colony of Kenya and the Union of South Africa.

**KENYA COLONY (INDIANS IN).**—Further immigration of Indians is much restricted, in spite of strong protests from the Government of India that there is no case for such restriction. The Governments of Kenya and Uganda have been invited to submit joint

proposals for legislation. Adult suffrage upon communal lines has been conferred on Indians domiciled in the colony, and an Indian has been appointed to the Governor's Executive Council. A proposed policy of segregation has been abandoned.

**SOUTH AFRICA (INDIANS IN).**—Emigration to Natal was discontinued from July 1, 1911, and under the Immigration Act of 1913 Asiatics with the exception of wives and children of domiciled persons, are prohibited from entering the Union. Voluntary repatriation of Indians has been encouraged, with the result that some 7,500 have returned to India from South Africa since 1921, of whom probably a large proportion has abandoned its South African domicile and accepted repatriation under the official scheme. There is a strong anti-Asiatic party in the Union and many of the former rights of Indians have been curtailed. Only in the Cape Province do Indians enjoy both the political and municipal franchise and the municipal franchise only in Natal. They are subjected to differential treatment in the matter of trading licences, especially in the Transvaal and severe penalties exist on inter-provincial migration. In the Transvaal they are not allowed to acquire immovable property outside locations, and on the Witwatersrand they are subject to the restrictions of the Gold Law. Compulsory segregation, which would inevitably have resulted in the economic ruin of a large number of Indian traders, was proposed under a Bill introduced in the Union Assembly in 1924 and 1925. As a result of strong representations made by the Government of India, a Round Table Conference was to be held between representatives of India and of the Union to consider the whole question of the status of Indians in South Africa.

## LABOUR

Judged only by the test of the number of workers India, with about 100 millions of occupied males, holds a commanding position among the countries of the world. Though many of her industries are still undeveloped, some have made enormous progress during the present century, especially since the War, with the result that the problem of labour and the relations between capital and labour in India has become an acute one.

While it is often said that the demand of labour in India exceeds the supply, the statement is perhaps too sweeping to be strictly accurate. India has an immense mass of potential labour, and the supply is probably more elastic than in countries in a more advanced state of industrial development. But none of the great industrial centres has access to a satisfactory labour supply in its immediate neighbourhood. The cotton operatives of Bombay are drawn for the most part from agricultural districts over a hundred miles away, and since the Bengal has a strong dislike to manual labour, Calcutta must get its supply of labour from Bihar, the United Provinces and Orissa. In consequence, the Indian factory hand, like the Indian country labourer, is characterised by a very small output, largely on account of his migratory character, and in most industries throughout India no real industrial community has yet established itself. Coming from long distances, as the workers frequently do, they are prone to throw up one job for another on slight provocation, and even when they remain in the employ of one concern, they often spend a substantial portion of the year cultivating land in their own villages. In some industrial centres it has been computed that the entire labour force changes every 18 months.

**HOURS OF WORK.** The latest available statistics of the hours of work in India show that while the majority of factories probably work up to the maximum of 60 hours allowed by law, a considerable proportion work appreciably shorter hours. The percentage of factories maintaining a week of 48 hours or less for men was 27, in 13 per cent the men employed worked 54 hours or less. The proportion of factories working in excess of 54 hours was 60 per cent. For women, the corresponding percentages were 31, 14 and 55. The movement towards shorter hours is most marked in Bengal and Assam, in both of which provinces the hours of work for women are 48 or less in the majority of factories. In Bombay a greater proportion of factories work up to the limits permissible under the Act of 1922 both for men and women. The maximum weekly hours for children are 30, and 43 per cent of the factories employing children limit their work to 30 hours or less.

**INDUSTRIAL DISPUTES.** Complete statistics in connection with industrial disputes are not available for the whole of India. The increasing importance that is being attached to the weapon of strike by the workmen of India may, however, be gathered from the figures given for industrial disputes in the Bombay Presidency during the year ended March 31, 1924. This was the worst year in the history of industrial relations in the Presidency. Although the number of disputes in cotton, spinning and weaving mills only amounted to 64, the number of factories and industrial establishments affected was 100, the approximate total of workpeople involved was 261,923, and the number of working days lost was 10,237,823. Two general strikes of great magnitude in that year were the strike in Ahmedabad, which affected 50 out of 61 cotton mills in that locality and lasted for two months, and the general strike in the cotton mills in Bombay city, which took three months to settle and affected some 213,000 operatives and others. During the greater part of 1925 there was a further strike in the Bombay cotton mills, which so spread that towards the end of the year 79 mills were closed and only three continued to operate. No less than 145,000 workers were then idle.

**LEGISLATION.**—The Indian and Provincial Governments have, during the present century, conducted many important investigations into the conditions of labour, and have initiated much useful legislation. In 1924 a technical enquiry was concluded into the methods of humidification and ventilation employed in cotton mills and their effect upon labour conditions. As a result of the draft convention adopted by the International Labour Conference regarding the employment of women before and after child-birth, careful investigations have been instituted into the condition of women workers by several local Governments. Legislation, too, has been important. In 1922 the whole law relating to factories was revised, and the new Factories Act provided, among a number of other reforms, for the introduction of a 60-hour week, the raising of the minimum age of children from 9 to 12, a large extension of the definition of "Factory," and a complete prohibition of night work for women. In 1923 the Workmen's Compensation Act was passed and came into force in 1924. The scales for compensation under the Act are generous. Legislation contemplated includes a Bill relating to the investigation and settlement of trade disputes, one for maternity benefit, and a Weekly Payments Bill.

**TRADE UNIONS.**—The employers in the leading industries have been organised into associations for many years, but the great majority of Labour Unions in India date from the last decade. In the course of the year 1921 Labour Unions came prominently before the notice of the general public on account of the magnitude and frequency of the strikes which took place, and from time to time since, especially in the Bombay Presidency there have been periods of great Trade Union activity. It is often said that in India the strike comes first and that the Union is formed afterwards. Many of the Unions would appear to have little activity except during strikes, and in numbers of instances to be but little more than the formal statement of a vague sense of solidarity.

In 1926 the Legislative Assembly passed a Bill providing for the registration of Trade Unions and defining the law in relation to them. In 1925 the number of Unions in the Bombay Presidency was stated to be 19, with a membership of 41,646.

**WAGES.**—Whether wages in India generally have kept pace with the cost of living is a disputed question, conditions varying so greatly between province and province that exact figures are difficult to obtain. In the cotton industry the average daily earning of men in Bombay city in 1924 was Rs 1 7a 2p, of women 12a 5p, and of big lads and children 12a 3p. In other towns of the Presidency the standards were somewhat lower. Taking all workpeople together and counting two half-timers as one full-timer, the average for Bombay city worked out at Rs 1 4a 2p (equal to 1s 11d), while for the whole Presidency it was Rs 1 3a (equal to 1s 9½d). These were the actual earnings, including monthly bonus and special allowances which are regarded in India as of the nature of wages, but excluding overtime pay, the annual bonus (if paid), and all remuneration in the form of grain or clothing or accommodation at rates below market prices or rentals.

**WELFARE WORK.**—Continuous efforts are now being made both by private enterprise and by the State to improve the housing and general conditions of labour. In cities where Improvement Trusts exist considerable attention is being paid to the provision of homes for the workers. Private employers are also realising the economic advantage of undertaking housing schemes for their labourers. In several of the large commercial centres European and Indian firms have set an honourable example in the care devoted to the conditions under which their workpeople live. There is a growing interest on the part of the general public in all large industrial centres in the health of the operatives, and organisations such as the Poona Seva Sadan Society and the Servants of India are performing a very valuable function in focussing public attention upon housing, food supply, indebtedness, medical aid, educational facilities and the like where ameliorative measures are urgently required.

## EDUCATION

Of the many problems, social and political, which the diverse peoples of India present, there is hardly one which is not traceable, directly or indirectly, to the lack of education. According to the census figures of 1921, out of the 247 million inhabitants of British India less than 9 millions were being educated. In other words, considerably less than 4 per cent of this vast population is under the influence of instruction. Statistics also show the number of literates in India to be 22,600,000, only 122 per thousand of men and 18 per thousand of women being

able to read and write. It is also a fact that while the middle and upper classes of India are educated in a proportion equal to that of many European countries, the poorer classes are predominantly illiterate, a state of things largely due to the poverty of the masses, the inadequate condition of communications, the persistence of certain traditional ideals at present regulating human intercourse throughout the country, the conflict of communal interests, and the chasm between rural and urban life.

Despite all these disadvantages, the last five years have witnessed considerable progress in almost every province in India. In one year Madras increased its pupils by 150,000, Bengal by 100,000, the United Provinces by 60,000, and the Punjab by 61,000. In other parts the advance has been less marked, but is of a substantial character almost everywhere.

**ADMINISTRATION.**—Under the Reforms Act of 1919 education is now a "transferred" subject in the Governors' provinces, and is in each such province under the charge of a Minister. There are, however, some exceptions to this order of things. The education of Europeans is a "Provincial reserved" subject—that is, it is not within the charge of the Minister of Education, and to the Government of India are still reserved matters relating to Universities like Aligarh, Benares and Delhi, also all such new universities as may be declared by the Governor-General in Council to be central subjects. The Government of India is also in charge of the Chiefs' Colleges and of all institutions maintained by the Governor-General in Council for the benefit of members of His Majesty's Forces or of other public servants, or of the children of such members or servants.

**CHIEFS' COLLEGES.**—For the education of the sons and relatives of the Chiefs and Princes of India, whose families rule over one-third of the country, five Chiefs' Colleges are maintained, viz. Mayo College, Ajmer, for Rajputana Chiefs; Daul College, Indore, for Central India Chiefs; Aitchison College, Lahore, for Punjab Chiefs; Rajkumar College, Rajkote, for Kathiawar Chiefs, and Rajkumar College, Raipur, for Central Provinces and Bihar and Orissa Chiefs.

In point of buildings, staffs and organisation these institutions approximate to English Public Schools. Students are prepared for a diploma examination conducted by the Government of India. The diploma is regarded as equivalent to the matriculation certificate of an Indian University. A further course of University standard, called the Higher Diploma, is conducted at the Mayo College. The examination for this diploma is also held by the Government of India. Its standard is roughly equivalent to that of the B.A. diploma of an Indian University.

**FEMALE EDUCATION.**—The last available information shows that there are 24,777 institutions (of which 23,583 were recognised) for the education of Indian women and girls, containing 906,289 scholars. It must be remembered that all the many influences which operate in India against the spread of education among boys are reinforced in the case of women by the *pardah* system and the custom of early marriage. Arts colleges, medical colleges, and the like admit students of both sexes, but only a few girls attend them. The Lady Hardinge Medical College for Women at Delhi gives a full medical course for students. The Shreemati Nathubai Damodhar Thackersey Indian Women's University was started in 1916 by Professor Karve. It is a private institution, doing good work.

**INDIGENOUS EDUCATION.**—Of the 8,791,000 scholars being educated in India, 612,115 are classed as attending "private" or "un-recognised" institutions. Some of these institutions are of importance. The Gurukula, near Hardwar, and Sir Rabindra Nath Tagore's school at Bolpur have attained some fame, Mr Gandhi's school at Ahmedabad has attracted attention, and the numerous monastery-schools of Burma are well-known. Connected with every big mosque in Northern India there is some educational organisation, and the schools attached to the Fathpur and Golden Mosques at Delhi and the Dar ul-Ulm, Deoband, are notable. These institutions generally have a religious or "national" atmosphere, and are possibly destined to play an important part in the future of India.

**PRIMARY EDUCATION.**—The primary schools of India are mainly under the direction of the local boards and municipalities. For financial reasons compulsory primary education has not yet been adopted by the Indian Government, but in recent years seven provincial legislatures have passed Primary Education Acts authorising its introduction by local option. In 1925 there were 168,013 primary schools in British India, containing 6,956,634 scholars (The latter figure does not include scholars reading in the primary classes of secondary schools). The total direct expenditure on primary schools during 1924-1925 amounted to Rs 5,65,44,830.

**SECONDARY EDUCATION.**—The policy of the Government is to maintain a small number of high schools (roughly one for each revenue district), which are to be regarded as models for private enterprise, and to aid private institutions. In 1911-12 there were 1,219 high schools for boys in India, by 1924-25 the number had risen to 2,487, the total of scholars in the former year being 300,881, and in the latter 687,934.

In recent years provincial authorities have recognised that secondary education is often of poor standard and badly regulated, and have taken steps to effect an improvement. It is now generally admitted that the system in India needs to be radically remodelled in order to bring it more closely into contact with the needs and aspirations of the country. Already a considerable step forward has been taken by the establishment of Intermediate Colleges under the control of a Board of Secondary and Intermediate Education.

**TECHNICAL EDUCATION.**—There are increasing signs in India of a demand for technical and industrial education, but for the most part the success of training of this description is intimately bound up with the existence of avenues leading to lucrative employment. At present, owing to the industrial condition of the country, these avenues are in large measure lacking. In 1925 there were 35 Medical Colleges and Schools with some 9,000 students, 13 Law Colleges and schools with 7,400 students, and more than 20 Agricultural Colleges and Schools containing upwards of 1,000 students. There are 22 training colleges for secondary teachers in various parts of India with 1,187 scholars, and normal schools for the training of vernacular teachers. Of commercial colleges and schools there are 144, with nearly 10,000 pupils. The most important is the Sydenham College of Commerce in Bombay. Industrial institutions are dotted about the country, some maintained by Government, others by municipalities or local boards, and some by private bodies. The Indian Institute of Science at Bangalore, the product of generous donations by the Tata family, has accomplished much useful work. In addition to a number of engineering schools, there are Engineering Colleges at



Roorkee, Sibpur, Poona, Madras and Benares, each of which, except that at Roorkee, is affiliated to a University.

**UNIVERSITY EDUCATION.**—The general control of the university system, with the exception of certain All-India sectarian institutions and the Delhi University, has been placed within the province of the Local Governments. The Government of India, however, still retains certain functions in connection with university matters, particularly in the sphere of legislation. Of late, university education has undergone a striking change as a result of the lead supplied by the recommendations of the Calcutta University Commission. Up to the year 1921 the typical Indian university consisted of scattered colleges, one frequently separated from another by many miles. These colleges, often inadequately staffed and inconsiderably equipped, attempted to convey instruction far more elaborate than lay within their competence, whilst the University itself pursued a phantom existence as an examining body. In substitution for this system the Calcutta University Commission recommended the creation of centralised unitary universities as residential and teaching bodies, in which all instruction was to be given by university officers under the direct control of the university authorities. This change was to be accompanied by the removal from the university stage of all tuition which did not strictly belong to it and the creation of new institutions to be called intermediate colleges, which should provide a logical culmination to the secondary school course. But as India was studded with isolated colleges before the new idea took shape, the reorganisation of universities of the old affiliating type may be expected to proceed hand in hand with the multiplication of the new unitary universities.

**LINEs OF DEVELOPMENT.**—The task of giving effect to such recommendations of the Calcutta University Commission as seemed to harmonise with local conditions has fallen to the reformed Provincial Governments. A lead was taken by the United Provinces where new universities have lately been opened at Aligarh and at Lucknow, while the original university at Allahabad has been reconstructed in an attempt to follow the general lines recommended by the Commission. Allahabad University now contains both an internal and an external side, the internal side following the lines of a unitary and residential university, the external side carrying on the old work of affiliation for the benefit of outlying colleges. The operation of this dual system has been attended by certain disadvantages, and a movement is now on foot to start an affiliating university at Agra to which the outside colleges can be attached. In Rajputana there is a movement also for the creation of a separate university. In Bengal, the University of Calcutta is being reorganised. The University of Decca, which was constituted strictly on the lines recommended by the Commission, continues to function usefully. The Universities of the Punjab and of Bombay have developed new honours courses and added university teachers, and the Madras University has been remodelled upon sound lines.

## SPORT

It is not, perhaps, always recognised how important a part sports and pastimes play in the social life of India. Polo and cricket, to mention only two of the games played, have done much to excite healthy emulation between Europeans and Indians, and the

mixed teams that are constantly competing make for camaraderie and good feeling. As regards the more adventurous kinds of sport, such as big game shooting and pig-sticking, India may be called the sportsman's paradise.

**CRICKET.**—Cricket, which was for a long time the favourite game of the British in India, has somewhat declined in favour as polo has spread from the great cantonments to the Native States, though it is still played in the Army and at all schools and colleges, both European and Native. English professionals come out to India every winter to coach the players whom this or that Indian ruler wishes to put into the field, the example of H.H. the Jam Sahib of Nawanagar (better known to all English cricketers as Prince Ranjitsinhji) in fostering the game in his State having been widely followed. Many Indians show not only fondness for the game, but skill in it, and interesting matches are played annually between Europeans, Mohammedans, Hindus and Parsees. In 1926 an English team visited India and played a series of matches.

**FOOTBALL.**—This game in India owes its popularity to the late Sir Mortimer Durand, who started tournament play (Association) at Simla in the "eighties," and it has served a more than useful purpose in bringing Europeans and Natives together in friendly rivalry. The games on the Calcutta Maidan are watched by enormous crowds, and the rough and tumble of the Rugby scrums, mostly between Army teams, are also thoroughly enjoyed.

**GOLF.** Golf has for many years been very popular, but is practically confined to the Anglo-Indian community, though some of the Native Princes are taking to, and proving adepts at, the royal game. Links have been made in scores of stations, and Calcutta is naturally more than well supplied. Here is held the annual tournament for the championship of India, and the links on the Maidan, at Tollygunge and in Barrackpore Park give splendid opportunities to players of every grade. In Simla golfers have to engage in their game sixteen miles away, but there are week-ends to be enjoyed on the hillside at Naldera, even though the greens are on precipitous slopes. In far away Gulmarg, visitors to Kashmir play golf the whole summer through amid beautiful surroundings.

Most of the Indian courses may seem rough to those accustomed to the smooth links of England, but they afford good games nevertheless. The course on the Bombay Maidan dates back to the "forties," and it is traditionally asserted that a match was played on the very day that certain mutineers were blown from the guns on the Maidan. The Bombay course is as flat as a billiard table, and bunkers are furnished by canvas screens. Good grass greens are found in some of the hill stations.

**POLO.**—India owns the oldest European polo club in the world, the Calcutta Polo Club. Climatic conditions make polo a far faster game in India than in England, and the general tactics of the pastime all conduce to pace. There are no boarded grounds, and it is a centre-line game all the way. Polo in India is universal, from the championship in Calcutta down to the humble station game it claims innumerable devotees. The principal tournaments are at Calcutta, where also the Indian Polo Association Championship is played. The Indian Regimental Championship takes place at Meerut, and there is a tournament at Lucknow, besides the various hill station tournaments, among which may be mentioned that at Annandale (Simla) for the Beresford Cup.

**RACING.**—The class of horseracing in India is now equal to the best to be seen anywhere in the Eastern Hemisphere. Calcutta, Bombay, Poona, Lucknow, Meerut, Bangalore, and Rawalpindi are all centres at which meetings under particularly excellent conditions can be patronised. Calcutta may be called the Newmarket of India, and its principal race that for the Viceroy's Cup, dates back to 1856. In Poona there is an excellent flat and steeplechase course, as also in Lucknow. Further north, at Pindi and Lahore it is usually found that ponies, and not horses, predominate at meetings.

**SHOOTING.** In connection with big game, tiger shooting is the pre-eminent branch. There are three recognised methods of pursuing this sport: the first to attack the animal on foot, this is highly dangerous and is seldom attempted; the second, to lay in wait for him from a machan, or sort of platform in a tree; and the third, to drive with beaters and elephants. The record tiger is stated to have been eleven feet before skinning and twelve feet ten inches after dressing. In addition, rhino, buffalo, sambar, black buck, *oris ammon*, pheasant (*monard*), partridge and sand-grouse, snipe and teal all offer opportunities for excellent sport.

**TENNIS.** This has probably gained in popularity more than any other game, and India has sent out of the country several players in the very front rank to compete at Wimbledon and elsewhere. Tournaments, in which more than local interest is taken, are those for the Western India Championship at Bombay, the Bengal Championship at Calcutta, the Southern India Amateur Championship at Madras, the Karachi and Simla Championships, and the All India Tournament at Bangalore.

**YACHTING.** Yachting and sailing of all descriptions are indulged in either privately or by local clubs at most of the ports and sea-coast towns of importance.

## PRESS

The Newspaper Press in India is of British origin and was introduced soon after the task of organising the Administration was seriously taken in hand by the English in Bengal. The first paper, called the "Bengal Gazette" but better known from the name of its founder as "Hicky's Gazette" or Journal, saw the light in 1780 and disappeared from public view two years later. Several journals rapidly followed Hicky's, though fortunately they did not copy his bad example of disseminating gross scandal. The "Indian Gazette" had a career of over half a century, but in 1833 it was merged into the "Bengal Harkara," which came into existence a little later than the former, and both are now represented by the "Indian Daily News," with which they were amalgamated in 1860. In 1784 the "Calcutta Gazette" was started under the avowed patronage of the Government, and flourishes still as the official organ of the Bengal Administration. In 1789 the first Bombay newspaper appeared, the "Bombay Herald," followed next year by the "Bombay Courier," a paper now represented by the "Times of India," with which it was amalgamated in 1861. The forerunner of the "Times of India" was the "Bombay Times," which was started in 1838 by the leading merchants of the city named, but changed its title in 1861.

**EARLY GROWTH.**—In the early days of the British settlements newspapers in India had to submit to a rigorous and often irritating press censorship. The Marquis of

Hastings did something to relax this drawback, but the real emancipator of the press in India was Lord William Bentinck, and the year 1835 has often been cited as the beginning of a new era in its history. A great improvement began to be apparent in the tone and status of the Anglo-Indian press, and a native or Indian press came into being. The first newspaper in any Indian language was the "Samachar Darpan," started by the famous Serampore Missionaries, Ward, Carey and Marshman, in 1818 in Bengal, and it received encouragement from Hastings, who allowed it to circulate through the post office at one fourth the usual rates. This was followed in 1822 by a purely native paper in Bombay called the "Bombay Samachar," which still exists, and thus was laid the foundation of the Native Indian press, which is now by far the largest part of the press in India, numbering over 650 papers.

From the year 1835 to the Mutiny the press spread to other cities like Delhi, Agra, Cawnpore, and even Lahore, whereas formerly it was chiefly confined to the Presidency towns. During the Mutiny its freedom had to be temporarily controlled by the Gagging Act which Canning passed in 1857, but a year later the press was once more free. At the end of 1858 there were 19 Anglo-Indian papers and 25 Native papers, and the circulation of all was very small. The number of the former did not show a great increase in the next generation, but the rise in influence and also in circulation was very marked. Famous journalists like Robert Knight, James Maclean and Hurris Mookerji flourished about this time. The "Civil and Military Gazette" was originally published in Simla as a weekly paper, the first issue being dated June 22, 1872. Prior to and in the days of the Mutiny the most famous journal in Northern India was the "Mofussilite," originally published at Meerut, but afterwards at Agra and then at Ambala. After a lively existence for a few years in Simla the "Civil and Military Gazette" acquired and incorporated the "Mofussilite," and in 1876 the office of the paper was transferred from Simla to Lahore, the "Gazette" then becoming a daily.

**ENGLISH PAPERS.**—Something has already been said concerning the origin and growth of English journals in India. The latest available returns show a total of about 150 English papers and periodicals published throughout British India, a large proportion of which are of the highest standard and comparable to any Western publications.

**DAILY PAPERS.**—The "Times of India" dates from 1838, when it was known as the "Bombay Times." Lord Curzon once referred to it as "the ablest newspaper of Asia," and it is the boast of the proprietors that it circulates from Aden to Mandalay and from Cape Comorin to Kashgar. A daily paper strongly Imperial in outlook and with the full confidence of responsible Englishmen and moderate Indians throughout the East, it is particularly noted for its well served literary department. The illustrated weekly edition has by far the largest circulation of any illustrated paper in the East. From its palatial offices in Bombay also issues the "Evening News of India," which deals with all matters of Indian and world interest in an entertaining manner. The "Indian Daily Mail," the youngest of Bombay dailies, having been founded in 1923, claims to have the largest net sales of any daily journal in Northern, Southern, Central and Western India. The "Bombay Chronicle" is an old established Nationalist English daily.

Calcutta, for so long the administrative capital of the Empire, has, as may be

supposed, no lack of influential newspapers. The "Statesman" was established in 1873 on popular lines, and has gained for itself a foremost position. It is a recognised authority in the discussion of political, financial and economic questions, and is well supplied with news from all parts, including special cable services from London. Five editions are published daily, and a weekly overland edition (which has recently been enlarged and improved) is also issued. The "Englishman" is an older paper, dating from 1821 when it was published under the name of "John Bull in the East." Its present title dates to 1833. The organ is largely supported by the official commercial and planting classes, and is an excellent and up-to-date publication, running to 28 and sometimes to 32 pages. The only English evening paper in Calcutta is the "New Empire."

The "Madras Mail" with which is incorporated the "Madras Times" is a high-class evening daily paper, which has the distinction of having been the first evening journal to be issued in India. It circulates all over Southern India, and issues a very readable and well illustrated weekly supplement.

English and Anglo-Indian papers of the highest class are, of course, not confined to the three Presidency cities. Were this the case, one of India's oldest and best known daily journals would have to be excluded. This is the "Pioneer," first published in Allahabad in 1865 and now possessing a circulation which testifies to its popularity as an established newspaper which is read by the most influential classes of the community. Other first class English dailies are the "Daily Post" of Bangalore, the "Advocate of India" of Bijapur, the "Cawnpore Journal," the "Daily Gazette" and "New Times" of Karachi, the "Indian Daily Telegraph," published in Lucknow, the "South of India Observer and Nilgiri News" of Ootacamund, the "Deccan Herald" of Poona, the "Baluchistan Gazette" of Quetta, and the "Hyderabad Bulletin" of Secunderabad.

#### WEEKLY AND MONTHLY PAPERS.

Apart from the special weekly editions of the leading daily papers, English weeklies published in India are generally connected with economic, agricultural or industrial subjects. Such are "Indian Engineering," the "Planters' Journal and Agriculturist," "Capital" and "Commerce," all published weekly from Calcutta, the "Railway Times" of Bombay, the "Law Times" of Madras, the "Servant of India" of Poona, the "Star of India" of Karachi, and last, but not least, the "Indian Trade Journal," published by the Department of Commercial Intelligence and Statistics, Bombay. Important monthly publications are the "Bombay Law Journal," "Indian Industries and Power," "Indian Textile Journal," "Indian Medical Journal" and "Railway Times," all published in Bombay, "Business," the "Calcutta Medical Journal," the "Indian Agriculturist," the "Indian World," and the "Commercial News" of Calcutta, and the "Anglo-Indian" and the "Indian Railway Journal" of Madras.

**INDIAN PRESS.**—Having been pioneered by the missionaries, for many years the native press preserved the marks of its origin, and was limited almost exclusively to theological controversy, the missionaries being met with their own weapons by the theistic sect of the Brahmo Samaj, also by the orthodox Hindus. As late as 1850 most of the vernacular newspapers were still

religious and sectarian rather than political. But during the latter half of the 19th century the character of the press underwent a great change, and the majority of the newspapers owned by Indians have long ago discarded religious debate for current topics and political discussion. With the growth of nationalism there has naturally been a great development in the political activities of many of the native journals, and occasions have not been wanting when stern repression has been necessary. It is, however, a great mistake to suppose that all organs published in the vernacular are either hostile in tone or opposed to the present system of Government. Many are both moderately and capably written, and do excellent service by their restrained discussion of public events. The great circulations of England and America are unattainable in India, partly owing to the enormous distances covered. On the other hand, circulation in India must not be judged by English standards. Newspapers are passed from hand to hand and among Indians in particular a single copy may have a score or more of readers.

**LEADING INDIAN PAPERS.** In Bombay the leading daily papers in Gujarati are the "Akhlbar-i-Islam," which has an enormous Moslem circulation, and the "Bombay Samachar," which as a commercial daily newspaper has no rival in Western India. The "Lokmanya" and "Nawakal" are Marathi dailies, the "Independent Daily Organ," "Praja Mitra" and "Satya Mitra" are Anglo-Gujarati papers which circulate widely among the educated Indians and the mercantile public, and the "Gujarati" is an influential weekly. The "Hindi Punch" is Bombay's "Punch," and is published weekly in English and Gujarati. In Calcutta the "Ananda Bazar Politika" known as one of the foremost Bengali papers, is published daily and weekly; it is an excellent advertising medium. The "Calcutta Samachar" is published in Hindi. Karachi has its "Praja Mitra," or "People's Friend," a bi-weekly in Gujarati, Madras the excellent "Andhra Patnika" in Telugu and the Tamil daily paper, the "Janavarthamani," Lahore the "Akhlbar-i-Islam," the oldest journal in that city, and Lucknow the "Oudh Akhlbar," an Urdu daily which circulates extensively in the Native States. This, of course, is but a very limited selection, since all the larger towns have one or more daily or bi-weekly papers and there are in addition a number of well-written weekly and monthly reviews dealing with political, social, and industrial matters.

**PRESS LAW.**—In 1922 both the Newspapers' Incitements to Offences Act, 1908, and the Indian Press Act, 1910, which dealt with newspaper incitements to murder and acts of violence and with certain other specified classes of published matter, were repealed. The present law as to the press in India may be summarised as follows: (a) The name of the editor must be inscribed on every issue of a newspaper, and the editor is subject to the same liabilities as the printer and publisher as regards civil and criminal responsibilities, (b) any person registering under the Press and Registration of Books Act must be a major as defined by the Indian Majority Act, (c) local Governments have the power to confiscate openly seditious leaflets, subject to the owner of the press or any other person aggrieved being able to protest before a court and challenge the seizure of such documents, in which case the local Government ordering the confiscation is called upon to prove the seditious character of the documents.

## TOURIST ATTRACTIONS

**3**NDIA has abundance to offer in the way of attractions to the tourist. Years can be spent in travelling over the territory and volumes would be needed to describe its myriad features of interest. All that can be done here is to indicate a few of the most important tourist resorts which draw the resident in or visitor to India by reason of their historic associations or their natural beauties. Nowhere in the world is there a region so full of vivid colour, of populous cities, of stately or curious edifices, of diverse races, and of absorbing objects for observation and study in regard to manners, customs, religions, philosophy and art. To the true lover of nature India can offer every charm of sea-coast, mountain, forest, valley, cultivated plain and wild waste. To the sportsman it can furnish some of the best shooting grounds in the world while for the naturalist and botanist the jungles and maddans, nullahs and tanks, even the gardens round every bungalow provide a scientific paradise.

**AGRA.**—Standing on the right bank of the Jumna Agra is the third largest city of the United Provinces, and is easily reached from either Calcutta or Bombay, from which it is distant 700 miles and 835 miles respectively. This ancient place famed amongst other things as having been the residence and death place of the great Akbar, possesses many features of interest, such as the Great Fort of red sandstone and the tomb of Akbar which took half a lifetime to complete and occupied 3,000 people daily during that time.

Above all, however, Agra is famous for its possession of the most exquisite Indian sarcophagus in existence, the world-renowned Taj Mahal. This wonderful monument, a perfect conception of the perpetuation of the love of a husband for his wife, was commenced in A.D. 1630 by the Emperor Shah Jehan as a tomb for his Queen, Mumtaz-i-Mahal, the "elect of the palace," whence the name Taj Mahal is derived. The Queen died in childbirth at Burhanpur in 1629, and her body was brought to Agra, where it lay in the garden where the Taj now stands until the mausoleum was built. Tavernier, who saw the commencement and completion of the monument, records that it took twenty-five years to build. There were originally two silver doors at the entrance, but these were taken away and melted by Suraj Mal and his Jats. The approach to the Taj is by the Taj Ganj gate, which opens into an outer court, 880 ft. long and 440 ft. wide. On the left is the great gateway of the garden court, a superb edifice of red sandstone, inlaid with ornamentations and inscriptions from the Koran in white marble, and surrounded by twenty-six white marble cupolas. Inside is the beautiful Taj garden. The principal vista is along a red sandstone water-course, set between two rows of dark green cypress and interrupted in the middle by a marble platform. At the end the Taj rises in all its peerless beauty, mirrored in the water below, and through the trees are seen striking views of the marble dome, walls and minarets. To see the Taj at its best the tourist should visit it immediately after sunset or by moonlight. No mere description can do justice to this beautiful monument, which is

ranked first in the world among the purely decorative forms of architectural design.

Under the centre of the dome are the tombs of Mumtaz-i-Mahal, the beautiful, and her husband, Shah Jehan, but these, as is usual in Indian tombs, are not the real sepulchres—the bodies resting, side by side in a vault, level with the surface of the ground, and placed exactly below the tombs in the hall above.

**AHMEDABAD.** However cordially Jahangir, the son of Akbar, may have disliked Ahmedabad, or the City of Dust (Gardabad), as he was wont to refer to it, the tourist of Western India cannot help admiring it, for not only does it contain some of the most perfect specimens of Mohammedan architecture in India, but it is the first city after leaving Bombay which in any way approaches the preconceived notions of temples and wonderful stone carvings. In Ahmedabad there is a blending between East and West which is almost unique. On the one hand is the influence of the Western world typified by the tall chimneys of the cotton mills, but, unlike Bombay, the remainder of the city is lost in the labyrinth of the East which surrounds it. At least two days can be spent here with enjoyment for it has been said that Ahmedabad from the point of view of antiquarian and architectural riches, is surpassed in India only by Delhi and Agra.

The Jama Masjid is rightly held to be one of the most beautiful mosques in India. Completed about 1424 under the rule of Sultan Ahmad I, it stands out as the central feature of a city which still carries the marks of the Mohammedan occupation. Near by is the famous Tin Darwaza (Three Gates), which are handsomely carved in stone and are one of the features of the place. The finest stone tracery work, however, is to be seen in the celebrated windows of Sidi Sayyid's mosque, which are hardly equalled anywhere in the world.

There are many other sights of interest in Ahmedabad and its immediate neighbourhood, of these mention must be made of the beautiful Ram Sipri's mosque and tomb perhaps the most beautiful monuments in all Ahmedabad.

**AJANTA.** The famous Caves of Ajanta are situated near the village of that name on the edge of the Deccan plateau, in Hyderabad State. Here are India's unique and oldest art treasures.

**BUDDHA (STORY OF).**—Some three centuries after the Buddha had, about B.C. 525, discovered the way to escape the suffering to which human flesh is heir, monks belonging to his faith selected this spot for their cloister. For a thousand years pious hands, driven by fanatic zeal, chipped with chisel and mallet the living rock spreading horse-shoe fashion round the basin of a mountain torrent, fashioning lofty, well-lit shrines and monasteries and opening out verandahs. To support the roof they left masses of rock, which they carved into pillars harmonious in size and varied in form. In the early days of Buddhism a convention prevailed that the Buddha's figure was too sacred to be copied, and attempts at decoration had to be confined to carving the various symbols which tradition prescribed to repre-

sent the events in his last life and in his previous incarnations, for he is believed to have been born in every conceivable form as god, man, and even animal before his final birth in which he attained enlightenment. A hemispherical dome, the *stupa*—, for instance, indicated the passing away of the Teacher, for such memorial mounds were raised at eight places to enshrine his relics—the pieces of bone found in the ashes after he was cremated, and even the ashes themselves. As time, however, robbed that convention of its binding character and the art impulse asserted itself, outstanding episodes from the Buddha's life were carved in the living rock, and scenes of allegorical character, but incidentally depicting the life of the period, were painted upon the walls of the shrines and monasteries.

Not until the visitor has ascended the steps carved in the mountain side and begun to examine one chamber after another does he realise the magnitude of the toil involved in creating them. Only hands inspired by a faith which refused to be daunted by the gigantic nature of the self-imposed task could have chiselled away hundreds of thousands of tons of rock in the days before explosives were invented.

To-day the effect is that of a series of vast cathedrals, many of great size and all of extreme beauty. Interesting are the small cells in which the monks slept, each with stone bed and pillow. These chambers, however, are in no sense "dungeons," having been so constructed that a flood of light pours into them, more abundantly at some hours of the day than at others. Except for examining carvings and paintings towards the backs of the chambers, it is not necessary to have artificial light, and photographs can even be taken without the aid of flash-lights.

### CARVINGS AND PAINTINGS.

The carving, which is such a feature of the Ajanta Caves, was done by a master-craftsman who could pourtray human emotion with great power and remarkable economy of line. He had an eye for feature and form, and the technique faithfully yet imaginatively to represent it. There are other figures which display a vigorous style of carving, aiming at much more than the reproduction of mere externals. They must have been executed at a time when the art of sculpture had been practised in India sufficiently long to enable the artists to become experts.

The paintings are characterised by boldness of outline and broad sweep of brush. Emotions are pourtrayed with faithfulness, as if life were reflected in a mirror—sadness, pain, death throes, love, sensuality, envy, fear, malice, avance, mischief, joy and sorrow all being shown with a realism which powerfully moves the spectator. So great is the variety of subjects treated that it is almost impossible to conceive of a phase of life which has been overlooked.

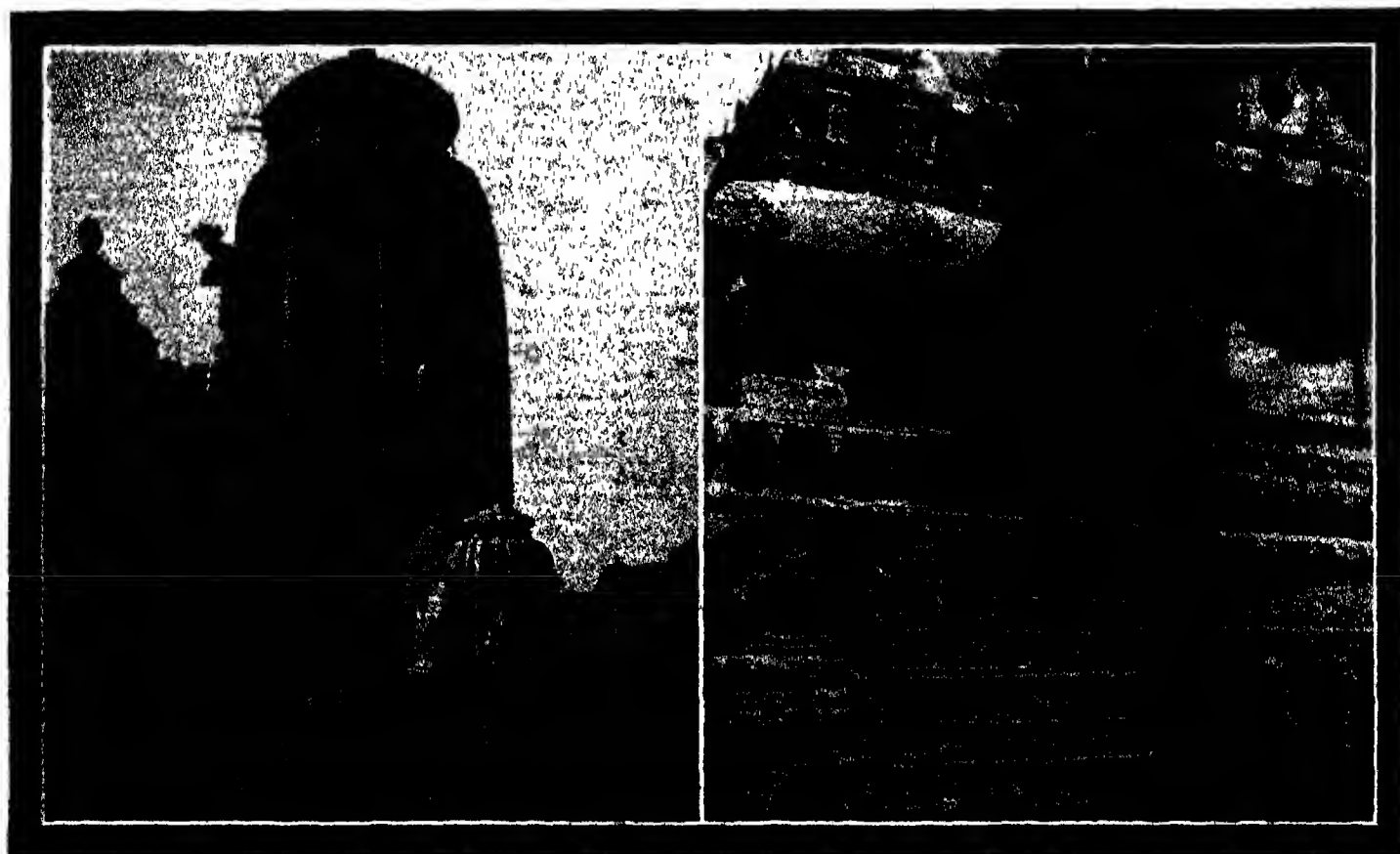
The carvings and paintings possess great historical and sociological value. They pourtray almost every aspect of human activity, and therefore constitute a record of nearly every phase of life for a period of about a thousand years. One knows, after looking at some of them, how men and women who lived in ancient and mediæval

India dressed and adorned themselves and arranged their hair, what sort of houses they dwelt in and how they were furnished, the vessels in which they cooked, their method of cooking, and the dishes from which they ate, the flowers and fruit placed before them, the way in which they travelled by land and sea, the animals and birds they kept as pets, the amusements they enjoyed, the games they played, and the sports in jungle and field in which they engaged.

**AJMER.**—Surrounded on all sides by high hills, and with the fortress of Taragarh commanding it from a height of 800 ft., Ajmer holds the distinction of being the most important city of Rajputana. That the title is an appropriate one will be conceded

**MAYO COLLEGE.**—In addition to the usual quaint mixture of native hovels and magnificent buildings, of which the Arhai-din-ka Jhonpra is probably one of the finest, there is the Mayo College on the other side of the town, an institution founded by Lord Mayo in 1870 for the education of the sons of Rajput Chiefs. That it has become the recognised site of learning for Indian princes speaks highly for those under whose charge the university has been placed. Within half a mile of the College will be seen the locomotive and carriage shops of the B B & C I Railway, where every modern mechanical device has been introduced on a scale only equal to that of European or American enterprise, and certainly unsur-

passed by any similar works of the kind in India to-day. has been ruled by Moslem women, either as regent or queen, the last of these, the Nawab Shah Jehan Begum, having abdicated in 1926. Bhopal, however, has other claims to the admiration of the tourist, it is a city of the middle ages passing through the process of modernisation. In the old bazar, where business is still conducted in small shops looking for all the world as if verandahs had been turned into booths, the motor car is seen side by side with the cow and buffalo. The old wall which, in days gone by, encircled the city is still intact in many places, a mute reminder of the time when wars raged and might was right. Now that peace prevails unbroken, there is no apparent necessity to keep it in repair. The gates, indeed, stand ever open, and the sentries stationed at them.



1. North Front of "Lingara," or the Great Temple at Bhuvaneswar.

2. The small carving depicts the story of the "Ramayana" or War of Rama, aided by Hanuman and his Monkeys.

by the visitor at first sight. Bishop Heber, in his writings, refers to the fortress of Taragarh, suggesting that with very little improvement from European skill it might become a second Gibraltar.

**ANA SAGAR LAKE.**—To the majority of visitors the Ana Sagar lake at Ajmer has an allurements which even the most material mind will find it difficult to resist. True, it is an artificial tank, but having regard to its picturesque surroundings and the striking contrast with the industrial portion of the city, it is quite worthy of the Great Shah Jehan who built it. Behind the main bund is the Daulat Bagh or the Garden of Splendour. Thanks to the efforts of Lord Curzon, who had the original bund repaired during his term of office as Viceroy, it is now one gleaming mass of the purest white marble. To see the lake and garden in their full beauty, a visit should be made to them about an hour before sunset.

passed by any similar works of the kind in India to-day.

**BHOPAL.**—Half-hidden among mountains ablaze with "flame in the forest" in the early spring and summer, and resplendent with rich-hued foliage in the autumn and winter, the city of Bhopal has provided an appropriate setting for the veiled queens whose residence it has so long been. The city is spread out over a series of hills connected by well-paved roads. The lakes on three different levels, and the general character of the country round about, suggest the rugged surroundings amidst which Dost Mohammed Khan—the great ancestor of the late Begum and the present Nawab of Bhopal—pitched his tent, and with his sword carved in the heart of India a kingdom over 7,000 square miles in area.

No doubt much of the charm of Bhopal lies in the fact that for four generations it

picturesque relics of a by-gone age, direct traffic by blowing shrill whistles to prevent slow-moving vehicles and people on foot from being run into or over by motor cars.

**CAUVERY FALLS.**—These are situated in Mysore, and can be reached by motor car from Mysore or Bangalore or by rail to Sivasamudram, 3 miles distant. The two falls, which are known as the Bar Chukki and the Gagana Chukki, have a sheer height of 320 ft., though hardly any of the many shoots into which they are divided has a clear leap of anything like that distance. Both falls are exceedingly beautiful when a large mass of water is going over them, and it is difficult to say which excels in picturesque quality. The foot of the Bar Chukki Fall can be reached by a long flight of slippery stone steps, the descent to the Gagana Chukki is possible on the west bank only. On the east bank, in front of it, are some



**Mohammedan shrines.** A cloud of spray constantly rises from the pool below them, and at a distance may be observed overhanging the head of the falls. The ordinary monsoon discharge is 18,000 cubic feet per second, but the discharge of a high flood has been known to be 200,000 cubic feet. The power of the falls is being utilised in a great irrigational and hydro-electric scheme, one of the most remarkable of modern developments in India. (See article on "Irrigation.")

**GULMARG.**—Fifteen miles west of Srinagar, Gulmarg is the summer resort of the European community of Kashmir, in recent years "huts" have been built in order to accommodate visitors. It is a lovely, if at times somewhat rainy, spot, situated at an elevation of 8,500 ft. Golf, etc. may be indulged in, and there are many beautiful walks through the forest glades. Above Gulmarg is the ridge of the Pirozpur Pass and the Apharwat Mountain, 14,500 ft. high. The fine snowy peak of Nanga Parbat, 26,600 ft., is seen from here dominating the valley.

**KASHMIR.**—"Beautiful Kashmir" is reached from south and central India by the well-appointed express trains of the Great Indian Peninsula Railway to Rawalpindi, and thence by luxurious motor cars. The Bombay Punjab mail train of the G.I.P. Railway provides a daily service of first class equipment comprising carriages of latest construction, fitted with electric lights and fans (in the hot season special coolers are placed in the first class compartments), restaurant cars are attached for meals all the year round. This "through" train makes the run of 1,447 miles between Nombat and Rawalpindi in about 52 hours. On arrival at the latter city the journey is continued by motor car to Srinagar, a distance of 160 miles, covered in about 33 hours, the night being spent at one of the dak bungalows. The run down the Jhelum Valley is one of continuous pleasure. Halts are made at Murree, the famous hill resort, just within the British border, Kohalla, Garhi, Uri (with its quaint old fort), and Rampur. The Wular Lake (the largest in India) is passed, also Mount Haramoukh, 16,000 ft. high, with its summit in perpetual snow. Finally the journey ends with the famous avenue of poplars, which extends 35 miles from Baramulla to Srinagar.

**MUSSOORIE.**—The hill-station of Mussoorie is situated on one of the outer ranges of the Himalayas, which lie to the north of Dehra Dun. The hill on which the station is built rises from the plains in the form of a horse-shoe, gradually ascending to the centre and enclosing in the hollow a number of ridges, which lose themselves in the mass above. Ridges also run down from the back of a hill to a valley in which flows a tributary of the Jumna; between the ridges north and south are deep wooded gorges. The view from Mussoorie over the valley of the Dun and across the Siwalik Hills to the plains is very beautiful, as is also that towards the north, which is bounded by the peaks of the snowy range. The climate of Mussoorie is delightful, and the station offers many attractions to the visitor.

**NAINI TAL.**—This is a favourite sanatorium of the United Provinces, the summer residence of the Governor, and the headquarters of the General Officer holding the Eastern Command. It is extremely picturesque, the lake forming a most striking feature, with its sulphur springs at one end. Polo, cricket and hockey are extensively played, there are all the usual amenities of



SCENES ON THE G.I.P. RAILWAY.

1. Indra-Sabha, at Ellora Caves.
2. Representing the marriage of the Hindu God "Sita," Ellora Caves.
3. Hindu God "Siva," dancing the "Tandava," Ellora Caves.

a European hill-station, and excursions can be made to such well-known camping and fishing-grounds as Bhim Tal, Naukuchia Tal and Malwa Tal.

**OOTACAMUND.**—One of the most beautiful hill-stations in India, Ootacamund is situated in the Madras Presidency on the Nilgiri Hills. As a health resort during the hot weather it is deservedly popular. From the top of the ridge a most superb view of hills, lake and the Moyar Valley is obtained, while on the north-west of the beautiful lake the Wenlock Downs provide the many hunting attractions for which Ootacamund is famous. Recently trout fishing has been started in the more important streams and rivers, and good sport is obtained. There is a well laid-out golf course, and the Botanical Gardens are charmingly situated and beautifully planted. Ootacamund is the centre of the Indian Government's quinine industry.

**SRINAGAR.**—Capital of the State of Kashmir, Srinagar is beautifully situated in the centre of the Happy Valley, being divided into two parts by the River Jhelum. The city, traversed by canals, was built in the sixth century and consists chiefly of wooden houses. Srinagar is also a place of houseboats and river launches, besides being of great interest to the tourist because of its native shops and curios. The Dal Lake lies to the north-east of the city, and is one of the most beautiful spots in the world. From the Dal Darwaza, shikaras or light skiffs take tourists through the channels passing under Akbar's Bridge at Kraliyar, or past floating gardens in the direction of the Nishat Bargh, one of the many delightful Mogul pleasure grounds.

**EXCURSIONS.**—Srinagar is a centre for many interesting excursions. That to the Sind Valley is especially recommended; it is more rugged than the Lidar Valley and full of charm. Shadipur, at the confluence of the Jhelum and Sind rivers, has an excellent camping ground, and from these places lighter dingies make their way up to Ganderbal (14 miles) at the mouth of the Sind Valley, where a lovely stretch of water is found and good fishing is obtainable.

A return to Srinagar is necessary in order to proceed to the Lidar Valley via Islamabad. The ruins of Martand occupy the visitor's attention as being the most celebrated of the Kashmirian temples. Situated on high ground amidst ideal surroundings, this temple was dedicated to the worship of the sun.

The Lidar Valley is very pretty and mild in comparison with the Sind. More adventurous tourists will probably attempt to mount Kolahoi, a sharp granite point jutting into the sky with its treacherous glacier at the foot, which should be carefully avoided. Avantipur and Achibal may be taken on the return journey, as they are interesting.

**UDAIPUR.**—Lying 2,034 ft. above sea-level, Udaipur is the picturesque capital of the State of Mewar in Rajputana. Neither its history nor its buildings are ancient, its charm for the tourist lying in the unspeakable beauty of its glistening lakes and fairy-like palaces. With the exception of Kashmir, there is nothing in the whole of India to be compared with Udaipur for delightful scenery and beautiful surroundings, and the very appropriate name of the "City of Sunrise" has been given to it. A drive through the narrow streets of the bazar to the palace of the Maharana, and thence along the side of the lake to the Slave Girl's Garden, is an experience which no visitor can forget. Another delightful excursion is by way of a boat to the different water palaces.

# ADMINISTRATION AND COMMUNICATIONS

## CONSTITUTION AND LAW

## PUBLIC WORKS

## ARMY, NAVY AND AIR FORCE

## POSTS, TELEGRAPHS AND TELEPHONES

## PUBLIC HEALTH

**T**HE present Indian Constitution has no parallel either in terms of English politics or in terms of Federal Governments. It is the result of a gradual evolution, and in its present form is a witness to the growth of national consciousness among the heterogeneous peoples of a vast Empire under the rule of an alien but benevolent Power.

The old East India Company, which was of course purely a trading concern at first, found it necessary to assume governing powers as far back as the 17th century and early in the 18th century to become a political and administrative body holding its territories in trust for the Crown. The Charter Act of 1833 vested the direction of the entire civil and military administration and the sole power of legislation in the Governor-General in Council, and defined the nature and extent of the control to be extended over the subordinate Governments. The Act of 1858 transferring the government of India from the Company to the Crown changed the administration in little but name, and the greater part of the Victorian era was notable rather for the increase in prestige of the British Raj than for any strong development of democratic institutions.

With the accession of the first King-Emperor (Edward VII) and the general renaissance of the Eastern peoples came the movement in India for constitutional reform. Representative institutions were gradually extended; in 1907 a Hindu and a Mohammedan were appointed to the Secretary of State's Council, and in 1909 a Hindu was appointed for the first time to the Viceroy's Council. But the will of the Executive still remained supreme, even so good a Liberal as Viscount Morley expressly repudiated the idea of setting up anything approximating to parliamentary institutions, and it was not until 1916 that the then Secretary of State, Mr. (now Sir) Austen Chamberlain, refused to consider any scheme of reform which did not confer the element of responsibility.

On August 20, 1917, the British Government announced in Parliament that its policy was that of the increasing association of Indians in every branch of the administration and the gradual development of self-governing institutions with a view to the progressive realisation of responsible government in India as an integral part of the British Empire. Mr. Montagu, the Secretary of State, visited India in the ensuing winter, and, in conjunction with the Viceroy, Lord Chelmsford, made an exhaustive investigation as to the reforms necessary to give effect to this policy. It was clear that the highly centralised system, however well it had worked in the past, could no longer be maintained if the aspirations of the Indian people and the promises of the British Government were to be fulfilled; the Montagu-Chelmsford Report announced a break with the past and a new departure. Important changes were made by a Select Committee of both Houses of Parliament, and a Bill received the Royal Assent on December 23, 1919, to be known henceforward as the "Government of India Act, 1919."

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**ADMINISTRATION.**—The administration of India in England is exercised by the Sovereign through a Secretary of State, who inherits all the powers formerly belonging to the Court of Directors and the Board of Control of the East India Company, and who, as a member of the Cabinet is responsible to Parliament. In administrative affairs he is assisted by the Council of India, an advisory body with special control over finance. This Council consists of not more than twelve and not less than eight members, appointed for five years by the Secretary of State. At least one-half of the members must be persons who have served or resided ten years in India, and have not left India more than five years previous to their appointment. A great many of the former functions of the India Office have been taken over by the Office of the High Commissioner for India, which was created in 1920. The present Secretary of State for India is the Right Hon. the Earl of Birkenhead, K.C. The High Commissioner for India is Sir A. C. Chatterjee, K.C.I.E., I.C.S.

The administration of government in India is divided between the Central Government of India and the Provincial Governments, the powers of the latter having been greatly extended under the Act of 1919 (see later).

**ADMINISTRATIVE FUNCTIONS.** The functions of the Government in India are perhaps the most extensive of any great administration in the world. It claims a share in the produce of the land, and in the Punjab and Bombay it has restricted the alienation of land from agriculturists to non-agriculturists; it undertakes the management of landed estates where the proprietor is disqualified; in times of famine it controls relief work and other remedial measures on a large scale; it manages a vast forest property and is the principal manufacturer of salt and opium; it owns the bulk of the railways of the country and directly manages a considerable portion of them; it has constructed and maintains most of the important irrigation works; it owns and manages the post and telegraph systems; it has the monopoly of the note issue, and alone can set the Mints in motion; it lends money to municipalities, district boards and agriculturists, and occasionally to owners of historic estates; it controls the sale of liquor and intoxicating drugs, and has direct responsibilities in regard to police, education, medical and sanitary operations and ordinary public works of the most intimate character. The Government has also close relations with the Indian States, which collectively cover more than one-third of the total area of India and comprise more than one-fifth of its population. The distribution of these great functions between the Government of India and the provincial administrations has fluctuated, but was definitely regulated by the Reform Act of 1919.

**CAPITAL.**—Since 1911 Delhi has been the capital of the Indian Empire and the Seat of Government, Calcutta having previously held that position. The administrative province of Delhi, under a Chief Commissioner, was proclaimed in 1912. This

enclave was entirely taken from the Delhi district of the Punjab, and in 1921 had a total population of 486,741, spread over an area of 573 square miles. The summer headquarters of the Government are at Simla.

**CENTRAL GOVERNMENT.**—The Central Government of His Imperial Majesty King George V is the Supreme Government of the Indian Empire, at whose head is the Viceroy, who is assisted by a Council composed of high officials, each of whom is responsible for a special department of the Administration. The most important subjects reserved to the Government of India, as apart from those vested in the Provincial Governments, are the defence of India and all matters connected with His Majesty's Forces in India, foreign affairs and relations with Indian States, railways and waterways, shipping and navigation, customs and excise, posts, telegraphs and telephones, currency, coinage, the public debt and savings banks, commerce including banking and insurance, civil law, the control of opium production and manufacture, emigration and immigration, control of petroleum and explosives, and criminal law.

**EXECUTIVE.** The supreme executive authority in India is vested in the Governor-General in Council, often styled the Government of India. The Governor-General, or Viceroy, is appointed by the Crown and custom has fixed his tenure of office at five years. During his term of office the Viceroy is subject only to the Secretary of State's direction, and is, within his sphere of authority, invested with full regal powers. He can, in special cases, overrule a majority opinion of his Council.

India has had a very notable list of Governor-Generals and Viceroys (the latter title was first used in 1858), among whom may be specially mentioned Lord Lawrence, the Marquis of Ripon, the Marquis of Dufferin, Marquis Curzon, Lord Hardinge of Penshurst, and the Marquis of Reading. The present Viceroy is His Excellency the Right Honourable Lord Irwin of Kirby Underdale, P.C., who assumed office on April 2, 1926.

**EXECUTIVE COUNCIL.**—The Governor-General's Executive Council consists of seven members (including the Commander-in-Chief), three of whom must have served ten years in India as well as himself. The six executive members hold respectively the portfolios of Education, Health and Lands, Home, Finance, Commerce, Industries and Labour, and Law. The Viceroy acts as his own member in charge of Foreign Affairs. Railways are administered by a Chief Commissioner, with the assistance of a Railway Board, and are for administrative purposes grouped under the Department of Commerce. The Commander-in-Chief may be, and in practice always is, an "extraordinary" member of the Council, and administers the Army. The Governors of Madras, Bombay and Bengal become "extraordinary" members if the Council meets within their Presidencies. The Council may assemble at any place in India which the Governor-General appoints; in practice it meets only at Delhi and Simla.

In 1926 the Executive Council was composed as follows: Field-Marshal Sir William R. Birdwood, Bart., G.C.B., G.C.M.G., K.C.S.I., C.I.E., D.S.O.—Commander-in-chief; Sir A. Muddiman C.S.I., C.I.E.—Home Department; Khan Bahadur Sir Muhammad Habibullah, Sahib Bahadur, K.C.S.I.—Education, Health and Lands; Sir C. A. Innes, K.C.S.I., C.I.E.—Commerce; Sir Basil P. Blackett, K.C.B.—Finance; Sir Bhupendra Nath Mitra, K.C.I.E., C.B.E.—Industries and Labour; Satish Ranjan Das—Law.

**INDIAN LEGISLATURE.**—The Indian Legislature as remodelled by the Act of 1919, consists of two Chambers. The Upper Chamber or Council of State consists of 60 members of whom 34 are elected and 26 nominated. Not more than 20 of the nominated members may be officials. The Legislative Assembly consists of 144 members, of whom 104 are elected (including as in the case of the Council of State, one Bera member, who though actually elected, is technically a nominee). Of the 40 nominated members, 26 are officials. The Executive Government is, therefore, not assured of a majority in either Chamber but safeguards have been provided to enable it to pass essential legislation and to obtain supplies. The Governor-General is not a member of, but may address either Chamber. The members of his Executive Council are appointed members of one or other Chamber as the Governor-General sees fit, but may speak in either Chamber. The normal lifetime of the Council of State is five years and that of the Legislative Assembly three years but either Chamber, or both simultaneously, may be dissolved at any time by the Governor-General.

**Method of Election.**—The apportionment of seats in both Chambers is arranged with regard to the relative size and importance of the several provinces. In Bengal are allotted 17 seats in the Legislative Assembly and 6 seats in the Council of State. Smaller provinces have a lesser representation. The Punjab and Assam, for instance, are given 12 and 5 seats respectively in the Legislative Assembly and 3 and 2 seats in the Council of State. The method of election to both Chambers is direct, the constituencies having been formed on the communal and special interests' lines adopted in creating electorates for the Provincial Legislative Councils (see later), though they are necessarily larger in area and the property qualification of voters is substantially higher.

**INDIAN CIVIL SERVICE.** The administration of India is carried out by members of the Indian Civil Service, the Provincial Civil Service being recruited from the successful candidates at competitive examinations held in London and (since 1922) in India, but a few vacancies are filled by nomination of natives of India and Burma by the Government of India. The Service is at present predominantly European, but in accordance with the present policy of the Government the proportion of Indians is to be increased until the Service consists of almost equal numbers of Europeans and Indians. Most of the higher administrative posts are secured to the Indian Civil Service by Act of Parliament, but members of the Provincial Civil Services may be promoted to offices reserved for the Indian Civil Service. These Provincial Services, appointments to which are made by the authorities in India, are composed of natives of India, including also domiciled Europeans. Some other Europeans are appointed in England, especially those who belong to scientific

departments and the Indian Education Service.

**LOCAL GOVERNMENT.**—The larger units of the local government are the districts (generally called collectorships in English and *zillahs* in the vernacular), of which there are in British India about 270. Each district is under a Collector-Magistrate or a Deputy-Commissioner, as the case may be. The head of a district has most multifarious and responsible duties; he is the fiscal officer, charged with collecting the revenue as well as magistrate, and also superintends the police, gaols, education, sanitation and roads; in some parts he is also the civil judge. The subordinate officers are known as Deputy Collectors and Assistant-Magistrates. The district may be compared to an English county or French department, and varies in size from an area containing 3,000,000 inhabitants to one having only 50,000. Within the district the lowest unit is the village or parish (*moorzah*), which is administered under the village system (see under "Peoples"). There are about 550,000 such villages or parishes in the British territories. In all the divisions of the Empire, except Madras, the districts are formed into groups, several to each group under a Commissioner, of these there are more than 50.

**DISTRICT BOARDS.** The duties and functions assigned to municipalities in urban areas are in rural areas entrusted to district and local boards of which throughout India there were in 1925 some 219 district boards, with 543 sub-district boards and more than 800 Union Committees. These boards deal *inter alia* with education, roads and bridges and medical relief.

**MUNICIPALITIES.**—There were in 1925 some 750 municipalities in British India with something over 18,000,000 people resident within their limits. Of these municipalities, roughly 683 have a population of less than 50,000 persons, and the remainder a population of 50,000 and over. As compared with the total population of particular provinces the proportion resident within municipal limits is largest in Bombay, where it amounts to 20 per cent, and is smallest in Assam, where it is only 2 per cent. The functions of Indian municipalities are classed under the heads of Public Safety, Health, Convenience and Instruction. More than half the total members of the municipalities are now elected, and there is a steady tendency to increase this proportion.

**PROVINCIAL GOVERNMENT.**—The fundamental principle of the Act of 1919 was that the first substantial steps towards the development of a system of responsible government must be taken in the provinces, which were accordingly given a large measure of independence of the Supreme Government. Apart from the matters reserved to the Central Government, the Provincial Governments have responsibility with certain limitations for a large number of subjects, and through the provincial legislatures the people of India have now a very considerable control over the affairs that most directly concern them.

**DIVISIONS.**—British India for administrative purposes is divided into 15 provinces, each with its separate Local Government or Administration. In nine of the provinces—the three Presidencies of Madras, Bombay and Bengal, the United Provinces of Agra and Oudh, the Punjab, Bihar and Orissa, the Central Provinces, Burma, and Assam—the Local Government consists of a Governor, an Executive Council of not more than four members, and two or

more Ministers. The remaining six provinces—the North-West Frontier Province, Ajmer Merwara, Coorg, Baluchistan, Delhi, and the Andaman and Nicobar Islands—are directly administered by Chief Commissioners, who are technically mere agents of the Central Government of India. No change was made by the Act of 1919 in the system of administration in these six minor provinces.

**DYARCHY.** In the nine provinces just mentioned the functions of government are divided into halves, one still amenable to the British Parliament the other amenable to the Indian electorate. One half of the provincial executive consists of the Governor and his executive council, all of whom are appointed by the King. They administer those subjects which are "reserved," and are responsible to the Government of India and ultimately to the British Parliament. The other half is constituted by the Governor working with Ministers whom he selects from elected members of the provincial legislature; to these is entrusted the administration of subjects known as "transferred," among which are education, industrial development, local self government, medical administration and public health, excise, agriculture, fisheries, co-operation and many other subjects.

This plan of dividing the provincial executives into halves (known as "Dyarchy") was adopted because, in the circumstances of India at the time of the reforms, those in control found it difficult to devise any alternative method of combining stability with progress. From the standpoint of constitutional theory the scheme has been much criticised, mainly on the ground of the deadlock which was likely to occur as the result of a virtually irremovable executive being confronted by an irresponsible and hostile legislature. To obviate this risk the provincial Governors are given a reserve of authority which enables them to carry on the essential work of the administration irrespective of the policy of the legislature. It can only be said here that the scheme is necessarily transitional and experimental; that it has been subjected to a severe test by the Swarajist policy of non-co-operation, but that, on the whole, it may be said to have definitely served the purposes of bringing about much useful legislation, and of giving the elected members a valuable insight into the practical aspects of administration.

**LEGISLATIVE COUNCILS.**—The Legislative Council of each of the nine major provinces contains not more than 20 per cent of official members and at least 70 per cent of elected members, and, in addition to its legislative functions (which, as stated, are exercised in respect only of "transferred" subjects), votes all expenditure, subject to certain specified exceptions and to the power of the Local Government to incur expenditure on reserved subjects without the Council's assent if the Governor certifies such expenditure to be necessary. The normal duration of the Legislative Council is three years, but it may be dissolved sooner by the Governor, or its term specially extended for one year. The Governor may not be a member of the Legislative Council, but may address it.

**Electorate.**—The electorates in all provinces are arranged for the most part on a basis which is designed to give separate representation to the various races, communities and special interests into which the diverse elements of the Indian population naturally range themselves. In Bengal, for instance, there are 42 non-Mohammedan electorates

returning 46 members, 34 Mohammedan returning 39 members, 3 European returning 5 members, one Anglo-Indian returning 2 members, 5 landholders returning 5 members, 1 University returning 1 member, and 8 commerce and industry electorates returning 15 members.

Males over 21 years of age (18 in the case of Burma) possessing certain qualifications as to residence within the constituency, having property, and paying revenue or municipal rates are eligible for the franchise, while in all provinces retired, pensioned or discharged officers and men of the regular army are entitled to the vote irrespective of the amount of their income or property.

**Powers.**—The most important of the powers of the Legislative Councils are (1) the power to vote (and consequently to withhold) supplies, (2) a greatly enhanced freedom of initiation in the matter of legislation, (3) the power to frame their own rules of procedure in matters of detail, subject to the Governor's concurrence, and

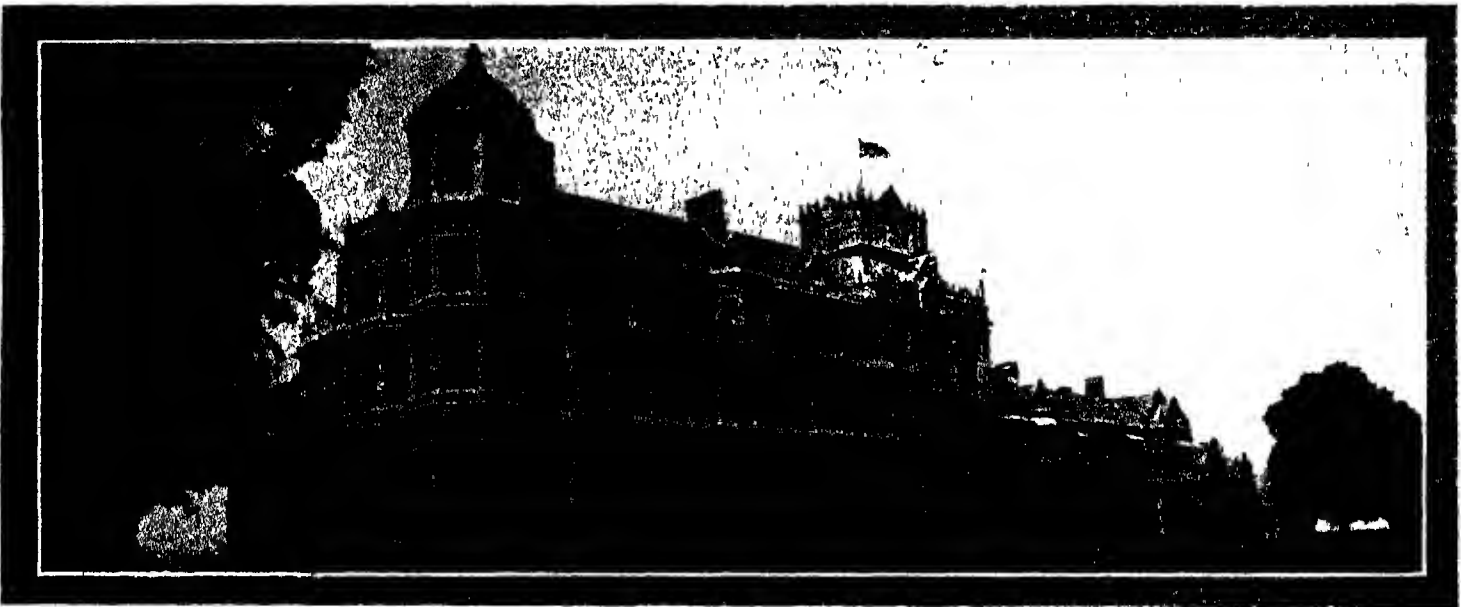
the judicial system, but on the whole it commands popular confidence, as is proved by the extent to which it is brought into use.

**INDIAN LAW.**—The law in force in British India may be conveniently divided under five heads, viz (1) the law expressly made for British India by the British Parliament or by the Sovereign, (2) English law in force in India, though not expressly made for India, (3) the law made by bodies or persons having legislative authority in India, (4) Hindu law, and (5) Mohammedan law. The first three of these are frequently described as Anglo-Indian law. They are, with rare exceptions territorial, that is, they apply generally either to the whole of India or to a given area and to all persons within those limits. The last two are personal, that is, they apply only to persons who answer to a given description. Hindu law is founded upon the Shastras, which are revered as being of divine origin, Mohammedan law is founded upon the Koran, and is concerned chiefly with intestate

and the Government of India hopes that the committee will take its place as a permanent feature of the legislative machinery of the country.

**JUDICATURE (HIGH COURTS OF).**—The highest legal tribunals in India are the High Courts of Judicature. They were constituted by the Indian High Courts Act of 1861 for Bengal, Bombay and Madras, and later for the United Provinces and the Punjab, superseding the old Supreme and Sudder Courts. The judges are appointed by the Crown, they hold office during the pleasure of the Sovereign, at least one-third of their number is composed of barristers, one-third is recruited from the judicial branch of the Indian Civil Service, the remaining places being filled by the appointment of Indian lawyers. Trial by jury is the rule in original criminal cases before the High Courts, but juries are never employed in civil suits in India.

For other parts of India, High Courts have been formed under different names. In Burma there is a Chief Court, with three



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(4) the right to elect their own President. The last-named of these powers was withheld until four years after the first election of the Councils.

## LAW

The fundamental institutions of the Indian Empire have been established by Parliament in a series of statutes consolidated in 1915 into one Act entitled the "Government of India Act". The regulations of the East India Company provided for civil procedure, leaving the native laws to be observed in social affairs and British justice to be followed in other affairs. But the law was then in a state of confusion, to rectify which Lord Macaulay's and subsequent commissions prepared both a penal code and a code of criminal procedure, which became law in 1860 and 1861. The Code of Civil procedure was remodelled in 1908 and that of Criminal procedure in 1898, these codes are now in force.

In such a society as that of India there must needs be defects and shortcomings in

and testamentary succession, also with marriage and divorce.

**STATUTE LAW REVISION.**—In October 1921 a committee was appointed under the presidency of the Hon. Mr. A. P. Muddiman, I.C.S., to deal with the question of statute law revision. The functions of the committee are to prepare for the consideration of Government such measures of consolidation and clarification as may be necessary to secure the highest attainable standard of formal perfection in the statute law of India. In several branches of the law consolidation has long been overdue, and it is suggested that the preparation of a Bill consolidating the existing law relating to merchant shipping, with such amendments therein as are necessitated or rendered desirable by the enactment of the English statutes since 1894 on the same subject, should form the first duty undertaken by the committee. Under the conditions resulting from the establishment of the reformed Constitution increasing importance will attach hereafter to the periodical examination and revision of the Statute Book,

or more judges, in the other provinces the chief appellate authority is an officer called the Judicial Commissioner. In Sind the Judicial Commissioner is termed Judge of the Sudder Court and has two colleagues.

**LOWER COURTS.**—Inferior courts are styled courts of session and courts of magistrates. Every province, outside the Presidency towns, is divided into sessions divisions consisting of one or more districts, and every sessions division has a court of sessions and a sessions judge, with assistance if need be. These statutory sessions courts take the place of English Assizes, and are competent to try all accused persons duly committed, and to inflict any punishment authorised by law, but sentences of death are subject to confirmation by the highest court of criminal appeal in the province. Magistrates' Courts are of three classes, with descending powers. Provision is made and largely utilised in the towns for the appointment of unpaid magistrates, in the Presidency towns Presidency magistrates deal with magisterial cases, and benches of Justices of the Peace or honorary magistrates



dispose of the less important cases. In jury trials the opinion of the majority prevails if accepted by the presiding judge.

**POLICE AND PRISONS.**—The regular police of India comprises a force of about 205,000. The constabulary is a native force, the principal officers for the most part being European. It is subject in all respects, except internal discipline, to the magistracy, and in each province is under an Inspector-General. There is one regular constable to 6 square miles and 1,500 inhabitants, which indicates the peaceful habits of the people. Besides the regular police there are village watchmen. Great care has been taken in the scientific construction and supervision of the prison in almost every district. There are upwards of 750 gaols, with usually about 115,000 prisoners, exclusive of 11,000 transported to the convict settlement in the Andaman Islands.

## ARMY, NAVY & AIR FORCE

The problem of the defence of India is obviously one which concerns the British Empire as a whole, and the retention of India is an essential part of Great Britain's strategic scheme of Empire. The Power that holds India maintains the balance of dominion in Southern Asia, and though its possession imposes a severe strain upon the Mother Country's resources, and though the task of holding it is the primary preoccupation of the British Army, yet its value for purposes of Imperial defence fully counterbalances the price to be paid.

During the year 1920 the question of India's defences received rather more attention than usual owing to the avowed campaign of the Soviet Government against British rule in India and to the fact that the Army in India had been reduced, owing to financial stringency, to a minimum. In that year there were about 70,000 British regular troops in India and about 170,000 Indian regular troops. In addition, there are the various State forces, the Auxiliary Force, recruited from persons of British descent, and the Indian Territorial Force, with native personnel. The Royal Indian Marine is to be reorganised as a fighting service under the name of the Royal Indian Navy, with native personnel as far as possible.

### ARMY

India has always been a theatre of wars, the country having from the earliest days of its history been liable to invasion by land and also to internal disorder. Consequently a large part of the populace of India is composed of what are known as the fighting races, and from these the great Sepoy army which the French and English in turn used to defend their possessions and wage war on their adversaries was drawn. The Great Mutiny of 1857 will be found described in the historical part of this volume, since then the Indian Army, which consists of a judicious admixture of British and Indian elements, has been several times reorganised, the system now ruling being in the main that which was instituted by Lord Kitchener in 1904.

**ADMINISTRATION.**—The superintendence, direction and control of the civil and military government of India are vested in the Governor-General in Council, who is required to pay due obedience to all such orders as he may receive from the Secretary of State. The Viceroy's Executive Council

exercises in respect of Army administration the same authority and functions as it exercises in respect of other departments of the Government, under the Montagu-Chelmsford Reforms Scheme, Army expenditure and the direction of military policy are excluded from the control of the Legislature.

The Secretary of State has for his principal adviser on Indian military affairs the Secretary in the Military Department of the India Office. This post is filled by an officer of the Indian Army of high rank, he is usually a General, with recent Indian experience. The Military Secretary is assisted by one first grade staff officer, selected from the Indian Army. In order that he may keep in touch with current Indian affairs, the Military Secretary is expected to visit India during the tenure of his office. In addition, by a practice which has obtained for many years, a retired Indian Army officer of high rank has a seat upon the Secretary of State's Council.

**COMMANDER-IN-CHIEF.**—His Excellency the Commander-in-Chief in India, who is by custom also the Army Member of the Viceroy's Executive Council, is a member of the Council of State, and is the authority in whom is vested all the work connected with the administration of the Army, the formation and execution of the military policy of the Government, the responsibility for maintaining every branch of the Army, combatant and non-combatant, in a state of efficiency, and the supreme direction of any military operations based upon India. In addition, the Commander-in-Chief administers the Royal Indian Marine and the Royal Air Force in India. The present Commander-in-Chief is Field-Marshal Sir William R. Birdwood, Bt., G.C.B., G.C.M.G., K.C.S.I., C.I.E., D.S.O.

**DEPARTMENT (ARMY).**—The staff of the Army Department consists of a Secretary, who, like the secretaries in the civil departments, is a Secretary to the Government of India as a whole, possessing the constitutional right of access to the Viceroy, a Deputy-Secretary, an Establishment Officer, and two Assistant Secretaries.

The Army Department deals with all army services proper, also the administration of the Royal Indian Marine and the Royal Air Force in India in so far as questions requiring the orders of the Government of India are concerned. The Army administration is represented in the Legislature by the Army Member in the Council of State, and by the Army Secretary in the Legislative Assembly.

**MILITARY COUNCIL.**—This is composed of the Commander-in-Chief as President and the following members: the Chief of the General Staff, the Adjutant-General, the Quartermaster-General, the Master-General of Supply, the Secretary to the Government of India in the Army Department, and the Financial Adviser, Military Finance, representing the Finance Department of the Government of India. It is mainly an advisory body, constituted for the purpose of assisting the Commander-in-Chief in the performance of his administrative duties, and has no collective responsibility. It meets when convened by the Commander-in-Chief for the consideration of cases of sufficient importance and difficulty to require examination in Conference. The heads of the minor independent branches of Army Headquarters and the directors of technical services attend when required.

**AUXILIARY FORCE.**—The Auxiliary Force, organised in 1920 when the War had shown the necessity of some form of universal military training, is confined to persons of British extraction. This body can only be called out for service locally, being intended primarily for those who can undergo training in their spare time and are unable to afford the longer periodical training obligatory in the Territorial Force. Enrolment is voluntary but entails training extending to 64 hours annually for infantry and 80 hours for other arms. The strength of the Auxiliary Force in 1925 was 20,000.

**BRITISH REGULAR FORCES.**—The British cavalry and British infantry forces in India are units of the British service, no individual British service unit being located permanently in India. Units of the British army are detailed for a turn of foreign service, of which the major part is as a rule spent in India. The British regular forces serving in India are paid by the Indian Exchequer, and are organised in brigades and divisions with the Indian Army, the normal proportion being one British battalion to three Indian. In 1925 there were 45 British infantry battalions in India, each with an establishment of 28 officers and 882 other ranks, five British cavalry regiments, each with an establishment of 27 officers and 571 other ranks, four Royal Horse Artillery batteries, six pack batteries, and six armoured car companies of the Royal Tank Corps. There are also a number of British commissioned and non-commissioned Royal Engineer officers with the Corps of Sappers and Miners and the Pioneer Corps.

In 1925 the total number of effectives of the British regular forces in India was as follows:—

	OFFICERS	OTHER RANKS
Combatant Services	4,400	59,450
Departmental and Administrative Services	2,090	2,375
Other Services	400	994
Totals	6,890	62,819

**INDIAN ARMY (REGULAR).** The Indian Army consists of 21 regiments of cavalry, 20 regiments of infantry (206 battalions), two pioneer regiments (12 battalions), one independent pioneer battalion, 10 Gurkha regiments (20 battalions), four corps of sappers and miners, signal, ordnance, medical, veterinary and remount services, and the Indian Army Service Corps and Mechanical Transport Service. The peace establishment of an Indian cavalry regiment comprises 14 British officers, 19 Indian officers, 512 Indian non-commissioned officers and men, and of an active infantry battalion, 12 British and 20 Indian officers and 742 Indian other ranks.

**INDIAN FIGHTING RACES.**—The Indian troops are largely Mohammedans drawn from both the north and the south of India, as well as from beyond the frontier. They are all excellent fighting men, hardy and warlike, who have furnished soldiers to the great powers of India for hundreds of years. As cavalry the Mohammedans are perhaps unequalled by any other race in the East. Sikhs from the Punjab and Gurkhas from Nepal are unsurpassed as fighters in the hills, even by the Pathans of the North-West Frontier. Many splendid battalions are furnished by the Rajput caste of Rajputana and the United Provinces. Their high caste and consequent prejudices in no way interfere with their martial instincts and efficiency in war. The Garwhalis are Hill Rajputs, who established an imperishable

record in the Great War both in Europe and the East. A fine and warlike race of Hindus—the Jats—from the Delhi and Rohtak districts have proved themselves good soldiers on every battlefield, and the Dogras from the hilly districts of the Punjab fought especially well in Flanders and Mesopotamia.

**OFFICERS**—There are two main categories of officers in the Indian Army, those holding the King's Commission and those holding the Viceroy's Commission. The latter are all Indians (apart from the Gurkha officers of Gurkha battalions), and have a limited status and power of command, both of which are regulated by the Indian Army Act and the rules made thereunder. Until recent years Indians were not eligible for King's Commissions. King's Commissioned officers (European) for the Indian Army are obtained from two sources—from among the cadets who pass through the Royal Military College, Sandhurst, and by the transfer to the Indian Army of officers belonging to British units. The former is the principal channel of recruitment, the latter being only resorted to when, owing to abnormal wastage or for some other special reason, requirements cannot be supplied by recruitment from Sandhurst.

**Indian Officers**—A momentous decision of the Great War, so far as the Indian Army was concerned, was that which rendered Indians eligible to hold a King's Commission in the Army. Commissions are now obtainable by Indian gentlemen, either by qualifying as a cadet through the Royal Military College, Sandhurst, or by the bestowal of an honorary commission as a reward for distinguished service. Ten vacancies at Sandhurst are reserved annually for Indian cadets, and the establishment of the Prince of Wales' Royal Indian Military College at Ichra Dun has rendered it possible to fill from there these ten vacancies.

In addition to providing the means by which a satisfactory stream of candidates for Sandhurst may be maintained, the Government of India in 1923 made provision for the complete Indianization of eight units of the Indian Army. To these units, which include two from cavalry, five from infantry, and one pioneer battalion, Indian officers holding commissions in the Indian Army are gradually being transferred and posted to fill appointments for which they are qualified by their rank and length of service. The completion of this noteworthy experiment is expected to take about 22 years.

**RESERVE**—There are two classes in the reserve, Class A and Class B. A reservist is eligible to serve in Class A up to 8 years' combined army and reserve service, and in Class B up to 15 years' combined service. Service in the reserve is compulsory, and while not under training (during which he receives the full pay of a serving soldier) the reservist receives pay as follows: Class A, Rs 7 per mensem; Class B, Rs 4 per mensem. The establishment of reservists in 1925 was fixed at 27,641.

**SERVICE (TERMS OF)**—Terms of service in the Indian Army are four years for cavalry, artillery, sappers and miners and signal corps; for infantry and pioneers (except Gurkha groups, the 4th Hazara Pioneers and trans-frontier personnel of the infantry), five years in the army and ten years in the reserve, and for the Gurkha groups, 4th Hazara Pioneers and trans-frontier personnel of the infantry, four years. The period laid down for service in the regular army may be extended.

**STRENGTH**—The following table shows the effective strength of Indian officers and other ranks in 1925—

Combatant Services	130,722
Departmental and Administrative Services	14,980
Other Services	17,373
	172,075

Many of these are distributed among the British forces serving in India, the average effective strength of the Indian troops, including those on duty in China and Nepal and other stations outside India, but excluding those on Field Service, in 1924 was 134,742.

**STATE FORCES.**—The Indian State Forces formerly designated "Imperial Service Troops," consist of the military forces raised and maintained by the Rulers of Indian States at their own expense and for State service. It has been the custom in emergency for State troops to be lent to the Government of India, and the latter has on many occasions received military assistance of great value from this source. But the rendering of such aid is entirely at the discretion of Ruling Princes and Chiefs. The Government, on the other hand, provides permanently a staff of British officers, termed "Military Advisers and Assistant Military Advisers," to assist and advise the Ruling Princes in organising and training the troops of their States.

After the termination of the Great War the Indian States, like the Government of India, undertook a military reorganisation, which in a number of cases has been completed. Indian State Forces are now in general composed of three categories of troops: Class A, which is organised on the present-day Indian Army system and establishments, and Classes B and C, which retain generally the system of pre-war formations and of militia formations. On October 31, 1925, the actual strength of the Indian State Forces amounted to 31,241, of whom 19,362 were infantry, 8,207 cavalry, and 1,562 transport corps.

**TERRITORIAL FORCE.**—This Force is one of the several aspects of the Indianization of the military services. It is intended to cater, amongst other things, for the military aspirations of those classes of the population with whom military service has not hitherto been an hereditary profession. It is intended, at the same time, to be a second line to and a source of reinforcement for the regular Indian Army. Membership of the force for this latter reason carries with it a liability for something more than purely local service or home defence. It may in certain circumstances involve service overseas. The force is the direct descendant of the Indian section of the Indian Defence Force created during the War. It has been modelled on the old militia in England, and consists at present of two main categories, provincial battalions and the university training corps battalions, the latter being recruited from the staff and students of Indian universities.

In the case of the university training corps battalions, whose members are automatically discharged on the completion of their university training, the purpose of enrolment is entirely educative and disciplinary, and the liability to render actual military service is not enforced. Members, however, of the provincial battalions accept the full liability for service which has been mentioned and serve for six years, the period being reduced to four years in certain cases. During his first year every man does 28 days' preliminary

training, and during every year he receives 28 days' periodical training. Considerable progress has been made in the constitution of the territorial force. Twenty provincial battalions were in existence in 1925, the enrolled strength being over 12,000. The six battalions of the University Training Corps are located at Bombay, Calcutta, Allahabad, Lahore, Madras and Rangoon, and two separate companies have been constituted at Patna and Delhi.

## NAVY

India's naval history goes back to Elizabethan days, when "John Company" purchased armed vessels for the protection of its settlements and seaborne commerce. Two ships, the "Dragon" and the "Osander," formed the nucleus of what came to be known as the Bombay Marine, with headquarters at Surat. Having proved their mettle against the pirates who infested the Bombay coast, they soon met sterner adversaries in the men-of-war of Portugal and the Netherlands, from that time onward the Bombay Marine bore an honourable part in every Eastern campaign. Its ships helped to capture Chandernagore, Trincomali, Pondicherry and Mauritius. During the nineteenth century the thunder of their broadsides was heard in Burma and China, and even as far afield as New Zealand. As units of what had meanwhile become the Royal Indian Marine, the Great War found them active in many waters. Two ships, the "Hardinge" and "Dufferin," assisted in the defence of the Suez Canal, where the first-named was heavily engaged with the Turkish artillery. Others rendered priceless service in the Mesopotamian campaign.

To these inspiring traditions the new Royal Indian Navy, the establishment of which was announced by the late Viceroy (Earl of Reading) on February 9, 1920, is heir. The Royal Indian Marine is to be reconstructed as a combatant force to enable India to enter upon the first steps of her naval development, and ultimately to undertake her own naval defence. Subject to His Majesty's approval, the service will be known as the Royal Indian Navy and will fly the White Ensign.

**ESTABLISHMENT.**—The fleet of the Royal Indian Navy will consist in its first stage of development of four sloops, two patrol craft vessels, four trawlers, and two survey ships, together with one depot ship. In course of time, however, it is hoped to see cruisers of the most powerful class embodied in the Royal Indian Navy. The inauguration of the Navy will be entrusted to the personnel of the existing Service, subject to any necessary readjustment of cadres. Indians will be eligible for commissioned rank, and the changes which this policy involves will be carried out as soon as agreement has been reached in consultation with the Admiralty on the details of administration, organisation and finance.

**FINANCE.**—The Committee which recommended the reorganisation of the Royal Indian Marine estimated that the net annual cost of maintaining a Royal Indian Navy would amount at first approximately to Rs.63 lakhs. The average annual cost of the Royal Indian Marine is put at Rs.51,62,000, the excess of the annual cost of the Indian Navy being expected to be reduced to a considerable extent by the leasing of dockyards, and still further if, as is contemplated, the Government of India institutes a system for the levy of fees for lighting on shipping companies.

**FUNCTIONS.**—The functions of the Royal Indian Navy in peace time will be as follow: (a) The training of personnel for service in war, (b) The services required by the Indian Government in the Indian Ocean and Persian Gulf, (c) The organisation of the naval defences at ports which are under the control of the Indian Government, (d) Survey work in the Indian Ocean, (e) Marine transport work for the Government of India.

In case of war the ships would pass under the control of the British Admiralty, just as the other Dominion fleets did in 1914.

**INDIA'S MARINE EXPENDITURE.**—Since 1869 India has paid a contribution of varying amounts to the Imperial Government in consideration of services performed by the Royal Navy. Under existing arrangements, which date from 1869, a subsidy of £100,000 a year is paid for the upkeep of certain ships of the East India Squadron, which may not be employed beyond prescribed limits except with the consent of the Government of India. The expenditure amounts to nearly £400,000 annually.

**ROYAL INDIAN MARINE.**—In 1925 the Royal Indian Marine comprised the following vessels: "Clive" (station ship), 8,200 tons, stationed at Burma and the Andamans, "Cornwallis" (sloop), 1,200 tons, at Aden, "Lawrence" (despatch vessel), 1,250 tons, in the Persian Gulf, "Investigator" and "Palinurus" (surveying ships), "Dalhousie" (receiving ship), 2,195 tons, at Bombay, "Lathan" and "Baluchi" (patrol ships). In addition to the foregoing, there were 38 vessels composed of steam trawlers, service launches, target towing tugs, powder boats and military service launches, distributed at Bombay, Calcutta, Aden, Rangoon and Karachi.

## AIR FORCE

The Royal Air Force in India is controlled by the Commander-in-Chief as part of the defence services of the Indian Empire, and the Air Force budget is incorporated in the Army estimates. The Commander of the Air Force, the Air Officer Commanding in India, is an Air Vice Marshal, whose rank corresponds to that of a Major-General in the Army.

**ADMINISTRATION.**—The headquarters of the Air Force is closely associated with Army Headquarters, and is located with the latter at the seat of the Government of India. The Air Officer Commanding has a headquarters staff constituted in four branches, namely, air staff, personnel, technical and stores and medical. The system of staff organisation is similar to the staff system obtaining in the Army. Broadly speaking, the duties assigned to the four divisions mentioned are those which are performed by the General Staff Branch, the Adjutant-General's and Military Secretary's branches, the Quartermaster-General's branch, and the Medical branch respectively of Army headquarters. The formations subordinate to Royal Air Force headquarters are: (1) the Wing Commands, which, in their turn, control the squadrons of aeroplanes, (2) the Aircraft Depot, (3) the Aircraft Park.

**AIRCRAFT DEPOT.**—This may be conveniently described as the wholesale store and provision department of the Royal Air Force. Technical stores from the United Kingdom are received and held in the depot, which is also the main workshop and repair shop of the Force where all engine repairs, mechanical transport repairs, and aircraft repairs of any magnitude are carried out. The depot is located at Karachi, the chief

reason for the selection of this place being, first, that the climate of Karachi permits of European artificers working efficiently for the greater part of the year, and, secondly, that the Cairo-Bagdad-India air-route enters India at Karachi.

**AIRCRAFT PARK.**—This Park, which is situated in peace time at Lahore, acts as the distributing centre between the Aircraft Depot and the squadrons. In the event of war it is a mobile formation. New aeroplanes, received in parts from the United Kingdom, are assembled there, but no major repairs are undertaken.

**COMMANDS.**—There are three Wing Commands in India, namely at Peshawar, Risalpur and Quetta. The Wing Commander is an officer with Air Force rank corresponding to that of Lieutenant-Colonel in the Army. He is equipped with a staff organised on the same system as the headquarters staff of the Air Force. The Wing Headquarters establishment consists, approximately, of six officers and fourteen other ranks.

**SQUADRONS.**—The Royal Air Force in India consists of six squadrons of which five are extended along the North West Frontier from Quetta to Risalpur and one is stationed at Ambala. The squadron is the primary air force unit, and it consists normally of a headquarters and three flights of aeroplanes. A flight can be detached temporarily, but not permanently, from its squadron, as repair facilities, workshops and stores cannot economically be organised on anything lower than a squadron basis. The squadron headquarters comprises the officers and other ranks required for the command and administration of the squadron as a whole, it includes the workshop and repair units, the armours and equipment stores of the squadron. The number of aeroplanes in a squadron varies with the type of aeroplane of which the squadron is composed, but, speaking generally, all squadrons on a peace basis have twelve aeroplanes—that is, four in each of the three flights.

Of the six squadrons in being in 1925, two were equipped with De Havilland 9A aeroplanes and were allotted to distant reconnaissance and bombardment duties, the remaining four, which are allocated to army co-operation duties, have Bristol Fighter aeroplanes. The establishment of officers in a squadron consists of six officers at headquarters and fifteen officers allotted to flying duties. This allows a reserve of one officer for each of the operative flights.

**ESTABLISHMENT.**—The personnel of the Royal Air Force in India comprises officers, non-commissioned officers and airmen of the Royal Air Force of the United Kingdom and Indian artificers and mechanics belonging to the Indian technical section. The officers are employed on administrative, flying and technical duties, but all are required to be capable of flying an aeroplane. A proposal to employ non-commissioned officers as pilots was agreed to by the Government of India in 1923, and there were six of these in India in 1925. Other airmen are employed solely on technical work. The only flying personnel who are not officers are those mentioned above and a few aerial gunners who are airmen from various troops. The non-commissioned officers and airmen are employed both with squadrons and at the Aircraft Depot and Park. The personnel of the Indian section is employed entirely at the Depot and Park on technical trades, and consists of carpenters, fitters, fabric workers, instrument repairers, machinists, etc.

The total establishment of the Air Force in 1925 consisted of 218 officers, 1,757 British non-commissioned officers and airmen, and 138 Indians.

## PUBLIC HEALTH

The history of the sanitary departments in India goes back about 50 years, during which period great improvements have been effected in the health conditions of the towns. Much, however, remains to be done, for before the public health of the country can be brought up to anything like the standard attained in the West a radical change must take place in the ideas of the Indian people concerning hygiene. This change is rendered more difficult by the fact that the ideas alluded to are intimately connected with religious and social customs. India can never be safeguarded from a heavy death-rate, punctuated by disastrous epidemics, until her peoples can be weaned from their tenacious adherence to social observances which are as diametrically opposed to public health as they are to economic prosperity. With an increase in the receptivity of the educated classes to new ideas, and with the slow amelioration of the social and economic status of the masses, it will be possible eventually to remedy India's backwardness in sanitary matters, but so revolutionary a progress cannot be effected quickly. Diseases are still generally attributed to the wrath of Heaven, when sickness occurs the Indian's first impulse is to propitiate offended deities rather than to disinfect his water supply and prevent the contamination of his food. Throughout town and country alike even elementary sanitary science is conspicuous by its absence, therefore until the value of fresh air, pure water and wholesome food is appreciated by the Indian people no real progress can be hoped for.

**BIRTH AND DEATH RATES.**—Owing to the casual manner in which birth and death registration is carried out in other than the main centres of population, statistical figures can at best be only approximate. The following table gives the birth rates and death rates per thousand for a recent year.

PROVINCE	BIRTH RATE PER 1000	DEATH RATE PER 1000
Delhi	42.07	37.90
Bengal	29.90	25.50
Bihar and Orissa	37.00	25.00
Assam	28.82	23.54
United Provinces	30.04	23.37
Punjab	43.20	30.09
N-W Frontier Province	27.60	23.74
Central Provinces and Berar	45.63	30.53
Madras	33.10	22.20
Coorg	25.62	29.14
Bombay	35.58	25.09
Burma	29.51	20.87
Ajmer-Merwara	32.56	25.62
Average, all Provinces	35.06	25.00

**DISEASES.**—In India there are three main classes of fatal disease—specific fevers, diseases affecting the abdominal organs, and respiratory diseases. Intestinal and skin diseases of parasitic origin, ulcers and scurvy widely prevail. Much has been done by the wholesale extermination of rats to reduce the ravages of plague, though this disease, cholera, small pox and malaria are still prevalent. Malaria is perhaps the greatest scourge, and it has been authoritatively stated that in Bengal alone there are every year 28,300,000 cases of malaria requiring treatment. If this estimate be applied to India, the number of cases requiring treatment throughout the land would be about 100,000,000.

**DRINK AND DRUGS.**—Drink, as understood in Europe, is almost unknown in India, except in those places where there are large industrial communities. This fact is explained by the general reprobation in which indulgence in strong drink—as distinguished from indulgence in drugs—is held among the Indian people. The *per capita* figure of consumption for drugs as well as for liquor is very low. There is, nevertheless, a considerable amount of illicit distillation of inferior spirit (toddy), the consumption of which in some centres has proved very injurious.

As regards drugs, the eating of opium is fairly common in India, but not the smoking, which is regarded as disreputable. There are no "dope fiends" in India as understood in the West. The soil of most parts of the country produces the opium poppy, and long before the arrival of the British the people had habituated themselves to the consumption of the drug in small quantities. Various medicinal qualities are ascribed to it, it is used on ceremonial occasions and as a refreshment. As in the case of drink, the general policy of the Government is to control the trade in such a way as to ensure its most effective regulation, and to prevent it from passing into the hands of undesirables. All statistics go to show that the abuse of opium eating in India is on the decline.

**HOSPITALS.**—According to the last report published, there are in India 3,634 State-public, local fund and private aided civil hospitals and dispensaries, the number of patients treated annually being some 38,000,000. In Calcutta alone there are 26 hospitals, ten of which are supported by the Government and 410,019 persons were treated at these institutions in 1925, of whom 40,755 were in-patients. Three large hospitals are maintained by the Government in Bombay, and there are in addition in most of the Presidency cities and other large towns well-equipped and up-to-date hospitals for Indians of both sexes, many of which owe their existence to private or communal generosity.

**INFANTILE MORTALITY.**—Among the most pressing problems of India's public health is the mortality among infants. It has been calculated that every year some two million Indian babies die. Birth registration is still too casual to afford precise data, but it may be stated with confidence that one in six, or perhaps even one in five, of the infants born in India perish within the first year of life. In crowded industrial cities the rate is even more lamentable, and it is believed that in certain localities the death-rate varies from over 200 to 600 per 1,000.

Of late much attention has been devoted to remedial measures. Lady Chelmsford initiated an All-India Maternity and Infant Welfare League, and the National Baby Week initiated by Lady Reading has caught the imagination of large sections of the people all over India, while the exhibitions, lectures and baby shows which annually take place in all the important centres have aroused public interest in an unprecedented degree. Various benevolent institutions, such as the Poona Seva Sadan Society, the Social Service Leagues and the Servants of India Society, have thrown themselves with enthusiasm into the task of furthering the campaign. The Poona Seva Sadan Society has seven Infant Welfare centres and ante-natal clinics working in conjunction with the two maternity hospitals it conducts.

**LEPROSY.**—It is difficult to give anything approaching an accurate estimate of the number of lepers in the Indian Empire

to-day. The last census figures place the total at 102,513, as against 109,904 ten years previously. It is, however, doubtful if this figure represents anything more than the more advanced cases, and possibly the majority of these are the begging and pauper lepers who are seen all over the country. A leading authority has suggested that the number of lepers in India may be put down at over half a million. Compulsory segregation and the establishment of special leper clinics are advocated.

**LUNATIC ASYLUMS.** The treatment of lunatics in asylums is on a very small scale, there being only 25 asylums in the whole of India, having in all about 10,000 patients. In the Native States the condition of affairs as regards the provision of institutions for the care and treatment of the insane is still worse, as no asylums exist at all.

**MEDICAL COLLEGES.** There are seven Medical Colleges (Bombay, Madras, Calcutta, Belgaum, Lahore, Delhi and Lucknow). There are also 18 medical schools, and there is an X-ray institution at Dehra-Dun.

**MEDICAL RESEARCH.**—Of immediate bearing upon the progress of sanitation in India is the advance of medical research. In this field financial stringency has of late hindered development, but in the 1925-26 Budget provision was once more made for a subvention to the Indian Research Fund Association whose activities had suffered temporarily from retrenchment. This body conducts important investigations into the epidemics with which India is afflicted. In this direction much valuable work has been done.

**MORTALITY FROM WILD ANIMALS.**—The total number of persons killed by wild animals in British India during 1924 amounted to 2,587, as against 3,605 in the previous year. Tigers were responsible for 1,174 deaths, leopards for 406, wolves for 119, bears for 82, elephants for 41 and hyenas for 19. Deaths were highest from tigers and leopards in Madras, from wolves in the United Provinces, from bears in Bihar and Orissa, and from elephants in Assam. Of the 446 deaths from "other animals," about 53 were assigned to wild pigs, and 213 to crocodiles and alligators.

**SNAKE BITE.**—Deaths from snake bite fell from 19,990 in 1923 to 19,867 in 1924. This is a very frequent cause of death in almost every province. Rewards are paid for the destruction of venomous snakes.

**NURSING ASSOCIATIONS.**—State registration of nurses for all India is very much required, but at present Government action in the matter has not gone further than the recommendation of provincial registers. In the three Presidencies there has been a remarkable development of skilled nursing during recent years, such associations as the Bombay Presidency Nursing Association, the Calcutta Hospital Nurses' Institution, Lady Minto's Indian Nursing Association, the Lady Amphilh Nurses' Institute and South Indian Nursing Association, and the Trained Nurses' Association of India having done much to raise the general standard of nursing. Most of the larger Government Hospitals also act as training institutions, and turn out a yearly supply of fully trained nurses, both to meet their own demands and those of outside institutions and private agencies. In this way the supply of trained nurses, English, Anglo-Indian and Indian, is being steadily increased.

## PUBLIC WORKS

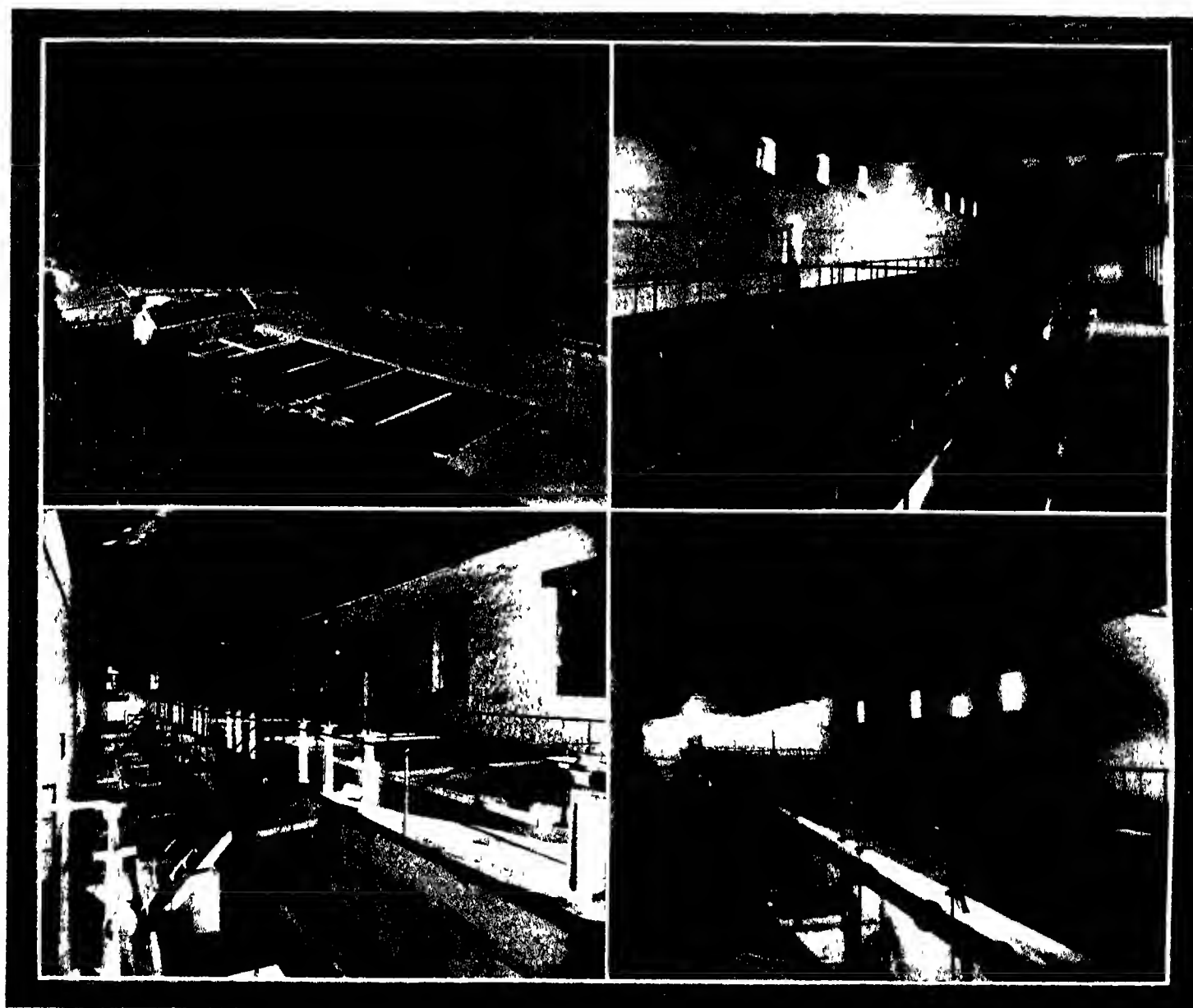
The Public Works Department has always been an important feature of British administration in India. Its history dates from 1854, when it first came to be organised on a definite basis in succession to the old Military Boards, constituted mainly for the carrying out of military works. Under the Reforms Act of 1919 public works are a "transferred" subject, control being vested in the Provincial Governments, each of which has its own Department of Public Works, dealing principally with buildings, roads and irrigation.

**BENGAL.**—In the Bengal Presidency the Public Works Department is under the charge of a Chief Engineer, who is also the Secretary to Government in the Public Works and Railway Departments. The Public Works Department deals with questions regarding the construction of buildings and roads, the Railway Department with questions bearing upon the acquisition of lands required by the several railways, the alignment of new lines of railway and with tramway projects, and the Irrigation Department with irrigation, navigation and flood protection by means of embankments and drainage.

**BOMBAY.**—The Public Works Department of the Bombay Presidency is under the control of two Chief Engineers, who act as Secretaries to the Government—one for General Works and the other for Irrigation. Under them are Superintending Engineers in charge of divisions and Executive Engineers in charge of districts, with the Consulting Architect. The chief irrigation works are in Sind, and consist of a chain of canals fed by the annual inundations from the Indus and one perennial canal, the Jamrao. In the Presidency proper the principal protective works are the Nera Canal, Gokak Canal, Mutha Canal, and the Godavari Canal Scheme. In addition, there is under construction a chain of protective irrigation works originating in reservoirs in the Ghat regions. The Godavari canals were completed during the year 1917-18, the Pravara canals are approaching completion, and the works in connection with the Nira Right Bank Canal and the Pravara River Works system, which have been under construction since 1912 and 1911 respectively, are nearing completion. These projects will irrigate certain tracts most liable to famine. (See also special article on "Irrigation").

Among public buildings recently erected by the Bombay Public Works Department are the Pavilion at the Apollo Bunder, Bombay (see under "City of Bombay"), and the Historical Museum and Library at Satara. During the year 1924-25 the Roads and Buildings Branch executed works the total expenditure on which was Rs. 2 crores 17½ lakhs. The expenditure on buildings connected with Imperial Services amounted to over Rs. 13½ lakhs, which included Rs. 2½ lakhs on salt, Rs. 3½ lakhs on post and telegraph offices, and Rs. 4 lakhs on military works.

**CENTRAL PROVINCES.**—The Public Works Department is controlled by two Chief Engineers, who are also Secretaries to the Government. There are two Superintending Engineers for Roads and Buildings and three for Irrigation. In 1892 a separate division of the Public Works Department was formed for the construction of roads and buildings in the Feudatory States, but it has since been abolished. The expansion of the department and its work has been one of the most remarkable features of the administration in the past decade and a half, largely owing to the demands of a progressive



1. New Simla Water Works. General view of Coagulating Tanks (Paterson System).
3. Poona Cantonment Water Works: Interior of Filter House (Paterson System).

2. Lucknow Water Works. Filter Units and Operating Platform (Paterson System).
4. Delhi Water Works, Showing Filter Units.

age in regard to communications and new buildings. The Irrigation Branch represents a completely new departure. It was formerly the accepted view that the irregular surface of the country would make irrigation canals impossible, and that the south-west monsoon was so regular that it would pay better to relieve famine than to prevent it. Both conclusions have been reversed. Picked officers investigated projects for irrigation when the Irrigation Commission was appointed (1901), and canal and storage works have since been advanced with vigour. The Tandula, Wainganga, Mahanadi, Kharang and Manari projects are amongst the more important schemes, while an extensive network of minor protective works is being constructed throughout the Province.

**MADRAS.**—The work of the Madras

Public Works Department is very largely connected with irrigation, the area already irrigated in the Presidency being over 7,000,000 acres, to which the Cauvery Reservoir Project is expected to add another 300,000. The budget estimates for 1925-26 allotted 50 lakhs of rupees to expenditure on irrigation, apart from expenditure from capital accounts not charged to revenue (See also special article on "Irrigation").

**UNITED PROVINCES.**—The Public Works Department is divided into the Roads and Buildings branch and the Irrigation branch, each of which is administered by a Chief Engineer, who is also a Secretary to the Government. The Provinces are divided into circles and divisions, both for roads and buildings and for irrigation purposes. Each circle is in charge of a Superintending Engineer, and

each division is directed by an Executive Engineer. The whole of the irrigation works constructed or maintained by Government is in charge of the Irrigation Department, while nearly all metalled roads and bridges on second-class roads, as also generally all works costing more than Rs 1,000, except in municipalities, are controlled by the Buildings and Roads Department. Under Public Works there is now a separate Sarda canal branch of the Irrigation Department directed by a Chief Engineer with a full staff distinct from that of the running canals. The Sarda canal is a project of first rate importance and is under construction. It will introduce irrigation into most of the districts of Oudh (See also special article on "Irrigation").



## POSTS, TELEGRAPHS AND TELEPHONES

In the large and complicated system of Indian communications the Posts and Telegraphs Department performs functions of the highest importance, since, in addition to providing the Indian public with easy and rapid means of intercourse, it is called upon to act as the agent of the Government in carrying out many other essential services not directly connected with its basic activities. It acts as the banker and agent of the people, enabling them to do their shopping from all distances, collects customs charges on dutiable articles coming to India by post, insures the lives of Government employees, pays the pensions of retired officials of the Indian Army, is the custodian of postal and telegraphic stores held in reserve for purposes of military organisation, and, finally, among a host of miscellaneous activities, it sells quinine. The extent to which these useful functions are carried on may be estimated from the figures given below

### POSTS

For postal purposes the Indian Empire is divided into nine circles as shown hereafter, each of the first eight being in charge of a Postmaster-General, while the Sind and Baluchistan circle is controlled by a Deputy Postmaster-General. Bengal and Assam, Bihar and Orissa, Bombay, Burma, Central, Madras, Punjab and North-West Frontier, United Provinces, and Sind and Baluchistan. The Central circle comprises roughly the Central Provinces and the Central India and Rajputana Agencies.

**GROWTH OF POST OFFICE.**—At the end of 1897-98 the total number of post offices in India was 11,742 and the length of mail lines 126,351 miles. At the close of 1924-25 there were 105,800 postal officials, 19,652 post offices and 156,117 miles of mail lines. During the year 1897-98 the total number of letters, postcards, packets and newspapers given out for delivery was 460,899,344, while for the year 1924-25 the number was 1,195,760,042. Parcel mail articles despatched for delivery in the former year totalled 4,119,781, as compared with 13,566,890 in the latter year. The number and value of money orders issued increased from 11,795,041 and Rs 24,79,45,455 in 1897-98 to 34,977,329 and Rs 87,72,33,404 respectively in 1924-25.

**LETTERS, ETC.**—The mail matter dealt with in 1924-25 (exclusive of parcels) reached a total of 1,229,943,101 articles, an increase of 34,185,059 over the figure for 1923-24. This total was distributed as follows: Paid unregistered letters, 478,328,996, unpaid letters, 21,084,513, registered letters and packets, 34,136,780, postcards, 542,365,050, registered newspapers, 74,378,525, ordinary unregistered packets, 79,651,237. The number of unpaid letters, which are a feature of Indian postal correspondence, showed a decrease of 710,706, all other items showed large increases.

**LETTER RATES.**—The inland tariff for letters, etc (which is applicable to Portuguese India and Ceylon, except in respect of insurance fees), is as under—

*Letters.*—When the postage is prepaid: Not exceeding two and a half tolas, 1 anna; every additional two and a half tolas or part of that weight, 1 anna.

*Book and pattern packets.*—Every 5 tolas or part of that weight,  $\frac{1}{2}$  anna.

*Postcards.*—Single,  $\frac{1}{2}$  anna, reply, 1 anna. (The postage on cards of private manufacture must be prepaid in full.)

When the postage is wholly unpaid on the above letters, etc double the prepaid rate (chargeable on delivery).

*Registration Fee.*—For each article, 2 annas.

(1 tola (rupee-weight)=180 grains, or rather less than half an ounce.)

*Foreign Tariff.*—The foreign tariff for letters, etc., is as follows—

*Letters.*—To the United Kingdom, other British Possessions and Egypt, including the Sudan, 2 annas for the first ounce and  $\frac{1}{2}$  annas for each additional ounce or part of that weight, to other countries, colonies or places 3 annas for the first ounce and  $\frac{1}{2}$  annas for every additional ounce or part of that weight.

*Postcards.*—Single,  $1\frac{1}{2}$  annas, reply, 3 annas.

*Business Papers.*—For a packet not exceeding 10 ounces in weight, 3 annas, for every additional 2 ounces or part of that weight,  $\frac{1}{2}$  anna.

*Printed Papers.*— $\frac{1}{2}$  anna for every 2 ounces or part of that weight.

*Samples.*— $\frac{1}{2}$  anna for every 2 ounces or part of that weight, subject to a minimum charge of 1 anna for each packet.

The rates shown are those chargeable when the postage is prepaid.

**MONEY ORDERS.**—Money orders are issued for amounts ranging from one to 600 rupees. In 1924-25 the total number of such orders of all kinds issued, inland and foreign, exceeded 34 millions, of the aggregate value of 87 crores of rupees, as compared with 33 millions, value Rs 84 crores, in 1923-24. Inland orders issued realised Rs 82½ crores, and foreign orders (issued and paid) Rs 4½ crores.

*Telegraphic Money Orders.*—The total number of telegraphic money orders issued rose from 847,914 in 1923-24 to 904,836 in 1924-25, and their value from 79½ crores to 81½ crores of rupees.

**P. AND O. CONTRACT.**—All mails for Great Britain and most of those for European countries are carried by the P and O S N Company. During 1924-25 over 50 steamers left London with mails for India, and the same number left Bombay with the Indian mails. The average time occupied in the transit of these mails by the overland route (London—Marseilles) is 14 days 15 hours from London to Bombay and 14 days 9 hours in the reverse direction.

**PARCEL POST.**—Statistics relating to parcels show that the total number handled by the Post Office in 1924-25 was 14,480,134, against 13,566,890 in 1923-24, an increase of 6.73 per cent. The total number of parcels despatched by the foreign post from India was 638,117, compared with 617,236 during the preceding year, and the number received was 702,648, against 669,500. In 1924-25 the number of parcels sent to and received from Great Britain and Northern Ireland alone was 503,892.

**PARCEL POST RATES.**—Following are the rates for inland parcel post: (a) Parcels not exceeding 440 tolas in weight: Not exceeding 20 tolas, 2 annas; exceeding 20 tolas but not exceeding 40 tolas, 3 annas; for every additional 40 tolas or part of that weight, 3 annas; (b) Parcels exceeding 440 tolas in weight: exceeding 440 tolas but not exceeding 480 tolas, Rs 3, with 4 annas for every additional 40 tolas or fraction thereof up to 800 tolas. Registration is

compulsory in the case of parcels weighing over 440 tolas. These rates are not applicable to parcels for Portuguese India. In the case of parcels for Ceylon a registration fee of 2 annas is chargeable on each parcel in addition to the rates shown above.

The foreign tariff for parcels is as follows:

(a) Parcels not exceeding 11 lbs in weight are forwarded as mails to the British Post Office, the rates of postage being Rs 1 8 annas for 3 lbs and under, Rs 2 12 annas from 3 to 7 lbs, Rs 3 15 annas from 7 to 11 lbs. (b) Parcels which exceed 11 lbs, but which do not exceed 50 lbs (the maximum allowed) in weight, are forwarded from India through the medium of the P & O S N Co, and are delivered at destination under arrangements made by that Company. The postage charge applicable to such parcels is 12 annas for each lb or fraction of a lb. The parcels are delivered free of charge within a radius of one mile from the Company's head office in London, if addressed to any places beyond that radius, carrier's charges are collected from the addressees on delivery.

**VALUE-PAYABLE ("C O D") PARCELS.** India has a very efficient system of C O D parcel-post, of which great use is made, the number of parcels under this head dealt with having risen from 5,742,742 in 1923-24 to 6,061,534 in 1924-25. During the latter year no less than Rs 266,000,000 were collected from tradesmen and others on value-payable articles.

**POSTAL COMMUNICATIONS.**—The total distance over which mails were conveyed during the year 1924-25 by agencies employed by the Department was 156,117 miles, an increase of 962 miles as compared with the previous year. Sixty-eight new motor lines were introduced, which replaced existing services worked by other means. The total distance over which mails were conveyed by rail was 36,569 miles and by steamer 18,485 miles.

**SAVINGS BANK.**—The number of active accounts in the Post Office Savings Bank of India on March 31, 1925, was 2,104,473, representing an increase of 3.59 per cent. over 1923-24. The total balance standing to the credit of depositors rose from 24½ crores to 25½ crores of rupees, and the average balance to the credit of a depositor was Rs 118 45, compared with Rs 118 64 in the preceding year.

### TELEGRAPHS

Up to 1912 the telegraph system in India was administered as a separate department by an officer designated the Director-General of Telegraphs. After tentative experiments had been made, a complete amalgamation of the Posts and Telegraphs Departments was effected in 1914, the fundamental principles of working closely following the systems in force in the United Kingdom and some European countries.

**GROWTH OF TELEGRAPHS.**—At the end of 1897-98 there were 50,305 miles of line and 155,088 miles of wire and cable, as compared with 94,037 line (including cable) miles and 477,839 wire (including cable) miles respectively on March 31, 1925. The number of departmental telegraph offices declined from 257 to 165, while the number of telegraph offices worked by the Post Office rose from 1,634 to 3,507. The total number of telegrams dealt with grew from 5,754,415 to 19,842,000.

The outturn of the telegraph workshops during 1924-25 represented a total value of Rs 16,80,444, compared with Rs 16,60,258 in the preceding 12 months, and at the end of the year the total staff numbered over 14,000. There was an increase of 4 per cent.

in the number and nearly 2 per cent in the value of inland telegrams dealt with during 1924-25 as compared with the traffic of the preceding year. State telegrams decreased by 10 per cent in number and by about 16 per cent in value. Raj (or Indian State) telegrams increased by about 40 per cent in number and by about 59 per cent in value. Private telegrams increased by 3 per cent in number and by 7 per cent in value. The total inland traffic was 16,957,818 messages and the value Rs 1,95,49,917, as compared with 16,259,737 and Rs 1,91,09,152 in 1923-24. The total number of foreign telegrams was nearly three millions, daily letter telegrams showing the remarkable increase of 224 per cent.

**TELEGRAPH RATES.**—Telegrams sent to or received from places in India or Ceylon are classed as inland telegrams. The tariff for inland telegrams is as follows:—

*For Delivery in India (Private and State)*  
—Minimum charge. Express, Rs 1 8a, ordinary, 12a, each additional word over 12. Express, 2a, ordinary, 1a.

*For Delivery in Ceylon (Private and State)*  
—Minimum charge. Express, Rs 2, ordinary, Rs 1, each additional word over 12. Express, 3a, ordinary, 2a.

The address is charged for.

**Additional charges.**—Minimum for reply-paid telegram, also acknowledgment of receipt. Minimum charge for an ordinary telegram. Multiple telegrams, each 100 words or less 4 annas. Collation. One quarter of charge for telegram.

**FOREIGN TARIFF.**—The charges for foreign telegrams vary with the countries to which they are addressed. The rates per word for private and State telegrams to countries in Europe are as follow:—

All countries in Europe (except Russia and Turkey). Via Eastern—Urgent, Rs 3 12a, ordinary, Rs 1 4a, deferred, 10a, State (British Govt.), 10a. Via Indo—Urgent, Rs 3 12a, ordinary, Rs 1 4a, deferred, 10a.

**LETTER-TELEGRAM SERVICE.**—During the year 1924-25 a daily letter telegram service at quarter rates, subject to a minimum of 20 words, which had been

introduced as an experimental measure between India and Great Britain in 1923, was extended to all British possessions and the United States of America.

**RADIO TELEGRAMS.**—For radio-telegrams addressed to ships at sea and transmitted via the coast stations at Bombay, Calcutta, Diamond Island, Karachi, Madras, Port Blair, Rangoon or Victoria Point the charge is eleven annas per word in nearly all cases. The number of radio telegrams exchanged with ships at sea by coast stations in India and Burma during 1924-25 was 19,551, as compared with 18,845 in 1923-24 and 16,278 in 1922-23.

**WIRELESS.**—Progress in the development of wireless telegraphy has been seriously affected by the financial stringency. At the suggestion of Lord Inchcape's Retrenchment Committee almost all development in the wireless branch was postponed and many of the Indian stations were put under care of maintenance parties. On the other hand, the new high-speed continuous wave stations at Rangoon and Madras have been completed, and a great deal of commercial traffic is now carried direct, to the relief of congestion on the long land line round the north of the Bay of Bengal. Press messages from England are received daily. Progress is now (1926) being made towards completion of the Indian portion of the Imperial Wireless Scheme, negotiations having been concluded with the Indian Radio Telegraph Company for communication with the United Kingdom by means of the mammoth Marconi Beam Station at Kirkee, 65 miles inland from Bombay. Each of the five masts of this station is 227 ft high and weighs 50 tons, and the line of them points directly toward the beam station at Skegness station on the Lincolnshire coast. Before long it is hoped to establish wireless communication with Tokyo, Rio de Janeiro and South Africa.

**BROADCASTING.**—As compared with other countries, broadcasting in India is comparatively undeveloped. But there are now three Radio Clubs situated in Bombay, Calcutta and Madras respectively, which are likely to form the nucleus for expansion in the next few years. These possess licences enabling them to broadcast regular pro-

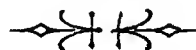
grammes. Draft conditions have also been formulated for the establishment of commercial broadcasting and throughout the country public interest in wireless seems to be increasing. The number of wireless licences issued for receiving sets showed a substantial increase in 1924-25.

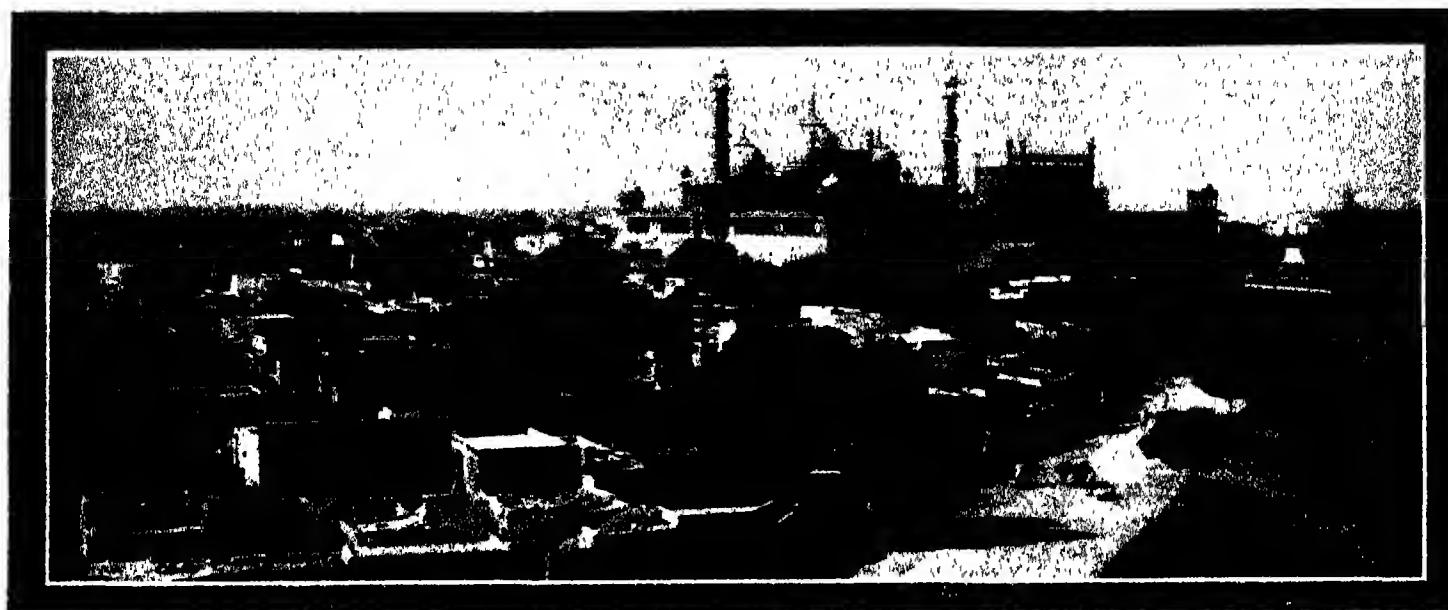
## TELEPHONES

The telephone systems of India differ from those of the posts and telegraphs in that they are not all controlled by the Government there being a number of companies which are licensed to construct and operate lines. Unquestionably, the use of the telephone is increasing in India, the trunk lines are becoming very popular, and it can only be a matter of a few years before a general demand for the extension of existing facilities makes itself manifest with greater force.

**RECENT EXTENSIONS.** In addition to many of the existing telephone installations being extended, obsolete plant is being replaced by modern apparatus. Advantage has been taken of the recent improvements in automatic telephone apparatus, and the Department now has 14 exchanges equipped with such plant while several more are in process of installation. Good progress has been made in the extension of the trunk line system. The Punjab and the United Provinces have been linked up telephonically and through communication is possible between the larger towns. In June 1925 the trunk line from Delhi to Bombay was thrown open to the public, and it is hoped that the long-talked-of service between Calcutta and Bombay will not be further delayed.

**STATISTICS.**—On March 31, 1925, the number of exchanges owned and maintained by the Government of India was 252, with 13,031 straight line connections and 1,754 extension telephones, of which 158 exchanges with 1,450 straight line connections and 386 extension telephones were not operated by the Department. There were also 290 independent non-exchange systems with 930 telephones. The number of exchanges owned by the licensed Telephone Companies was 14, with 20,455 connections.





VIEW OF DELHI, SHOWING THE JAMA MUSJID, BUILT IN 1644-1658.

## CITY OF DELHI

**D**ELHI, the old Moghul capital and now by Imperial proclamation again the capital of All India, is unique among the great cities of the world in respect not only of its varied history, but of its architectural glories. It extends for over two miles along the west bank of the River Jumna, and on the other three sides is enclosed by a lofty stone wall,  $3\frac{1}{2}$  miles in length, built by Shah Jahan. Once it was entered by fourteen gates, eight on the land side and six leading to the river, but most of these have been removed, and of those still existing only the Kashmir Gate on the north, the Farash Khana and Ajmer Gates on the west, and the Delhi Gate on the south are specially noteworthy.

Delhi is a modern city, having been built in the 17th century, but the plain on which it stands is covered with the dust of dead empires. Though the first authentic record of a city dates no further back than the 11th century, it is probable that far older ones lie buried beneath the soil. No fewer than six cities are known to have been constructed south of the present Delhi, and as the visitor leaves the Ajmer Gate he wanders over ground where dynasty after dynasty has risen, fought, built, ruled and died. The Kutb Minar, justly called the most beautiful tower in the world, is an abiding monument of the Moslem conquest of India. Beyond it, and far too rarely seen by travellers, is the city of Tughlakabad, the projected capital which was never occupied.

The whole future of India's rule has been decided again and again within a day's ride of the mouldering ruins of the older Delhis. Thrice on the field of Parnap, north of the city, conflicts were fought which are counted among the decisive battles of the world. The famous Ridge beyond the northern walls is sacred ground, for there the fate of

British rule in India hung trembling in the balance for long weeks in 1857. The northern walls of the city still bear the marks of the siege, the breaches can be traced, the Kashmir Gate is scarred and battered, the narrow lane where John Nicholson fell is almost unaltered, and his modest tomb is in the cemetery near by. Truly, if Delhi is full of memories of the older rulers of India, it is sacred soil for the British also. Lake rode in triumph through its streets in 1803, at its gates the destiny of the British in India was decided, its walls echoed the salute proclaiming the assumption of the Imperial title by Queen Victoria, it heard the guns commemorate the accession of the first British Emperor of India, and all the princes of India gathered within its precincts to render fealty to the first British Monarch who had ever gone in person to his Asiatic dominion.

**BUILDINGS, ETC.**—The Fort and Palace and the principal mosques and tombs are described later. Of the architectural glories of Delhi it need only be said that they are famous alike in Indian and European literature, but more than a brief mention of the more important is impossible in a work of this description. Visitors entering Delhi from the north will notice on the face of the Kashmir Gate a memorial tablet to the explosion party, and just inside the outlines of the Quarter Guard, in which so many European officers were murdered on May 11, 1857. St James' Church, built at a cost of £10,000 by Colonel Skinner, stands in front of the Gate, and near by are the buildings of the Residency, now used as a Government High School, the Cambridge Mission College, the Post Office, and the gateways of the Old Magazine. Near the Jama Masjid, on the

north-west side, is a beautiful Jain Temple approached by narrow streets, the Kotwali, where many massacres took place after September 1857, lies near the Queen's Gardens, and close to it is the Sonreh Masjed of Roshan-ud daula, on the platform of which Nadir Shah sat in stony silence while the inhabitants of Delhi were being massacred by his troops. Opposite the Kotwali, in the centre of the square, and erected on the site of famous Karawan Sarai, rises the Northbrook Clock Tower, and behind the Municipal Buildings are the Begam's or Queen's Gardens, beautifully laid out and maintained, in which is situated the fine Public Library erected to commemorate the Viceroyalty of Lord Hardinge. The statue of General Nicholson, close to the cemetery where the body lies, is outside the Kashmir Gate, while here and all along and around the Ridge are ruins and memorials which speak of the Mutiny. The Mutiny Memorial, near Hindu Rao's House and the Lat of Asoka, is a somewhat heavy piece of sculpture, though of great historic and military interest.

To the south of the city the most conspicuous and noteworthy buildings are Delhi Gate, the ruins of Firozabad, the Mosque of Sher Shah (which is one of the handsomest and most picturesque structures in Delhi), the tomb and mosque of Isa Khan, the mausoleum of Nawab Safdar Jang, the Begampur Mosque, the Tomb of the Emperor Firoz Shah and the Kutb Minar and Mosque of Kutb-ul-Islam.

The palaces of the nobles which once gave an air of grandeur to the city have for the most part disappeared. Their sites are occupied by buildings of less pretensions, but still with some elegance of architectural design. In the native city the buildings are chiefly of brick, and are well built and substantial.



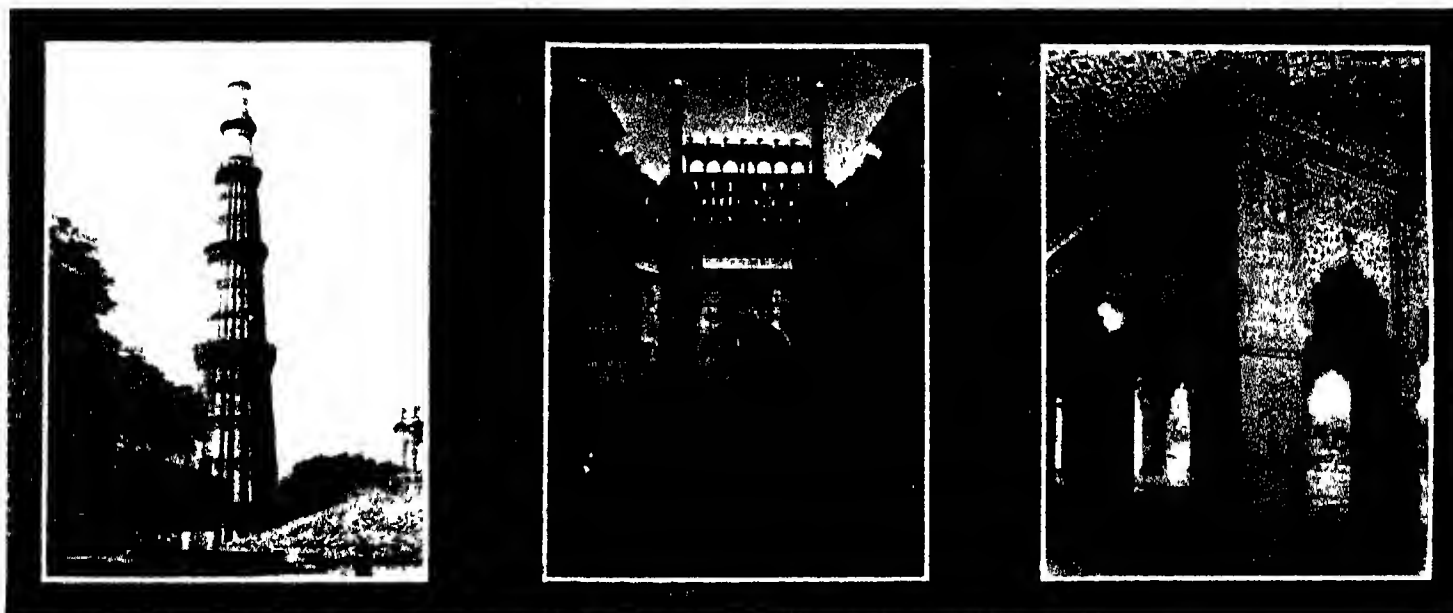
**FORT AND PALACE.**—The pride of Delhi, the structure which invests it with visible grandeur, is the vast Fort, whose rose-pink battlemented walls confront across a tree-clad pleasure the mighty Jama Musjid, the Cathedral Mosque of India. The Fort was the Imperial Palace of Shah Jahan, and is a great enclosure containing gardens and several beautiful buildings. No Imperial residence in the world possesses a more majestic portal, and the lofty gateway leads into an entrance hall like the nave of a cathedral. The courtyard beyond is said to be as spacious as a London square. Within the Fort there still remain gems of architecture which are almost unspoilt. The Diwan-i-Am, or Hall of Public Audience, 100 ft. by 60 ft., is a huge arched hall with red stone pillars and engrafted arches, where the Emperors showed themselves to their followers. In a high marbled recess, whose sides are now robbed of their original incrustation of precious stones, stood the famous Peacock Throne, which Nadir Shah carried off to Persia when he left Delhi shattered and desolate.

mounted by a capital composed of a series of bevelled rims. The shaft displays an inscription, as sharply defined and legible as on the day it was first cut, to the effect that "the pillar is the arm of fame of Raja Dhava, who obtained, with his own arm, an undivided sovereignty of the earth for a long period." Who Raja Dhava was is only conjectural, he is believed to have reigned at Delhi in the third or fourth century A.D.

**KUTB MINAR.** Described as the seventh wonder of India, the famous Kutb Minar towers 11 miles south-west of Moghul Delhi. The tower looks what it was intended to be—that of victory raised to celebrate the Moslem conquest of Delhi and the surrounding country. Built and re-built in the 13th and 14th centuries, it is 238 ft. high and consists of five graduated storeys, each emphasised by a balcony composed of richly carved projecting pendentives in the style characteristic of the first Pathan period. Owing to the extreme durability of the red sandstone of which it is constructed, the Minar presents a deceptive modern appearance, while the excellence and curious beauty

**MODERN INDUSTRIES.** Modern mill and factory industries have, during the present century, made great progress in Delhi. The Delhi Cloth and General Mills, the Birla Cotton Spinning and Weaving Mills, the Goenka Cotton Spinning and Weaving Mills and the Ghanesh Flour Mills are amongst the best known of their kind in India. There are also a number of sugar cane pressing factories and cotton-ginning factories. Minor industries include printing, biscuit making, malting and iron and brass work.

**MOSQUES AND TOMBS.** At first glance the Jama Musjid or Great Mosque of Shah Jahan, is by far the most striking building in Delhi, owing much of its imposing effect to its position on a rocky eminence commanding the Palace and city. It was begun in 1644 and finished in 1658. Built of red sandstone and marble, the sanctuary faces a spacious quadrangle enclosed by sandstone walls. Its three noble gateways are approached by grand flights of steps, unrivalled elsewhere except at Latchpur Sikri. As of old the great doors of the main (East) gateway



1. Kutb Minar pillar, 238 ft. 11 in. high, 47 ft. 3 in. diameter, and an upper diameter of 9 ft. (A.D. 1200-1220).

2. Lahore Gate of the Fort. Archway and apartments where the Officers of the Palace Guard were massacred in the Mutiny.

3. Celebrated Persian inscription on the cornice of the Diwan-i-Khas. "If a Paradise be on the face of the earth, it is this, it is this, it is this."

The greatest architectural marvel of the Fort is the Diwan-i-Khas, or Hall of Private Audience, a pavilion with an open portico, surmounted at the corners by domes on slender pillars. It is built throughout of white marble, and presents a vision of arches and pillars adorned with gold and inlay work, of delicate pierced tracery, of cool shady retreats. The jewels have been torn from its walls, but the impression it leaves is abiding. Its essential beauty is unspoilt, and no one who has seen it marvels at the spirit of ecstasy in which its creator inscribed upon it the words "If a Paradise be on the face of the earth, it is this, it is this, it is this."

**IRON PILLAR.**—This is one of the most curious monuments in India. It stands within the precincts of the Mosque of Kutb-ud-Din, where its presence has in turn excited wonder, curiosity and superstitious awe. According to an old belief, it was held that so long as the pillar of Raja Dhava should stand Hindu rule would endure at Delhi. The Pillar consists of a solid shaft of wrought iron 23 ft. 8 in. in length, sur-

mounted by a capital composed of a series of bevelled rims. The shaft displays an inscription, as sharply defined and legible as on the day it was first cut, to the effect that "the pillar is the arm of fame of Raja Dhava, who obtained, with his own arm, an undivided sovereignty of the earth for a long period."

**MANUFACTURES AND INDUSTRIES.**—From time immemorial Delhi has been famous for the art of its gold and silversmiths. They are particularly skilful in engraving gems, and make a speciality of jade ornaments veined with gold and set with precious stones in bird and flower designs. Whereas modern jewellery of this description is by no means unduly expensive, old Delhi work, in cut and gem-encrusted jade, is described as priceless. Delhi goldsmiths also excel in devising beautiful mounts for the world-famous miniatures commonly called Delhi paintings, in the style which was long ago introduced from Persia. The miniatures are exquisitely painted on ivory and, when converted into jewellery, are usually set in locketts, brooches and bracelets. Another speciality of the capital is carving on wood or ivory, while Delhi embroideries are known the world over. Lac ornaments are also extensively produced, and glazed pottery has always been a noted Delhi industry.

were opened only for the Moghul Emperor, so now they are opened only for the Viceroy of India and the Head of the Local Administration. Cloisters run round three sides of the vast triangle, in the centre of which are a marble basin and fountain.

Three other mosques deserve special notice—the Kali Musjid, or "Black Mosque," so called from the dark colour given to it by time, and supposed to have been built by one of the early Afghan sovereigns, the Moti Musjid, or "Pearl Mosque," which is now only a beautiful case robbed of those gems that were once its glory, and the Sher Musjid, which stands as perhaps the finest architectural example of the third Pathan period.

The Tombs of the Imperial family lie outside the walls to the south and south-west of the city proper. That of Humayun is a noble building of red sandstone, with a dome of marble. It stands about 3½ miles from the Delhi gate in a large garden of terraces, the whole surrounded by an embattled wall, with towers and four gateways. The tomb of

Adham Khan, near the Minar, now used as a rest house, is an imposing mausoleum.

**NEW DELHI.**—At the Coronation Durbar of 1911 the King Emperor, George V, restored Delhi to its former high estate as capital of India. The proclamation announcing this was followed by the decree that a new city should be erected more in keeping with modern requirements.

Absolute freedom of choice was allowed the Committee appointed to decide upon the site of New Delhi. Beyond the proviso that the projected metropolis must be in close physical and general association with the existing capital founded by Shah Jahan and with the Delhi of the past the Committee was left an open field from which to make selection. Naturally this was governed by certain important considerations such as water supply, health, sanitation, space for expansion and the provision of parks and recreation grounds.

After a prolonged study of the neighbourhood and a careful weighing of the pros and cons of the various localities the site finally

Other projected features of New Delhi are a spacious forecourt east of and below the forum, which will be defined by trees and linked on to the great main avenue or park way which leads to Morapat. Across this main axis will run an avenue to the railway station. Other roads go in different directions from the entrance to the forum. The axis running north-east towards the Jama Masjid will form the principal business approach to the present city. At the railway station a place will be laid out around which will be grouped the administrative and municipal offices, the banks, the shops and the hotels. The main roads or avenues range from 76 feet to 150 feet in width with the exception of the main avenue east of the Secretariat Buildings, where a park way width of 175 feet has been allowed. The principal features in addition to the main avenues are those running at right angles to the main east to west axis.

**ESTIMATED COST.** It was at first tentatively announced that the cost of the new capital would be four millions sterling

purpose, and will when completed bear the names of Indian regiments only.

**POPULATION.**—The total population of Delhi as recorded at the last census was 304,420, the large increase since 1901, when the figure was 208,575, being greatly due to the development of milling industries.

**SANITATION.**—The city is well supplied with water and of late years much attention has been paid to cleanliness and sanitary requirements generally.

**STREETS.**—The smaller streets of Delhi are narrow and tortuous and in many cases end in cul-de-sacs. On the other hand no city in India has finer streets than the main thoroughfares in the Capital, ten in number, thoroughly drained, metalled and lighted. The principal thoroughfare, the Chandni Chalk or Silver Street, leads eastwards from the Fort to the Lahore Gate and is  $\frac{1}{2}$  of a mile long by 74 ft. broad. Throughout the greater part of its length a double row of trees runs down its centre on both sides of a raised path which has taken the place of the masonry aqueduct that in former days



THE NEW IMPERIAL SECRETARIAT IN COURSE OF CONSTRUCTION AT DELHI.

selected was that on the eastern slopes of the hills to the south of Delhi and on the fringe of the tract occupied by the Delhi of the past. This site was chosen largely because of its freedom from liability to flood, its good natural drainage, its comparative freedom from monuments and tombs needing reverential treatment, and its close proximity to the present centre of Delhi. Some ten square miles were apportioned for the new city and fifteen square miles for cantonments on the Naraina Plain.

#### ARCHITECTURAL FEATURES—

The task of planning the new city was assigned to the eminent English architect, Sir Edward Lutyens, who is also the architect of the new Government House, the central point of interest in the lay-out of the city. The two large blocks of buildings known as the Secretariats are the work of Mr. Edward Baker. The former building will, it is estimated, cost approximately Rs 140 lakhs and the latter groups some Rs 124 lakhs.

Government House was expected to be ready for occupation in 1927. The Secretariats, which give accommodation to all the administrative departments, were first used in October 1926, when the new capital was inaugurated by the Viceroy as the winter seat of Government. In January 1927 the Assembly and Council of State met for the first time in the Legislative Building.

and that sum was given in the original despatch of the Government of India on the subject. Various factors have since increased the cost and the total final outlay is now estimated to be not less than Rs 1,292 lakhs (£8,612,500).

**UNIVERSITY OF DELHI.**—In 1922 an Act was passed establishing a unitary teaching and residential University of Delhi, the buildings for which will be erected in the new capital. It is intended to provide a local university on the model recommended for Dacca by the Calcutta University Commission.

**WAR MEMORIAL.**—The All-India War Memorial stands at the southern end of the Central Vista, in the centre of the circular Princes' Park. It is in the form of a triumphal arch spanning Kingsway, the avenue running down the centre of the Vista. Generally similar to the Arc de Triomphe in Paris, it is yet simpler in a way that increases its grandeur and dignity. Over the arch, which is 160 feet high, on both fronts is the single word "India," and above the arch is a circular stone bowl 11 ft. in diameter, which will be filled with oil on great anniversaries and other occasions, so that there will be a shining fire by night and a column of smoke by day. The memorial is solely Indian in

conducted water from the canal to the Palace. In the Chandni Chalk are many of the best modern buildings of Delhi and it has long been the centre of the gold and silver work for which the city is famous.

**WATER SUPPLY.**—The source of the Imperial Delhi Water Supply is the River Jumna and after natural settlement the water is purified by the Paterson system.

The new purification works were, at the instance of Government engineering and medical authorities, installed at Chandrawal in 1920, and are designed for a maximum duty of 15,000,000 gallons per day.

#### VISITORS' GUIDE.

**CLUBS.**—Chelmsford Delhi—Civil Lines, Imperial Delhi—Gymkhana—Kingsway, Union—Queen's Garden.

**HOTELS.**—Apollo—Nicholson Road, Kashmir Gate, Civil and Military—Underhill Road, Civil Lines, Hotel Cecil, Maiden's Hotel—Alipore Road.

**MAIDEN'S HOTEL.**—Delhi. One of the most sumptuous hotels in the East, accommodating over 200 guests, with magnificent public rooms which have been the scene of many notable functions. Cables "Maidens," Delhi Controlled by The Associated Hotels of India, Ltd. (See notice following "Simla," p. 74).

# FINANCE, BANKING, and INSURANCE

## FINANCE

**3** INDIA, in common with other countries, suffered derangement in her economy from the aftermaths of the War, a fact which was reflected in a period of five years of unbalanced Budgets. Since then, however, financial equilibrium has been restored, a steady revival in trade has taken place, and her prospects of commercial and industrial expansion are now extremely favourable.

Before proceeding further, certain general conditions which regulate the finances of the country require a short explanation. India has large commitments in London which require annual payments of from £25,000,000 to £30,000,000. The major portion of this sum represents the interest on capital which India has borrowed for the purpose of internal developments, whence she derives great profit. A second item is payment for Government stores which cannot be obtained in India. This head is destined gradually to disappear as the new policy of purchase in India gains ground. Third come the payments made to England for the leave allowances of Government servants and for their pensions after they have retired, while the fourth is the cost of maintaining the High Commissioner for India, who discharges functions in England similar to those of High Commissioners representing the self-governing Dominions. Occasionally these commitments in London are swollen by special items. For example, the estimates for the year 1924-25 provided for a total disbursement by the Secretary of State and the High Commissioner for India of a sum of £50 millions. Of this amount, £18½ millions represented the Last Indian Railway Debentures taken over by the Secretary of State on the termination of the Company's contract. Other items were £7½ millions on account of railway capital outlay, £2½ millions representing expenditure on behalf of Provincial Governments, and £2 millions for the discharge of debentures and issues under deposits and advances. The net expenditure of the Government of India in England in excess of revenue there received accounted in 1924-25 for £25½ millions and in 1925-26 for nearly £25 millions.

From the internal aspect, also, India's financial system presents certain peculiarities. Direct taxation, in the ordinary sense of the word, bulks far less largely in her Budget than in the revenues of many other countries. For example, out of the total estimated revenue for 1925-26 of Rs 130.6 crores, only Rs 17.34 crores is derived from the direct taxation of income. Government incomings are drawn principally from such indirect means as Customs, Salt, Railways, Currency and Mint profits and Irrigation. Further, since India is still predominantly agricultural, the revenue of the country is largely influenced by the character of the season, although, in this connection, the separation of the railway finance from the general finance of the country will probably reduce

in some degree the element of uncertainty which previously characterised financial predictions. As time goes on it may be hoped that the Indian Budget will cease to merit the cynical description of it as "a gamble in rain", but so long as three out of every four persons gain their living directly from the soil, the influence exerted from year to year upon the prosperity of the country by the nature of the monsoon must continue to remain a financial factor of no ordinary importance.

**BUDGETS.**—The deficits in connection with the first five Budgets following the conclusion of the World War ranged from Rs 5.73 lakhs to Rs 27.05 lakhs in amount. The last of these Budgets was that for the financial year ending March 31, 1923, when the deficit amounted to Rs 15,01,76,000. During the period of economic depression the Incheape Retrenchment Committee had sat and issued its report which not only recommended reductions in expenditure amounting in the aggregate to Rs 18 crores, but also advised the doubling of the Salt Tax, which has always been unpopular in India. The political effects of the Viceroy's "certification" of the higher Salt Duty do not come within the province of this article, it is here sufficient to say that after twelve months it was reduced to its former level. Fortunately, too, at this point in India's history financial equilibrium was established, and a surplus of Rs 2.39 crores realised on the Budget of 1923-24. In the following year this marked improvement in the financial position was maintained, there was a steady revival of trade, the surplus reaching the total of Rs 3.09 crores. Great economy in expenditure had been exercised, particularly in respect of military expenditure, and there were notable increases in Customs receipts, as also in the contribution from Railways to general revenues.

For the year 1925-26 the Budget closed, in spite of a less favourable monsoon, with a realised surplus of Rs 130 lakhs (£975,000), after appropriating two crores to the relief of the provincial contributions.

A noteworthy feature of the 1926-27 Budget was the abolition of the cotton excise duty, which it is estimated will cost the Government 175 lakhs. For the year named the estimated revenue was Rs 133.43 crores (£100,072,500) and expenditure Rs 130.38 crores (£97,785,000), leaving a surplus of Rs 305 lakhs (£2,287,500). A further relief of provincial contributions to the extent of Rs 125 lakhs was also announced.

**CENTRAL AND PROVINCIAL FINANCE.**—As between the Central and Provincial Governments the financial arrangements were, until recently, somewhat complex. Formerly, all revenues went into the coffers of the Government of India, whose sanction was requisite for any considerable expenditure. This system developed into the plan of "divided heads." The Budget of the Government of India still included the transactions of the local Governments, but

the revenues enjoyed by the latter were mainly derived from sources of income which they shared with the Central Government. The reformed Constitution has introduced a complete separation between the finances of the Central and Provincial Administrations. Land revenue, Irrigation, Excise and Stamps have become provincial sources of revenue, the Government of India still retaining such important heads as Customs and Taxes on Income and Salt as well as the profits derived from Railways, Irrigation, Currency and Mint Charges, Posts and Telegraphs and other Central Services.

**CONTRIBUTIONS (PROVINCIAL).**—When the division of the sources of revenue was made between the Central and Provincial Governments, it was realised that the Central Government would be left insufficiently provided. It was therefore arranged that an annual contribution should be made by eight of the local Governments to the Central Government. The annual contributions fixed at the outset aggregated 9.83 crores of rupees. They were not, except in cases of emergency and with the sanction of the Secretary of State, to be subject to increase, and, should reduction of the aggregate be found possible, reductions were to be made in fixed proportions from the quotas of the several Provinces. The general policy which it is intended to pursue in the matter is a progressive reduction of provincial contributions with a view to their ultimate cessation. As special measures, the annual contribution of Rs 0.3 lakhs by the Province of Bengal has been remitted for a total period of six years with effect from 1922-23, and for 1925-26 a reduction of Rs 50 lakhs in the aggregate was made in favour of certain provinces.

**CURRENCY AND EXCHANGE.**—The principal coin in use in India is the silver rupee containing 165 grains of fine silver and 15 grains of alloy, the weight in all being 180 grains troy. Up to 1893 the Indian Mints were open by law for the unrestricted coinage of silver into rupees. Owing, however, to the almost continuous fall in the value of the rupee from 1871 to 1893, legislation in the latter year closed the Mints to the public with a view to eventually fixing the exchange. For a time the rupee continued to fall, but subsequently it rose, and between 1898 and 1910 was practically stable at 15.4d. The Act of 1899 made the British sovereign legal tender in India at the ratio of 15 rupees to the sovereign, the rupee, however, remaining also legal tender to any amount, but the ratio was altered to 10 rupees in 1920. In 1907 it was decided that half the profit on silver coinage should be applied to capital expenditure on railways, the other half of the profit and the whole of the interest being added to the Gold Standard Reserve. In June 1912 it was decided that no portion of the profit was to be used for railway purposes until the total sterling assets of the Gold Standard Reserve amounted to £25,000,000. Since April 1, 1921, the

interest on investments in the Gold Standard Reserve, when that reserve reaches £40,000,000, has been appropriated in reduction of rupee securities created for the special purpose of the Currency Reserve. The total receipts from profit on coinage, interest and discount, also profit by exchange up to March 31, 1925, amounted to £48,513,000. Of this sum, £1,123,055 has been used for capital expenditure on railways, the remainder has been paid to the Gold Standard Reserve for the purpose of maintaining the rate of exchange between England and India. On March 31, 1925, the investments of this fund in sterling securities amounted to £39,996,814 (estimated value), while £3,186 was held in cash in India.

**PAPER CURRENCY.**—India has a paper currency. The 1, 2½, 5, 10, 50 and 100 rupee notes are legal tender everywhere in India, but other notes only within their circles of issue.

**TABLE OF CURRENCY.**—In addition to the silver rupee, copper, bronze, and nickel coins are also in circulation. The table of coinage is as under:—

The pie = one-third of a pice or one twelfth of an anna.  
The half-pice = one-eighth of an anna.  
The pice (3 pie) = a quarter-anna.  
The double pice = a half-anna (4 pice, or 12 pie = 1 anna and 16 annas = 1 rupee).

#### CURRENCY COMMISSION (REPORT OF).

During the last thirty-five years no fewer than five formal inquiries have been held by expert bodies into the question of Indian currency. More than one of these commissions suggested the establishment of a Gold Standard, but the recommendation of the Committee presided over by the late Sir Henry Babington-Smith in 1919 that the gold value of the rupee should be fixed at 2s proved to be so impracticable that the attempt to carry it out was abandoned in 1921. Between August of that year and September 1924 the rupee fluctuated between 11½d and 1s 3½d gold, yet the Government maintained its determination to establish a higher rate than 1s 4d gold. From October 1924 the rupee exchange was maintained at 1s 6d sterling (which was less than 1s 6d gold), and it was not until the middle of 1925 that the rupee was worth 1s 6d in gold. The Babington-Smith Committee in 1919 had made the mistake of basing its recommendations on the assumption that the high level of prices then current might last. Within a few months of the issue of its report prices had collapsed all over the world, and their tendency still remains downward.

The failure of the 1920 inquiry rendered a fresh attempt inevitable as soon as economic conditions had become stabilised. Commander Hilton Young was accordingly appointed Chairman of another Commission, with Sir Henry Strakosch as the chief gold expert, and the terms of reference were comprehensive. The Report of this Commission, which was issued in August 1926, makes an exhaustive survey of the Indian currency system, and contains recommendations of singular importance. Its outstanding features are the advocacy of a gold standard for India and the creation of a distinct Central Reserve Bank and Bank of Issue.

**GOLD STANDARD.**—The Commission's recommendation of a gold standard is in the following terms:—

"We have already arrived at the conclusion that, in order to secure public confidence in India, the currency of the country

must be linked with gold in a manner that is real and conspicuously visible, or, in other words, that it is necessary to establish a true gold standard. It should be understood that this does not necessarily imply a gold currency. It is possible to have a true gold standard under which the currency is based on gold both in reality and in a manner that is conspicuously visible without putting gold into circulation. Having stated our reasons for rejecting the principal proposal for a gold standard with a gold currency that has been suggested to us, we proceed to deal with the method of the establishment of the gold standard which is recommended for adoption. The essence of the proposal which we proceed to develop is that the ordinary medium of circulation in India should remain as at present the currency note and the silver rupee, and that the stability of the currency in terms of gold should be secured by making the currency directly convertible into gold for all purposes but that gold should not circulate as money. It must not circulate at first, and it need not circulate ever."

**POSITION OF SILVER.**—The Commission declares itself "wholly opposed to any such alteration in the legal tender character of the silver rupee" as was involved in the scheme suggested by the Finance Department of the Government of India, basing its objection on the following grounds:—

"The people of India have from time immemorial placed their trust in silver as the medium of exchange and as their store of value. They are deeply interested in the value of silver bullion, and it is contrary to their interests to depreciate it. The present proposals would inflict heavy losses on the poorer classes, who have put their savings into silver ornaments and who would find their stores of value depreciated by perhaps 50 per cent by the action of Government. It might well happen that, when it was seen that the price of silver was doomed to fall, there would be a tendency to change over from silver to gold in all parts of the world where silver is still held in large quantities as a store of value. It is proposed in the scheme to protect the value of the Indian holdings of silver against this inevitable depreciation by an import duty. Quite possibly if it were a very heavy duty it might protect them to some extent. If it did it would put the Government of India under a moral obligation to maintain the price of silver for practically all time, for at the completion of the plan it would have sold nearly 700 million ounces of silver to the people at a price that was possibly double the world price. In our opinion, however, the effort to maintain the domestic price of silver irrespective of world price would probably fail."

The Commission proposes to make rupees and other coin freely available to the public in such quantities as may be required for circulation. It further proposes that the present silver reserves be reduced to 25 crores, which would mean a disposition in some ways of approximately 250,000,000 ounces, but recommends that this reduction be spread over ten years. It says that a sufficient amount of coin must be kept in reserve to provide for the ebb and flow of rupees in circulation, but adds: "Our recommendation implies that the coinage of silver rupees should be stopped for a long time to come, until the amount of silver rupees in circulation is reduced to the amount required for small change."

To sum up, the Report seems to look forward to the gradual reduction of the rupee

to small change, with paper notes, redeemable in gold, to constitute the body of the currency. The immediate effect upon the silver market may be lessened by the slow process of the Commission's scheme, but the policy clearly looks to a diminishing use of silver in the monetary system of India.

**RESERVE BANK.** The Report recommends the establishment of a Reserve Bank to serve as a central institution of re-discount for the other banks, and to issue and redeem the paper currency, serve as banker to the Government and perform the usual functions of a banking institution. It shall do no business with the public, thus being the principal reason for not adopting the proposal to develop the Imperial Bank of India as the central institution. The latter has a very large and profitable commercial business, and its shareholders will probably prefer that it shall continue as it is.

**STABILISATION OF THE RUPEE.**—The Report recommends the stabilisation of the rupee currency at 1 shilling 6 pence, on the ground that this rate has been practically maintained for such a length of time that internal prices are generally adjusted to it. The employing industries urged a lower rate (1 shilling 4 pence) on the ground that it would aid them in their competition with imported goods.

There has already been manifested a sharp division of opinion in India upon this point. The higher rate for the rupee naturally will be to the advantage, at least temporarily, of those having payments to make abroad, either upon indebtedness or for imported goods, while the low rate is generally favoured by manufacturers competing with imported goods.

Immediately following the publication of the Report the India Office announced that it would lay proposals before the Legislature concerning the stabilisation of the rupee and the arrangements to be adopted during the period which must elapse before the central bank can be brought into being. Meanwhile, in order to remove any uncertainty, the Government of India announced that it would take such steps as might be necessary to prevent any undue fluctuation in the exchange value of the rupee, in order to confine the movements of the exchange within the approximate upper and lower gold points as calculated on the basis of a 1s 6d gold rupee—viz., 1s 6½d and 1s 5½d respectively.

**LOANS.**—A feature of the Budget statement of 1926 was the announcement that no India loan would be necessary in Great Britain in that year. This made the third year in which India had abstained from borrowing in the Home market. In one sense this may be taken as an indication of the growing financial power of the country. In the financial year ended March 31, 1926, instead of borrowing over seven crores of rupees net in India, as was anticipated in the Budget statement, she discharged two crores net of the market debt in India and paid off 5·7 crores of debt in England. In addition, 30 crores of new capital expenditure were financed and a conversion loan was successfully floated. The capital programme for 1926-27 provided for the redemption of 24 crores of maturing debt and 35½ crores of new capital outlays. In May 1926 a new loan of 25 crores was issued in India, and was immediately over-subscribed.

**PUBLIC DEBT.**—The table at the head of the succeeding page shows the actual debt position of India on March 31 of the years named respectively (figures in crores of rupees):—

IN INDIA —	1924	1924	1925
Loans	145 69	158 81	370 18
Treasury bills in hands of public	—	2 12	—
Treasury bills in paper currency reserve	—	49 65	49 65
Other obligations	34 10	72 41	82 10
Total in India	179 79	482 99	501 93
IN ENGLAND (at Rs 15 to £) —			
Loans	265 60	366 80	395 33
War contribution	—	28 90	28 20
Capital value of liabilities undergoing redemption by way of terminable railway annuities	105 90	90 14	88 25
	( 170,000,893)	( - 60,095,487)	( - 58,836,487)
Total in England	371 50	485 84	511 78
Total debt	551 29	968 83	1,013 71

These figures include the debt due by the Provincial Governments to the Government of India, amounting to Rs 106.95 crores on March 31, 1925. The productive debt on the same date was Rs 725.15 crores, the unproductive debt Rs 288.56 crores, the increase in the productive debt during the financial year 1924-25 was Rs 42.17 crores, almost entirely accounted for by railway development. Unproductive debt increased by Rs 6.08 crores, but the real figure was still larger by Rs 1½ crores through conversion. The increase in the external debt was purely nominal, because the figure included the sum of 118½ millions of East India Railway Company's debentures, which were not a real increase in debt, but necessitated by the acquisition of the property of the East India Railway on buying out the old company's share. Apart from nominal changes, the external debt was reduced during 1924-25 by nearly 2½ millions.

**REVENUE AND EXPENDITURE.**—The following table shows the items of revenue and expenditure of the Central Government in India and England for 1925-26 as compared with 1924-25 —

REVENUE	1924 25 Rs	1925 26 Rs
Principal Heads of Revenue		
Customs	44,70,44,000	46,35,00,000
Taxes on income	16,47,26,000	17,34,87,000
Salt	7,73,78,000	6,95,00,000
Opium	3,68,30,000	3,55,85,000
Other heads	2,08,21,000	2,23,14,000
Total principal heads	74,73,99,000	76,43,86,000
Railways Net receipts	34,19,37,000	33,89,44,000
Irrigation Net receipts	8,91,000	10,42,000
Posts and Telegraphs Net receipts	91,14,000	68,11,000
Interest receipts	3,79,59,000	3,60,44,000
Civil Administration	70,70,000	72,60,000
Currency, Mint and Exchange	3,94,93,000	4,08,07,000
Civil Works	12,12,000	10,18,000
Miscellaneous	33,50,000	43,21,000
Military receipts	4,16,96,000	4,01,17,000
Provincial contributions and miscellaneous adjustments between Central and Provincial Governments	9,25,16,000	6,22,14,000
Extraordinary items	2,55,89,000	38,33,000
Total revenue	1,34,82,26,000	1,30,67,97,000

EXPENDITURE	1924 25 Rs	1925 26 Rs
Direct demands of the revenue	5,66,73,000	5,61,84,000
Railways Interest and miscellaneous charges	28,55,02,000	28,65,58,000
Irrigation	21,91,000	17,79,000
Posts and telegraphs	— 62,000	— 28,17,000
Debt services	17,92,04,000	18,18,06,000
Civil administration	10,26,87,000	10,97,98,000
Currency Mint and Exchange	73,20,000	73,47,000
Civil Works	1,93,27,000	1,68,47,000
Miscellaneous	4,47,95,000	4,01,91,000
Military services	60,49,96,000	60,26,17,000
Miscellaneous adjustments between the Central and Provincial Governments	56,32,000	15,74,000
Extraordinary items	—	25,00,000
Total expenditure charged to revenue	1,30,82,68,000	1,30,43,84,000
Surplus	3,99,58,000	24,13,000
Total	1,34,82,26,000	1,30,67,97,000

**REVENUE AND EXPENDITURE (PROVINCIAL GOVERNMENTS).**—The following tables show (a) the items of revenue and expenditure of the ten Provincial Governments for 1925-26 (Budget estimates), and (b) the Budget estimates of each Government for the same year —

(A) REVENUE AND EXPENDITURE OF PROVINCIAL GOVERNMENTS 1925 26	Rs
REVENUE	
Land revenue	36,38,85,000
Stamps	12,97,71,000
Excise	19,86,19,000
Taxes on income	23,50,000
Forests	5,58,87,000
Registration	1,28,74,000
Scheduled taxes	31,50,000
Interest	2,18,10,000
Receipts by Civil Debt	3,37,75,000
Miscellaneous	1,83,59,000
Railways	2,44,000
Irrigation	6,09,99,000
Civil Works	65,10,000
Assignments and contributions	21,08,000
Extraordinary items	69,21,000
Total	91,72,71,000

EXPENDITURE	Rs
Land revenue	4,13,08,000
Stamps	34,27,000
Excise	2,49,94,000
Forests	3,54,90,000
Registration	69,12,000
Scheduled taxes	36,000
Assignments and contributions	6,51,10,000
Interest	3,46,99,000
Salaries, etc	49,75,10,000
Miscellaneous	7,37,38,000
Railways	1,68,000
Irrigation	5,19,42,000
Civil Works	9,73,98,000
Extraordinary items	1,00,000
Total	93,28,32,000

(B) BUDGET ESTIMATE OF PROVINCIAL GOVERNMENTS, 1925 26	In Lakhs of Rupees	Surplus or Deficit
Madras	1,652	1,622 + 30
Bombay	1,610	1,706 - 96
Bengal	1,045	1,067 - 22
United Provinces	1,282	1,232 + 50
Punjab	1,140	1,081 + 59
Bihar and Orissa	544	579 - 35
Burma	1,040	1,166 - 126
Central Provinces and Berar	557	550 + 7
Assam	244	241 + 3
Coorg	14 5	15 - 5
Total	9,128 5	9,250 - 131 5
Less contributions to Central Government	620	620 —
	8,508 5	8,630 - 130 5

**EXPENDITURE (CAPITAL).**—The estimated capital expenditure of the Central Government on State railways in 1925-26 was Rs 26,43,33,000 and the initial expenditure on New Delhi Rs 1,55,00,000.

The capital expenditure of the Provincial Governments during the same year totalled Rs 11,82,90,000.

**REVENUE (DETAILS OF).**—The following table shows the receipts of both the Central and Provincial Governments from the most important sources of revenue —

	1924 25 Rs	1925 26 Rs
Land (1)	36,28,20,000	36,77,20,000
Opium	3,68,30,000	3,55,80,000
Salt	7,73,80,000	6,95,00,000
Stamps	13,10,00,000	13,24,90,000
Excise (2)	19,22,40,000	20,30,40,000
Customs (3)	44,76,50,000	46,35,00,000
Taxes on income	16,68,60,000	17,58,40,000
Railways (net receipts)	34,22,20,000	33,91,80,000
Irrigation	5,78,00,000	6,20,50,000
(1) — Exclusive of portion of Land Revenue due to irrigation		
(2) — The Excise revenue is derived from intoxicating liquors, hemp drugs, and opium consumed in the country. The bulk of the revenue comes from spirits. The excise system and rates of duty vary from province to province.		
(3) — Liquors, petroleum, sugar, tobacco, cotton manufactures, metals and manufactured articles are the chief items from which customs revenue is derived. Under this head are also included the proceeds of export duties on rice, jute, tea and hides, and of excise duties on motor spirit and kerosene.		



**TAXATION.**—If taxation proper be divided among the population of British India, without allowing for certain portions of Salt, Excise and Customs duties which fall on persons in the Indian States, the burden in a recent year was estimated at Rs 4 per head, or, if land revenue (which is akin to rent) be added, Rs 5 4 per head. The excess profits duty of 50 per cent imposed in 1919-20 was discontinued in the following year, at the same time that the super-tax law was amended. Taxation proper is now confined to income tax (and super tax), land revenue and the taxes on opium and salt.

**INCOME TAX.**—The income tax was first imposed in India in 1860, in order to meet the financial dislocation caused by the Mutiny. It was levied at the rate of 4 per cent, or a little more than 9½d in the pound on all incomes of Rs 500 and upwards. Many changes have from time to time been made in the system, and since the War the process of revising and raising the schedule has been almost continuous. The present scale is as follows—

(a) In the case of every individual, every unregistered firm and every undivided Hindu family—

- (1) When the total income is less than Rs 2,000—Nil
- (2) When the total income is Rs 2,000 or upwards, but is less than Rs 5,000—Five pies in the rupee
- (3) When the total income is Rs 5,000 or upwards, but is less than Rs 10,000—Six pies in the rupee
- (4) When the total income is Rs 10,000 or upwards, but is less than Rs 20,000—Nine pies in the rupee
- (5) When the total income is Rs 20,000 or upwards, but is less than Rs 30,000—One anna in the rupee
- (6) When the total income is Rs 30,000 or upwards, but is less than Rs 40,000—One anna and three pies in the rupee
- (7) When the total income is Rs 40,000 or upwards—One anna and six pies in the rupee

In the case of every company, and every registered firm whatever its total income—One anna and six pies in the rupee

Super-tax is leviable in addition to ordinary income-tax on incomes of individuals and registered firms above Rs 50,000, also of Hindu undivided families above Rs 75,000, at 1 to 6 annas in the rupee, and on the taxable incomes of companies at a flat rate of 1 anna in the rupee

The head of the Income Tax Department of a province is the Commissioner of Income Tax, who is appointed by the Governor-General in Council

The estimated yield of income tax in 1925-26 was Rs 17,34,87,000, compared with Rs 16,47,26,000 in 1924-25

**LAND REVENUE.**—Land revenue, which is derived from the permanent or temporary settlement of land, of which the Government is the supreme landlord, is now a provincial head of revenue and is not shown in the All-India accounts. It may be taken to yield roughly £28,000,000 per annum

**OPIUM TAX.**—Opium is largely consumed in India, mostly in the form of pills, and opium smoking also prevails in the city of Bombay and other large towns. The general practice is to sell opium from the Government Treasury, or a central warehouse, to licensed vendors. The right of retail to the public is sold by annual auction to one or several sanctioned shops. The estimated opium revenue in 1925-26 was Rs 3,55,85,000, but the Government is now initiating steps which will ultimately lead to the disappearance of Rs 200 lakhs per annum of this revenue through the progres-

sive reduction and eventual extinction of exports (See also under "Agriculture" and "Commerce")

**SALT TAX.**—See under "Customs"

**TAXATION INQUIRY COMMITTEE.**—In 1924 a strong Committee was appointed by the Government of India to inquire generally into the system of Indian taxation, to report on the suitability of alternative schemes of taxation, and to advise as to the machinery required for the imposition, assessment and collection of taxes, old and new. In March 1926 the Committee issued a unanimous report, the main features of which are as follow—

The proposal to levy an export duty on raw cotton is condemned as unsound, on the ground that the proper way to protect the mill industry is to increase the import duty on manufactured cotton goods. Increases in the export duty on rice and jute are not favoured, and the removal of the export duty on hides is recommended. A tax on patent medicines is proposed, and, generally speaking, the report concerns itself largely with the increasing or decreasing of duties on imported articles

## BANKING

India, with an area two-thirds that of the United States, with a population three times as large, and with a volume of foreign trade which places it in rank just below the first half dozen countries of the world, has only 936 officially recognised banks, including branches, compared with about 30,000 in the United States. This elementary banking development is partly the cause and partly the effect of the prevalence of hoarding in India. Although during the ten years 1915 to 1924 inclusive bank deposits more than doubled, and although the number of institutions nearly trebled, progress in the development of banking facilities is still very slow; indeed, the slight progress achieved recently has been owing almost entirely to the activity of the Imperial Bank of India and to the growing popularity of co-operative banking

**BANK RATE.**—Formerly each Presidency Bank fixed its own bank rate, and the rates were not uniform. Now the Imperial Bank fixes the rate for the whole of India. The rate fixed represents that charged by the Banks on demand loans against Government securities only, and advances on other securities or discounts are granted as a rule at a slightly higher rate. Ordinarily such advances or discounts are allowed at from one-half to one per cent over the official rate, but this does not always apply, and in the monsoon months, when the Bank rate is sometimes nominal, it often happens that such accommodation is granted at the official rate or even less

Since the Imperial Bank was constituted the average Bank rate ranged from 6.038 in 1921 to 7.419 in the early part of 1923, dropping to 4.5 in the same year and rising again to 8.05 in 1924. In 1925 there was a reduction from 6 per cent to 5 per cent, and in May 1926 the rate was still further reduced to 4 per cent

**CLEARING HOUSES.**—The principal clearing houses in India are those of Calcutta, Bombay, Madras, Rangoon, Colombo (Ceylon) and Karachi, and of these the first two are by far the most important. The members of these places consist of the Imperial Bank, most of the Exchange Banks and English Banking Agency firms; also a few of the better known of the local Joint Stock Banks. No Bank is entitled to claim to be a member as of right, and any application for admission to a Clearing House must be proposed and seconded by two members and be subject thereafter to ballot by the existing members.

The duties of a settling bank are undertaken by the Imperial Bank at each of the places mentioned, and a representative of each member attends at the office of that Bank on each business day at the time fixed to deliver all cheques he may have negotiated on other members and to receive in exchange all cheques drawn on him negotiated by the latter. Debtor and creditor balances are thereafter settled by means of cheques drawn on or by the settling bank

**CO-OPERATIVE BANKS.**—Co-operative banking in India, which had its inception in 1904, when the Co-operative Credit Societies Act of that year was passed, has since grown to such an extent that central and provincial co-operative banks at the beginning of 1926 numbered 530. The growth of the system was slow at first, there being only 17 banks in operation in 1912, but subsequent modifications of the law acted as a stimulus to the movement, with the result that two years later, in 1914, there were 194 in operation. About that time the MacLagan Committee was organised, which, after thorough investigation, made a report recommending certain changes in the operations of the societies. Most of the Provinces adopted these recommendations and from that time the growth of the co-operative movement has been very rapid. The total capital of the 530 central and provincial banks amounted, on January 1, 1926, to over Rs 50,00,00,000

The cost of administration of these banks and societies is very low—one per cent of the working capital for the provincial banks in the Bombay Presidency, two thirds per cent for all the other provincial banks, and a little under one per cent for the central banks. The institutions obtain their funds at rates varying from 5 to 8 per cent, and re-issue them to the affiliated societies at rates varying from 7 to 12½ per cent. Dividends range from 5 to 9 per cent

**LAND-MORTGAGE CREDITS.** The co-operative banks of India are at present studying the question of land-mortgage credits. The principle of the system has been accepted, but the details of its operation have not yet been worked out. Particular problems demanding solution are those of determining the agency through which the loans should be advanced, the area to be served by each bank, whether the debentures issued should be marketed by the small local banks or through the existing provincial banks, and the method of issuing and marketing mortgage bonds

**EXCHANGE BANKS.**—The banks carrying on exchange business in India (at present 18 in number) are merely branch agencies of banks having their head offices in London, on the Continent or in the Far East and the United States. Originally their business was confined almost exclusively to the financing of the external trade of India, but in recent years most of them, while continuing to finance this part of India's trade, have taken an active part in the financing of the internal portion also at the places where their branches are situated. The following are the leading exchange banks doing business in India—

**BANCO NACIONAL ULTRAMARINO.**—This is the State Bank of the Portuguese Colonies, operating from Lisbon with a paid up capital of Esc 30,000,000 and reserves amounting to Esc 40,000,000. The Indian branches are at Bombay, Mormugao and Novo-Goa. (See also text of bank following in this section)

**BANK OF TAIWAN.**—The Bank of Taiwan was granted a special charter by the Japanese Government in 1899, with authority to issue its own notes in Formosa. It is well represented in India, and has also

branches in London and New York. A reconstruction scheme was authorised in 1925 (See p. 54.)

**CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA**—This well-known banking corporation, which is represented in every important city in the Far East, has its headquarters in London, with branch offices in Calcutta, Bombay, Madras and the great industrial centres of India. Founded in 1853 by Royal Charter, the bank has a capital of £3,000,000 and a reserve fund of £4,000,000. (See also text of bank following in this section.)

**EASTERN BANK, LIMITED**—Established in 1909, the Eastern Bank has eleven branches in India, Mesopotamia and Ceylon. Its principal business is in bills and exchange. The authorised capital is £2,000,000, paid up capital, £1,000,000, reserve fund, £360,000, reserve liability of shareholders, £1,000,000. The head office is in Crosby Sq., Bishopsgate, London. (See p. 54.)

**HONGKONG AND SHANGHAI BANKING CORPORATION**—The Hongkong and Shanghai Banking Corporation was established in 1867. It has in all 39 branches and agencies, most of which are in the Far East, but in addition to London it maintains offices at New York, San Francisco, and Lyons. (See also text of bank following in this section.)

**IMPERIAL BANK OF PERSIA**—Incorporated by Royal Charter in 1889 this important bank, whose head office is at 33-36 King William Street, London, operates principally in Persia and Mesopotamia, with a branch at Bombay, where banking business of every kind is carried on. (See also text of bank following in this section.)

**INTERNATIONAL BANKING CORPORATION, LIMITED**—Owned by the National City Bank of New York this Corporation does a large banking and exchange business in Bombay, Calcutta and Rangoon. (See p. 54.)

**LOYDS BANK LIMITED**—An interesting event in Indian banking history is the recent entry into the field of one of the English "Big Five," brought about by the acquisition of the old-established business of Cox and Co. by Lloyds Bank, whose authorised capital is £74,000,000. Besides the large banking premises in Bombay and Calcutta, the institution has important branches at Karachi, Rangoon, Rawalpindi, Delhi, Simla, Srinagar, etc. (See also notice of bank following in this section.)

**MERCANTILE BANK OF INDIA, LIMITED**—This bank was formed in 1892 to acquire the business of the old Chartered Mercantile Bank of India, London, and China, whose charter was granted in 1858. In 1916 it took over the Bank of Mauritius. Head office, 15, Gracechurch Street, London. (See text of bank following in this section.)

**NATIONAL BANK OF INDIA, LIMITED**—The National Bank, established in India in 1863, was registered as a British company in 1866. In addition to its Indian offices it has a number of branches in Kenya, Uganda, and Tanganyika Territory. The subscribed capital is £4,000,000, paid-up capital £2,000,000, and reserve fund £2,850,000. (See also text of bank following in this section.)

**NETHERLANDS TRADING SOCIETY**—This well-known Dutch bank, which has a fully paid-up capital of Fl. 80,000,000 and a statutory reserve fund of Fl. 21,117,340, has its headquarters in Amsterdam and its Eastern head agency at Batavia. The Indian branches of the bank are at Calcutta, Bombay and Rangoon. (See also text of bank following in this section.)

**P & O BANKING CORPORATION, LIMITED**—Established under the auspices of Lloyd's, the Westminster and the National Provincial Banks and the P & O Steam Navigation Company in 1920, the P & O Banking Corporation acquired virtually the whole capital of the Allahabad Bank in the following year. It does a general banking business, but makes a speciality of letters of credit. (See also text of bank following in this section.)

**YOKOHAMA SPECIE BANK, LIMITED**—This Bank, established in 1880 in Japan, has now 39 branches spread over the world. In London it acts as the agent of the Bank of Japan. No person not a Japanese can hold shares in the company. The subscribed and fully paid up capital is Yen 100,000,000, and the Reserve Fund Yen 80,500,000. London office, 7 Bishopsgate. (See also text of the bank following in this section.)

**IMPERIAL BANK OF INDIA**—The Imperial Bank was constituted under a special Act of 1920 to take over the business of the three Presidency banks of Bombay, Bengal and Madras. It keeps the Government accounts and in general acts for the Government both in India and in London. (See also text of bank following in this section.)

**JOINT-STOCK BANKING**. The development of joint-stock banking for the most part locally financed is comparatively recent. Although this type of bank was known in India as early as 1840, the greatest development dates from 1906, when the Indian Specie Bank (which has since gone into liquidation) was established. A period of rapid expansion followed, during which several institutions were organised with insufficient reserves and inexperienced management, in consequence of which a reaction set in and there were a large number of failures, no less than 34 per cent. of the total paid-up capital of these banks being lost through liquidation and failure between 1913 and 1917, while in three years 85 banks suspended operations. The total number, however, has continued to increase, and of the 69 banks in operation in 1925 with 500 branches, 28 were organised after 1913.

Of total deposits in all India in a recent year 40 per cent. were held by the Imperial Bank, 34 per cent. by the exchange banks, and only 26 per cent. by the joint-stock banks. This small share of business done by the strictly native institutions under private control and the steady decline in their operations in comparison with the other banks have aroused general anxiety.

**JOINT-STOCK BANKS**.—The following are the names of the better-known joint-stock banks in India—

**ALLAHABAD BANK, LIMITED**—This prominent banking institution, which is affiliated with the P & O Banking Corporation, Limited, was established in 1865 and operates from a head office in Calcutta, with numerous branches and sub-agencies. (See also text of bank following in this section.)

**BANK OF BARODA, LIMITED**—This bank, whose head office is at Sarkarwada, Baroda, acts as bankers to the Government of Baroda, and has established branches at Bombay, Ahmedabad, Surat, Bhavnagar and other centres. The subscribed capital is 60 lakhs of rupees, and the paid-up capital 30 lakhs. (See p. 54.)

**BANK OF INDIA, LIMITED**—With head office in Bombay, this bank has a subscribed capital of Rs 2,00,00,000, a paid-up capital of Rs 1,00,00,000, and a

reserve fund of Rs 76,00,000. There are branches of the bank at Calcutta and Ahmedabad. (See p. 54.)

**CINIRAL BANK OF INDIA, LIMITED**—This bank operates chiefly in the Presidencies of Bombay and Bengal, the United Provinces and the Punjab. The head office is in Bombay. The subscribed capital is Rs 3,36,00,000 and the paid up capital Rs 1,68,00,000, the reserve fund amounting to Rs 1,00,00,000. (See also text of bank following in this section.)

**KARACHI BANK, LIMITED**—Operating in the city of Karachi and vicinity, this banking institution has an authorised capital of Rs 5,00,000, subscribed capital, Rs 5,00,000, and paid-up capital Rs 2,50,000. (See p. 54.)

**PUNJAB NATIONAL BANK LIMITED**—The headquarters of this bank are at Lahore, and it has an authorised capital of Rs 1,00,00,000, subscribed capital, Rs 50,00,000, capital issued, Rs 50,00,000, capital paid up, Rs 30,84,370, reserve fund, Rs 25,50,000. (See also text of bank following in this section.)

**UNION BANK OF INDIA, LIMITED**—The head office of this bank is in Bombay, in which city there is a sub-branch. (See also page 39.)

**MOFUSSIL BANKS**.—Banking facilities in the provinces and back country are still inadequate, in spite of the great expansion in the activities of the Imperial Bank. Banking is concentrated in a few large cities, and great sections of the provinces are altogether without banks. It was recently stated that there were some 450 towns of over 10,000 population with no banking service available other than that provided by the local bannias, while over 70,000 villages are entirely out of touch with any financial institution.

In solving this problem two opinions are current—one favouring the establishment of big joint-stock banks with branches throughout the country, and the other favouring local independent banks organised and managed by native business men of the village or town. Because of the cost of management, the absence of liquid securities against which advances can be made, and the inability to modify banking practice to conform with local custom, the large institutions have shown little inclination towards expansion into country areas, while the ignorance of banking practice in the country and the difficulty of securing efficient management have prevented any great development of an individual banking system.

**PRIVATE BANKERS**.—Indian private bankers and shroffs flourished in India long before joint stock banks were thought of, and it is probable that they will continue to thrive for some considerable time. The "shroff" is in fact a kind of middleman between the banks and the small trading community, and in this capacity he brings a very considerable volume of business within the scope of the Presidency Banks Act, enabling the banks to give accommodation which, without his assistance, they would not be allowed to furnish. These shroffs are almost invariably men of high financial integrity and standing, their association with numberless small traders is a very close one, and it is said that the class of business they are concerned with is one of the safest in which the banks can engage.

To what extent native bankers and shroffs receive deposits and engage in exchange business throughout India is difficult to estimate, but there is no doubt that the system is very considerably practised.



## REPRESENTATIVE BANKING INSTITUTIONS.

### IMPERIAL BANK OF INDIA.

**Inception.**—The idea of a central banking establishment for British India, though mooted and discussed on many previous occasions, did not reach fruition until 1921, when (January 27) the Imperial Bank of India was constituted by the amalgamation of the three Presidency Banks of Bengal, Bombay and Madras. This event, of paramount importance in the history of Indian banking, was the outcome of a *rapprochement* of these institutions, desirous of consolidating and extending the system of banking in India.

**Control.** In accordance with the Imperial Bank of India Act (1920), the control of the concern is vested in a Central Board of Governors, with local boards at Calcutta, Madras, Bombay, and other places selected by the Central Board and sanctioned by the Governor-General. The latter authority is entitled to direct the procedure of the Bank regarding any matter which affects his financial policy or the stability of the Government balances. Since February 1925 the organisation has had a London Advisory Committee, upon which is represented the Governor of the Bank of England, and which was constituted to preserve close touch between the two great banks on matters of policy.

**Capital.**—The capital of the three Presidency Banks amounted to 3½ crores of rupees in shares of Rs 500 each, fully subscribed. The authorised additional capital was 7½ crores in shares of Rs 500, on each of which Rs 125 has been paid. The present capital of the Imperial Bank is therefore 11½ crores (Rs 11,25,00,000), of which, as on December 31, 1925, Rs 5,62,50,000 had been paid up. The reserve fund on the same date stood at Rs 4,82,50,000, and the reserve liability of shareholders at Rs 5,62,50,000.

**Official Operations.**—The Imperial Bank of India Act expressly defined the character of

the business in which the institution must engage. It provided that all the general banking transactions of the Government of India should be carried out by the Bank, which must hold all the Treasury balances at headquarters and at its branches. Within five years of its incorporation the concern undertook to open 100 new branches, the Government determining the location of one in every four. The management of the Public Debt was also entrusted to the Bank for specified remuneration.

**General Business.**—Among the general business transacted are the opening of current accounts free of charge, the receipt of fixed deposits and of savings bank deposits at interest. Government and other securities are received for safe custody, purchases and sales effected, interest and dividends collected and credited to account or remitted. Loans and cash credits are also granted, and approved mercantile bills discounted.

**Branches.** The local head offices of the Imperial Bank are situated at Calcutta, Bombay and Madras, and it maintains in addition, according to latest available information, 166 branches, 7 sub-agencies and 6 pay offices in India and Ceylon.

**Financial.**—**GOVERNMENT DEPOSITS.** The following shows in round figures the annual totals of Government deposits with the Imperial Bank since its inception: June 30, 1921, 22.20 lakhs of rupees; June 30, 1922, 16.72; June 30, 1923, 12.56; June 30, 1924, 22.08; June 30, 1925, 22.52.

**RECENT PROGRESS.** The statement below indicates in rough figures the progress made by the Bank during five years (the numbers signify lakhs of rupees):—

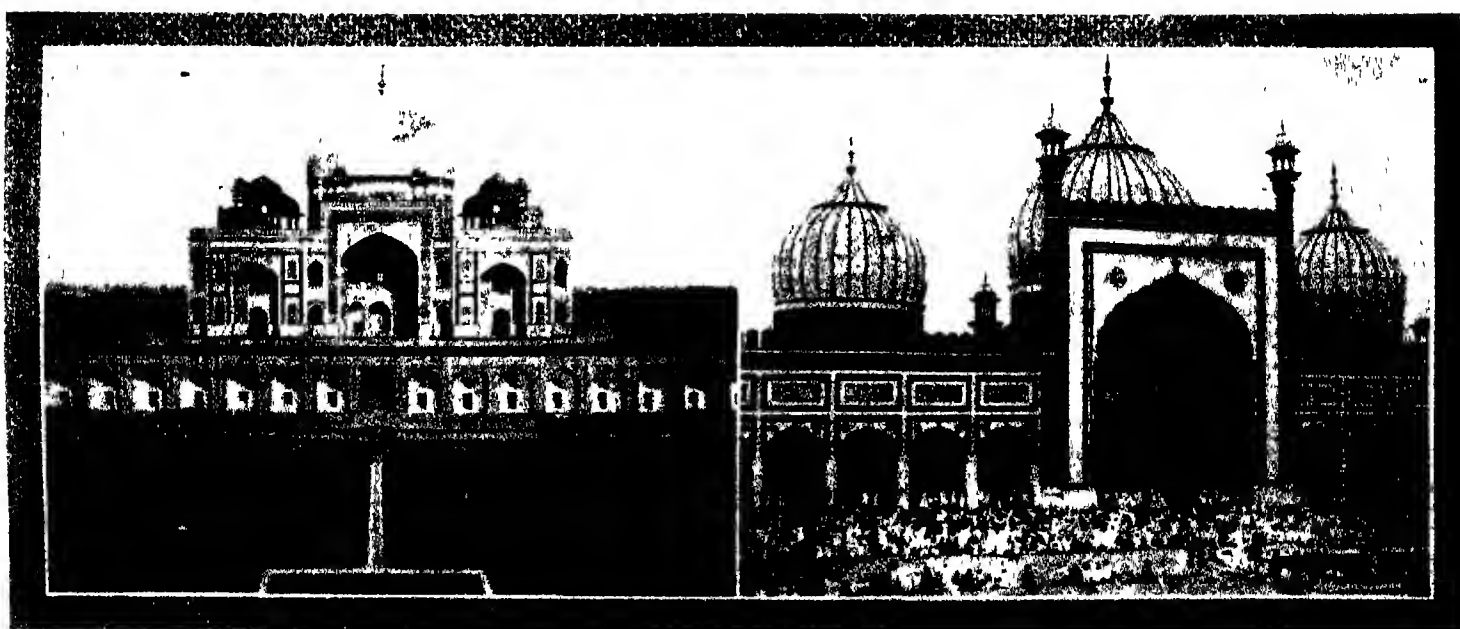
JUNE 30	CAPITAL	RESERVE	GOVERNMENT DEPOSITS	OTHER DEPOSITS	CASH	INVESTMENTS	DIVIDEND FOR YEAR
1921	547	371	22.20	70.16	34.34	16.52	16 per cent
1922	562	411	16.72	63.36	33.95	900	16 " "
1923	562	435	12.56	70.47	29.13	925	16 " "
1924	562	457	22.08	76.62	21.95	11.75	16 " "
1925	562	477	22.52	75.88	35.82	14.14	16 " "

**Calcutta Office.**—3, Strand Road, South (cables "Thistle," Calcutta).

**Balance Sheet.**—The following was the balance sheet of the Imperial Bank of India at June 30, 1925:—

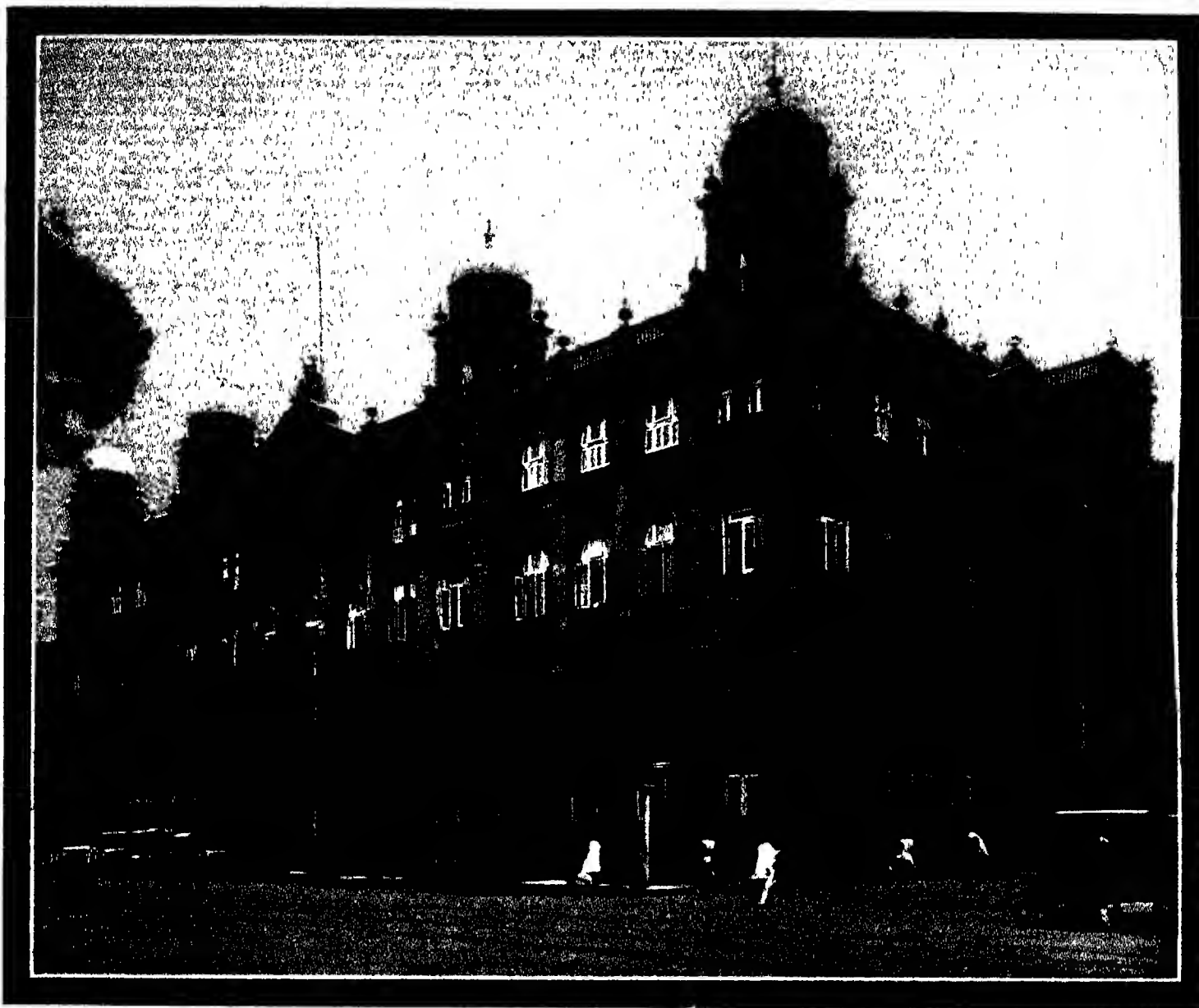
EXPENDITURE	Rs	a	p
Subscribed capital	11,25,00,000	0	0
Capital paid up	5,62,50,000	0	0
Reserve	4,77,50,000	0	0
Public deposits	22,52,81,052	8	5
Other deposits	75,88,03,099	0	3
Loans against securities per contra			
Loans from the Government of India under Section 20 of the Paper Currency Act, against Inland Bills discounted and purchased per contra			
Contingent liabilities			
Sundries	67,29,148	15	7
Total Rs	1,09,19,03,300	8	3
ASSETS	Rs	a	p
Government securities	12,91,07,533	14	11
Other authorised securities under the Act	1,22,09,878	10	0
Loans	17,33,75,317	6	8
Cash credits	1,03,60,400	3	8
Inland bills discounted and purchased	5,75,21,791	2	6
Foreign bills discounted and purchased	1,26,79,030	12	9
Bullion			
Dead stock	2,71,03,857	5	4
Liability of constituents for contingent liabilities per contra			
Sundries	47,61,060	8	5
Balances with other banks	20,92,200	11	1
	73,66,11,018	9	0
Cash	35,82,02,351	14	9
Total Rs	1,09,19,03,300	8	3

The above balance sheet includes Deposits in London, £1,250,093 3s 7d, advances in London, £1,183,493 17s 8d, cash and balances at other banks in London, £226,447 0s 4d.



1. HUMAYUN'S TOMB (A.D. 1560). This mausoleum covers the grave of the Emperor Humayun, and was built by his son.

2. JAMA MASJID, DELHI.



CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA  
The Bombay Premises.

#### CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA.

**Inception.**—This far-reaching institution now has to its credit nearly three-quarters of a century of progressive achievement. Its "enabling bill" was a Royal Charter granted in 1853 and subsequently renewed on different occasions, the last (1909) providing for an extension of 30 years. Under the terms of its original prospectus, the Bank was established chiefly to furnish legitimate banking facilities for the rapidly expanding trade between the Australian colonies, British East India, China and different parts of the Eastern Archipelago—a field hitherto untouched by any similar enterprise. At the same time it was resolved to extend banking accommodation to the direct trade of British India, China and Australia with the United Kingdom.

**Capital.**—The capital of the Bank stands at £3,000,000 in £5 shares, with a reserve fund totalling £4,000,000.

**Development.**—The objects governing the inception of this institution have been amply

fulfilled, with the sole exception that so far no office has been established in Australia. Elsewhere, however, the Bank's influence has penetrated to a much greater degree than was originally intended, business being conducted, in addition to India and China, in Japan, Netherlands East Indies, the United States, the Straits Settlements and Siam. Although chartered in 1853, the organisation did not commence operations until four years later, branches being opened at Bombay, Calcutta and Shanghai. Thenceforward activities have been extended constantly throughout the Far East, until to-day the name of the Chartered Bank is a household word.

**Activities.**—Among the chief operations of the Corporation are the granting of drafts payable at all its agencies and branches, the buying and collecting of bills of exchange, issuing of letters of credit, and transacting general banking business connected with the East. Deposits of money are received on terms which may be ascertained on application; interest is payable half-yearly, on

June 30 and December 31. On current accounts interest is allowed at 2 per cent per annum on the minimum monthly balances provided they do not fall below £200. The Bank is also prepared to undertake Trusteeships and Executorships.

**Indian Operations.**—The chief branch of the institution in India was established at Bombay in 1857, tenanted small offices at the corner of Ash Lane. In 1901 part of the building now occupied was completed, while considerable extensions thereto were finished in 1924. The whole of the Bombay Presidency, with the exception of Sind, is controlled from this office, the staff of which comprises 12 Europeans and 192 Indians. The branch at Calcutta occupies one of the most imposing office buildings in that city. Additional agencies and branches are in operation at Amritsar, Cawnpore, Delhi, Karachi, Madras and Peshawar.

**Directorate.**—Sir Montagu Cornish Turner (chairman), Henry Bateson, Colin Frederick Campbell, Sir William Henry Neville Goschen, K.B.E., Archibald Auldjo Jamieson, Edward



CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA  
Banking Hall, Bombay Office.

Fairbairn Mackay William Foot Mitchell  
M.P., Archibald Rose C.I.F. Lewis Alex  
ander Wallace, and Jasper Burtram Young  
Chief manager W. L. Preston, managers  
J. S. Bruce and G. Miller

**Offices.**—London (head office) 38  
Bishopsgate, E.C.2 Bombay Esplanade  
Road, Fort (cables 'Bungalow,' Bombay),  
Calcutta Chartered Bank Buildings  
(cables 'Constance,' Calcutta)

**Balance Sheet.**—The following are the  
balance sheet and profit and loss account of  
the Bank for the year ended December 31,  
1925 —

LIABILITIES	£	s	d
To Capital, 600,000 shares of £5 each, paid up	3,000,000	0	0
" Reserve fund	4,000,000	0	0
" Notes in circulation	1,931,942	10	6
" Current and other accounts including provision for bad and doubtful debts and contingencies	33,114,145	16	5
" Fixed deposits	17,820,135	16	0
" Bills payable —			
Drafts on demand and at short sight on Head Office and Branches £2,865,024 8 1			
Drafts on London and foreign bankers against security, per contra £94,110 3 1			
" Advances on account of customers	2,959,134	11	2
" Bills payable, against security, per contra	3,027,570	3	11
" Due to agents and correspondents	2,565,171	16	10
" Sundry liabilities, including rebates and exchange adjustments	1,258	3	7
" Profit and loss	1,490,311	1	1
Liability on bills of exchange re-discounted, £8,577,681 16s 4d, of which £7,508,269 11s 11d has run off at 15th March, 1926	756,778	4	6
Outstanding forward exchange contracts for purchase and sale of bills and telegraphic transfers, etc., £48,976,425 10s 4d	70,866,448	4	0

ASSETS	£	s	d
By Cash in hand and at bankers	5,648,448	8	9
Bullion on hand and in transit	1,855,861	4	2
Government and other securities	8,314,666	17	2
Security lodged against note issue and Government deposits	2,056,331	6	8
Bills of exchange	27,300,208	6	8
Bills discounted and loans	21,281,343	5	0
Liability of customers for acceptances, per contra	3,027,570	3	11
Due by agents and correspondents	91,323	3	7
Sundry assets	41,972	13	7
Bank premises and furniture at the head office and branches	1,025,720	14	0
	£70,866,448	4	0
PROFIT AND LOSS ACCOUNT	£	s	d
Dr To Interim dividend at 30th June 1925	210,000	0	0
Balance proposed to be dealt with as follows			
Dividend at the rate of 14 per cent per annum for the half year to date	£210,000 0 0		
Bonus of 6s 3d per share	£187,500 0 0		
Officers' superannuation fund	£25,000 0 0		
Bank premises	£125,000 0 0		
Carried forward to profit and loss new account	£209,278 4 6		
Cr By Balance at 31st December, 1924	756,778	4	6
Less Dividend for half year to 31st December, 1924 £210,000 0 0	£966,778	4	6
Bonus of 6s 3d per share	783,123	11	8
Reserve fund			
£187,500 0 0			
£100,000 0 0			
Officers' superannuation fund			
£25,000 0 0			
Bank premises			
£125,000 0 0			
	572,500	0	0
" Net profits for the year, after deduction of expenses of management, and after providing for bad and doubtful debts, taxation, etc.	210,623	11	8
	756,154	12	10
	£966,778	4	6

## HONGKONG & SHANGHAI BANKING CORPORATION.

**Inception.**—Throughout two generations of continual change in the constitutional and social history of the countries of its adoption the Hongkong & Shanghai Banking Corporation has pursued a course of unchecked development and eminently serviceable participation in the financial operations of the Orient. The institution was incorporated by special ordinance of the Legislative Council of Hongkong on July 20 1867 duly confirmed by the British Government.

**Capital.**—The authorised capital of the Corporation (originally \$2,500,000) is \$50,000,000 which taking sterling exchange at 25 4/11d represents £5,011,458 0s 8d. Of this amount a sum of \$20,000,000 is issued and fully paid up. Reserve funds comprise a sterling reserve of £4,500,000 and one of \$27,000,000 in silver while the reserve liability of proprietors amounts to \$20,000,000.

**Development.**—An index to the continuous and rapid expansion of the business of the Bank and to the great degree of public confidence enjoyed by it is forthcoming in comparing deposit and current account figures at successive stages of development. In 1880 deposit and current accounts totalled \$24,198,572 at the end of 1916 \$303,067,500 and on December 31 1925 \$550,680,802.

The institution to day has in all 39 branches and agencies situated chiefly in the Far East but including important offices at London New York San Francisco and Lyons.

**Activities.**—The Bank grants drafts upon and negotiates or collects bills at any of its branches or agencies while it issues for travellers use letters of credit and circular notes negotiable in the principal cities of Europe Asia Africa Australia and America. The Corporation is prepared to receive for safe custody Indian and other Government securities interest and dividends on which are collected as they fall due. Credits are granted on all approved securities and every other description of banking and exchange business is transacted.

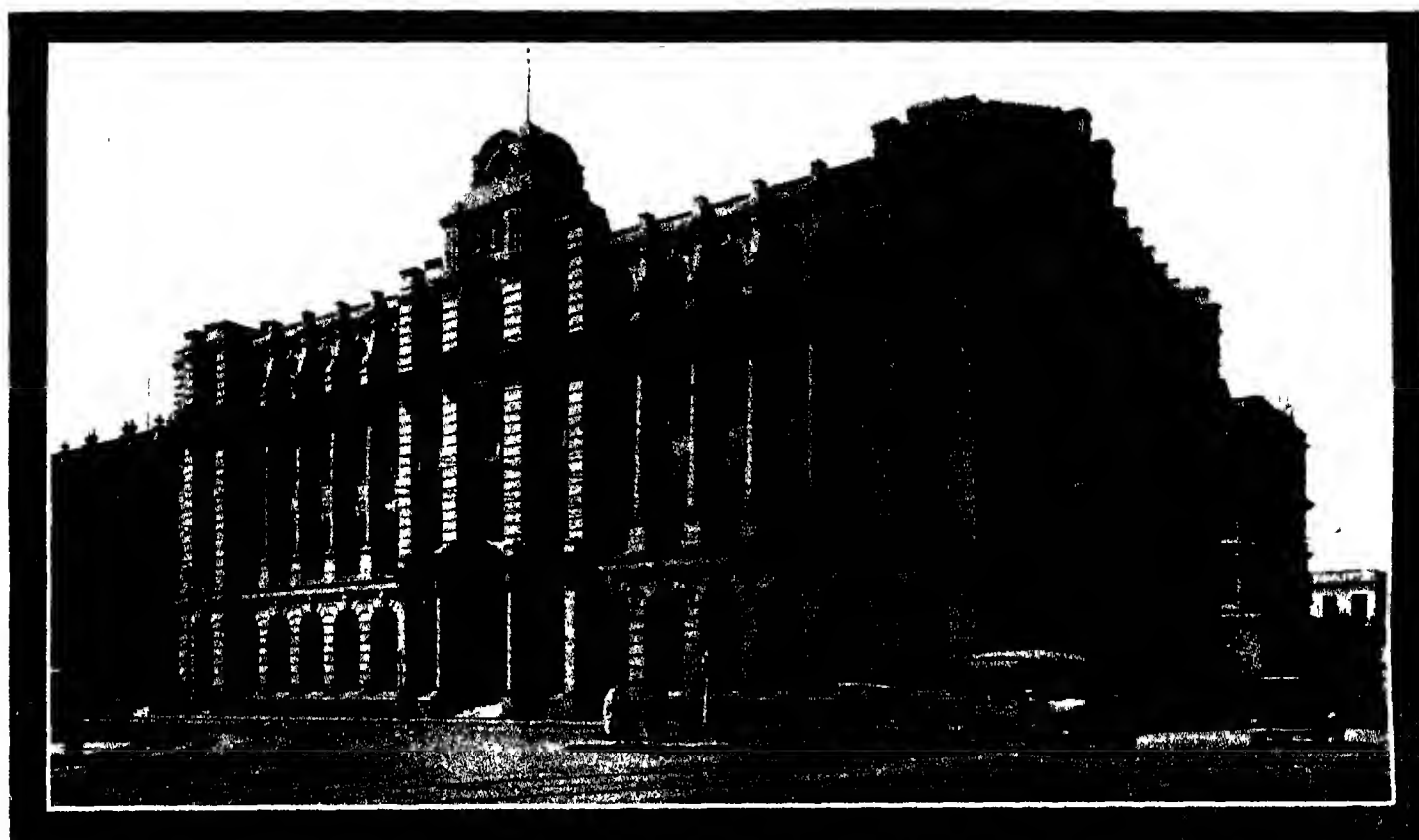
**Indian Branches.**—The business of the Bank in India is conducted from branches at Calcutta and Bombay, housed in finely-appointed and commodious office buildings.

**Court of Directors.**—The Court of Directors at Hongkong is composed as follows: D. G. M. Bernard (chairman), Hon. Mr. A. O. Lang (deputy chairman), W. H. Bell, A. H. Compton, Hon. Mr. P. H. Holyoak, W. L. Pattenden, J. A. Plummer, T. G. Weall, H. P. White and G. M. Young, Chief manager, A. H. Barlow.

**Committee in London.**—Sir Charles Addis, K.C.M.G. (chairman), Hon. Cecil Baring, C. A. Campbell, David Landale, Sir George Macdonogh, G.B.E., K.C.B., K.C.M.G., Sir George Sutherland, A. M. Townsend and C. F. Whigham, Managers in London, Sir Newton J. Stabb and H. D. C. Jones.

**Offices.**—Hongkong (head office), London 9, Gracechurch Street, E.C.3; Calcutta 31, Dalhousie Square, South (cables "Mandarin," Calcutta); Bombay 49, Church Gate Street, Fort (cables "Cassandra," Bombay). Codes: A.B.C. 5th Edition, Bentley's, Western Union, Lieber's and Private.

**London Bankers.**—Westminster Bank Ltd.



HONGKONG AND SHANGHAI BANKING CORPORATION.  
Calcutta Premises.

**Balance Sheet.**—The following is an abstract of the Bank's assets and liabilities, together with the general profit and loss account, for the year ended December 31, 1925 —

LIABILITIES	STERLING EQUIVALENT £ s d	Dollars
Authorised capital — 400,000 shares of \$125 each, \$50,000,000		
Issued and paid up capital — 160,000 shares of \$125 each	2,364,583 6 8	20,000,000 00
Reserve liability of pro- prietors — \$125 per share on 160,000 shares issued \$20,000,000		
Sterling reserve	4,500,000 0 0	38,061,674 01
Silver reserve	3,133,072 18 4	26,500,000 00
Marine insurance ac- count	49,557 5 10	250,000 00
Notes in circulation — (Authorised and ad- ditional issue against securities and coin amounting to \$59,824,255.19 de- posited with the Crown Agents for the Colonies, their Trustees, and the Hongkong Govern- ment)	5,355,647 15 5	45,298,871 00
Current accounts	43,269,272 15 9	382,894,289 66
Fixed deposits	19,837,968 18 6	167,792,512 50
Bills payable (in- cluding call loans and short sight draw- ings on London office and drafts on Lon- don bankers)	482,956 18 1	4,034,921.85
Acceptances on ac- count of constituents	861,045 0 2	7,282,847.65
Profit and loss ac- count	1,379,053 13 8	11,664,242.58
Liability on bills of exchange re-discount- ed, £12,845,863 1s. 10d., of which £11,661,593 12s. 8d. have since run off.	£83,213,158 12 5	\$703,829,359 25
Assets		
Cash (including \$25,000,000 coin lodged with the Hongkong Govern- ment and \$7,600,000 coin lodged with H B M Consul Gen- eral, Shanghai, against authorised and/or excess note circulation)	11,953,600 2 1	101,105,340 08
Bullion in hand and in transit	900,022 16 6	7,663,276 77
British Government, Indian, Colonial and other securities	10,970,174 5 11	92,787,377 28
Bills discounted, loans and credits	31,595,672 4 11	267,240,928 23
Bills receivable and balance of remit- tances and drafts in transit	21,365,158 15 10	206,084,162 47
Liabilities of constitu- ents for acceptances, per contra	861,045 0 2	7,282,847 65
Bank premises	2,561,485 7 0	21,665,426 77
	£83,213,158 12 5	\$703,829,359 25
Sterling Exchange taken at 25 4 3/4		
PROFIT AND LOSS ACCOUNT		
Dr	Dollars	Dollars
To Interim dividend — Paid on 10th August, 1925, of £3 per share on 160,000 shares — £480,000 @ 2/3 1/2 =		\$4,132,735 43
„ Remuneration to di- rectors		50,000 00
„ Balance to be appro- priated —		
„ Final dividend — Of £3 per share on 160,000 shares = £480,000 @ 25 4 3/4 = \$4,059,912.89		
Bonus of £2 per share on 160,000 shares = £320,000 @ 21 4 1/2 = \$2,706,507 93		
„ Transfer to silver re- serve ..	6,766,519.82	
„ Transfer to bank pre- mises account	500,000.00	
„ Balance forward to next year .. .. .	1,000,000.00	
	3,397,722.76	
		11,664,242.58
		\$15,846,978.01

Profit and loss — (continued)

Cr	Dollars	Dollars
By Balance of undivided profits, 31st Decem- ber 1924	3,190,508 94	
„ Amount of net profits for the year ending 31st December, 1925, after making provi- sion for bad and doubtful debts and contingencies, deduct- ing all expenses and interest paid and due	12,456,469 07	\$15,846,978 01

**MERCANTILE BANK OF INDIA LTD.**—

8, Clive Street, Calcutta Incorporated in  
England Head office 15, Gracechurch  
Street, London, E.C. 3. Subscribed capital,  
£1,800,000 Reserve fund £1,300,000.  
Australia agents Bank of New South Wales  
and Union Bank of Australia Ltd. America  
Agents The Bank of Montreal South  
Africa agents The Standard Bank of South  
Africa Branches Calcutta, Howrah,  
Delhi, Simla, Bombay, Madras, Karachi,  
Rangoon, Colombo, Kandy, Galle, Penang,  
Singapore, Kuala Lumpur (F.M.S.), Kota  
Bharu (Kelantan), Batavia, Bangkok, Soura-  
baya, Hongkong, Shanghai, Mauritius and  
New York Cables. "Paradise," Calcutta.  
Codes. Private, A.B.C. 5th Edition and  
Bentley's.

**UNION BANK OF INDIA LTD.**—Head

office. 68-80 Apollo Street, Fort, Bombay.  
Authorised capital Rs. 1,50,00,000. Sub-  
branch: Zaveri Bazar, 185-201 Sheik  
Memon Street, Bombay. Managing agents.  
The Central Bank of India Ltd. London  
agents: The Westminster Bank Ltd.



1 Building in which Calcutta Office is located.

## LLOYDS BANK LIMITED

2. Banking Hall, Calcutta Office.

**LLOYDS BANK LIMITED.**

**Inception.**—The inception of Lloyds Bank Ltd, that colossus among the gigantic banking corporations so comparatively recent a feature of British financial history, was a direct derivative of the Limited Liability Act of 1862 and the outcome of the fusion authorised by that measure of two old-established private concerns. The houses of Lloyds & Co (Birmingham Old Bank), founded in 1705, and Molliet & Sons, of Birmingham, were so amalgamated in 1865 the resulting joint stock institution forming a sound basis for the successive developments of the future policy.

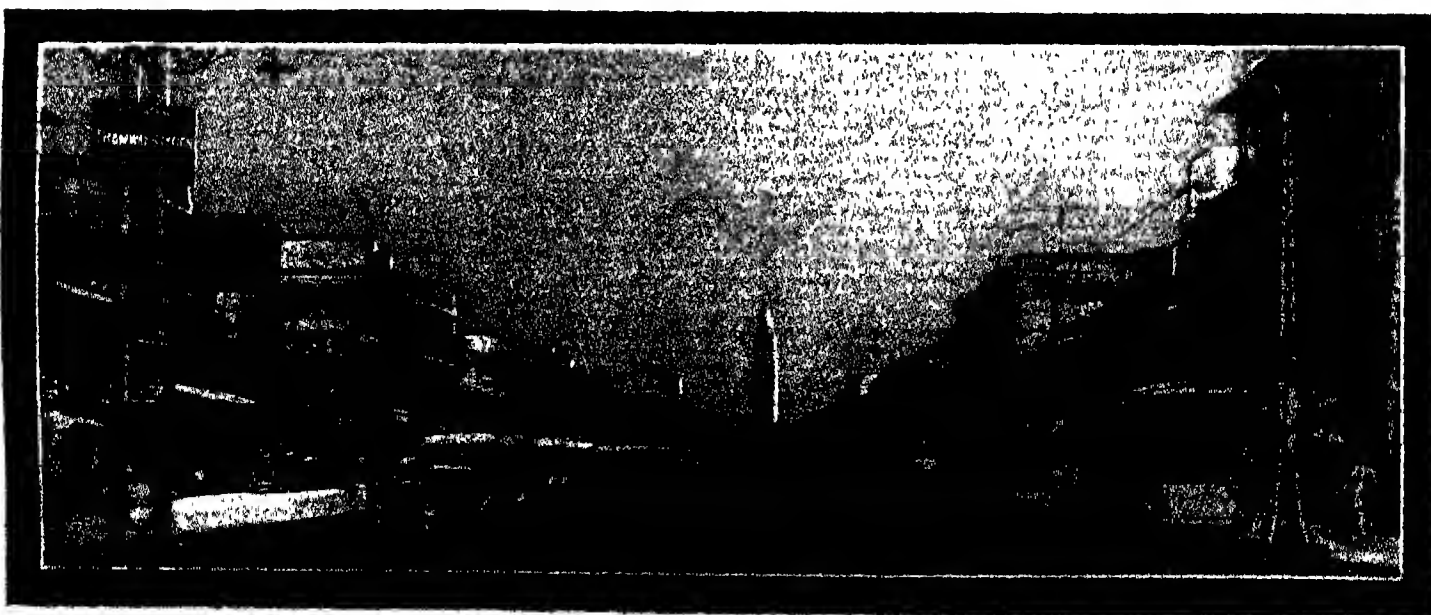
**Development by Absorption.**—That policy soon resolved itself into one of expansion by the process of absorbing private or joint stock banking businesses. The assimilation of eight other companies had been completed

when, during 1884, Messrs. Barnetts, Hoares & Co. and Bosanquet, Salt & Co. were absorbed, to furnish Lloyds Bank with office premises in London. Until 1888 operations were confined in the main to consolidation and to organising a system of control for the network of town and country branches. Thenceforward the amalgamating process continued, scarcely a year passing without the addition of at least one London or provincial old-established concern to the list. Altogether 53 companies have been absorbed by Lloyds Bank Ltd during the 60 years of its career as a joint stock corporation. In 1918 not only was the Capital and Counties Bank Ltd, with its 473 offices, taken over, but Lloyds Bank also became closely associated with the National Bank of Scotland Ltd and the Bank of London & South America Ltd (then known as the London & River

Plate Bank). The two banks so far the last to be merged in the institution under notice were Messrs. Cox & Co., the famous Army Bankers, and Henry S. King & Co., bankers and agents, both absorbed in 1923.

**Capital.**—The authorised capital of the Bank is £74,000,000, consisting of 14,500,000 "A" shares of £5 each and 1,500,000 "B" shares (a recent creation) of £1 each. Of this capital, £73,302,070 is subscribed, while the paid-up capital totals £15,810,252. The reserve fund stands at £10,000,000.

In this connection it may be interesting to note, as bearing upon the expansion of the Bank over the two generations of its existence, that in 1865 its paid up capital amounted to £143,415, the reserve fund then stood at £18,415; while deposits at June 30, 1920, reaching £336,631,359, totalled at its foundation but £1,166,160.



CHANDNI CHAUK, the principal business thoroughfare of Delhi.



**Operations.** Every description of banking and exchange business is transacted by Lloyds Bank Ltd. By reason of its extensive organisation and its vast number of branches and agencies, it is in a position to offer the public the most exhaustive facilities available in any part of the world, including the financing of commercial bills covering imports and exports. Of special convenience is the issue of world letters of credit against which funds can be drawn at any of the 1,700 offices of the Bank in England and Wales, at its branches in India and Burma or from its numerous agents throughout the world, a list of whom is supplied with every letter of credit issued. The agency of foreign and colonial banks and overseas business of all kinds are undertaken.

**Departments.**—A Trustee Department has been organised in London to which all matters relating to trusteeships and executorships may be referred for advice, either direct or through branches of the Bank. The office of trustee or executor on behalf of clients is undertaken by the institution. Lloyds Bank Ltd. has also an Income Tax Department offering expert advice on all relevant affairs which is at the disposal of overseas residents.

**Indian Activities.**—The business of Lloyds Bank Ltd. in India and Burma comprises the old established firms of Cox & Co. and Henry S. King & Co. whose branches, as has already been mentioned, were taken over by the absorbing concern in 1923.

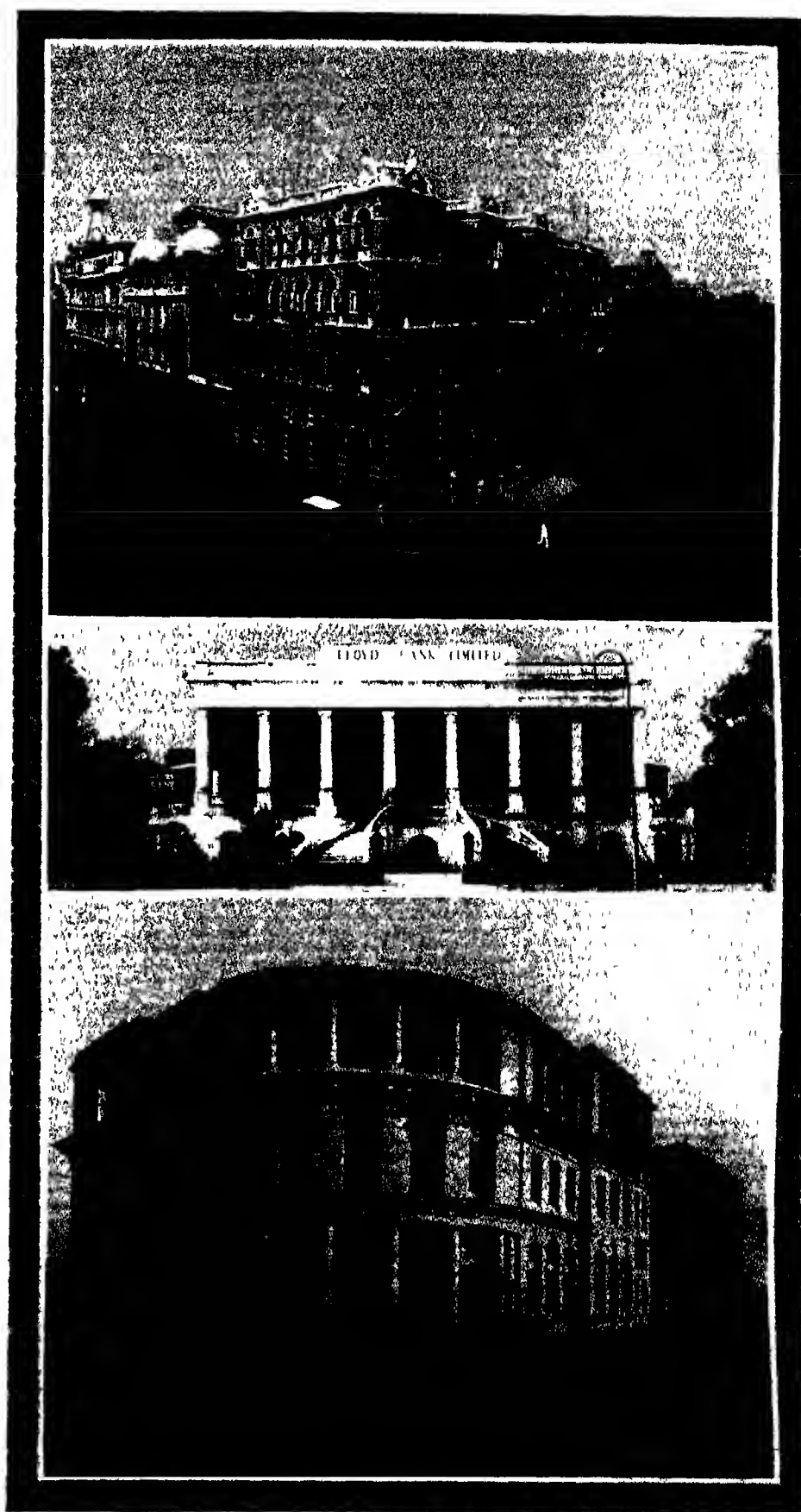
Branches are in operation at Bombay, Calcutta (two offices), Delhi, Karachi, Murree, Rawalpindi, Simla, at Srinagar and Gulmarg in Kashmir, and at Rangoon in Burma.

A large and efficient European and local staff is employed in India and Burma, prepared to deal with any matters brought before it and it is the special desire of the Bank that their customers and others shall at all times feel free to avail themselves of those services in the fullest possible manner.

**Associated Banks.**—Lloyds Bank Ltd. is closely associated not only with the National Bank of Scotland Ltd. and the Bank of London & South America Ltd., but also with Lloyds & National Provincial Foreign Bank Ltd., the National Bank of New Zealand Ltd., the Bank of British West Africa Ltd., and the British Italian Banking Corporation Ltd.

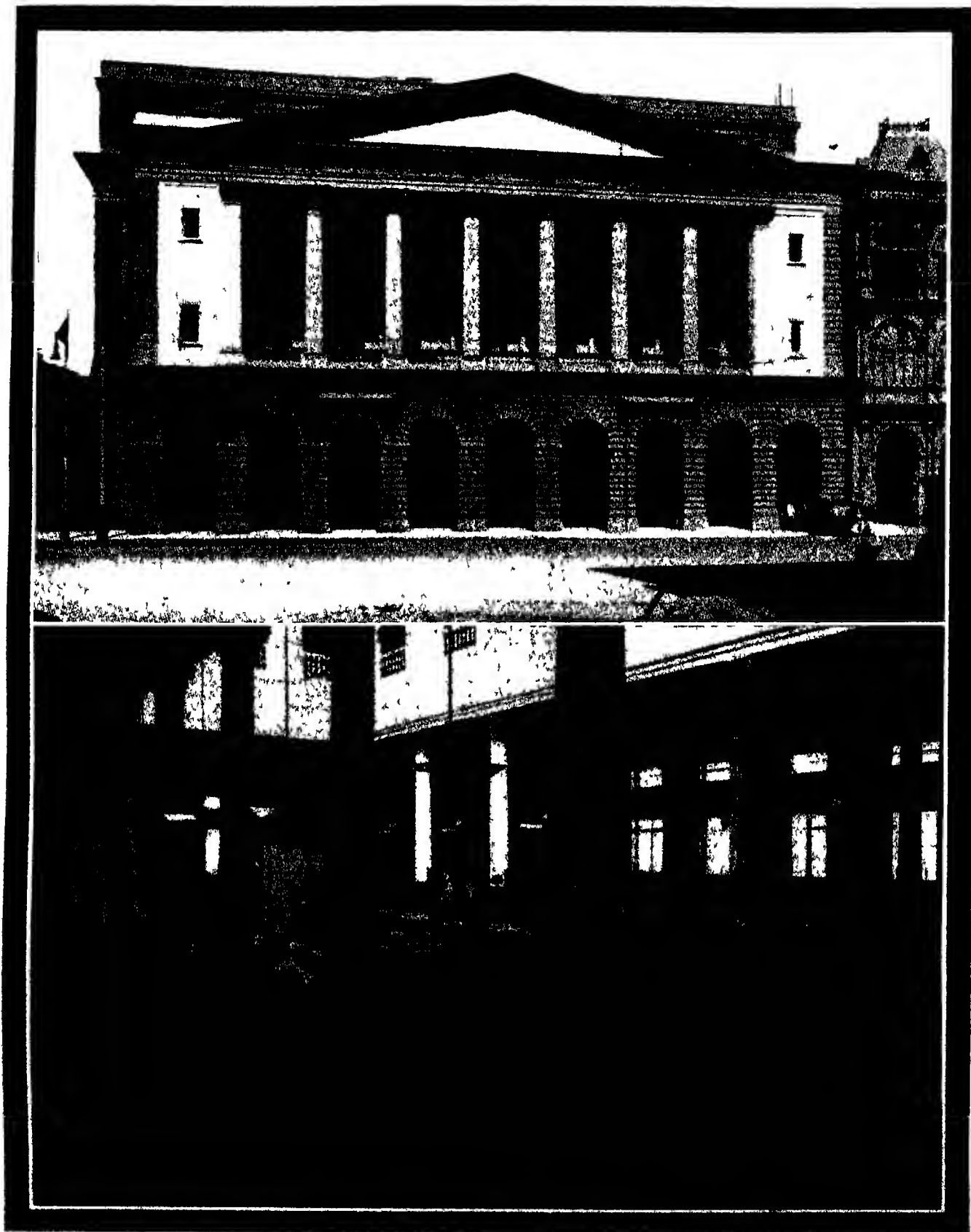
**Directorate.**—J. W. Beaumont Pease, (chairman), Sir Austin E. Harris, KBE (deputy chairman), J. H. L. Baldwin, Charles F. Barnett, Henry Bell, The Hon. R. H. Brand, CMG, Ernest R. Debenham, W. S. De Winton, J. Howard Fox, Major James W. Garton, R. C. Chapple Gill, George A. Harvey, Sir H. H. A. Hoare, Bt., The Rt. Hon. Sir Robert S. Horne, GBE, MP, The Rt. Hon. Lord Inverforth, PC, Herbert J. W. Jervis, Charles Ker, Sir H. Seymour King, KCIE, Cyril E. Lloyd, MP, Lambert W. Middleton, Lt.-Col. R. K. Morcom, CBE, Philip E. Noble, William W. Paine, Alwyn Parker, CB, CMG, Arthur E. Pattinson, Sir Arthur F. Pease, Bt., DL, Samuel Samuel, DL, MP, Oswald Sanderson, DL, The Rt. Hon. The Earl of Selborne, KG, PC, GCMG, Herman B. Sim, Sir Edwin F. Stockton, Col. The Hon. F. Vernon Willey, CMG, CBE, MVO, Evan Williams, DL, The Rt. Hon. Viscount Younger. Joint General Managers, W. C. Buckley, W. S. Draper, F. A. Beane, A. Davidson (Birmingham), G. F. Abell.

**Offices.**—Head office 42, Gracechurch Street, London, E.C.3, Eastern department 14, King William Street, London, E.C.4, Colonial and Foreign Department 20, King William Street, London, E.C.4, Calcutta (District Manager's office), 101-1, Clive Street (cables: "Coxia," Calcutta).



LLOYDS BANK LIMITED.

1. The Bombay Offices.
2. Branch at Delhi.
3. The Karachi Branch.



THE NATIONAL BANK OF INDIA LTD. Bombay Branch.



**Statement.**—The following is a statement of the Bank's liabilities and assets on June 30, 1926 —

LIABILITIES	£	s	d
Current, deposit, and other accounts	336,631,355	18	8
Acceptances, endorsements, guarantees, etc.	15,240,167	9	7
Capital paid up	15,810,252	0	0
Reserve fund	10,000,000	0	0
	£377,681,778	8	3
ASSETS	£	s	d
Cash in hand and with the Bank of England	49,183,172	15	8
Balances with, and cheques in course of collection on, other banks in the British Isles	11,293,962	8	8
Money at call and short notice	18,221,257	0	10
Bills of exchange	43,568,975	3	1
Treasury bonds and other short-term British Government securities	29,831,066	2	0
Other British Government securities (of which £114,800, nominal, is lodged for public accounts)	13,293,307	10	2
Indian and Colonial Government securities, Corporation stocks, and other investments*	3,486,036	9	11
	£159,877,777	10	4

#### NATIONAL BANK OF INDIA LTD.

**Inception.**—To Calcutta belongs the credit of providing the first domicile for this institution, which influences with increasing importance the financial transactions of two continents. The National Bank of India was established in that Presidency city on September 29, 1863, to be registered in London under the Companies Act of 1862 on March 23, 1866.

**Capital.**—The subscribed capital of the Bank is £4,000,000, while the paid-up capital totals £2,000,000. The present number of shareholders is 2,504.

**Reserve Fund.**—The reserve fund, £1,175,000 in 1915, £2,000,000 in 1920, and £2,750,000 at the close of 1924, has been raised by recent considerable additions to £2,850,000.

**Development.**—The Bank considered as a whole has a splendid record of reliability and progress. It possesses to-day 19 branches in India, Further India and Ceylon, viz., Aden, Aden Point, Amritsar, Bombay, Calcutta, Cochin (S. India), Colombo, Delhi, Chittagong, Kandy, Karachi, Lahore, Madras, Cawnpore, Mandalay, Nuwara Ehiya, Rangoon, Tuticorin, and Zanzibar, five in Kenya Colony, at Kisumu, Mombasa, Nairobi, Nakuru and Eldoret, three in Uganda, at Entebbe, Jinja and Kampala; and two in Tanganyika Territory, at Dar-es-Salaam and Tanga. In Kenya Colony and Uganda the institution has been appointed bankers to the Government. Agencies and correspondents are maintained in all important cities throughout the world.

**Activities.**—The National Bank of India Ltd. grants drafts and telegraphic transfers on all places where it is represented; negotiates and collects bills of exchange; collects pay and pensions, and generally

transacts every form of Eastern banking business. Deposits are received for fixed periods not exceeding one year, at rates to be obtained on application. The Bank opens current accounts, and, provided they do not fall below £200, allows 2 per cent. per annum interest on the minimum monthly balances.

**Current and Other Accounts.**—The respective totals of current, fixed deposit and other accounts at the beginning of the years named were as follow: 1915, £16,392,710; 1920, £45,200,202; 1925, £32,548,163; 1926, £33,168,283.

**Dividends.**—For a number of years past the Bank has paid a dividend of 20 per cent. free of income tax.

**Bombay Branch.**—The Bombay establishment of the institution under notice, opened soon after the foundation of the Bank, was originally housed in Hornby Road, but in 1868 entered the present building. At that time part of the premises was let out as offices, but subsequently the entire structure was occupied by the Bank. Considerable alterations and extensions are now being carried out in order to provide adequate accommodation for dealing with the large volume of business devolving upon the branch, including as it does the buying and selling of sterling exchange and of bullion, for which the market in Bombay is a very large one.

The staff of the branch at Bombay consists of 21 European officers and 265 native shroffs and clerks, under the direction of the manager, Mr. David Kydd.

**Directorate.**—Sir Charles C. McLeod Bart (chairman), J. N. Stuart (deputy chairman), Hon. F. Julia Hawke, Sir John P. Hewett, G. C. S. I., K. B. E., C. I. E., R. Langford James, Robert Miller, C. Nicoll (general manager) and J. A. Toomey.

**London Manager.**—J. Y. Munro

**Offices.**—London (head office) 26, Bishopsgate, E. C. 2 (cables "Minerva," London), Bombay Esplanade Road (cables "National," Bombay) Calcutta 104, Clive Street (cables "National" Calcutta).

**London Bankers.**—Bank of England, National Provincial Bank Ltd., and National Bank of Scotland Ltd.

**Balance Sheet.**—The general balance sheet and profit and loss account for the year ended December 31, 1925, were as follow:—

Dr	£	s	d
To Capital			
Subscribed, 160,000 shares of £25 each, £4,000,000			
Paid up (£12 10s per share)	2,000,000	0	0
" Reserve fund	2,800,000	0	0
" Current, fixed deposit and other accounts, including provision for bad and doubtful debts and contingencies	13,168,283	7	8
" Bills payable	1,136,821	15	6
" Acceptances for customers	1,062,856	2	6
" Profit and loss account, as under	561,084	18	1
	£40,729,048	1	9
Cr	£	s	d
By Cash on hand, at call and at bankers	5,223,492	11	0
" Bullion on hand and in transit	229,033	12	8
" Indian Government rupee securities	1,454,526	3	8
" British Government securities, Indian Government guaranteed debentures and other securities (of which £300,000 War Loan lodged with Bank of England as security for Government accounts)	4,092,187	19	2
" House property and furniture	9,890,819	12	6
" Bills of exchange (including Treasury bills)	477,177	4	1
" Discounts, loans receivable, and other sums due to the bank	6,768,060	4	1
" Customers for acceptances per contra	12,983,420	15	9
	£40,729,048	1	9

The Rupee Assets and Liabilities have been converted at the rate of 15 4d per rupee.

Dr	£	s	d
To ad interim dividend at the rate of 20 per cent. per annum for the half year ended 30th June, 1925	200,000	0	0
" Expenses of management at head office and branches	558,505	18	8
" Balance	561,084	18	1
	£1,319,590	16	9
Cr	£	s	d
By Balance at 31st December, 1924	534,980	4	9
Deduct			
Dividend at the rate of 20 per cent. per annum for the half year ended 31st December, 1924	£200,000	0	0
Amount written off house property account	£20,000	0	0
Officers' pension fund	£40,000	0	0
Amount carried to reserve fund for the year ended 31st December, 1924	£50,000	0	0
	310,000	0	0
Balance brought forward	224,980	4	9
" Gross profits for the year ended 31st December, 1925, after providing for all bad and doubtful debts	1,094,610	12	0
	£1,319,590	16	9

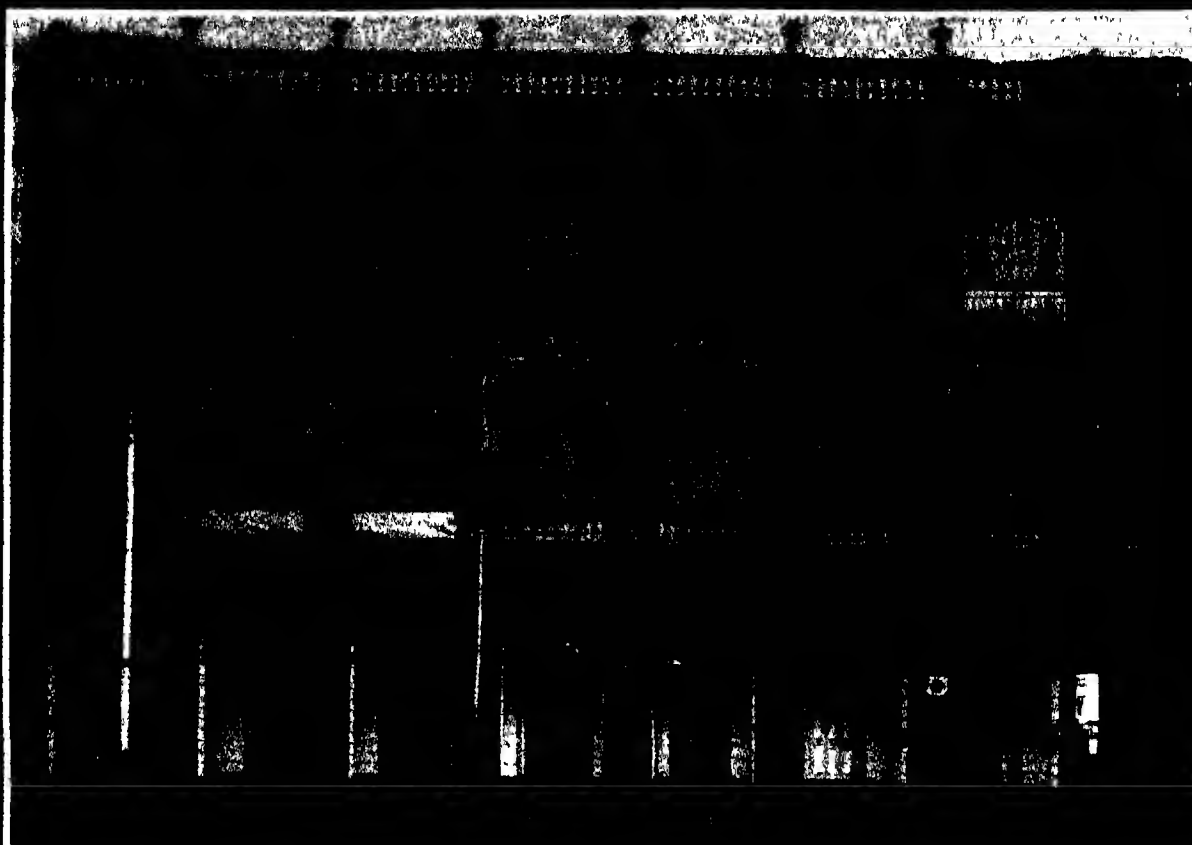
#### NETHERLANDS TRADING SOCIETY.

**Inception.**—The Netherlands Trading Society, which celebrated in a recent year the completion of a century of remarkable achievement in many spheres of commerce and finance, was established at The Hague by Royal Charter, March 29, 1824. King William I not only furnished with Fl 4,000,000 part of the capital (originally fixed at Fl 37,000,000, though subscriptions had been received for Fl 70,000,000), but also personally guaranteed a dividend of 4 per cent. The chief object of the Society's inception was to relieve the existing economic depression by fostering Dutch trade generally, but particularly that of shipping, shipbuilding, fishing, agriculture and industries. The original articles of association, however, prohibited banking business and dealing in stocks and exchange.

**Development.**—The Royal Charter granted the Society extensive monopolies, enabling it to secure virtual control of all sailing vessels trading to the Indies. The bulk of outward cargoes consisted of cotton manufactured in mills mainly under its control, returning ships brought colonial products against which, by agreement with the Government under the "Culture System" introduced in 1830, the Company made advances. In 1831 the enterprise was reconstructed, the capital reduced to Fl 23,500,000, and the headquarters were transferred to Amsterdam.

With the gradual abandonment of the "Culture System" the Society commenced its own export business made advances to planters, interested itself in plantations, and was so enabled considerably to promote colonial development.

**Banking Participation.**—In 1874 the articles of association were amended to permit of banking and exchange business, and nine years later such transactions were initiated on an important scale. From that beginning the Society has pursued a policy of successive development and consolidation, to become the leading banking institution in the Netherlands and the colonies thereof, and a power in international finance. In Holland it has interested itself in the Geldersche Credietvereeniging, in other provincial banks, and in South America in the Netherlands Bank for South America.



NETHERLANDS TRADING SOCIETY Branch at Bombay.

(See *the press* page 43)

**Capital.**—The authorised capital of the Netherlands Trading Society was raised in 1901 to Fl 45,000,000, and in 1913 to Fl 75,000,000. The paid-up capital by 1914 was Fl 50,000,000, by 1916 Fl 60,000,000, by 1918 Fl 70,000,000 and by 1919 Fl 80,000,000 (£6,666,666), at which figure it now stands. The statutory reserve fund amounts to Fl 21,117,340 (£1,759,778), and the extraordinary reserve fund to Fl 22,660,000 (£1,888,333).

**Activities.**—The Society grants drafts and issues letters of credit on all its branches and correspondents in the East, on the Continent, in Great Britain, Africa, America and Australia, and transacts every description of banking business. Special facilities are offered for financing shipping documents to the Far East.

**Branches.**—Subsidiary to the head office at Amsterdam, the Society has established branches in Holland at The Hague and Rotterdam. In the Netherlands Indies branches exist at Batavia, Sourabaya, Semarang, Medan and further principal ports. Important agencies also function at Singapore, Penang, Rangoon, Hongkong and Shanghai, while the latest Eastern development of the concern, necessitated by the ever-expanding volume of business, was the opening (1920-21) of branches at Kobe, Calcutta and Bombay. Further, a branch has recently been opened at Jeddah (Hedjaz).

**Bombay Premises.**—The original quarters in Hornby Road of the Bombay establishment soon proved inadequate in accommodation, and the present premises, although still to be considered temporary, were acquired as

offering more scope for the efficient performance of the Society's manifold services to clients.

**Administration.**—President of the Board of Commissaries S. P. Van Eeghen, President of the Board of Directors C. J. K. Van Aalst, K. B. E., directors J. Bierens de Haan, F. P. J. Vester, J. C. A. Everwijn, D. Crena de Jongh; secretary F. H. Abbing.

**London Correspondents.**—The National Provincial Bank Ltd.

**Addresses.**—Amsterdam (head office) (cables "Trading," Amsterdam), Batavia (Eastern head agency) (cables "Factorij," Batavia); Bombay 82, Esplanade Road (cables "Traderbank," Bombay), Calcutta 8, Royal Exchange Place (cables "Traderbank," Calcutta). Codes used by Bombay branch Bentley's Complete Phrase, Peterson International 2nd ed., A B C 5th and 6th eds and Laeber's.

**Balance Sheet.**—The following are the general balance sheet and profit and loss account of the Society to December 31, 1925

LIABILITIES	Fl 12 — =	£1 —
Capital paid up in full	Fl 80,000,000 —	£6,666,667
Reserve fund	21,117,340 75	1,759,778
Extraordinary reserve	22,660,000 —	1,888,333
Reserve for special purposes	7,000,000 —	583,333
Fixed deposits	141,785,598 96	11,815,467
Current accounts	270,418,878 27	22,534,907
Sundry creditors	60,385,126 63	5,032,094
Bills payable	29,566,984 32	2,463,915
Officers' pension fund	3,000,000 —	250,000
Dividends	6,072,763 50	506,064
Balance carried forward to new account	11,192 96	933
	Fl 648,017,885 39	£54,001,491

ASSETS	Fl 12 — =	£1 —
Cash in hand and at bankers	1144 111,677 88	£3,675,971
Bills receivable	148,485,251 25	12,373,771
Government and other stocks and debentures	86 599,837 41	7,213,320
Advances to estates	35,314,505 55	2,942,876
Loans receivable and current accounts	181,779,184 56	15,148,265
Sundry debtors	130,048,823 67	10,837,402
Estates and shares in estates	12,818,665 04	1,068,217
Premises	8,900,000 —	741,667
	Fl 648,017,885 39	£54,001,491

#### PROFIT AND LOSS ACCOUNT

Dr.	Fl 12 — =	£1 —
To Expenses of management and general charges	Fl 10,225,039 07	£852,086
„ Reserve for special purposes	2,000,000 —	166,667
„ Profit	6,902,395 27	575,200
	Fl 19,127,434 34	£1,593,953
Cr	Fl 12 — =	£1 —
By Commission, interest and exchange, after making provision for bad and doubtful debts and taxes	Fl 14,355,048 57	£1,196,454
„ Stocks and debentures	506,127 42	42,177
„ Estates in Netherlands India and Surinam	4,266,258 55	355,522
	Fl 19,127,434 34	£1,593,953



THE P &amp; O BANKING CORPORATION LTD General View of the new Banking Hall, Calcutta

### THE P. & O. BANKING CORPORATION LTD.

**Inception.**—Registered in London on May 3, 1920, this important banking corporation was founded in June of that year, having as chairman the Rt Hon The Viscount Inchcape, GCSI, GCMG, KCIH. Lord Inchcape is also chairman of the P & O Steam Navigation Co., with which, as its name suggests, the Bank is closely associated.

**Affiliation.**—In December 1920, in order to acquire a solid footing in the interior of India, the Corporation offered to buy the fully paid ordinary shares of the Allahabad Bank Ltd. More than 90 per cent of the shareholders of the latter institution accepted the offer, and the option given to exchange their holdings to P & O Banking Corporation shares in lieu of receiving cash was exercised to the extent of 9,416 shares of that Corporation. The issue of this number brought the paid up capital of the Bank under notice from £2,500,000 to £2,594,160.

**Capital.**—The authorised capital of the Bank is £5,000,000 in shares of £10 each, while the reserve fund has recently been augmented to £180,000.

**Operations.**—The Corporation transacts general banking and exchange business of every description, and has branches and agents throughout the world.

**Branches.**—The P. & O. Banking Corporation Ltd. has its head office and a subsidiary agency in London, with branches at Bombay, Calcutta, Karachi, Madras, Colombo, Canton, Hongkong, Shanghai and Singapore. Business is also transacted on behalf of its constituents at all centres where branches and agencies (some 35 in number) of the Allahabad Bank are established.

**Dividends.**—The dividends disbursed by the Bank since its inception are as follow: 5 per cent per annum to March 31, 1921, 5½ per cent p.a. for the three years 1921-22, 1922-1923, 1923-1924, and 5 per cent p.a. for 1924-1925 and 1925-1926. In recommending a reduction of ½ per cent in the dividend for 1924-1925 and increasing the amount carried to reserve, the directors were influenced by the uncertain condition of affairs in the Far East.

**Directorate.**—The Rt Hon The Viscount Inchcape, GCSI, GCMG, KCIH (chairman), Alastair Cameron (deputy chairman), the Rt Hon The Earl of Selborne, KG, GCMG, Sir Frederick Eley, Bart, Sir Montagu Cornish Turner, Francis Alexander Johnston, Alexander Kemp Wright, CBE, DL, Walter Osborn Grazebrook and The Hon Alexander Shaw. General manager, M. M. S. Gubbay, CSE, CIE, assistant general managers, C. E. Malkinson and R. Nicholson, secretary, Chas Selbie.

**Offices.**—London (head office) 117-122, Leadenhall Street, EC3. (cables "Penorbanca," London). Calcutta 1, Fairlie Place.

**London Bankers.**—Bank of England, National Provincial Bank Ltd, Westminster Bank Ltd., Lloyds Bank Ltd, Royal Bank of Scotland.

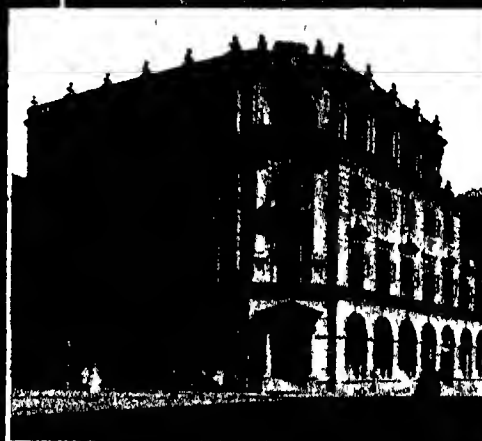
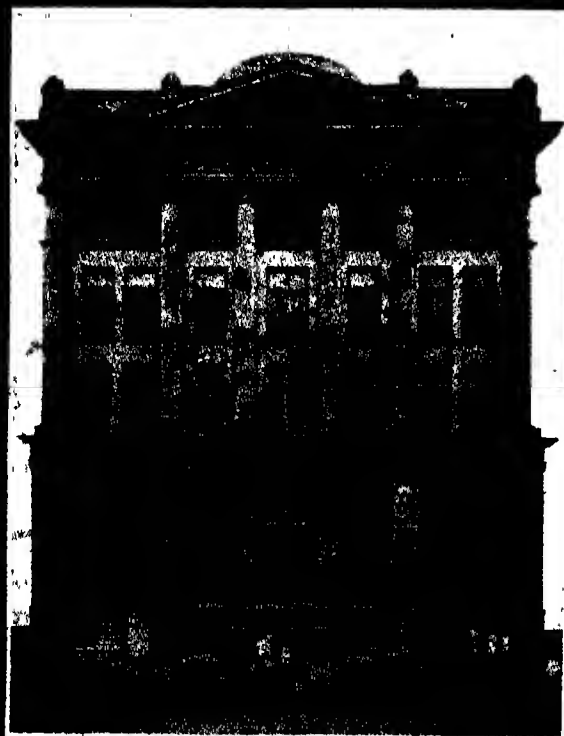
**Balance Sheet.**—The following balance sheet and profit and loss appropriation account were submitted for the year ended March 31, 1926:—

LIABILITIES.		£	s	d
Capital—				
Authorised—500,000 shares of £10 each—£5,000,000				
Issued—259,416 shares of £10 each fully paid up				
		2,594,160	0	0

Liabilities (continued)		£	s	d
Reserve fund				
Current, deposit and other accounts				
Loans payable against security				
Acceptances, endorsements, etc. as per contra				
Bills receivable for collection, as per contra				
Profit and loss account				
Total		£16,779,430	14	3

ASSETS		£	s	d
Cash at bankers and in hand—				
Bullion in hand and in transit—				
Money at call and short notice—				
Hills receivable in hand and in transit including Treasury bills		1,784,932	15	8
Investments		4,175,285	8	6
Allahabad Bank, Ltd. shares		1,611,324	4	8
Loans receivable against security		589,569	1	2
Advances to customers on current and other accounts		3,319,941	11	10
Bank premises and furniture		89,542	19	5
Liabilities of customers for acceptances, endorsements, etc., as per contra		667,859	15	8
Bills receivable for collection, as per contra		624,974	17	4
Total		£16,779,430	14	3

PROFIT AND LOSS APPROPRIATION ACCOUNT		£	s	d
Dr				
To Transfer to reserve fund				
" Written off premises account				
" Proposed dividend at the rate of 5 per cent per annum for the twelve months ended 31st March, less tax £109,322 4 0				
" Balance to be carried forward				
Total		£128,364	6	0
Cr.				
By Balance brought forward from 31st March, 1925				
" Net profit, after providing for bad and doubtful debts and payment of Income Tax				
Total		£133,364	6	0



# ALLAHABAD BANK LTD.

1. The Allahabad Branch.
3. Exterior of Head Office.
5. Branch at Cawnpore,

2. Head Office at Calcutta.
4. New Bombay Office.
6. Banking Hall, Bombay.

**ALLAHABAD BANK LIMITED.**

**Inception.**—Claiming at the present day to be the oldest indigenous bank in India, the Allahabad Bank Ltd was established in 1865 and registered under Acts XIX of 1857 and VII of 1860

**Development.**—Starting with but one office, the institution gradually extended, confining its operations chiefly to the United Provinces, where in course of time it opened branches in most of the important towns and many smaller districts. A number of offices were established at places then unapproached by other corporations, and in subsequent years the Allahabad Bank continued to play a pioneer part in the provision of banking facilities. The system of branches was later extended to the chief centres of the Punjab, Central Provinces and Behar, while offices were also opened in Bombay and Rangoon

**Affiliation.**—The most notable recent development in the history of the Bank was its affiliation in 1921 with the P & O Banking Corporation Ltd. That arrangement provides the latter concern with a large and influential connection in the interior of India, while giving the customers of the Allahabad Bank Ltd the benefit of the international banking service furnished by the larger institution

**Capital.**—The subscribed capital of the Allahabad Bank Ltd stands at Rs 40,00,000, while that paid up totals Rs 35,50,000. The reserve fund now reaches Rs 44,50,000 invested in Government paper

**Operations.**—Every description of banking and exchange business comes under the purview of the Bank, which opens current accounts free of charge and receives fixed deposits for long or short periods on terms ascertainable by application. Currency notes of any circle, cheques and hundis are received for credit in fixed deposit accounts without charge. Government paper and other securities are purchased, sold, or received for safe custody, and interest and dividends realised. Loans and cash credits also are granted by the Bank. Passenger letters of credit are issued, available for use on board the P & O, British India Steam Navigation Company (Home Line) and Orient Steamers at ports of call, at the offices of agents of the P & O Steam Navigation Company and British India Steam Navigation Company, and at any branch of the P & O Banking Corporation Ltd

**Branches.**—The head office of the Allahabad Bank Ltd is situated at Calcutta, and its branches and sub agencies are at Allahabad, Allahabad City, Amritsar, Bareilly, Benares, Bombay, Cawnpore, Cawnpore City, Chandauli, Dehra Dun, Delhi, Etawah, Fyzabad, Gorakhpur, Hapur, Hathras, Jhansi, Jubbulpore, Lahore, Lucknow, Lucknow (Aminabad Park), Lucknow City, Jyallpur, Moradabad, Mussoorie, Meerut, Muttra, Nagpur, Naini Tal, Patna, Rae Bareilly, Raipur, Rangoon, Shahjahanpur and Sitapur

The Bank has correspondents in all principal towns throughout India

**Financial.**—The latest balance sheet of the Allahabad Bank Ltd shows a position of unquestioned stability. Surplus profits carried forward to next account amount to Rs 3,47,827-9-6. Liabilities to the public on current, fixed deposit and savings bank account total Rs 9,35,44,000, while liquid resources, consisting of cash, Government of India securities and short term deposits with other banks, amount to Rs 4,42,10,100, representing 47.2 per cent. of these liabilities. Additional assets in the shape of credits extended by the Bank on loan, cash credit, overdraft, etc., total Rs 5,46,56,000. Bad

debts are nil. The balance sheet (see later) is a typical example of the working of the Allahabad Bank Ltd, the conservative nature of whose policy throughout has been directed towards the provision of the maximum security possible to depositors

**Dividend.**—The Bank pays a dividend of 18 per cent on ordinary and 6 per cent on preference shares, rates which have been maintained for the last 19 years

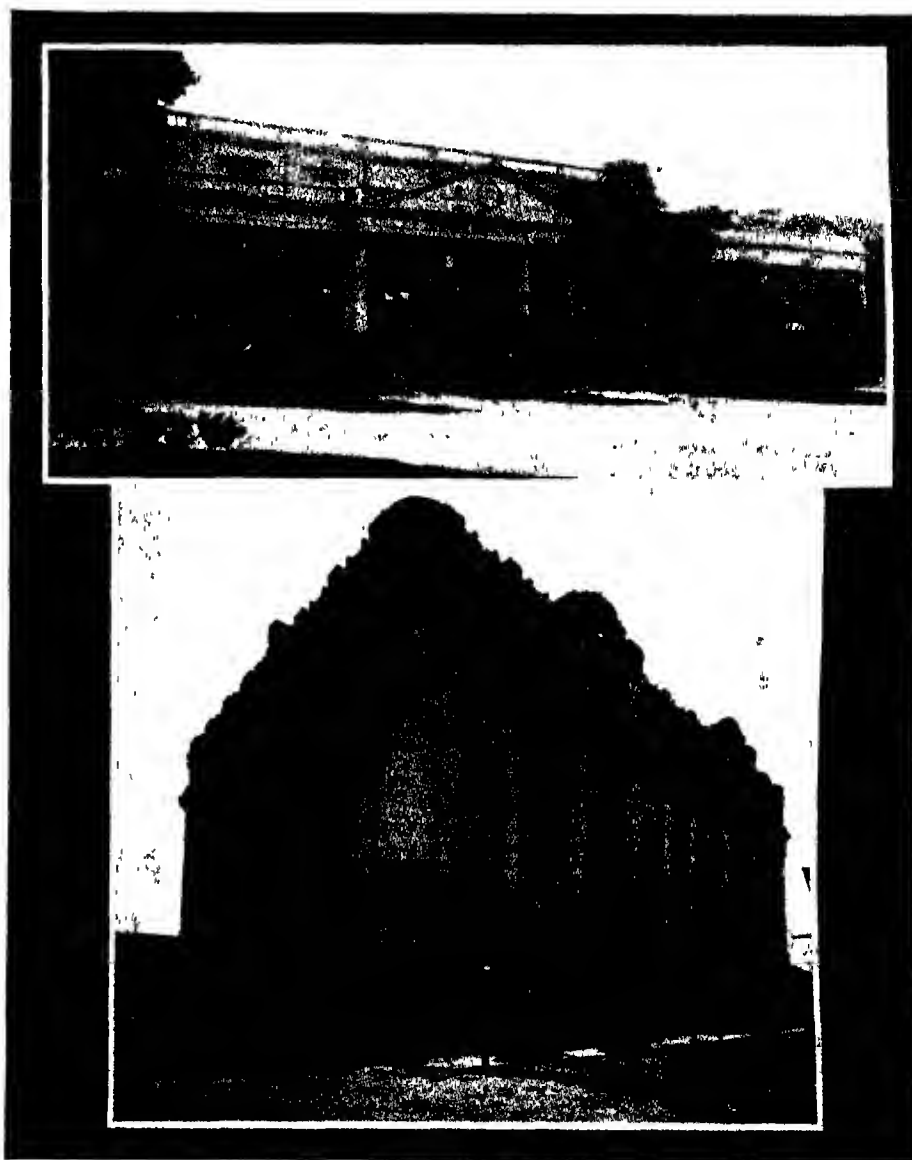
**Directorate.**—Hon Mr J W A Bell (Mackinnon Mackenzie & Co) (chairman), Raja Sir Rampal Singh, K C I E, J H Fyfe (Mackinnon Mackenzie & Co), C F Cockell (Allen Bros & Co (India) Ltd), and H B Whutby (Kilburn & Co) Alex Bowie (general manager)

**Office.**—6, Royal Exchange Place, Calcutta (cables "Allah," Calcutta) Codes Bentley's and ABC 5th Edition

**London Bankers.**—P & O Banking Corporation Ltd and National Provincial Bank Ltd

**Balance Sheet.**—The balance sheet and profit and loss account for the twelve months ended March 31, 1920, were as follow —

CAPITAL AND LIABILITIES		Rs	a	p
Capital				
Authorised		40,00,000	0	0
Issued and subscribed		40,00,000	0	0
Called up		35,50,000	0	0
Reserve fund	Invested as per contra	44,50,000	0	0
Provident fund		9,71,900	12	7
Fixed, current and savings bank deposits		9,35,44,083	9	0
Suspense		3,04,617	8	3
Rebate on bills discounted not due		1027	14	8
Unpaid dividends		5,290	1	0
Sundry credits established as per contra		6,38,189	0	0
Profit and loss account		5,77,327	9	6
Grand total rupees		10,40,42,436	7	0
PROPERTY AND ASSETS		Rs	a	p
Loans		68,72,389	12	11
Cash credits and overdrafts		3,07,17,944	3	3
Bills discounted and promotes		80,66,264	9	8
House property		38,23,408	6	11
Dead stock		3,48,437	9	3
Stationery		1,76,188	0	11
Stamps		23,837	11	9
Suspense		1,05,278	1	2
Customers' liability for sundry credits established as per contra		6,38,189	0	0
Investments		4,42,10,478	15	2
Grand total rupees		10,40,42,436	7	0



THE PUNJAB NATIONAL BANK LTD.

1. Head Office at Lahore.
2. Branch at Calcutta.

(See letterpress, page 48)

PROFIT AND LOSS ACCOUNT			
Dr	Rs	a	p
Interest paid on deposits	46,37,894	6	0
Establishment	12,94,670	14	2
Directors' and auditors fees	15,250	0	0
Contribution to provident fund	50,465	7	3
Stationery	89,786	9	4
Postage and telegrams	58,932	14	11
Printing and advertising	23,790	15	7
Depreciation in the value of house property	50,195	12	3
Depreciation in the value of dead stock	32,014	13	0
Income and other taxes and subscriptions to the Chambers of Commerce	44,443	3	1
House rent, ground rent and fire insurance premiums	75,167	13	6
Travelling expenses	11,116	4	2
General charges	1,71,902	5	5
Net profit carried to balance sheet	5,31,576	15	11
Grand total rupees	70,87,208	6	9
Cr	Rs	a	p
Interest	65,33,534	2	10
Exchange	2,75,618	13	1
Discount	72,950	13	5
Commission	2,05,008	9	5
Grand total rupees	70,87,208	6	9

### THE PUNJAB NATIONAL BANK LTD.

**Inception.** With the object of providing eminently serviceable banking facilities throughout the province whence its name is derived, The Punjab National Bank Ltd was established in 1895

**Development.**—The record of the institution has been one of steady progress, and to-day, in addition to its head office at Lahore, it possesses 38 branches in important centres all over India

**Capital.**—The authorised capital of the Bank is Rs 1,00,00,000. The capital issued and subscribed amounts to Rs 50,00,000, while that paid up now totals Rs 30,84,370. The reserve funds, comprising Fund No 1 and Fund No 11 (for bad and doubtful debts, etc.), amount to Rs 25,50,000

**Operations.**—All varieties of banking business are transacted by this concern, which enjoys the complete confidence of its widespread constituents

**Branches.**—The following branches of The Punjab National Bank Ltd. are controlled from the head office at Lahore: Abohar, Allahabad, Amballa City, Amballa Cantonment, Amritsar, Bombay, Calcutta, Cawnpore, Delhi, D I Khan, Ferozepore City, Gogra, Gujranwala, Hafirabad, Hoshiarpur, Hyderabad (Sindh), Jammu, Jaranwalla, Jhang-Maghiana, Jhelum, Jullundur City, Karachi, Kasur, Lahore City, Ludhiana, Lyallpur, Meerut City, Moga, Multan City, Montgomery, Okara, Patiala, Peshawar City, Peshawar Cantonment, Quetta, Rawalpindi City, Sangla Hill, Sargodha, Sialkot City, Simla, and Srinagar

**Directorate.**—R B Lala Dhanpat Rai (chairman), Bakhshi Tek Chand, Advocate, Lahore, Lala Lajpat Rai; Mukand Lal Puri, M.A., Bar-at-Law, Advocate, High Court, Lahore, Dr Gokal Chand, Narang, M.A., Ph.D., Advocate, High Court; R. B. Captain Maharaj Krishna, Kapur, I.M.S., D.P.H., D.T.M., L.M.S.; Professor Devi Dyal, B.A. Secretary, Bhagat Govind Dass, M.A., LL.B.

**Offices.**—Lahore (Head Office): 25, The Mall (cables "Stability," Lahore); Calcutta 135-136, Canning Street (cables: "Stability," Calcutta). Code: Private.

**Agents.**—London: Midland Bank Ltd.; New York: The American Exchange & Pacific National Bank.

**Balance Sheet.**—The balance sheet of The Punjab National Bank Ltd as at December 31, 1925, and the profit and loss account for the half-year then ended, were as follow:—

LIABILITIES			
	Rs	a	p
<b>Capital</b>			
Authorised	1,00,00,000	0	0
Issued	50,00,000	0	0
Subscribed	30,84,369	14	2
Reserve funds	23,57,841	0	4
Fixed and other deposits	7,01,91,884	9	2
Bills for collection as per contra	30,91,888	2	5
Acceptances for customers per contra	1,21,741	7	0
Other liabilities —			
Due to bankers against Government securities as per contra	52,24,444	0	11
Sundry accounts	2,26,500	4	7
Miscellaneous accounts	6,92,505	0	2
Dividends unclaimed	19,268	7	11
Rebate on bills	26,373	4	0
Profit and loss account	5,37,015	0	2
Total Rs	8,58,73,821	8	10
ASSETS			
	Rs	a	p
Advances — Loans, cash credits, promissory notes, bills discounted and demand advances	5,11,27,895	10	0
Property —			
House property	17,85,508	12	2
Sales, fixtures, etc.	1,69,319	2	7
Bills lodged as per contra	30,91,888	2	5
Customers for acceptances per contra	1,21,741	7	0
Other assets			
Sundry accounts	1,81,689	3	7
Miscellaneous accounts	3,871	0	7
Difference between head office and branches	7,07,117	6	2
Investments	1,89,95,535	0	6
Cash and other balances	94,89,102	5	10
Total Rs	8,58,73,821	8	10

PROFIT AND LOSS ACCOUNT			
	Rs	a	p
To Depositors' interest	17,38,460	9	0
Establishment	2,92,679	1	7
Auditors and directors' fees, postage and other expenses	1,76,209	11	6
Balance net profit carried to balance sheet	4,85,798	4	5
Total Rs	26,93,137	12	6
INCOME			
	Rs	a	p
By Interest, Commission, clearing and forwarding charges, and discount (after providing rebate on bills)	26,60,821	15	1
Income from house property	32,265	13	5
Total Rs	26,93,137	12	6

**Profit (Ensuing half-year).**—Transactions for the following half-year (ending June 30, 1926) yielded a profit of Rs 3,40,203-8-4 which, with the addition of Rs 56,591-8-7, made Rs 3,96,795-0-11 available for appropriation, as follows — An ad-interim dividend at 15 per cent per annum for the half-year under report free of Income Tax, absorbing Rs 2,28,485-3-5, a sum of Rs 1,25,440-2-11 to be credited to Contingent Fund, which would then stand at Rs 5 lakhs, and the balance Rs 42,869-10-7, to be carried forward (See illustration page 47)

### THE IMPERIAL BANK OF PERSIA.

**Inception.**—Incorporated in 1889 by Royal Charter under an exclusive concession granted by the Shah of Persia for sixty years, the Imperial Bank of Persia is a purely British institution registered in London. In terms of that concession, the Persian Government is entitled to 6 per cent. of the net profits

**Capital.**—The fully paid up capital of the Bank, which it is empowered to increase to £4,000,000, stands at £650,000. The reserve account has now been raised to £470,000, while the reserve liability of proprietors, under the provisions of the Charter, amounts to £1,000,000.

**Activities.**—The Bank is prepared to transact banking business of every description in and connected with Persia and Iraq, also with Bombay, Calcutta and Karachi. Clean and documentary credits are arranged, documentary bills negotiated, clean and documentary bills collected, and letters of credit, drafts and telegraphic transfers issued. The institution is served by correspondents in all important centres abroad.

**Branches.**—The chief office in Persia is situated at Teheran, while branches of the

Bank are established in that country at Abadan, Ahwaz, Baku, Barmah, Bander Abbas, Burujird, Bushire, Duzdab, Hamadan, Isfahan, Kazvin, Kerman, Kermanshah, Masjed-i Suleiman, Meshed, Mohammerah, Nasratabad (Seistan), Resht, Shiraz, Sultanabad, Tabriz and Yezd. Branches in Iraq are at Bagdad, Basra, Hinaidi and Kirkuk

The Bank's branch in India is situated at Bombay occupying commodious and well appointed premises which were reopened after reconstruction in June, 1910

**Dividend.** On December 22, 1925, was paid an interim dividend of 4s per share, free of income tax, and at the general meeting held on June 30, 1926, it was proposed to pay a final dividend of 6s per share, free of tax, making 10s for the year. That sum free of tax at 4s in the £ is equivalent to 12s 6d per share gross or 0.61 per cent per annum

**London Bankers.** Messrs Glyn Mills & Co., Westminster Bank Ltd, Lloyds Bank Ltd

**Directorate.** Sir Hugh S. Barnes, K.C.S.I., K.C.V.O. (chairman), W. A. Buchanan, F. A. Chettle, D. Gubbay, V. A. Cesar Hawkins, and Col. Sir A. Henry McMahon, G.C.M.G., G.C.V.O., K.C.I.T. Manager and secretary, Sydney Rogers, sub-manager, E. M. Eldrid

**Offices.**—London (head office) 33-30, King William Street, E.C. 4, Bombay 63 Esplanade Road (Cables "Bactria," Bombay) Codes Bentley's and private

**Balance Sheet.**—The following are the balance sheet and profit and loss account submitted for the year ended March 20, 1926 —

LIABILITIES			
	£	s	d
To Capital—99,800 ordinary shares of £6 10s 0d	650,000	0	0
200 founders' shares of £6 10s 0d	470,000	0	0
Reserve account	1,841,420	5	6
Notes in circulation	4,842,728	14	0
Deposits			
Bills payable, endorsements, ad justments and sums due to other banks	1,814,287	6	6
Profit and loss account	61,967	14	1
	1,965,240	0	1
ASSETS			
	£	s	d
By Cash in hand, at bankers, and in transit and money at call in London	4,243,971	18	10
Investments in British and Colonial Government and other securities	1,953,984	14	0
Bills discounted, loans and advances	2,744,129	1	7
Bills receivable	1,020,281	11	0
Bank premises, furniture and stationery	14,036	14	8
	1,968,401	0	1
PROFIT AND LOSS ACCOUNT			
	£	s	d
Dr			
To Interim dividend at 4s per share, paid 22nd December, 1925 (free of Income Tax)	20,000	0	0
Transfer to reserve account	50,000	0	0
Transfer to Bank premises account	30,000	0	0
Proposed dividend at 6s per share (free of Income Tax)	30,000	0	0
Balance to new account	33,967	14	1
	63,967	14	1
Cr			
By Balance brought forward at 20th March, 1925	31,565	16	2
Net profit after deducting expenses of management, royalty and general charges in London, at Chief Office and Branches, and after making provision for Income Tax and bad and doubtful debts	129,401	17	11
	163,967	14	1



**THE CENTRAL BANK OF INDIA LTD.**

**Inception.**—The origin of this Bank was the outcome of the ambition of Mr S N Pochkhanawala (its present managing director) to establish an institution entirely under Indian control with himself as manager. His project secured the invaluable support of the late Sir Phirozeshah M Mehta K C I E, under whose chairmanship The Central Bank of India was founded, being registered in Bombay on December 21, 1911. Operations were commenced early in the next year.

**Development.**—The institution had made rapid progress when, within two years of its foundation, a great financial crisis over-whelmed the Indian-managed banks in the country causing the failure of no less than sixty three. The concern now dealt with not only succeeded in riding the storm of 1913-1914, but has always emerged with enhanced credit from subsequent crucial periods, restoring public confidence in banks under Indian control. In August 1923 the Fata Industrial Bank was amalgamated with The Central Bank of India Ltd augmenting considerably both the capital and reserve of the latter, which now claims a recognised place among the leading financial corporations of the country of its origin.

**Capital.** At its inception the Bank had a subscribed capital of but 20 lakhs, of which half the amount was paid up. To-day the subscribed capital reaches Rs 3,30,00,000, the sum of Rs 1,68,00,000 being paid up, while the reserve fund comprises one crore of rupees.

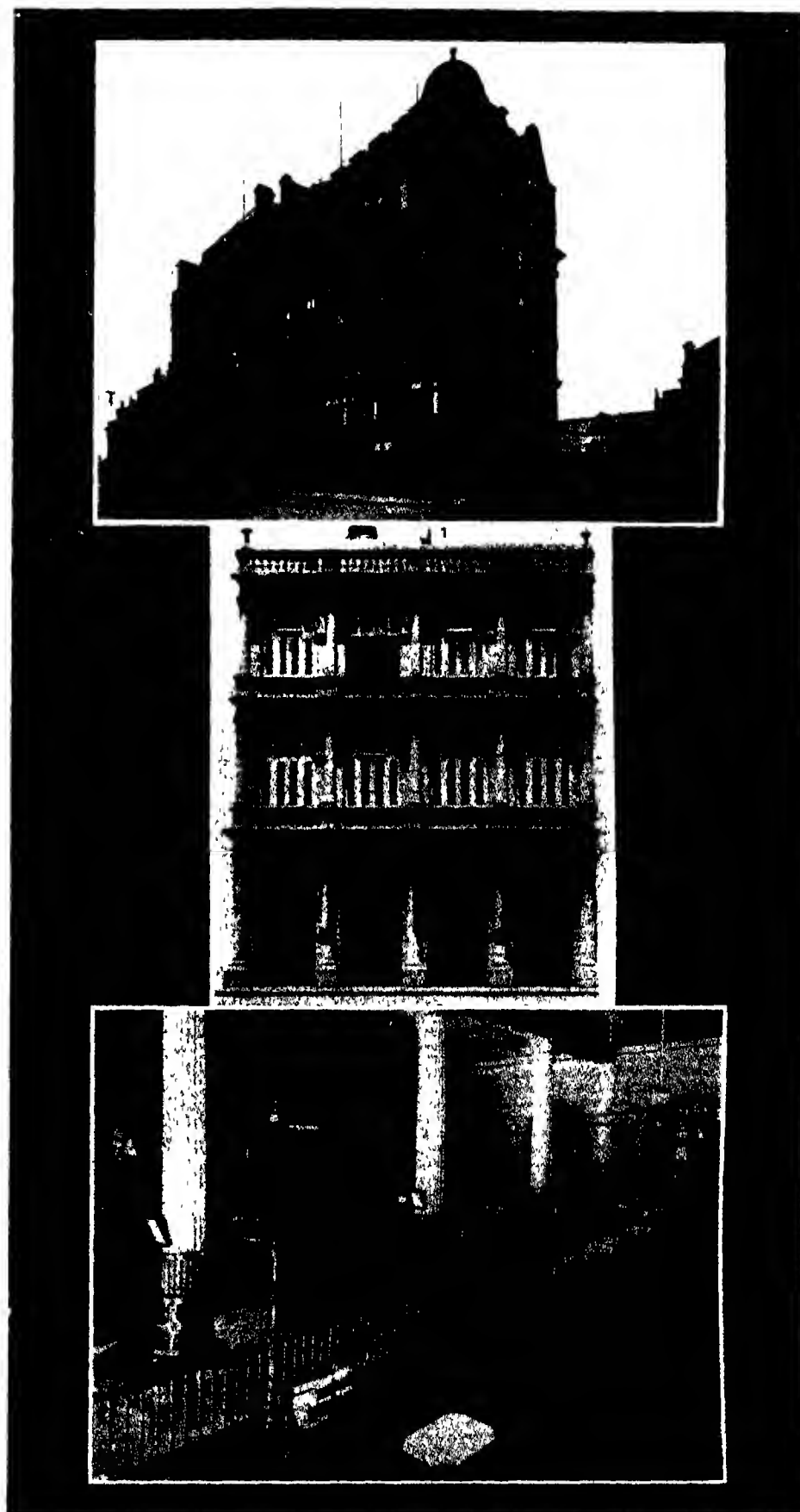
**Operations.** The policy of the Bank is directed towards no particular branch of business but embraces all classes of operations. The prompt collection of cheques, bills and drafts is undertaken, and enquiries from foreign banks and firms are welcomed. The institution encourages the public to invest in Government and gilt-edged securities by advantageous schemes of payment by instalment, while for the small depositor a Home Savings Department on unprecedentedly beneficial lines is provided. The Bank is the first joint stock concern in the country to publish a statement of liabilities and assets every fortnight, on similar lines to the weekly statements of the Imperial Bank of India.

**Safe Deposit Vault.**—On March 1, 1920, Sir Leslie Wilson, Governor of Bombay, formally opened the safe deposit vault of The Central Bank of India Ltd. The vault is constructed on the latest principles, and is the largest and strongest of its kind in the country.

**Branches.**—The Bank possesses four establishments in Bombay, including the head office, at which a staff of 500 persons is employed. Other branches are situated at Calcutta, Madras, Karachi, Lahore, Lyallpur, Cawnpore, Lucknow, Amritsar, Jharia, Asansol, Chandansi, Hapur, Delhi, Kasur, Hyderabad, Secunderabad, Ahmedabad, and Rangoon.

**Financial.**—The expansion of the business of this organisation may be gauged from the steady augmentation of its deposits, the quinquennial growth of which was as follows. In 1915 total deposits were Rs 50,30,000, in 1920, Rs 10,93,12,000, and in 1925, Rs 14,15,67,000. The latest available estimate of deposits places them at Rs 15,93,33,000.

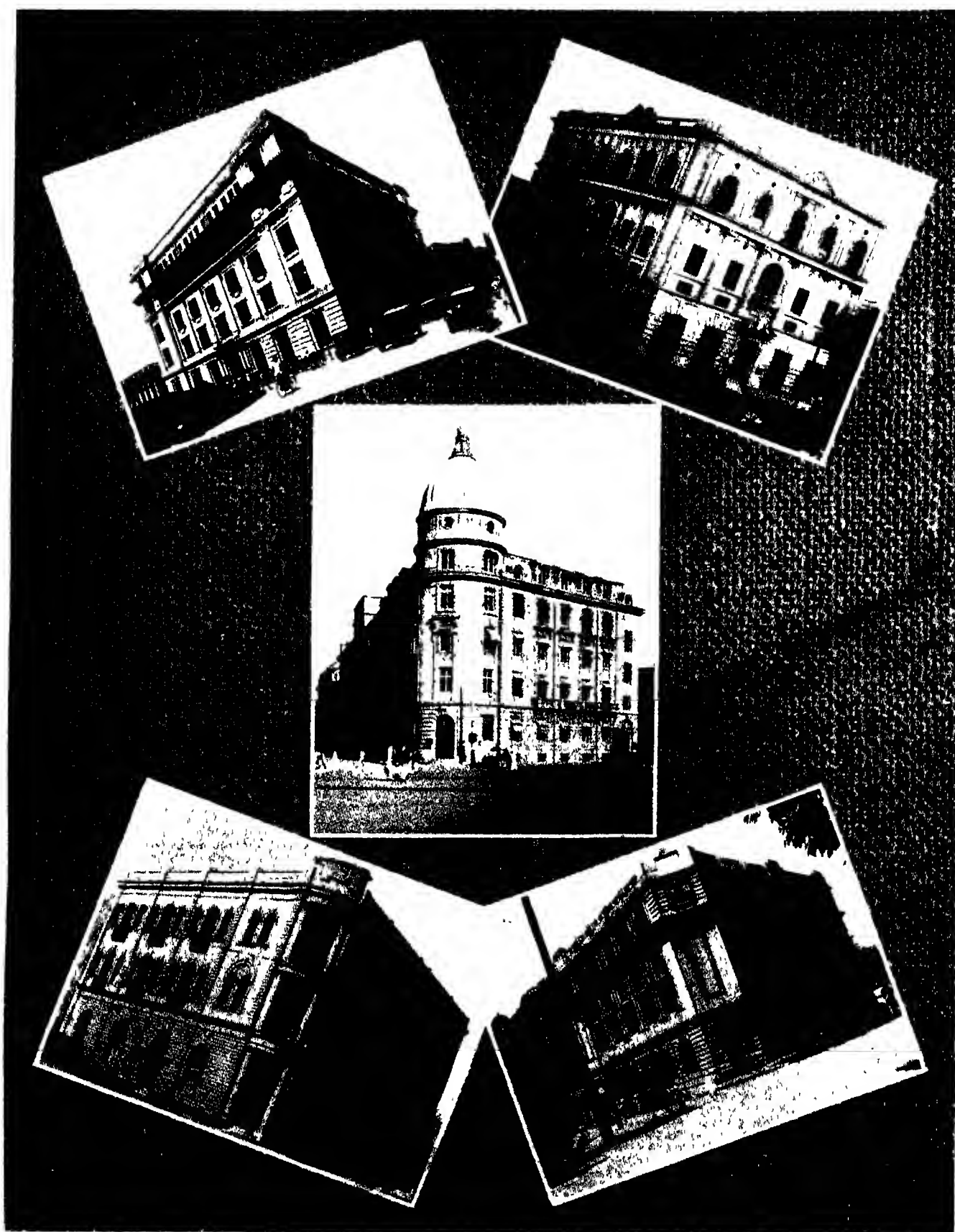
Since the inception of the Bank it has disbursed to shareholders dividends amounting to Rs 78,00,000.



**THE IMPERIAL BANK OF PERSIA.**

1. London Office.
2. Bombay Premises.
3. Banking Hall, Bombay.





THE CENTRAL BANK OF INDIA LTD.

Premises at

Centre, Bombay.

(See letterpress, page 49)

1. Calcutta.  
4. Karachi.

2. Lahore.  
5. Rangoon.

**Directorate.**—Hon Sir Phiroze C Sethna, Kt O B E, J P (chairman), Hon Sir Dinshaw F Wacha, Kt A B Dubash Motilal Kanji, Haji Gulam Mahomed Ajam, Hon Rai Bahdr Lala Ramsaran Das, C I E, Sir Bissessurdas K Daga, Kt, Mathradas Vissonji Khimji and S N Pochkhanawala (managing director) Secretary, H C Captain, B A, I I, B

**Offices.**—Bombay (head office) Central Bank Building, Esplanade Road, Fort (cables "Certam," Bombay), Calcutta Central Bank Building 100 Chive Street (cables "Centbank," Calcutta) Code Bentley's

**Agents.**—London Lloyd's Bank Ltd New York Guaranty Trust Co of New York, Berlin Deutsche Bank

**Balance Sheet.** The following were the Bank's balance sheet at June 30 1926, and the profit and loss account statement for the half-year ended that date

Capital	LIABILITIES	Rs	a	p
Authorized -				
7,00,000 Shares of Rs 50 each		3 50 00 000	0	0
Issued and Subscribed -				
6 72 528 Shares of Rs 50 each		3 36 26 400	0	0
Paid up				
6 72 528 Shares at Rs 25 1/4		1 68 13 200	0	0
Amount Received on 31 Shares				
Forfeited		530	0	0
Reserve Fund		1 00 00 000	0	0
Current and Savings Bank Deposits				
Bills Payable, and other Sums due		7 14 03 801	10	0
Fixed Deposits including Savings				
Fixed Deposits		8 29 30 001	0	4
Debts due to Banks, Agents and				
Correspondents secured by Bills				
and Investments per Contra		5 23 35 325	0	0
Provident Fund		8 04 934	0	0
Unclaimed Dividends		84 443	7	0
Refute on Bills Discounted		78 438	0	7
Branch Adjustments		1 00 732	12	1
Acceptances for Customers				
As per Contra		1 07 27 060	10	0
Bills for Collection				
Bills Receivable as per Contra		17 15 953	0	0
Profit and Loss Account		16 15 017	15	5
Rupees		26 20 71 450	6	1

## ASSETS

	Rs	a	p
Cash in hand and at Banks	2 98 28 900	15	8
Monies at Call and at Short Notice	1 00 000	0	0
Bullion on hand	2 88 016	14	4
Investments -			
Government Loans, War Bonds			
and other Gift Endowed Securities			
at or under market rate	9 92 11 105	6	10
Cumulative preference shares and			
debentures of Joint Stock Com-			
panies, etc., at or under market			
rate	1 03 13 440	14	1
Loans and other Advances	9 16 55 959	13	8
Land and Buildings	34 07 033	12	0
Bank Premises at Bombay, Calcutta			
Karachi Lahore and Asansol at			
Cost	57 03 371	4	0
Customers for Acceptances per			
Contra	1 07 27 060	10	0
Bills Receivable	47 15 953	0	0
Other Assets	6 47 804	2	6
Stamps Stationery and Stock			
of Home Savings Schemes	2 74 806	0	1
Rupees	26 20 71 450	6	1

## PROFIT AND LOSS ACCOUNT

	Rs	a	p
To Interest on Fixed Deposits	22 29 156	1	9
To Interest on Current Accounts and			
Savings Bank Deposits	8 41 575	0	4
To Salaries at Head Office and Local			
Branches	3 85 254	8	1
To Salaries at Up country			
Branches	3 97 586	1	8
To Directors' Committee Members' and			
Auditors Fees	40 550	0	0
Rent Lighting Taxes and other			
Charges	1 71 212	15	1
Postages Stationery Adver-			
tising Depreciation Contribu-			
tion to Provident Fund etc	2 87 046	0	9
Balance (Net Profit)	17 68 511	6	1
Rupees	50 11 853	10	9

	Rs	a	p
By Interest	48 35 550	8	1
To Discount (after allowing for Re-			
bate)	3 25 714	14	10
To Exchange Commission and			
Transfer Fees, etc	4 00 558	3	10
Rupees	56 21 853	10	9

## THE YOKOHAMA SPECIE BANK LTD.

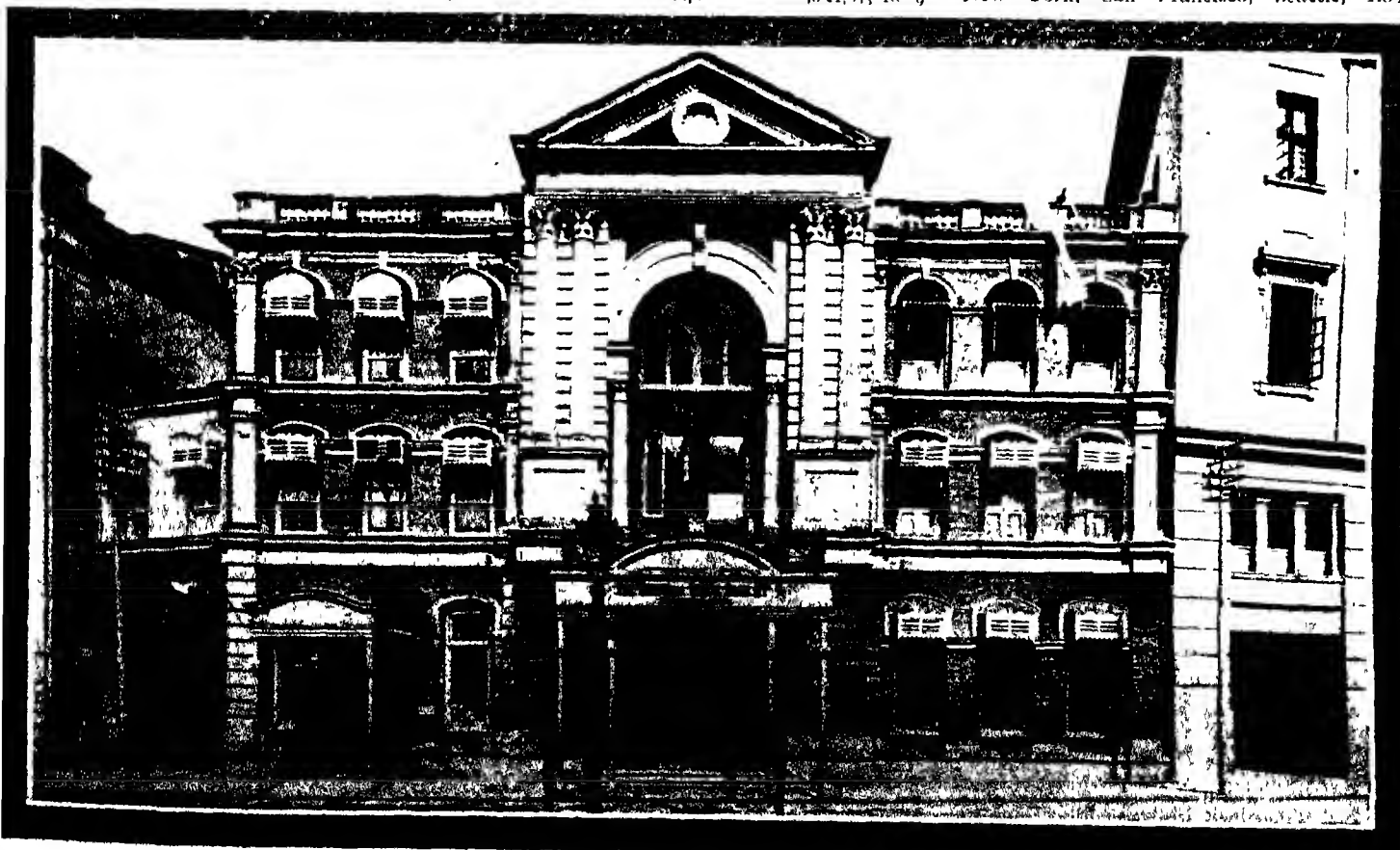
**Inception.**—Known officially in Japan as the Yokohama Shokun Ginko, and universally as one of the most powerful of the Far East corporations, The Yokohama Specie Bank Ltd was registered in Japan and founded in 1880 for the purpose of providing financial facilities for the Empire's foreign trade

**Development.**—The institution was originally operated in conformance with the National Banking Law until in 1887 a special Imperial Ordinance "The Yokohama Specie Bank Regulations," enjoined a system of strict Government supervision, which is still in force By 1889 the corporation had become independent of State aid, and thence forward it has pursued a course of continuous expansion

**Capital.** The capital of the Bank, originally Yen 3,000,000 is now Yen 100,000,000, fully paid, while the reserve fund attains the substantial figure of Yen 80,500,000

**Operations.** The daily operations of the Bank cover foreign and inland exchange, the issue of loans, the acceptance of deposits and the safe custody of valuables, the discount and collection of bills of exchange, promissory notes and other securities The institution may also buy and sell public bonds gold and silver bullion, or foreign specie

**Branches.**—The Bank's head office is at Yokohama, while its other establishments in Japan are at Kobe Nagasaki Nagoya Osaka, Shimonoseki and Tokyo Branches in China are situated at Canton Changchun, Dairen Fengtien, Hankow, Harbin, Kai-Yuan Newchwang, Peking Shanghai, Tientsin, Tsinan and Tsingtau European offices operate at London, Lyons and Hamburg, and there are also important branches at New York, San Francisco, Seattle, Los



THE YOKOHAMA SPECIE BANK LTD. Calcutta Office.

Angeles, Buenos Aires, Rio de Janeiro, Honolulu, Manila, Hongkong, Singapore, Saigon, Sourabaya, Batavia, Semarang, and Sydney. The Vladivostok branch is temporarily closed.

In India the Bank maintains branches at Calcutta, Bombay and Karachi, and in Burma at Rangoon.

**Directorate.** Kenji Kodama (president), Reitaro Ichinomiya (vice-president), Masnoske Odagiri, Baron Kovata Iwasaki, Konojo Tatsumi, Fukusabaro Watanabe, Prince Iwao Matsukata, Baron Katsaku Morimura, Kiapen Takenchi, Taro Hodsuni, Kunizo Mogami, Naoto Igarashi, Toshikata Okubo and Yakichi Smitzu.

**Offices.**—Yokohama (head office), London 7, Bishopsgate, L.C. 2, Calcutta 102 1, Clive Street (cables "Shokin" Calcutta) Codes A B C 5th edition, Bentley's and private.

**London Bankers.**—Westminster Bank Ltd, National Provincial Bank Ltd, Midland Bank Ltd and Lloyds Bank Ltd.

**Balance Sheet.**—The following are the balance sheet and the profit and loss account of the Bank for the half-year ended December 31, 1925—

LIABILITIES	Yen
Capital	100,000,000 00
Reserve fund	83,500,000 00
Reserve for doubtful debts	5,287,383 68
Notes in circulation	6,657,869 44
Deposits (current, fixed, etc.)	579,412,914 86
Bills payable, bills re-discounted acceptances, and other sums due by the Bank	589,013,373 24
Dividends unclaimed	10,703 25
Balance of profit and loss brought forward from last account	5,568,628 43
Net profit for the past half year	9,237,362 48
	Yen 1,478,718,235 38

ASSETS	Yen	Yen
Cash account—		
In hand	42,146,254 06	
At bankers	39,461,577 70	81,507,831 76
Investments in public securities and debentures	297,070,592 01	
Bills discounted, loans, advances, etc.	316,014,739 50	
Bills receivable and other sums due to the Bank	656,946,137 45	
Bullion and foreign money	10,074,465 50	
Bank's premises, properties, furniture, etc.	17,054,268 56	
	Yen 1,378,718,235 38	

PROFIT AND LOSS ACCOUNT	Yen
Dr	
To Reserve fund	3,000,000 00
„ Dividend—Yen 6 00 per share for 1,000,000 shares	6,000,000 00
„ Balance carried forward to next account	5,805,990 91
	Yen 14,805,990 91
Cr	
By Balance brought forward 30th June, 1925	5,568,628 43
„ Net profit for the half-year ended 31st December, 1925	9,237,362 48
(After making provision for bad and doubtful debts, rebate on bills, etc.)	Yen 14,805,990 91

**Profit (Ensuing Half-year).**—For the half-year to June 30, 1926, the directors announced a net profit of Yen 14,962,168 08 inclusive of Yen 5,805,990 91 brought forward from last account. It was proposed to add Yen 3,000,000 to the reserve fund, to pay a dividend at the rate of 12 per cent per annum (absorbing Yen 6,000,000), and to carry forward to next account the balance of Yen 5,962,168 08.

### BANCO NACIONAL ULTRAMARINO.

**Inception.**—As is suggested by its name, as also by its device showing a steamship under way, the Banco Nacional Ultramarino has as its prime constitutional objects the promotion of the colonial welfare and the consolidation of the overseas trade of the country of its origin. Designed to be the State bank for the Portuguese colonies, it was established at Lisbon in 1864.

**Capital.**—The original authorised capital of the institution was Esc 12,000,000 of which Esc 4,000,000 only were subscribed for and fully paid up at the time. At various stages the authorised and the paid up capital have been increased until they stand today respectively at Esc 48,000,000 and Esc 30,000,000. The reserve funds amount to Esc 10,000,000.

**Activities.** The appointment of the corporation as State bank for the Portuguese colonies, in all of which it enjoys the monopoly of issuing notes, has greatly furthered its development. It forms to-day the intermediary for the negotiation of three-quarters of the total export trade of Portugal, and has agents and correspondents in all parts of the world.

**Operations.**—The Banco Nacional Ultramarino transacts general commercial banking

YEAR	TOTAL TURNOVER (Rupces)	FIXED AND CURRENT DEPOSITS (Rupces)	OTHER BANKS DEPOSITS (Rupces)
1921	76,70,82,125	1,02,82,074	13,16,57,243
1922	76,17,16,579	1,08,69,330	14,33,74,114
1923	42,66,17,141	1,62,04,867	6,08,02,207
1924	81,01,29,717	2,21,41,135	12,80,88,226
1925	104,48,53,137	2,20,55,705	16,11,09,259

business of every description, specialising in that concerning Portuguese interests. Among its services are the purchase and sale of foreign exchanges for spot and future delivery, and the opening of accounts in foreign currencies. Clean and documentary drafts on Portugal and its colonies, Brazil and any other countries are collected, while the Bank makes advances on or negotiates approved foreign bills, and finances exports and imports by means of clean and documentary reimbursement credits.

**Branches.**—The Bank has 76 branches in Portugal, Portuguese East and West Africa, India, China, Timor, Madeira, Azores, Belgian Congo, and Brazil, as well as at London, Paris and New York.

**Indian Activities.**—The Banco Nacional Ultramarino is the only bank having branches in Portuguese India. The first of these was opened in 1868 at Margao, Salcete, Goa, whence it was transferred to Nova Goa, the capital of Portuguese India, in 1877. On May 15, 1916, an agency was opened at Mormugao, and on April 1, 1922, a sub-agency at Margao. About 93 per cent of the import and 91 per cent of the export trade of Goa—excluding imports from and exports to British India—are effected through the intermediary of this Bank, which also negotiates and finances a considerable portion of the transit trade (in particular that in manganese ore) carried on through Mormugao Port.

**Bombay Branch.**—In conformity with the agreement with the Portuguese Government, the Bank opened a branch in Bombay on January 3, 1921. On the same day the inaugural Session of the new Bombay Legislative Council, constituted under the

Indian Reforms Act (1919), was opened by H R H the Duke of Connaught at the Town Hall, a few paces from the original site of the branch. This has now been transferred to Esplanade Road, the heart of the banking locality. The Bank's chief object in opening a Bombay establishment was to furnish for its other branches an intermediary for their exchange transactions in India. To what extent the object in view has been attained is evident from the following figures, which represent the turnover of exchange with the London branch alone during the years 1921-1925—

YEAR	TURNOVER
1921	19,001,027
1922	9,431,508
1923	4,034,375
1924	8,706,574
1925	13,261,034

Among the facilities afforded by the Bombay office to its constituents are the following: Transferences to Goa payable at the Nova Goa, Mormugao, Margao and Mapuca agencies are effected free of charge; drafts payable at those places are also issued *financo de commissao*, while transferences are effected and drafts issued on any foreign country free of charge at the best ruling rate of the day.

**Turnover.**—The progress of the Bombay branch may best be judged from the following details of its turnover for the five years 1921-1925.

YEAR	BRANCHES ACCOUNTS (Rupces)	STANDARD ACCOUNTS (Rupces)	CASH (Rupces)
1921	22,07,01,031	13,44,32,503	25,89,15,697
1922	15,83,72,008	15,63,30,404	9,27,04,332
1923	10,13,28,238	9,15,70,004	15,35,52,735
1924	19,86,59,779	16,90,13,023	29,19,26,684
1925	28,11,95,821	21,26,77,945	36,49,62,705

**Staff.**—Apart from a change in the managership, the present staff of the Bombay agency remains the same as at its inauguration. Mr. Eduardo P. de Medeiros was manager until May 1922, when Mr. C. de Seabra took over the direction.

**Colonial Note Issue.**—In Portuguese India the notes of the Bank are in rupees, and are at par with British India rupees. In Macao (China) they are in patacas, and are at par with Hongkong dollars. In Portuguese and West Africa the issue is in escudos, with a small circulation in pounds, and in Timor (Oceania) in patacas.

**Turnover and Dividends.** The figures furnished below represent the annual turnover of the Banco Nacional Ultramarino during the five years 1921-1925, together with the dividends disbursed—

YEAR	TURNOVER	DIVIDENDS
1921	Esc 35,246,400,000	20%
1922	42,764,898,412	30%
1923	56,704,698,383	30%
1924	66,430,331,831	30%
1925	56,554,767,215	30%

**Administration.**—Governor João Henrique Ulrich Vice-governors Arthur Porto de Mello e Faro (Conde de Monte Real), José da Cunha Rolla Pereira, Julio Schmidt, Francisco Pinto Fernandes, Ernesto Jardim de Vilhena and Dr. Francisco Machado.

**Offices.**—Lisbon (cables "Colonial," Lisbon). London: 9, Bishopsgate, E.C. 2 (cables "Ultramarino," London), Paris: 8 Rue du Helder (cables "Ultramarino," Paris); New York: Trust Co. of North America, 93, Liberty Street (cables: "Trunor," New York); Bombay: 78, Esplanade Road (cables: "Ultramarino," Bombay). Codes: A.B.C. 5th and 6th Editions, Marconi, Ribeiro, Lieber's, Bentley's, Peterson's Guedes.



BANCO NACIONAL ULTRAMARINO, Bombay.  
 Important branches at 1. Bombay. 2. Rio de Janeiro.  
 3. London. 4. Paris. 5. New York.

**Balance Sheet.**—The following are the balance sheet and the profit and loss account as at December 31, 1925 —

LIABILITIES	
Capital paid up	Rs 30,000,000 \$300
Reserves	38,000,000 \$380
Sight deposits	172,436,410 \$1,724
Fixed deposits	119,070,812 \$1,190
Bills payable	23,743,321 \$237
Unclaimed dividends	350,120 \$350
4½ per cent bonds issued	918,990 \$918
4½ per cent bonds drawn and payable	6,930 \$69
Interest on 4½ per cent bonds payable	10,151 \$101
Predial Colonial bonds 6 per cent Law of 27th April, 1901	195,100 \$195
Predial Colonial bonds 6 per cent drawn and payable, Law of 27th April, 1901	30,120 \$301
Interest payable on 6 per cent bonds, Law of 27th April, 1901	8,137 \$81
Accounts current creditors	336,881 \$336
Loan and guaranteed accounts—Credit balances	187,779 \$187
Agents and correspondents—Credit balances	7,210,941 \$72
Securities deposited (as per contra)	487,545,972 \$4,875
Sundry impersonal accounts (as per contra)	541,980,830 \$5,419
Fusion fund	1,458,692 \$14
Head office and branches—amounts in transit	114,848,479 \$1,148
Notes in circulation	116,826,570 \$1,168
Government Treasury account (as per contra)	101,224,912 \$1,012
Drivers accounts	1,122,768 \$11
Profit and loss	1,160,568 \$11
	Esc 2,106,665,123 \$21,066
ASSETS	
Cash in hand and with other banks	Esc 48,708,383 \$487
Investments	180,016,080 \$1,800
Exchange (bills on abroad, etc.)	78,143 \$781
Inland bills discounted and transfers	71,116,095 \$711
Bills receivable	115,870,368 \$1,158
Loan and guaranteed accounts—debit balances (Merchandise bills, stocks, etc.)	70,695,527 \$706
Agents and correspondents—debit balances	15,997,793 \$159
Accounts current debtors	451,993,073 \$4,519
Bank premises	15,735,401 \$157
Furniture and fittings	249,012 \$249
Mortgage loans, Act of 27th April, 1901	394,709 \$394
Securities deposited (as per contra)	487,545,972 \$4,875
Sundry impersonal accounts (as per contra)	541,980,830 \$5,419
Interim dividend in respect of 1925	1,574,658 \$15
Mortgage and municipal loans	1,339,462 \$13
Government Treasury account (as per contra)	101,224,912 \$1,012
Shareholders	50,000 \$500
	Esc 2,106,665,123 \$21,066
PROFIT AND LOSS ACCOUNT	
Debits	
Interest on current accounts, sundry interest, commissions, transfers, etc.	Esc 47,559,179 \$475
Interest on predial Colonial bonds 4½ per cent	41,640 \$416
Difference of exchange in payment of drawn predial Colonial bonds and coupons	5,436 \$54
General expenses at head office and branches	20,555,374 \$205
Medical services	508,417 \$508
Bonus and salaries of managers and clerks	12,820,164 \$128
Legal expenses	301,953 \$301
Taxes	5,045,040 \$50
Statutory contribution to the Government	1,906,257 \$19
Engraving and stamping of notes and printing work	2,296,944 \$22
Balance	12,106,568 \$121
	Esc 103,146,986 \$1,031
Credits	
Balance brought forward from 1924	Esc 308,034 \$308
Interest on bills discounted and guaranteed credits	19,657,053 \$196
Interest on sundry accounts, commissions, transfers, etc.	64,002,559 \$640
Interest and dividends on investments	19,178,687 \$191
	Esc 103,146,986 \$1,031

### NETHERLANDS INDIA COMMERCIAL BANK (Nederlandsch Indische Handelsbank).

—Established at Amsterdam in 1863, when there was a prevailing demand for credit, particularly on behalf of the many agricultural enterprises in Netherlands East Indies, this bank may be regarded as an offshoot of the Algemeene Maatschappij voor Handel en Nijverheid, founded at Amsterdam in the same year. The latter had for its object, in addition to banking, the financing of commercial, shipping and agricultural undertakings, in which it would figure as a sleeping partner. The Nederlandsch Indische Handelsbank was therefore projected as a means by which the Algemeene Maatschappij could specialise in this form of business in the Netherlands East Indies. The Batavia office (head office for the Far East) was opened in March 1864. The original capital was Fl 12,000,000, of which Fl 6,000,000 was issued. Certain initial opposition was soon overcome, branches being opened at Sourabaya and at Semarang in 1870, since which date the development of the bank's operations has been continuous. From 1883 to 1885 the institution, having financed many sugar and other enterprises in Java, encountered the difficulties of the prevailing commercial depression in that island, and to meet the situation a new company, the Nederlandsch Indische Landbouw Maatschappij, was formed which later took over from the bank all its interests in agricultural estates. Henceforward the Handelsbank confined its activities to the development of a general banking business, which has since pursued a steadily progressive course. Every description of banking operations is transacted. The authorised capital is now Fl 60,000,000. Branches are established at Calcutta (26-27 Dalhousie Square, West), cables "Handel bank," Calcutta) and Bombay at all important centres of the Netherlands East Indies, and at Singapore, Amoy, Hongkong, Shanghai, Swatow and Kobe. The bank also has correspondents in the chief cities of Europe, America, Africa and Australia. London representative, 27, Old Broad Street, E.C. 2. Codes: Bentley's, Peterson's, Lieber's, Mercator and Private.

**AGRICULTURAL IMPROVEMENT & BANKING TRUST LTD.**—8, Cannon Street, Calcutta. Capital Rs 500,000 in 100,000 shares of Rs 5 each. Managing agents: Chatterjee, Gangulee & Co. Ltd.

**AMERICAN EXPRESS CO. INC.**—4, Bankshall Street Calcutta. International bankers and travel agents. Cables: "Cicatrix," Calcutta, and "Amexco," Bombay.

**BANK OF BARODA LTD.**—Bankers to the Government of Baroda. Head office Sarkar wala, Baroda. Branches: Bombay, Ahmedabad, Surat, Navsari, Mahana, Bhavnagar, Petlad, Patan, Amreli, Dabhoi, Sidhpur and Karjan. Correspondents in Europe. The Eastern Bank, Ltd. Cables: "Ransom," Bombay. Code A B C 5th ed.

**BANK OF INDIA LTD.**—Oriental Buildings, Esplanade Road, Bombay. Registered under the Indian Companies Act VI of 1882. Capital subscribed Rs 2,00,00,000, divided into 200,000 shares of Rs 100 each. Paid up Rs 1,00,00,000. Reserve fund Rs 76,00,000. Cables: "Stringent," Bombay.

**BANK OF MOWAT LTD.**—Registered office 10-16, Hummer Street, Fort, Bombay. Capital fully paid up Rs 15,00,000. London bankers: National Provincial Bank Ltd. Cables: "Respect," Bombay. Codes A B C 5th ed and Bentley's.

**BANK OF TAIWAN LTD.**—2 and 3, Clive Row, Calcutta. Incorporated in Japan by special Imperial charter. Capital subscribed:

Yen 60,000,000. Capital paid up Yen 52,500,000. Reserve fund Yen 14,180,000. Cables: "Taiwanbank," Calcutta.

**BENGAL NATIONAL BANK LTD.**—Head office 11, Clive Street, Calcutta. Authorised capital Rs 50,00,000, divided into 50,000 shares of Rs 100 each. Cables: "Benation," Calcutta. Code A B C 5th Edition.

**BOMBAY MERCHANTS' BANK LTD.**—70 Apollo Street Fort, Bombay. Capital Rs 10,00,000. Cables: "Seaflower," Bombay. Code Bentley's.

**BOMBAY PROVINCIAL CO-OPERATIVE BANK LTD.**—Registered office Sardar Mansion, Apollo Street, Fort, Bombay. Registered in 1911. Authorised capital Rs 10,00,000. Branches: Baramatti and Nira (Puna district), Kopergaon and Belapur (Ahmednagar district), Dhulia and Dhundachi (West Khandesh district), Malegaon (Nasik district), Islampur Karad (Satara district), Dohad (Panch Mahals district), and Parola (East Khandesh district). Cables: "Farmerbank," Bombay.

**COMPTON NATIONAL D'ESCOMPTE DE PARIS.**—Bombay House, 24, Bruce Street Fort, Bombay. Incorporated in France. Head office 14, Rue Bergere, Paris. London branches 8 to 13 King William Street, E.C. 4 and 8, Princes Street, Regent Street, W. 1. Capital Frs 250,000,000 fully paid. Cables: "Comptona," Bombay. Codes A B C 4th, 5th and 6th Editions. Lieber's, Broomhall's, Whitlaw's, Bentley's, Pibco and Western Union.

**CO-OPERATIVE HINDUSTAN BANK LTD.**—Head office 12-2 Clive Row, Calcutta. Registered under Act II of 1882. Cables: "Hinduban," Calcutta. Codes A B C and private.

**EASTERN BANK LTD. (THE).**—9, Clive Street, Calcutta. Incorporated in England. Head office 1 Crosby Square, Bishopsgate, London. Authorised capital £2,000,000. Paid up capital £1,000,000. Reserve fund £300,000. Reserve liability of shareholders £1,000,000. Cables: "Eastertide," Calcutta.

**GRINDLAY & CO. LTD.**—Calcutta 6, Church Lane. Incorporated in England. Affiliated with the National Provincial Bank Ltd. Head office, 54, Parliament Street, London. Branches: Bombay, Simla, Delhi (two), and Lahore (two). Cables: "Grindlay," Calcutta. Codes Private, National and Lahore.

**INDIAN BANK LTD.**—Head office Indian Bank Buildings, North Beach Road, Madras. Local offices: Popham's Broadway, Esplanade, Big Street, Triplicane, and North Mada Street, Mylapore. Branches: Madras and Cochin. Authorised capital Rs 60,00,000, in shares of Rs 100 each.

**INTERNATIONAL BANKING CORPORATION.**—South British Insurance Building, 4, Clive Street, Calcutta. Capital and surplus US \$10,000,000. Owned by the National City Bank of New York. Head office 60, Wall Street, New York. London Office 36, Bishopsgate, E.C. Cables: "Statesbank," Calcutta.

**KARACHI BANK LTD.**—Registered office Karachi. Bombay office Examiner's Press Buildings, Meadows Street, Fort, Bombay.

**SUMITOMO BANK LTD.**—Church Gate Street, Fort, Bombay. Incorporated in Japan. Head office Osaka. Capital subscribed Yen 70,000,000. Capital paid up Yen 30,000,000. Deposits Yen 408,000,000.

**THOS. COOK AND SON (BANKERS) LTD.**—9, Old Court House Street, Calcutta. Incorporated in England. Head office London. Indian branches: Bombay, Calcutta and Delhi. Other branches: Bagdad, Colombo, Rangoon and Singapore. Cables: "Coupon," Calcutta. Codes: Lieber's and Bentley's.



# INSURANCE

## Notes by G. F. ROSS

Manager South British Insurance Company in India

**T**HE history of insurance in India is the history of British initiative and progress in the commercial development of the country. In the old days, when first commercial enterprise necessitated the insurance of merchandise on land and by sea, various commercial houses represented certain insurance companies as agents, probably doing but little business other than the insurance of their own stocks and shipments. As business grew, several enterprising insurance companies sent their own special representatives to India, those having a technical knowledge of their business, and gradually branch offices of some of the leading companies were established, the business generally being placed on a sound footing. The natives of the country began to see the advantages of insurance, and even Mohammedan traders commenced to realise the value of being protected against loss, even though such loss might be occasioned by "the Act of God"! To-day there are few Indian shippers who would revert to the old custom of risking loss by accidents which could be insured against.

**EARLY OPERATIONS.** In the early days, when first Indian shippers began to appreciate the advantages of marine insurance, much difficulty was experienced in explaining the differences between the various methods of insuring—Fire of Particular Average and With Average Insurance, etc. Very naturally they preferred to pay the cheaper rate for F.P.A. insurance, and when a loss occurred recoverable only under the W.A. form of insurance, they pleaded ignorance of the fact, using the wiles of the diplomat. Last to induce companies to meet their claims! To-day, however, these points are more clearly understood, and little difficulty arises in such matters. On the whole, Indian shippers have, rightly, great faith in the bona fides of the leading offices, and are prepared to accept the dictum of managers of companies well known to them for straightforward dealing.

**EXPANSION OF BUSINESS.**—Those enterprising companies which opened branch offices in India long before the field was

recognised as capable of great expansion have, of course, reaped the benefit of their enterprise and longsightedness. But success brings competition. Thirty years ago the branch offices in Bombay and Calcutta could be counted on the fingers of one hand, whereas to-day in Calcutta alone more than two hands would be required to count such offices, most of them transacting fire, marine, accident and workmen's compensation insurance.

**INSURANCE ASSOCIATIONS.** As business grew, the representatives of offices formed themselves into Insurance Associations for the protection of their interests, and this led in time to the formation of tariffs and agreements for the maintenance of rates. There are associations for each class of insurance—fire, marine, accident, etc., and much excellent work has been done by the committees of these bodies. Calcutta is perhaps fortunate in having several leading insurance men who have devoted time and care to the improvement of conditions in that field, with the result that the Associations in the District are looked upon by the Home insurance authorities as something approaching the models of what Insurance Associations should be.

**NEW FLOTATIONS.**—The wave of "national" feeling which spread over India on the advent of the so-called reform in Government very naturally led to the flotation of many Indian companies. Several of these concerns were floated without adequate backing, and now find themselves making but slow progress. On the other hand, there are a few well managed concerns, conducted by European officers, which will in days to come be a credit to their founders and justify their long-sighted policy of leaving the conduct of such a technical business to the expert European managers employed.

**PROTECTION AGAINST FIRE.**—Calcutta may not perhaps, be celebrated for really big conflagrations, but nevertheless the fire waste in the aggregate is considerable, and this is not entirely to be wondered at when we remember the inflammable nature of one of Bengal's principal commodities—jute. This interest is perhaps responsible for

what fraudulent claims arise, for there are, unfortunately, many petty dealers who seek to make profits by "selling" their jute to the insurance companies. In the Marine Department also there have been in the past many doubtful claims on jute despatched by country (native) boat from the jute districts to Calcutta. However, Calcutta is now in possession of a really efficient up-to-date Fire Brigade, commanded by a very experienced Superintendent, and this alone is a preventive of fire of a certain class. Better police control of the rivers in Bengal has also led to improved conditions.

**RECREATION.** In Calcutta, especially, very good feeling exists between the representatives of offices and their various assistants. This has led to the formation of an Insurance Games Association, and under its auspices tennis tournaments and golf competitions are held yearly. The final of these tennis tournaments is usually held at the residence of one of the leading insurance men. The games promote and encourage a spirit of friendly rivalry and good fellowship much to the advantage of all concerned.

**REGULATIONS (GOVERNMENT).**—The Government of India has recently decided to introduce new insurance legislation, governing not only life, as was the case with the previous Act, but fire, marine, workmen's compensation and other forms of insurance as well. The Government's measure will probably come before the Legislature in the near future. It is expected that all offices will be required to make a deposit of Indian Government securities and conform to regulations very similar to the Home Acts. It is felt that such demands are not unreasonable, provided regulations are framed upon the Home Act and not upon the somewhat drastic provisions of the American States.

**STRUCTURES.**—Some of the leading offices have erected their own buildings in places like Calcutta and Bombay. Many of these structures are very handsome and well arranged, providing a good indication of the view taken of the future of India's commercial possibilities.

G. F. ROSS

## SUPPLEMENTARY DATA

The first of the Indian life assurance companies was established in Madras about 90 years ago. Bombay has none older than the Bombay Mutual, the Oriental and the Bombay Widows' Pension Fund, which came into being some 50 years past. Life assurance does not seem to have been started in Bengal until much later, and it was not before 1906 that many companies were established in that Presidency or elsewhere in India. The year

1919 marked the formation of several such institutions, more particularly in Bombay.

**ACTUARIAL VALUATIONS.**—Of the 53 existing Indian companies, 38 have submitted the results of actuarial valuation of their assets and liabilities. The majority have undergone valuation more than once, and altogether 81 valuation reports have been furnished by the existing companies. The latest valuations disclosed a surplus in

the case of 28 companies and a deficit in nine. In four instances the deficit was covered by the paid-up capital, thus proving solvency but precluding the payment of either bonus or dividend. In the remaining five cases it became necessary either to call up more capital or to alter the policy contracts. Thus, only 15 companies out of a total of 53 have not undergone any actuarial valuation. Four of these transact business



which is not readily susceptible of actuarial valuation, and the remaining 11 have not yet reached the stage of having a valuation.

**ANNUAL PREMIUM.**—The average rate of annual premium payable under the policies issued by Indian companies is nearly 5½ per cent of the sum assured. The corresponding rate deduced from the returns to the British Board of Trade is lower, the difference being partly due to the fact that endowment assurances constitute a larger proportion of the policies issued by Indian than by British companies.

**CAPITAL.**—Dealing with 1924, the Actuary to the Government of India stated that the total amount of paid-up capital of the Indian life assurance companies was increased by over 1½ lakhs during that year and was in 1925 a little over 53 lakhs, more than 17 lakhs of which had already been expended in preliminary and organisation expenses, etc., while six lakhs of the balance had been earmarked to meet deficits disclosed at the time of the actual valuations of assets and liabilities.

The total sums assured remaining in force at the end of 1924 under ordinary life assurance policies issued by Indian companies was Rs 42 crores. The new sums assured during that year were over 6½ crores. That new business was greater than in any previous year, and was nearly four times as large as in 1916.

**EXPENSES.**—An outstanding defect in the working of Indian companies comes to light when the ratio of expenses is examined. According to the official analysis although the expense ratio of the companies as a whole shows a slight improvement, yet there are unfortunately many companies which still conduct their business on very extravagant lines. Of the companies established in the past 20 years more than half are spending over 45 per cent of their premium income. It is noticeable, as the Actuary observes, how a high lapse ratio generally coincides with a high expense ratio. This is to be expected. If the expense ratio is high policyholders are apt to become dissatisfied and to let their policies lapse. This again tends to keep up the high expense ratio owing to the heavy expenditure involved in securing new policy holders to fill the gaps.

**FIRE INSURANCE, ETC.**—All the British life assurance companies listed below, with the exception of the Gresham and Norwich Union Companies, transact fire insurance business, as does also the Chinese Underwriters' Company. Marine insurance is undertaken by the Alliance, Commercial Union, Liverpool and London and Globe, London Assurance, Phoenix, Royal, Royal Exchange, Scottish Union and National and Yorkshire Companies, and also by the China Underwriters' Company of Hongkong. Without exception, the 17 British life assurance companies and also the Sun Life of Canada do capital redemption business, while Fidelity Guarantee and Sickness and Accident business is undertaken by the majority of the British companies.

**LIFE ASSURANCE COMPANIES (INDIAN).**—The following is a list of the Indian companies in existence in the several provinces, with the date of foundation of each—

**BENGAL PRESIDENCY.**—Hindu Mutual (started in Simla in 1891); National Indian (1906); National (1906); Hindustan Co-operative (1907); Indian Equitable (1908); Bengal Mercantile (1910); Unique (1912); Light of Asia (1913); Himalaya (1919);

Bengal Insurance and Real Property (1920); Calcutta Insurance (1924).

**BOMBAY PRESIDENCY.**—Bombay Mutual (1871); Oriental (1874); Bombay Widows (1876); Goan Mutual (1885); B B and C I Zoron (1889); Bombay Zoron (1889); Gujarat Zoron (1891); Indian Life (1892); Sind Hindu (1894); Empire of India (1896); Bombay Life (1908); Asian (1912); Industrial and Prudential Western India (1913); East and West (1913); Zenith (1919); New Era (1919); Crescent (1919); Rising Star (1924).

**MADRAS PRESIDENCY.**—Madras Widows (1833); Finnevelly (1840); Indian Christian (1884); Mangalore R C (1888); United India (1906); All India and Burma (1910); South India Wesleyan (1911); Asiatic (1913).

**PUNJAB.**—Christian Mutual (started in Central Provinces in 1847); Punjab Mutual (1893); Bharat (1896); Simla Mutual (1901); Co-operative (1906); Hindustan Death Benefit (1908); British India (1914).

**UNITED PROVINCES AND DELHI.**—Rechabites (1843); General (1908); Aryya (1910); Nagpur Pioneer (1921); All-India Insurance and Pension (1921).

**LIFE COMPANIES (BRITISH AND COLONIAL).** In 1925 there were 22 British and Colonial life offices having places of business in India. Of these 17 are constituted in Britain two in Canada one in Australia, one in the Straits Settlements and one in Hongkong. Nearly all are partially exempt from the operation of the Indian Life Assurance Companies Act of 1912 on the ground that when it came into force they were carrying on business in the United Kingdom in conformity with the provisions of the British Assurance Companies Act of 1909. The principal effect of the exemptions allowed to these British and Colonial companies has so far been that they have been freed from the necessity either of making a deposit with the Controller of Currency or of making separate statements respecting their Indian business. Those granted exemptions are allowed to submit their accounts in the form prescribed by the British Assurance Companies Act of 1909. The Indian Life Act has to a great extent been enacted on the lines of the British Act. Under the provisions of the new Bill introduced in 1926, British, as well as other companies, will be required to pay deposits. The 17 British companies transacting life assurance business in India, with the locations of their head offices and dates of constitution, are as follow: Alliance (London, 1884); Atlas (London, 1808); Commercial Union (London, 1861); Gresham (London, 1848); Law Union and Rock (London, 1806); Liverpool and London and Globe (London, 1836); London Assurance Corporation (London, 1720); North British and Mercantile (Edinburgh, 1823); Northern (Aberdeen, 1830); Norwich Union (Norwich, 1797); Phoenix (London, 1782); Royal Exchange (London, 1720); Royal London Assurance (now merged in the Royal London Mutual Insurance Society, London, 1910); Scottish Union and National (Edinburgh, 1824); Standard (Edinburgh, 1825); Yorkshire (York, 1824).

The Colonial companies are: The Manu facturers' (1887) and Sun of Canada (1865); the National Mutual of Australasia (1869); the Great Eastern (1908); and the China Underwriters' (1924).

**AMALGAMATIONS.**—The New York Life Insurance Company of America, which formerly transacted business in India, has

transferred its Indian and British policies to the Sun Life Assurance Company of Canada. The life assurance business of the China Mutual Insurance Company and the Shanghai Insurance Company, both of Shanghai, was also transferred to the Sun Life Assurance Company of Canada in 1923.

**NEW INDIAN INSURANCE BILL.**—In 1925 there were published in the Gazette of India the terms of a new Bill to regulate the operations of assurance companies which was to be introduced in the Indian Legislature in 1926. The bill seeks to substitute for an old Act regulating life offices new regulations covering all forms of insurance. It introduces the principle of deposits for all classes of insurance. Companies doing a life business are to deposit 200,000 rupees with the Government; marine, fire, workmen's compensation and accident business is to be covered by another deposit of 100,000 rupees, and a further 100,000 rupees is to be required for the practice of any other form of insurance. These deposits are to be held, of course, purely in protection of the public interest as profit-earning assets. In addition, companies will be required to submit periodic accounts to the Government with fairly stringent regulations for life offices.

**RATES OF MORTALITY.** Up till 1920 there had not been any united effort on the part of the Indian life insurance companies to prepare a table of mortality applicable to the Indian lives assured in general. In the population of India it is generally found that Parsis and Burmans experience a very light rate of mortality. In Madras it is lighter than in the Punjab which again exhibits a lower rate than either Bengal, Bombay or the United Provinces. For Hindus the rate is lighter than for Mohammedans in Bengal and about equal in Madras, but heavier in Bombay the United Provinces and in the Punjab. For females the rate of mortality is less than for males in Madras and amongst Hindus in Bengal, Bombay and the United Provinces. In the Punjab and among Mohammedans in Bengal, Bombay and the United Provinces the female mortality is the heavier.

## REPRESENTATIVE INSURANCE COMPANIES.

### THE SOUTH BRITISH INSURANCE COMPANY LTD.

**Inception.**—Despite the title under which this prominent and progressive institution has built up its world-wide organisation, it is to the Southern Hemisphere that one must turn in tracing its origin. The company was established at Auckland, New Zealand, in August 1872, with a nominal capital of £500,000.

**Development.**—The business conducted at the outset was confined to fire and marine insurance, but with the steady growth of the concern its operations were extended to embrace all classes of accident insurance, and at the present time a flourishing general business is carried on. In the record of progress the absorption by The South British Company of various important insurance houses has been a dominant factor, among those whose shares have so been acquired being the Commercial Marine Insurance Co. Ltd. of South Australia, the Adelaide Marine and Fire Assurance Co. of South Australia, the Mutual Union Insurance Co. Ltd. of Tasmania, the Straits Marine Insurance Co. of Singapore, the Eastern United Assurance Corporation of Singapore, and the Equitable

Marine and Fire Insurance Co. of Capetown. To-day the parent company claims a very enviable reputation for integrity and stability.

**Capital.**—Considerable additions to the Company's capital have been made from time to time, and the present figure is £1,000,000, of which the sum of £1,031,640 is subscribed, and £773,730 paid up. The general reserve fund is £175,000, with an additional reserve of £493,000 for unexpired risks and one of £170,230 for losses outstanding.

**Branches.**—Through its branches, agencies and representatives The South British Insurance Company Ltd. operates throughout New Zealand, Australia, Great Britain, America, South and East Africa, Egypt, India, China, Japan, the Straits Settlements, and elsewhere in the Far East.

**Indian Activities.**—Notwithstanding the increasing competition among insurance offices the world over, the Company has continued to make steady progress, as in its other spheres of operation in India and the Far East since its establishment in Calcutta in 1885, and it has there preserved its high reputation for promptness and liberality in dealing with claims. Forty years ago one small room and two Europeans, assisted by a few Indian clerks, sufficed for the conduct of the business, whereas to-day the Company has its own palatial premises in the heart of the commercial centre of Calcutta, within a stone's throw of the principal banks and mercantile houses. In Bombay the institution has a branch office, while in Madras, Colombo, Rangoon, Karachi and Cochin it is represented by old established, reputable firms.

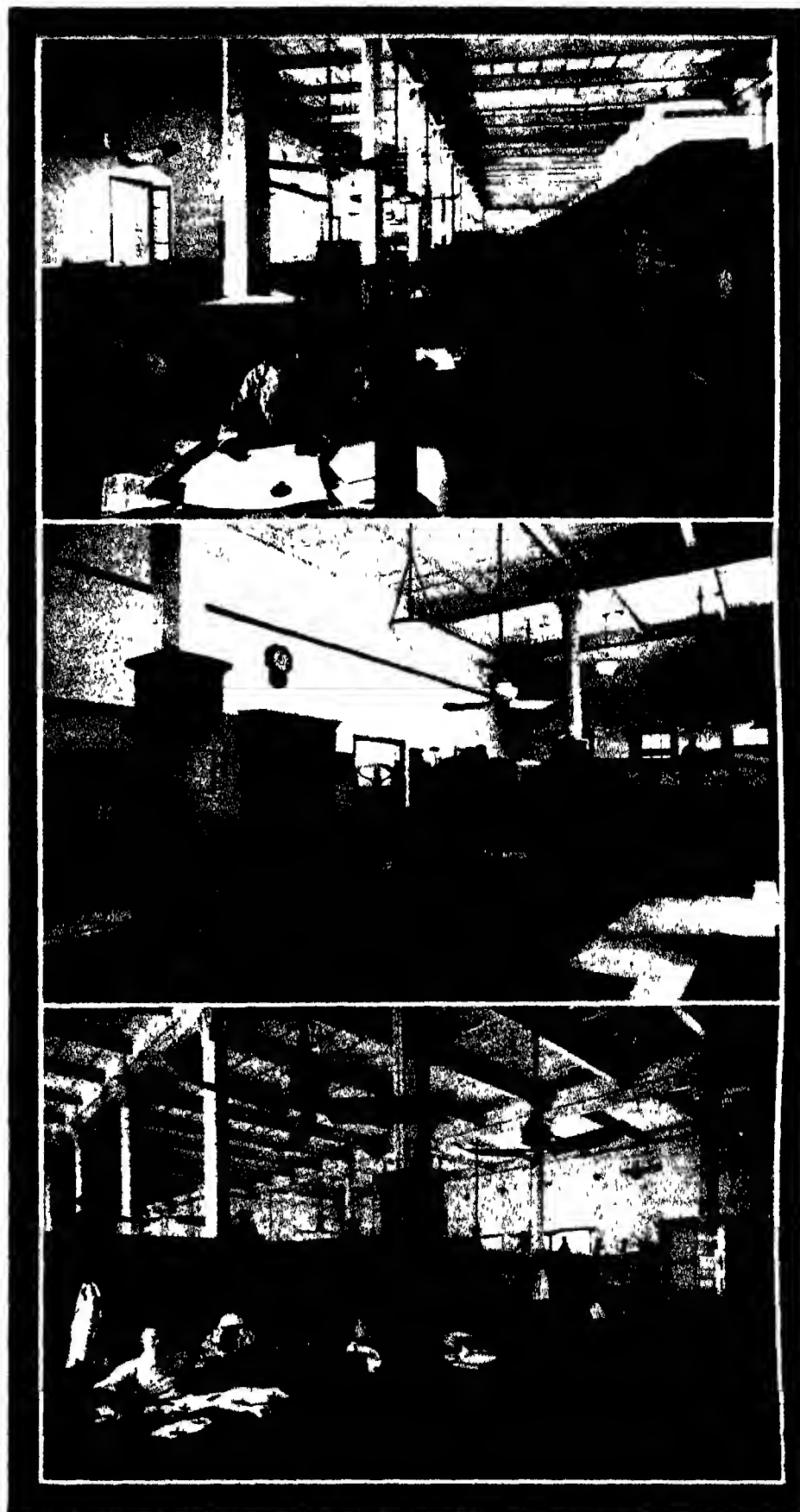
Mr G. F. Ross, the present manager in Calcutta, has had a lifelong experience of insurance matters, and has been associated with the Company for very many years, of which 32 have been spent in its Eastern service. Mr. Ross has long been connected with the Calcutta Marine Insurance Agents' Association, of which he has been chairman for the past seven years.

**Financial Position.** The statement of accounts for the year ended August 31, 1926, showed that the net premium revenue amounted to £930,533 and the interest and rents received and accrued after payment of Income Tax on same to £117,497, making a total of £1,057,923. The payment of a dividend of 1s. 1d. per share, additional to the interim dividend of 1s. 1d. per share disbursed in April 1926, was recommended. A sum of £167,735 was carried to the new account.

**Directorate.**—W. R. Wilson (chairman), Sir George Elliot, J. H. Upton, V. J. Larner, E. R. N. Russell, A. B. Robertson and Sir James H. B. Coates, General manager, P. H. Upton, secretary, J. M. Stokes, F.A.I.S.

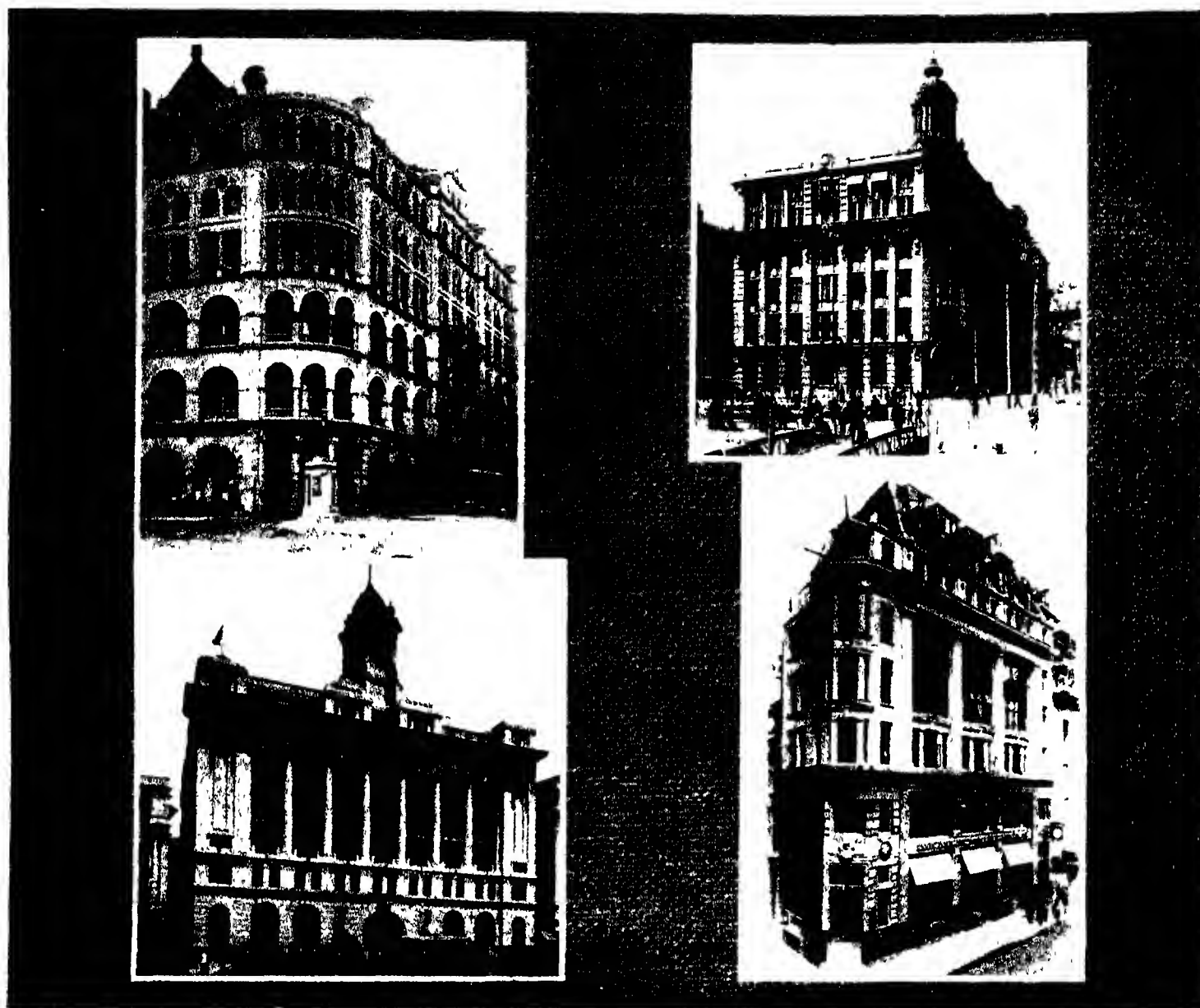
**Offices.**—Auckland (head office), 86, 88, 90, 92 Queen Street (cables "British," Auckland), Calcutta, South British Insurance Buildings, 3-5, Chive Street (cables "British," Calcutta), Bombay, Canada Building, Hornby Road (cables "British," Bombay), London, Jerusalem Chambers, 2, Cowper's Court, Cornhill, F.C. 3. Codes A.B.C. 6th Edition, Insurance and Maritime (Murray's), Bentley's.

**Bankers.**—Bank of New Zealand, Bank of England.



SOUTH BRITISH INSURANCE CO. LTD., Calcutta.

1. General Office. 2. Manager's Office. 3. Sub-Manager's Office.



UNION INSURANCE SOCIETY OF CANTON LTD., Calcutta.  
 1. Head Office at Hongkong.  
 3. Singapore Premises.

2. Offices at Shanghai,  
 4. The London Office.

#### UNION INSURANCE SOCIETY OF CANTON LTD.

**Inception.**—At an early date in the history of sea-borne commerce the favourable geographical situation of Canton made it the first Chinese port to be engaged in trade with Western countries. Thither, succeeding the Portuguese and the Dutch respectively, British merchants began to direct their cargoes towards the close of the seventeenth century, and the profitable relations so established were continued for nearly 150 years by the agents of the East India Company. The Cantonese operations of "John Company," begun in about 1684, were conducted until 1834, when its monopoly terminated, and in the next year the Union Insurance Society of Canton Ltd was founded by a group of pioneer British merchants under the guidance of the old firm of Dent & Co.

**Development.**—The enterprise early achieved a remarkable degree of success. Under the original scheme of a triennial

division of profits, first, second and third dividends of \$600 are recorded as having been paid on each share of \$5,000. The cession of Hongkong to the British Crown in 1841 was followed by the transference of the Society to the security of the new colony. Since that date its continuous progress has been synonymous with the expansion of Hongkong. Upon the collapse of Dent & Co during the financial upheaval of 1864, the Society, unaffected, became a separate organisation, controlled by a committee of management comprising representatives of prominent British firms established in the colony. In 1871 Mr Nathaniel J. Ede (uncle of the general manager, Mr C. Montague Ede) was appointed secretary, and under his dispensation the system of a triennial distribution of profits was changed to one providing for a reserve against contingencies and future expansion. The wisdom of the new policy is borne out by the sound position held to-day by the Society.

**Amalgamations.**—In 1906 an amalgamation with the China Traders' Insurance Co Ltd (now the British Traders' Insurance Co Ltd) was effected, and in 1915 one with the China Fire Insurance Co Ltd, with gratifying results to all concerned. During 1919 a fusion of interest took place with the North China Insurance Co Ltd (incorporated in Great Britain), this corporation continuing to maintain its head office at Shanghai. The Yangtze Insurance Association Ltd and the Far Eastern Insurance Co Ltd are also affiliated to the organisation under notice.

**Capital.**—The capital of this concern (originally \$1,250,000 in 250 shares of \$5,000 each, with \$1,000 per share paid up) is now £2,000,000, the paid-up capital being £540,000. Assets exceed £6,000,000.

**Activities.**—All classes of insurance, with the exception of life business, are transacted. The Society, the aims of which are "Service and Satisfaction," is continually concerned with future development, as is evidenced by

the fact that it was the first company to open a special office for aviation insurance.

**Branches.** Branches of the Society, controlled from the head office at Hongkong, are established at Adelaide, Auckland, Batavia, Bombay, Brisbane, Buenos Aires, Calcutta, Cairo, Christchurch, Dunedin, Hankow, Johannesburg, Kobe, London, Manila, Melbourne, Perth, Shanghai, Singapore, Sourabaya, Sydney, Toronto, Tokyo, Tientsin, Vancouver, Wellington, San Francisco and Yokohama. Operations have also been opened in 15 States of America, and agencies secured throughout the world.

**Indian Branches.** The Calcutta branch opened in 1906 is the controlling office for India, Burma and Ceylon. The Bombay branch commenced activities in 1920.

**Offices.** Calcutta: 8, Chive Street, P.O. Box 266 (cables "Unionist," Calcutta). Bombay: Esplanade Road Fort, P.O. Box 407 (cables "Unionist" Bombay). Codes: Bentley's, Private.

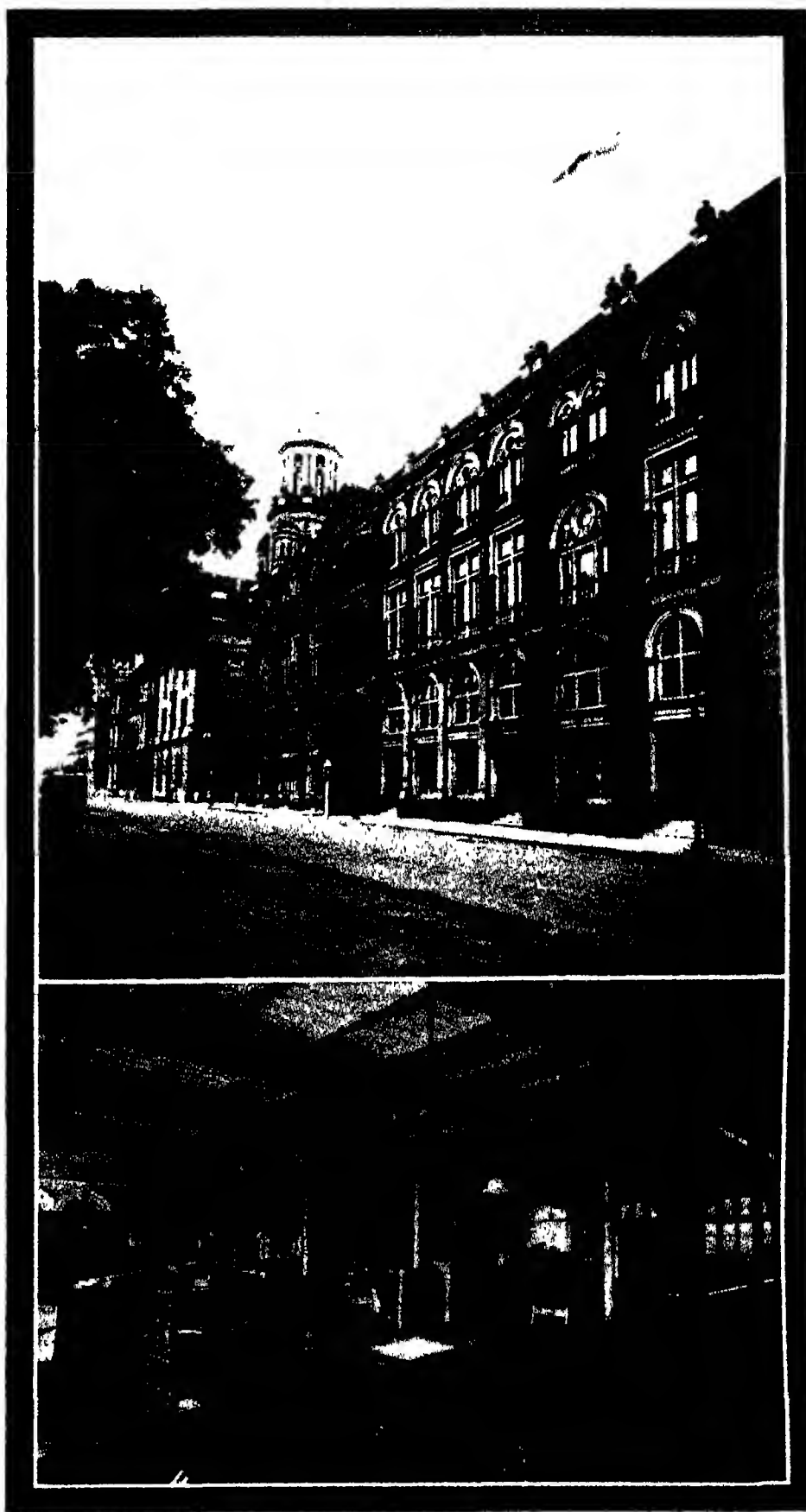
**Bankers.** Hongkong and Shanghai Banking Corporation, Mercantile Bank of India, Ltd.

#### THE STANDARD LIFE ASSURANCE COMPANY.

**Inception.**—The decision to establish The Standard Life Assurance Company was made at a meeting, held on March 23, 1825, of the partners of The Insurance Company of Scotland. The latter corporation had been established at Edinburgh in May 1821 for insurance against fire, but 'aware of the advantages resulting from Life Insurance had it from the commencement in contemplation to extend the object and business of the Company to Insurance on Lives.' That ambition was duly realised in 1825 by the foundation of The Life Insurance Company of Scotland, which changed its name pursuant to an Act of Parliament obtained in 1832, to the present form.

**Development.**—In 1846 the directors of The Standard Life Assurance Company, impressed with the conviction that life business in India and the Colonies might be undertaken at rates commensurate with the risk, turned their attention to those quarters, and after long and careful enquiry resolved to establish a new company having for its particular object colonial and foreign transactions. The Colonial Life Assurance Company was thus founded in October 1846 "for the purpose of extending to the Colonies of Great Britain and to India the full benefit of Life Assurance and for the purpose of giving increased facilities to persons visiting or residing in foreign countries." For twenty years the operations of this concern in India and the Colonies were conducted with results satisfactory in every respect, realising large profits in which the policyholders participated, and securing a wide and influential connection. In 1865 the directors of The Standard Life Assurance Company and the directors of The Colonial Life Assurance Company considered it in the interests of all concerned, seeing that the direction and management of both corporations were practically identical in composition, to amalgamate the two. The juncture was accordingly completed on March 19, 1866.

**Absorption.**—The fusion just described was the sole amalgamation to which The Standard Life Company was a party, but in the process of absorbing other businesses it had by no means been idle. The York & London Company was acquired in 1844, the Commercial Assurance, a Glasgow company, in 1846, the Colonial & General in the next year, The Experience Company of Edinburgh in 1850, the East of Scotland in 1852, the Minerva, a London corporation, in 1864, and



THE STANDARD LIFE ASSURANCE CO., Calcutta.

1 & 2. The Building and Offices.

the Victoria, similarly of London, in 1865. The Victoria Company itself had previously acquired the London & Provincial and the Legal & General Companies successively.

**Reincorporation.**—The Standard Life Assurance Company's Act (1925), reincorporating the Company and providing for its control and management as a Mutual Company, received the Royal Assent on July 31 of the year named. Under its provisions the said control is vested entirely in the policy-holders.

**Branches.**—The Company's branch offices and chief agencies abroad are established in Canada, India, Ceylon, Mauritius, China, Straits Settlements, South Africa, Egypt, West Indies and South America.

**Indian Operations.** The activities of the institution in India commenced, as has been indicated above, with the foundation of The Colonial Life Assurance Company in 1846, agencies in banks and well known firms in the principal cities of India being speedily established. Progress and prosperity, despite such set-backs as the Mutiny and recurrent outbreaks of cholera, were well maintained. In 1878, 12 years after the amalgamation of the Colonial Life and the Standard Life Companies, the business of the Indian Life Assurance Company was taken over. The last-named concern, founded in 1871 with its head office at Meerut, had undertaken "the usual description of risk contingent on human life." The greatest care has always been exercised in the selection of lives, and owing to the length of time the Company has transacted business in India it has been enabled to compile very reliable mortality statistics, and consequently to revise and reduce from time to time its various premium rates.

The whole of the Company's business in India, Burma, Ceylon and Mauritius is controlled by the office in Calcutta under the dispensation of a Local Board of Directors composed of leading members of the mercantile and banking professions. The present secretary for India is Mr. F. Loch Trevor.

**Financial Position.**—The following are the principal results of the operations of this institution during the year ended November 15, 1925—

The amount of life assurances proposed during the year was £2,226,413, the net amount of new life assurances effected £1,978,767. The corresponding net amount of premiums on new policies was £158,868. The total of claims during the year under life policies reached £868,294, while the purchase price of annuities granted was £395,428. The amount of capital redemption assurances effected was £54,804, and the corresponding premium revenue £3,564. The revenue for the year totalled £2,158,715, of which the sum of £1,395,951 was derived from premiums and consideration for annuities granted and £763,664 from interest on investments. The total assets, as shown in the balance sheet, amounted to £16,230,707. Deducting current liabilities (£276,353), the total available funds reach the figure of £15,954,354. The total of claims paid to date was £43,016,000.

The results of a valuation of liabilities and assets made as at November 15, 1925, were so satisfactory that it was decided to increase the rate of intermediate bonus to 40s per cent per annum.

**Directorate.**—Sir Ralph W. Anstruther, of Balcaskie, Bart (chairman), Field-Marshal Earl Haig, K.T., O.M., James C. Campbell, Alexander Wallace, W.S., George Wm. Blackwood, E. M. Beilby, C.A., James Ivory,

C.A., J. H. Millar, Advocate, LL.D., R. O. Pitman, W.S., Commander Hon. A. D. Cochrane, D.S.O., and H. A. Jamieson, W.S. Manager and actuary, Steuart Macnaghten, F.F.A., F.I.A., A.C.A., agency manager, L. T. J. Blount, F.F.A., A.I.A., secretary and assistant actuary, A. E. King, F.F.A., F.I.A.

**Offices.** Edinburgh (head office) 3, George Street. Calcutta Standard Buildings 32, Dalhousie Square South (ables "Standard," Calcutta) Code A.B.C. 5th Edition.

**Bankers.** Bank of Scotland, The Imperial Bank of India, The Chartered Bank of India, Australia and China, National Bank of India Ltd.

**SUN INSURANCE OFFICE, LTD. (Incorporated in England).**

**Inception.** To whatever extent that ubiquitous institution the Sun Insurance Office Ltd. may recognise the competition of its present contemporaries, it yields to none in the matter of seniority, enjoying the distinction of being the oldest insurance company in the world. In 1700 Charles Povey founded the Exchange House Fire Office for the purpose of insuring goods in the City of London, to be joined four years later by 23 men of like enterprise in establishing the Sun Fire Office and extending the existing operations to the provincial towns of England. Paul's Coffee House was appointed the meeting-place of the Company, each of the members of which, under the terms of the partnership deed, paid in the sum of £40 for the better maintaining and carrying on and establishing the office on a lasting and sure foundation. The total amount so contributed, £960, seems to have been the initial working capital of the venture.

**Development.**—From time to time losses and extraordinary disbursements necessitated the demand for additional funds, but it was not until 1728 that a substantial capital, fixed at £48,000, was created. By 1720, however, the business conducted by the Company had involved the surprising figure of £10,000,000, which after a record of progressive development, was raised to £100,000,000 in 1810.

**Capital.**—The present capital of the Sun Insurance Office Ltd. is £2,400,000 in shares of £10 each, 12 per share being paid. Of these 240,000 shares, 1,000 are held by the Office but are not included among the investments. The general reserve fund totals £650,000.

**Overseas Business.**—In 1830 the Company established contact with America by accepting the first insurance in the United States. By 1851 agents secured for it a sound footing throughout the West Indies, and in the next year firms of high standing undertook its representation in India and China. Transactions were opened in South Africa in 1853, extended to Chile in 1857, and inaugurated in Japan and the Philippines in 1865, such overseas business having since been expanded until the name and the device of the institution are encountered in every quarter of the globe.

**Indian Operations.**—The first branch of the Sun Insurance Office Ltd. in India was opened in 1808 at Calcutta by Mr. W. R. Rae, who controlled from that city the whole of the Office's operations in India until his retirement. Owing to expansion of the business, it was desirable that the Bombay Presidency

area should be controlled direct from Bombay, and a branch was opened there for that purpose in 1922, with Mr. J. A. Cochrane as branch manager.

In 1923 Mr. W. R. Rae retired from India and Mr. P. H. Price was appointed as branch manager at Calcutta, controlling Northern India, the Madras Presidency and Burma.

Mr. P. H. Price was later succeeded by Mr. W. G. Smith, who is now the Calcutta branch manager. With regard to representation, Messrs. Parry and Co. (established in 1788) have been the Company's agents in Madras since 1852 while Messrs. Ellerman's Asiatic Rice and Trading Co. Ltd. (formerly The Asiatic Co.) have performed a like service in Burma since 1885. Messrs. Balmer, Lawrie & Co. Ltd. and Messrs. Charn & Co. Ltd. are the Calcutta agents. At Bombay Messrs. Currimbhoy, Ebrahim & Co. are the representatives of the Office, and at Karachi Messrs. Kahn & Kahn and Couper & Young are the agents.

**BUSINESS UNDERTAKEN.** The following classes of insurance are undertaken by the Company in India: Fire, marine, motor cars and vehicles, burglary and house-breaking accidents and specified diseases, fidelity guarantee for Government and commercial appointments, third party (including lifts and drivers), plate glass and workmen's compensation.

**Financial Position.** The company's report and accounts for the year 1925 furnished the following particulars. The balance brought forward from 1924 amounted to £684,177, reduced after paying dividends less tax, to £498,177. This sum by the operations of 1925, was increased to £602,412, out of which there was carried to pension fund £50,000 and to general reserve fund £229,474 leaving a balance of £682,939. An interim dividend of 10s per share less income tax was paid in January 1926, and a further dividend (the 40th since the foundation of the Office) of the same amount was disbursed on July 1. This payment required a sum of £95,250, leaving unappropriated £492,439.

At the submission of the report on May 17, 1926, the total funds of the Office stood at £5,274,911.

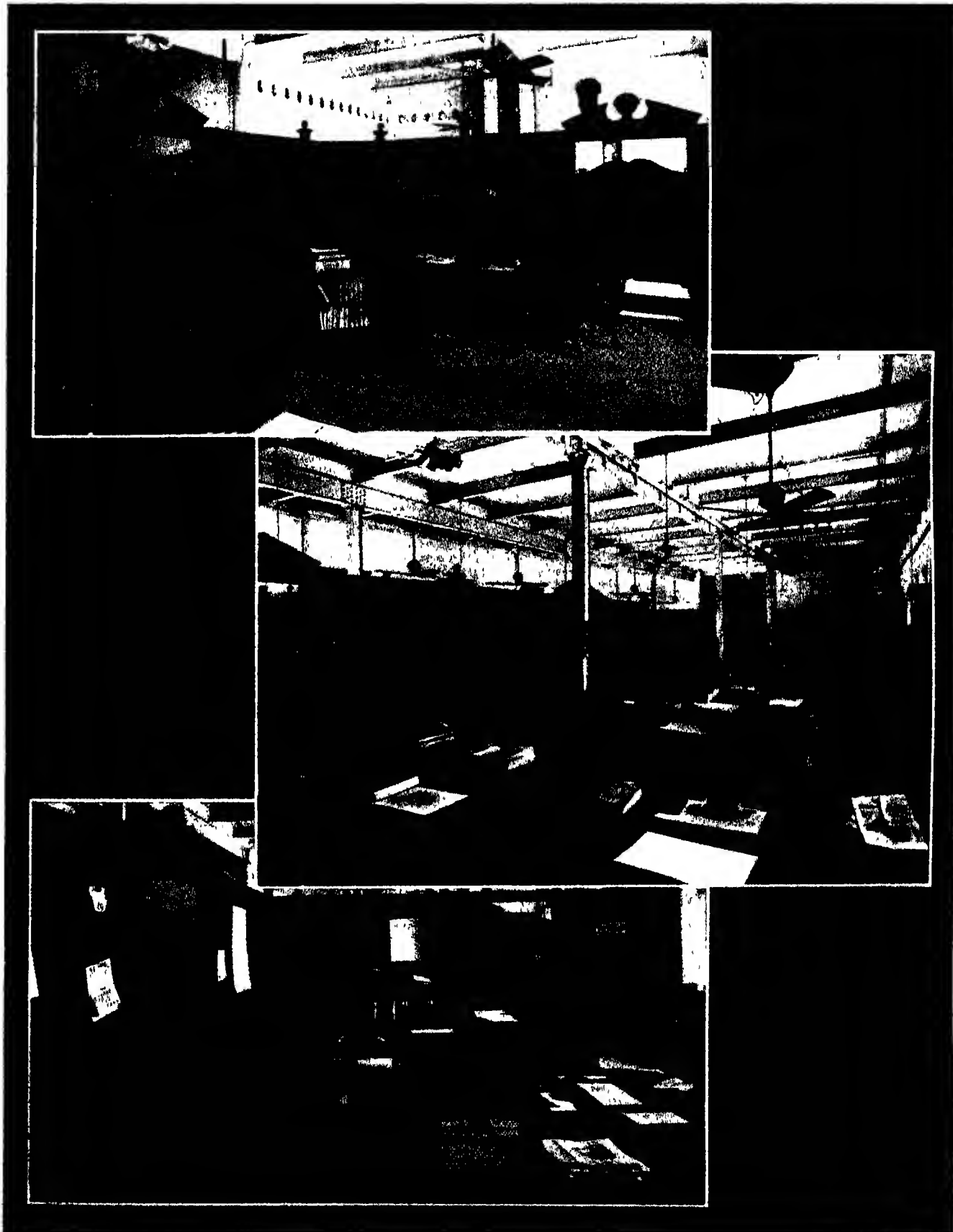
**Directorate.**—The Hon. Sir William H. Goschen, K.B.E. (chairman), Frank Chaplin (deputy chairman), W. M. Pryor, D.S.O. (vice-chairman), Edward Dent, Alfred Bagnall, Edward Charles Grenfell, M.P., Sir Robert Arundell Hudson, G.B.E., Gen. The Hon. Sir H. A. Lawrence, G.C.B., Ronald C. Scott Murray, Lord Henry G. R. Nevill, F. R. Peacock, The Hon. Charles Arthur Urian Rhyss, M.C., M.P., Charles V. Sale. The Hon. Charles L. Slater Booth, Lord Herbert Scott, C.M.G., D.S.O., Charles W. Tomkinson and W. K. Whigham. General manager and secretary, W. W. Otter-Barry, sub-managers, H. S. Whiting and H. R. Hobson, D.S.O.

**Offices.**—London (head office), 63, Threadneedle Street, E.C. 2, Calcutta 2, Hare Street (ables "Sun," Calcutta), Bombay 24, Bruce Road, Fort (ables "Insurance," Bombay) Code Bentley's.

**Patriotic Assurance Company Ltd.**—As is well known, the prosperous institution bearing this name is a subsidiary concern of the Sun Insurance Office, Ltd. Possessing a head office in Dublin, it is represented in both India and Burma.

**Bankers.**—Chartered Bank of India, Australia and China, Imperial Bank of India,





SUN INSURANCE OFFICE, LTD., Calcutta.

1. Manager's Office.
2. General Office.
3. Sub-Manager's Office.





PHOENIX ASSURANCE COMPANY, Calcutta.  
General Office.

#### PHOENIX ASSURANCE COMPANY.

**Inception.**—During the last quarter of the eighteenth century the influential body of London merchants engaged in sugar-refining, dissatisfied with the terms demanded by existing fire offices for insuring their particular trade, decided to formulate a plan of inter-insurance among themselves. In November 1781 the project was given close consideration, and under the guidance of Nathaniel Jarman was speedily put into practice. The trade committee proposed "a capital deposited of not less than £15,000 sterling, and subject to a call of £15,000 more if necessary," the shares to be 300 in number, of £50 each. The actual number of shares issued in the following January was, however, 325. At the general meeting of subscribers held in the same month, five trustees and ten directors were appointed to manage the society's affairs for one year. The name temporarily adopted was "The New Fire Office Company," and the first policy was issued on January 17, 1782. In the Deed of Settlement executed in August 1783 the name was altered to "The New Fire Office, or Phoenix Society," ultimately to be changed (1785) to "The Phoenix Assurance Company, or New Fire Office in London."

The first fire insurance company, granted a Royal charter in 1688 and conducting business until 1760 from an office behind the Royal Exchange, had also adopted the name of "Phoenix," but little definite connection can be traced between that institution and the one now under notice.

In 1785 a proposal to undertake life assurance was mooted, but it was not until 1797 that a sister company, known as the Pelican Life Office, was established on a separate foundation. It was decided that

eight of the Phoenix Company directors with seven others chosen from the new shareholders should compose the board of the junior concern.

**Development.**—The Phoenix Assurance Company from the first pursued a policy of steady extension and consolidation, securing for its administrators and representatives men and firms of the soundest reputation. Up till the twentieth century the institution had concerned itself little with the absorption of other companies, and had confined its transactions to fire insurance only. The Phoenix Assurance Company's Act (1895), however, had authorised it to conduct both life and accident business. On January 1, 1908, it was fused into one organisation with the Pelican Life Office, which had itself absorbed the Manchester Life Office in 1846 and the British Empire Mutual in 1903.

The acquisition of the Law Life Assurance Society in 1909 further augmented the life business of the Company, while marine insurance was first undertaken following the absorption of the Union Marine Company in 1911. Accident underwriting had been commenced in 1907, and the purchase fifteen years later of the London Guarantee and Accident Company's shares greatly increased the volume of accident and casualty insurance transacted. In 1920 the Phoenix Company had acquired the shares of the Norwich Union Fire Office, but these were relinquished in 1925.

**Capital.**—The fully subscribed capital of the Company is £3,792,795, of which £1,005,000 is paid up. Debenture stocks, comprising 4 per cent. (Law Life), 4 per cent. (1911) and 5 per cent. (Registered, 1922), amount to £2,249,583. Reserve funds in-

clude a general reserve of £2,500,000, an additional reserve of £1,000,000, and a contingencies reserve of £617,272.

**Advantages.**—Since the Phoenix Assurance Company was the direct creation of a body of would-be policy holders, its original conditions and benefits were naturally as advantageous as possible to those insured. The Company has never departed from that tradition, and to this day combines with complete security the widest range of service.

**Financial Position.**—The following figures represent the total assets of the Company on December 31, 1925:—

Life Assurance funds	£13,705,893
Fire Insurance funds	1,250,000
Marine Insurance funds	681,888
Personal Accident Insurance funds	101,000
Employers' Liability Insurance funds	165,000
General Insurance funds	1,449,000
Sinking Fund and Capital Redemption funds	564,256
General reserve	2,500,000
Additional reserve	1,000,000
Contingencies reserve	617,272
Profit and Loss account	1,580,518
Capital paid up	1,005,000
Debenture Stock funds	2,249,583
	£26,878,410
Reserve for dividends payable in 1926	518,517
Reserves for outstanding claims	2,838,349
Provision for outstanding accounts, etc.	1,605,751
Total assets as in balance sheet	£31,841,02

**Profit and Loss Account.**—Profits of £401,383 were transferred to this account from the underwriting accounts. Interest amounted to £554,786. The sum of £500,000 was applied in increasing the general reserve and £518,517 was set aside as a reserve for the dividends payable in 1926. The balance of profit and loss account carried forward was £1,580,518.

At the Ordinary General Meeting (April 27, 1926) the directors declared a dividend of 13s. per share to be paid in two instalments of 6s. 6d. each, subject to deduction of income tax.

**Agencies in India.** Another tradition preserved by the institution is that of entrusting with its representation throughout the world only those firms of the highest standing as is the case in India, where it has been represented for very many years, and where it possesses an imposing office at Calcutta. Amongst the many well-known firms representing the Company in various towns and cities of India will be found Messrs. James Finlay & Co. Ltd., Gill & Co., Balmer, Lawrie & Co. Ltd., Shaw, Wallace & Co., Rath Bros., Finlay, Fleming & Co., Binny & Co. (Madras) Ltd., Carson & Co. Ltd., Galloways, Arbuthnot & Co., Ellerman's African Rice & Trading Co. Ltd., Forbes, Forbes, Campbell & Co. Ltd., A. Scott & Co., Hayley & Kenny, Gladstone Wylie & Co., Walker & Co. Ltd., and B. P. Pochaj & Sons.

**Directorate.**—Sir Gerald H. Ryan, Bart. (chairman), Rt. Hon. Lord George Hamilton, P.C., G.C.S.I. and Edward Garney Buxton (deputy chairman), Henry Bell, Lt. Col. Hon. Stuart P. Bouvier, D.S.O., Bristow Boxall, Rt. Hon. Viscount Dillon, C.H., D.C.L., William F. Fladgate, M.V.O., Robert Grant, Sir Clarendon G. Hyde, Hon. Edwin Ponsonby, Sir Thomas Royden, Bart., C.H., John Tryon, Arthur M. Walters and Brig.-Gen. J. E. Wigan, C.B., C.M.G., D.S.O. General manager, R. Y. Sketch, F.C.I., Manager for India, J. W. Webber.

**Offices.** London (head office) Phoenix House, King William Street, E.C. 4, Calcutta 28, Dalhousie Square (cables "Phoenix" Calcutta) Codes Bentley's and Pyro.

#### THE MOTOR UNION INSURANCE COMPANY LTD.

**Development.**—Incorporated in England this progressive office speedily gained a wide reputation as a pioneer of motor vehicle insurance, becoming particularly esteemed for its prompt and generous settlement of claims. The activities of the corporation were subsequently extended to include the following classes of business: Fire, marine, workmen's compensation, loss of profits, burglary, plate glass, personal accident and sickness, and administration bonds.

**Capital.** The capital of the company is £400,000 (400,000 shares of £1 each), of which £374,543 is paid up.

**Alliance with the A.A.**—The concern under notice is closely allied to the vast organisation of the Automobile Association of Great Britain, being the official insurance company to that body.

**Indian Activities.**—The rise and growth of the enterprise in India are typical of the history of its world-wide ramifications. The Company started its career in that country as an agency in Bombay in 1909, occupying a small office situated in Elphinstone Circle. Motor vehicle insurance, as in the case of the Home policy, was the first undertaking, to be followed shortly by fire and marine underwriting. Gratifying expansion of business



THE MOTOR UNION INSURANCE CO. LTD., Bombay  
Building in which the Company's Head Office for India is situated.

led the directors to open a branch office in Bombay in January 1920, Mr. W. Bulmer Perry being in charge until his death in the middle of the next year. Mr. J. R. C. Badham was then appointed branch manager at Bombay. A few months later Mr. Badham opened a branch office at Calcutta, being subsequently created manager for the whole of India.

From the new and commodious head offices in Bombay, commandingly situated in the busiest part of the city, Mr. Badham controls the whole of the Company's business in India, administering the two branches at Bombay and Calcutta (with a joint personnel of seven Europeans and 64 Indians), also 85 agencies and sub-agencies. The interests of Automobile Association members in India are cared for officially by The Motor Union Insurance Co. Ltd., Mr. Badham being the representative of the A.A. in that country. He is also an active committee member of the Western India Automobile Association, and has recently been elected to a seat on the Bombay Municipal Corporation.

The business of the institution in India continues to grow, and now embraces all those categories enumerated above.

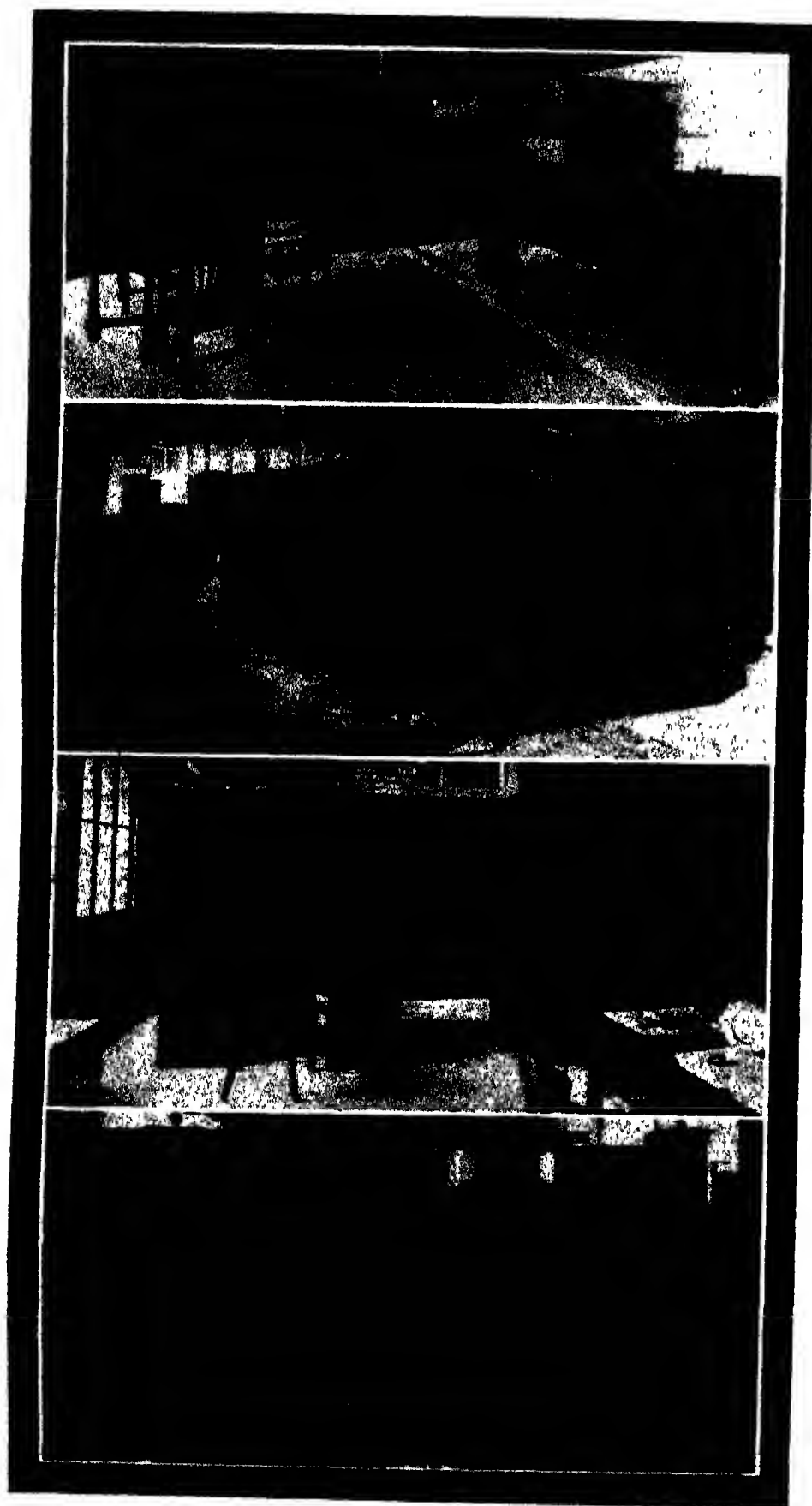
**Financial.**—The company's report for the year ended December 24, 1925, showed that the premium income in all departments was £1,954,906. Sums credited to profit and loss account in respect of the year's underwriting amounted to £84,303, to which were added interest, dividends, etc., £54,029, and the

amount brought forward from last account of £99,853, making a total of £238,184. The sum of £45,000 taxation reserve not required for that purpose increased that total to £283,184. From this amount were deducted the following: Loss on exchange £7,576, transfer to fire insurance account to meet special losses £43,148, transfer to marine insurance account £115,000, amounting in all to £165,723. The balance resulting to the credit of profit and loss account was £117,460. Out of this sum the year's dividend on 5½ per cent cumulative preference shares (less tax), amounting to £7,020, and an interim dividend of 4s. per share (less tax) on the ordinary shares, totalling £31,750, have been paid. The balance of £78,090 was applied to paying a final dividend of 6s. (less tax) on the ordinary shares, amounting to £47,625, and a grant of £1,500 to the staff pension fund, leaving £28,965 to be carried forward to the next account.

**Directorate.** C. H. Dodd (chairman), S. D. Hollingsworth, J. E. Hodgkin, W. Rees Jeffreys, W. B. Jessopp. General manager and secretary, H. F. Baker.

**Offices.**—London (head office) 10, St. James's Street, S.W. 1, Bombay Jehangir Wadia Building, Esplanade Road, Fort (cables "Motunicon," Bombay), Calcutta 101, Chive Street (cables "Motunicon," Calcutta) Codes A B C 5th and 6th Editions and Marconi, Vol. 1.

**Bankers.**—National Provincial Bank, Ltd.



NEW ZEALAND INSURANCE CO. LTD., Calcutta.  
 1. Vestibule of the Building.  
 2. Looking towards Vestibule from back of Office.  
 3. Manager's Room.  
 4. Back portion of the Office.

#### NEW ZEALAND INSURANCE COMPANY LTD.

**Inception.**—To the New Zealand Insurance Co. Ltd. attaches the distinction of being the oldest insurance institution in the Dominion, with a record approaching three-score and ten years in duration of consistently valuable service. The concern was incorporated in the country and established at Auckland in 1850.

**Development.** Early activities were restricted to fire and marine insurance, a sound business being built up in these departments. In December 1905, however, the New Zealand Accident Insurance Company was taken over, and the articles of association of the absorbing Company were extended to accommodate all classes of business, with the exception of life policies. In whatever category its transactions may be, the Company has won a reputation for prompt recognition of obligations and settlement of liabilities.

**Capital.**—The original nominal capital of the institution was £100,000, of which £52,000 was at once subscribed, some £5,000 being paid up. The first policy was issued on June 4, 1850. The subscribed capital stands to-day at £1,500,000 and the paid up capital at £1,050,000, while the reserve funds total £1,130,207.

**Trustee, Executor and Agency Department.**—In 1910, actuated by the growing demand in New Zealand for corporate trustees, the Company, obtaining statutory powers for conducting trustee, executor and agency business, opened a special department for the performance of such operations. The guarantee of safety offered by an organisation of such stability as the New Zealand Insurance Co. Ltd. renders this feature extremely attractive to those clients requiring services in any fiduciary capacity.

**Branches.**—Branches of the Company are established throughout the Dominion of its origin, and in Australia, India, Burma, the Far East, the United States, South America and the United Kingdom, some 600 employees being engaged in its world-wide transactions.

**Indian Operations.** By the opening of a branch at Calcutta in 1882, the Company enrolled itself among the pioneer insurance institutions in the Province of Bengal. The activities of that office have now been extended to the United Provinces of Agra and Oudh, Punjab, Delhi, North West Frontier, Kashmir, Baluchistan, Bihar and Orissa, Assam, Burma and Ceylon. The principal forms of insurance now conducted in India are fire, marine, comprehensive motor car and motor cycle, loss of profits, fidelity guarantee, combined fire and burglary, and workmen's compensation. Underwriting is conducted in Departments, each being under the supervision of European assistants. The Indian staff, numbering some 50 clerks, shares in the Company's Provident Fund on an equal basis with the European staff.

The principal agents for the Company in the city of Calcutta are Messrs. Bird & Co. and Messrs. Andrew Yule & Co., Ltd.

**Burma Branch.**—The New Zealand Insurance Co. Ltd. was first represented in Burma by agents in 1900. The steady growth of its marine and fire business in that country at length necessitated the opening of a sub-branch in Rangoon in 1911. Since its inception that office, which reports to Calcutta, has made uninterrupted progress.

**Financial.**—The Company's report for the year ended May 31, 1926, showed the net revenue from fire, marine and accident premiums to amount to £1,066,012. The surplus on the year's operations, after making

full provision for losses, depreciation of investments and appropriation for taxation, totalled £80,158, and the net income from interest and rents £117,240. It was proposed to supplement an interim dividend of 10d per share, paid in the preceding February, by another dividend of like amount. The sum of £75,000 having been transferred to the reserve fund, a balance of £121,983 remained to be carried forward. Among the Company's assets, the investment total of £2,250,518 comprised Mortgages, £34,717, shares

"Newzico," Calcutta), Rangoon Sofaer's Buildings (cables "Newzico," Rangoon) Codes Bentley's and Western Union

**Bankers.** Bank of New Zealand

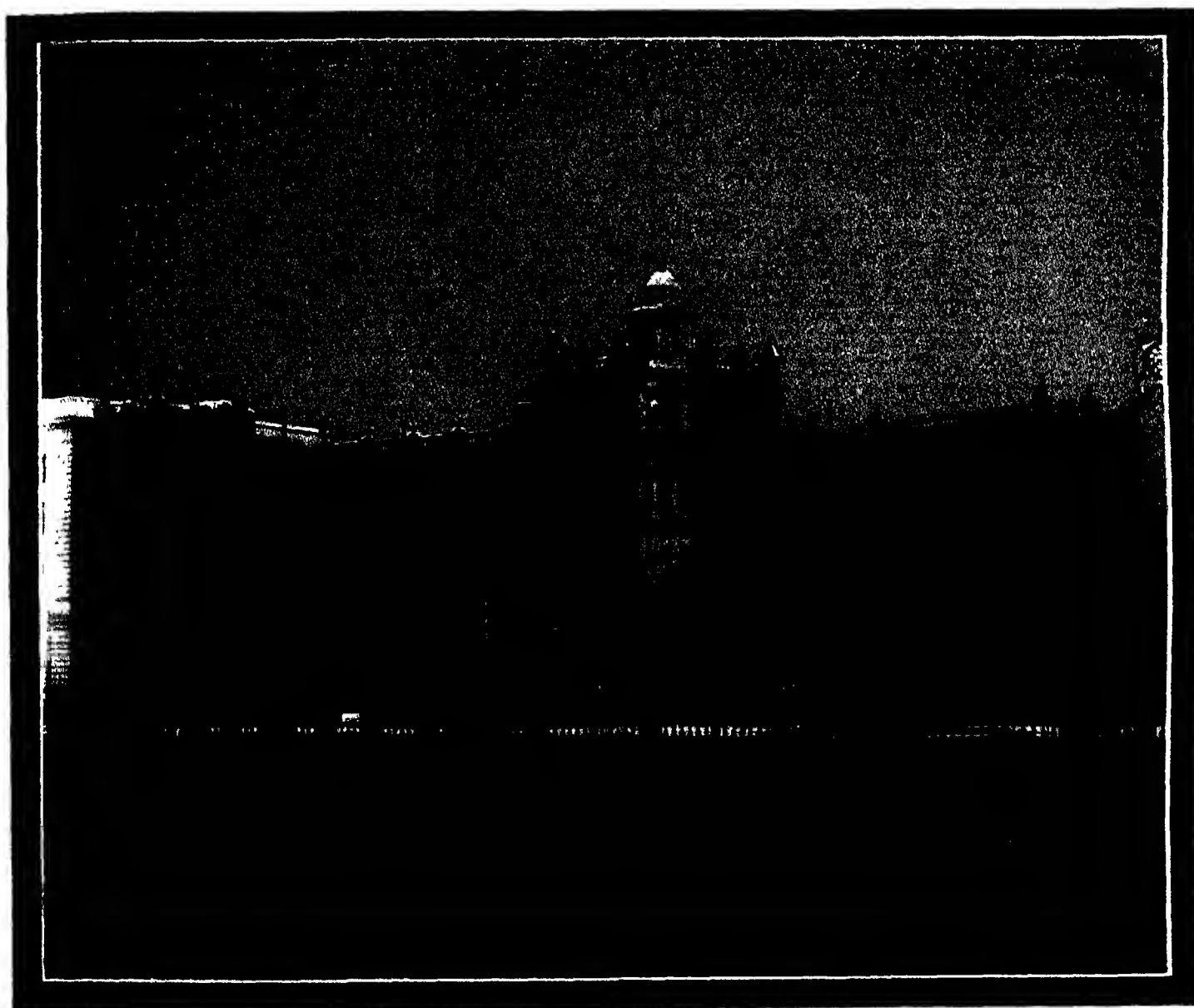
**INDIA** Chartered Bank of India, Australia and China and Mercantile Bank of India Ltd

**ROYAL INSURANCE COMPANY, LIMITED.**

**Inception.**—This institution, the crown and-shield device of which is familiar in every corner of the globe where general

£5,590,430 in 1,110,880 shares of £5 each. The paid up capital is £2,230,772 (£2 per share). The general contingencies fund stands at £500,000.

**Activities.**—The Royal Insurance Co. Ltd undertakes business in the following categories: Fire, life (offering a wide range of attractive schemes of personal insurance), marine accident, employers' liability, burglary, fidelity, motor car, engineering, live stock, loss of profits, etc.



ROYAL INSURANCE CO. LTD. The Calcutta Offices.

£671, freehold office premises and other properties, £412,523, bonds and debentures, £1,758,594, and fixed deposits, £53,014.

**Directorate.**—Sir James H. Gunson (chairman), Robert C. Carr, A. S. Bankart, Henry Horton, C. V. Houghton, Oliver Nicholson, Charles Rhodes and George H. Wilson. General manager, H. P. Kissling.

**Offices.**—Auckland (head office) Queen Street (cables "Ariadne," Auckland), London, 3, Finch Lane, E.C. 3, Calcutta Royal Insurance Company's Building, 26 and 27 Dalhousie Square, West (cables.

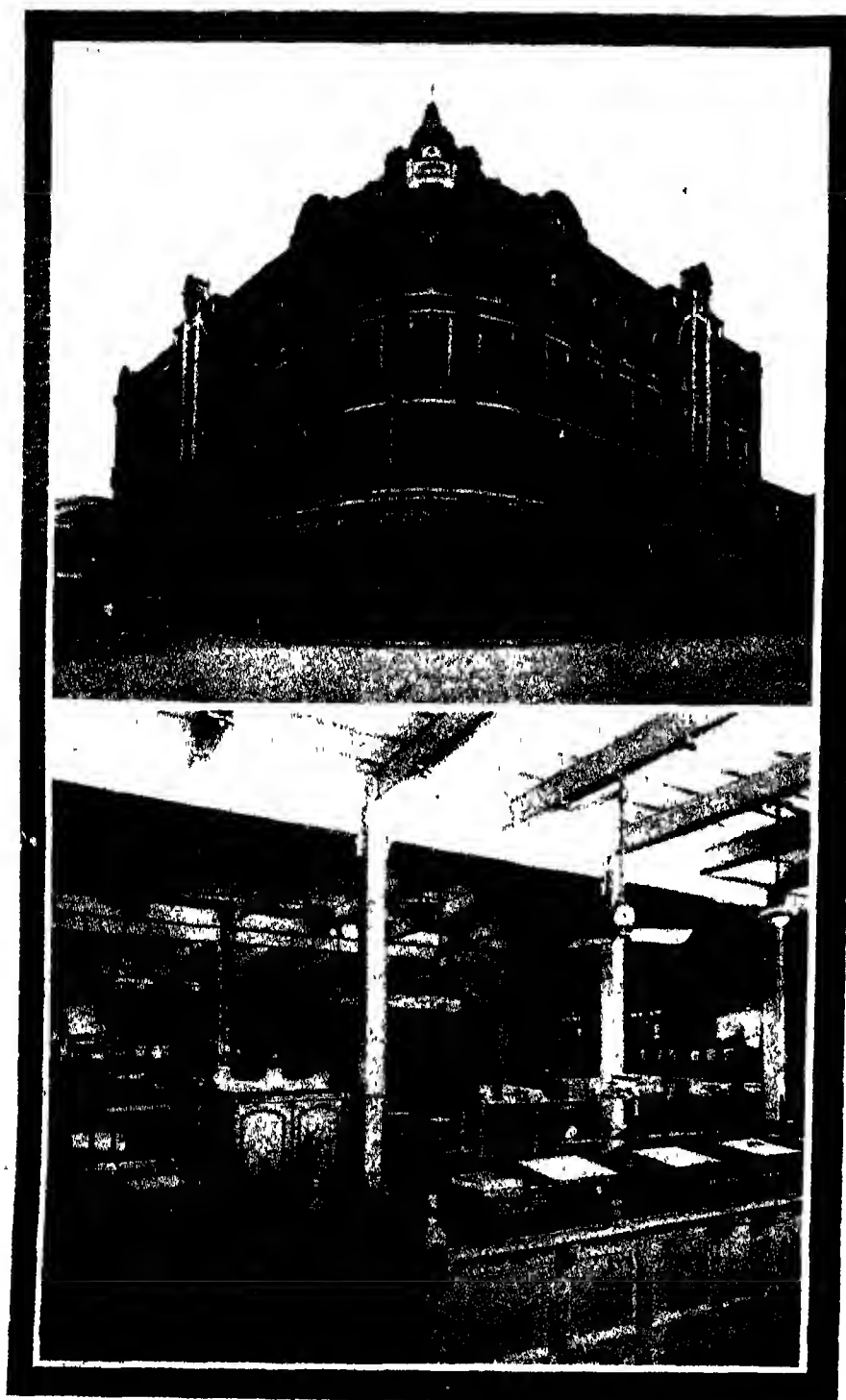
insurance business is transacted, was incorporated in Great Britain in 1845.

**Development.**—From its inception the "Royal" showed unmistakable signs of becoming a company of world-wide reputation—a promise which has been amply fulfilled during over 80 years of continuous expansion. To take but one branch of its operations, the concern to-day, with its allied institutions, transacts the largest fire insurance business of any company in the world.

**Capital.**—The shareholders' capital is

**Indian Operations.**—The Company has had a long association with India, having opened within a few months of its formation agencies in Calcutta and Bombay. The high reputation of the Home office facilitated the rapid expansion of its business to all the leading centres of commerce and industry in the Peninsula, Burma and Ceylon.

For many years the "Royal" was represented in India by the sole medium of influential agency firms, but in 1891, on the acquisition of the Queen Insurance Co. (which had established branches in Bombay and Calcutta as far back as 1875), it was



ROYAL EXCHANGE ASSURANCE CORPORATION.

1. View of premises at Calcutta.
2. General Office.

decided to conduct the business of both Companies from these offices, thus providing for the centralisation of the Company's Indian operations, and at the same time ensuring that expert advice would always be readily available for the assistance of its agents. The Company subsequently acquired more prominent sites for its offices in Calcutta and Bombay, and these headquarters are now well-known features in the commercial centres of those cities.

A branch of the institution was also opened in Rangoon in 1909 to facilitate its extensive operations in the thriving province of Burma.

The Royal Insurance Co Ltd is prepared to issue policies in India against all contingencies usually provided for by insurance.

**Financial.**—The amount at the credit of the profit and loss account for 1924, after payment of the final dividend, was £851,436. Following the operations of 1925, and after provision for interest on debenture stock and for dividends, the balance of profit and loss account for the year last-named was £958,185. An interim dividend of 13s. per share, less income tax, was paid on November 15, 1925, and a final dividend of 14s. per share, less tax, subsequently provided for.

At December 31, 1925, the total funds of the Company had reached £33,924,004, and the annual income £10,571,000.

**Directorate.**—W. R. Glazebrook (chairman), A. Allan Paton, C.B. (deputy chairman), A. K. Barnes, Frederick A. Bates, Sir Edmund F. Bushby, George Chappell, W. S. Crichton, J. Cyril Cunningham, P. R. England, G. B. Heyworth, Thomas H. Jackson, M. H. Maxwell, C.B.E., Evelyn S. Parker, Arthur F. Pattinson, Edward Paul, Lt.-Col. Sir J. P. Reynolds, Bart., D.S.O., and Thomas Woodsend. General manager, J. J. Atkinson, deputy manager, Walter Carter.

**Offices.**—Liverpool: Head Office, Royal Insurance Buildings, 1, North John Street; London: Head Office, Royal Insurance Bldg., 24-28 Lombard Street, E.C. 3; Calcutta: Royal Insurance Bldg., 26 and 27, Dalhousie Square (cables "Royal," Calcutta); Bombay: 42-48 Church Gate Street (cables "Royal," Bombay); Rangoon: Scafers Buildings (cables "Princely," Rangoon). Codes: A.B.C. 5th Edition, Bentley's Complete Phrase and Private.

**Bankers.** Bank of Liverpool and Martins Ltd., Midland Bank Ltd., and Lloyds Bank Ltd.

#### ROYAL EXCHANGE ASSURANCE CORPORATION.

**Inception.** The troublous period of the South Sea Bubble saw the origin of this powerful corporation. A Mr. Case Billingsley, member of the Mercers' Company, proposed a scheme for a marine insurance institution under the name of the Public Assurance Office, and opened a list at the Mercers' Hall on August 12, 1717. The subscription asked for was £1,250,000, of which £1,100,000 was to be paid up. While the list was open a rival concern was amalgamated with Billingsley's project. Though in the first instance the Government refused a charter, the founder was equal to the occasion, buying for a song an old Elizabethan charter which had nothing whatever to do with insurance, but which he adapted to the purpose in hand. The Billingsley Assurance Company was formed to transact marine business, it soon progressed and paid a dividend in 1719. During the next year a Royal Charter was granted in return for a promise of a considerable sum to help the King's Civil List. Billingsley's original company now took the title of the Royal Exchange Assurance Corporation, which it has ever since retained.

**Development.**—Life and fire insurance were added to the existing activities in 1721, and since that year the history of the Corporation has been one of sound business and consequent prosperity. Its first agent was appointed in 1721 (in Berkshire), and a year later it became the first Office to extend its work to Ireland. In 1904 it established a Trustee Branch, being the first English insurance concern to do so.

**Capital and Funds.**—The proprietors' capital paid up on December 31, 1925, was £789,149. The various funds of the Corporation attained the following totals: Life assurance, £6,005,289, annuity, £858,044, capital redemption, £215,594, fire insurance, £871,600, marine insurance, £788,024, general accident insurance, £626,219. Special reserve funds amounted to £149,062, and profit and loss account (general reserve fund) to £1,247,873. Total assets at the date named were £13,039,554 9s. 5d.

**Operations.**—The following are the Royal Exchange Assurance's departments of business. Fire, life, sea, accident, annuities, motor car, plate glass, burglary, employers' liability, fidelity guarantees, third party, live stock, lift, boiler, machinery, trustee and executor,



**Indian Activities.**—The representation of the Corporation in India dates from the early 'sixties, and branches are now established at Calcutta and Bombay, the former under the management of Mr d'A H Kilgour and the latter under the Indian Cotton Company, Ltd.

The principal agents of the Corporation in India are as follow —

**CALCUTTA**—Andrew Yule & Co, Ltd, Allen Bros & Co (India), Ltd, Blom & Van der Aa, Ashworth, Aspinall & Co, Ltd, Cory Bros & Co, Ltd, George Henderson & Co, Ltd, M M Isphahani, E D Sassoon & Co, Ltd, Shaw, Wallace & Co, Stoll, Earl & Co (1922), Ltd.

**BOMBAY**—The Indian Cotton Co, Ltd,

Road Codes A B C 5th Edition, Bentley's and Standard Shipping

#### **JAVA SEA & FIRE INSURANCE CO. LTD.**

**Inception.**—During the present century insurance methods in the Netherlands East Indies have been increasingly assimilated to those obtaining in Europe, replacing the former unsatisfactory conditions resulting from defective system and administration underwriting, instead of being as formerly in the hands of small, unstable concerns, is to-day controlled by soundly-established and reputable institutions such as that now dealt with. The Java Sea & Fire Insurance Co Ltd, established in Batavia in 1861, forms one of four companies operating in a combine. The associated concerns are the

**Branches.**—The Company has branches situated in Netherlands India, India, Burma, Ceylon, China, Australia and Europe.

**Indian Operations.**—In common with its sister company the Batavia Sea & Fire Insurance Co Ltd, the institution under notice has been operating in British India for over forty years through the medium of agencies in Calcutta, Bombay and Rangoon. In 1920 it opened its own branch offices in Calcutta and Rangoon, followed in 1923 by a branch in Bombay. The establishment of these branches gave many facilities to the existing agencies, and numerous new agencies were opened on behalf of the four companies throughout British India, Burma and Ceylon. A considerable and consistent increase of



**JAVA SEA AND FIRE INSURANCE CO. LTD., Calcutta**

Head Office at Batavia, from an Etching by the famous Dutch Artist, W. O. J. Mieuwenkamp.

The Hon. Sir Dinshaw Manockjee Petit, Bart  
**CANPPORE**—British India Corporation, Ltd.

**MADRAS**—Parry & Co, Binny & Co (Madras), Ltd, Hope Prudhomme & Co

**NILGIRIS**—The English and Scottish Joint Co-operative Wholesale Society, Ltd.

**COLOMBO**—Mackwoods, Ltd., Bons Bros & Co, Ltd, J. H. Vasseur & Co, Ltd

**RANGOON**—Finlay, Fleming & Co, Bulloch Bros & Co, Ltd

**Local Directors.**—H. Leonard Bell, A. W. Lilley, M.B.E., Sir Thomas S. Catto, Bt., C.B.E., The Hon. Sir Dinshaw M. Petit, Bt., A. J. Raymond.

**Offices.**—London (head office), Royal Exchange, E.C.3, Calcutta, 1 and 2, Old Court House Corner (cables "Foxhound," Calcutta); Bombay, G.P.O. Box 891, Whiteaway Laidlaw & Co's. Building, Hornby

Batavia Sea & Fire Insurance Co. Ltd., founded in 1843, the Insurance Company "Veritas" Ltd., dating from 1878 and the Insurance Company "Ardjoeno" Ltd. established in 1886.

**Controlling Interest.**—In 1925 the majority of the shares of the group of four companies were bought by the Royal Exchange Assurance Corporation of London. The management of the group, however, remained unchanged, and the constituents thereof operate independently from the London organisation mentioned. The Royal Exchange Assurance Corporation has agreed to guarantee all the policies issued by the combine.

**Activities.**—The Java Sea & Fire Insurance Co. Ltd. transacts all forms of fire, marine and accident business (including motor car risks), but does not undertake life insurance or annuities.

business has ensued.

The group thus represented in India, Burma and Ceylon has joined all the local Insurance Associations in those countries. The operations of the companies' branches at Bombay and Rangoon are controlled by the Calcutta office, which occupies premises next to the office of the Royal Exchange Assurance Corporation. The acting manager at Calcutta is Mr H. C. A. Van Someren.

**Offices.**—Batavia (head office), London, 23 Birchin Lane, E.C.3, Calcutta, Norton Buildings, 1-2 Old Court House Corner (cables "Sluytersco," Calcutta) Codes A B C 5th Edition and Bentley's.

**Bankers.**—Java Bank, Netherlands Trading Society, Netherlands India Commercial Bank, Messrs B. W. Blydenstein & Co, London, The Union Bank of Australia, Ltd., and the Bank of Australasia, Ltd.



### COMMERCIAL UNION ASSURANCE COMPANY LIMITED.

**Inception.**—Eminent among the world's leading organisations underwriting all classes of insurance business, this Company was incorporated by deed of settlement (with articles of association annexed) dated September 28, 1861, annexed articles being adopted by special resolution passed on May 6, 1891. On August 8, 1885, the concern had been registered as a limited company, it is now regulated by the Commercial Union Assurance Co. Ltd. Act of 1908, which substituted new articles for the deed of settlement and previous articles of association.

**Capital.**—The capital of the Company (£2,500,000 in 50,000 shares of £50 each at the outset) is now £2,950,000 in 1,180,000 shares of £2 10s each, £1,770,000 (£1 10s. per share) being paid up. The general and investment reserve fund stands at £692,846.

**Activities.**—The Company commenced fire business on October 1, 1861, life assurance on May 1, 1862, marine underwriting on January 1 of the following year, and accident business, covering all classes of casualty insurance, on the acquisition of the Palatine Company in August 1900.

**Indian Branches.**—The first branch office in India was opened at Calcutta in 1871, and at later dates branches were also established in Bombay and Madras. The Company is further represented by influential agents in all the principal cities and towns throughout India and Burma.

**Calcutta Local Board.** There is a local board of directors in Calcutta, composed of the following: Sir Alexander Murray (of Messrs Jardine, Skinner & Co.), J. F. Barton (Hoare, Miller & Co.), I. A. Clark (Anderson, Wright & Co.) and J. E. Vallance (Grindlay & Co.).

**Financial.**—**Fire Department:** Net premiums for 1925 amounted to £8,080,541, being an increase of £357,874 as compared with the previous year. Claims paid and outstanding totalled £4,457,661. From this department's profits the sum of £250,000 has been carried to profit and loss, leaving the fire insurance fund at £8,283,677.

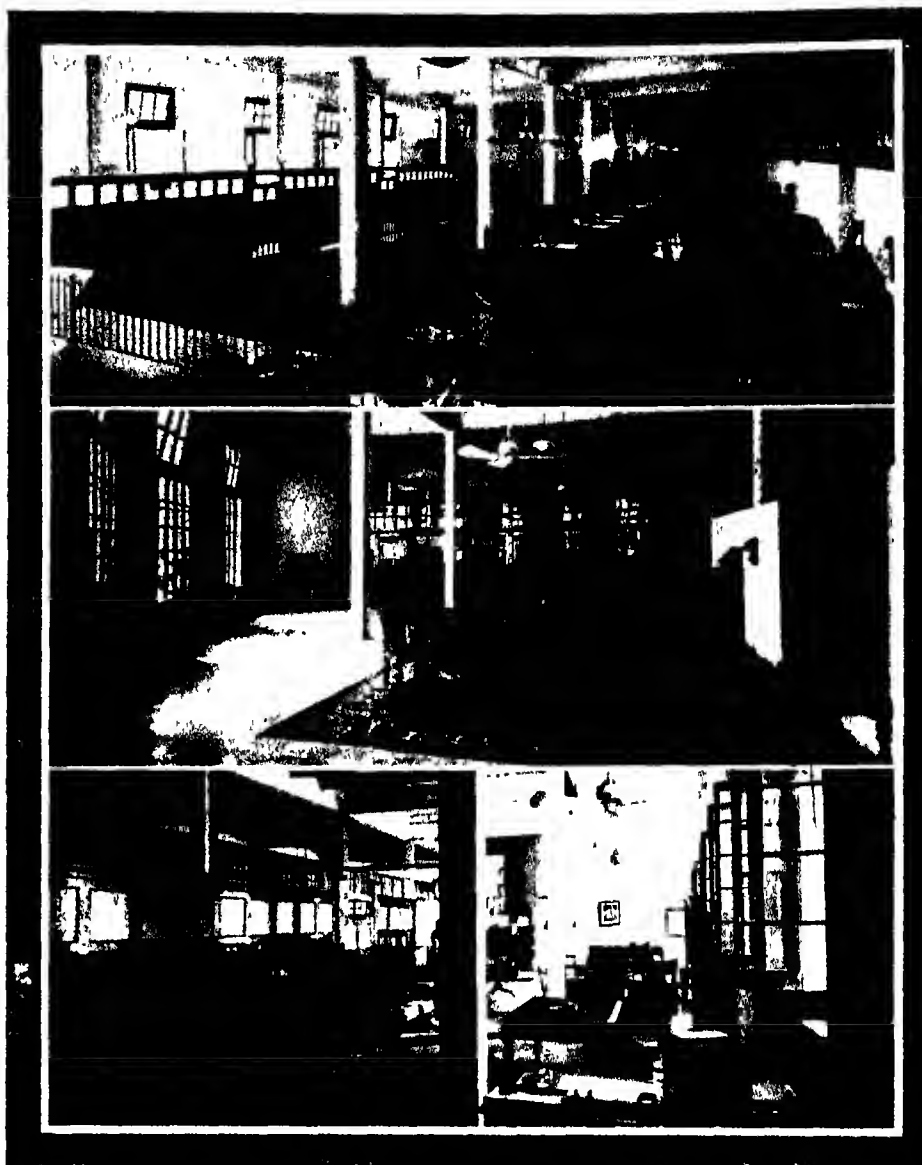
**Marine Department:** Net premiums for 1925 amounted to £496,881, an increase of £55,891 over 1924, claims paid and outstanding were £288,113, and £100,000 was carried to profit and loss, leaving the department's fund at £1,092,437.

**Accident Department:** Net premiums for 1925, £8,307,162, an increase of £675,759 compared with 1924, claims paid and outstanding, £4,638,579, £100,000 carried to profit and loss, leaving the accident insurance fund at £5,406,111.

**Life Department:** The new business for 1925 consisted of 6,134 policies for £4,161,523. As a result of the year's transactions the life assurance fund was increased by £1,294,595 to £12,990,794.

**Dividend:** From the profit and loss balance amounting to £1,056,288 it was proposed to pay a final dividend of 8s 3d per share, making with the interim dividend a total disbursement of 15s 6d per share, free of income tax, for 1925.

**Directorate.**—Robert L. Barclay, C.B.E., Harry Tabor Brooks, Sir Jeremiah Colman, Bart., The Master of Elibank, Hon. Walter D. Gibbs, John F. G. Gilliat, J. St. John Graham, Sir Austin E. Harris, K.B.E., Hon. A. H. Holland-Hibbert, The Rt. Hon. Sir Robert Horne, G.B.E., K.C., M.P., F. Larkworthy, John H. Ley, Sir Percy Wilson Newson, Bart., E. Roger Owen, Charles David Seligman, Alfred Shepherd, W. J. Thompson, The Rt. Hon. Viscount Ullswater, G.C.B., A. B. Williamson, and



COMMERCIAL UNION ASSURANCE COMPANY LTD., Calcutta

1. General Office.
2. Board Room.
3. Sub-Manager's Office.

Sir James Leigh-Wood, K.B.E., C.B., C.M.G. General managers, Joseph Powell and Herbert Lewis, deputy general manager, Henry Mann, secretary, John Dewhurst.

**Offices.**—London (head office) 24, 25 and 26 Cornhill, E.C.3, Calcutta B1, Clive Buildings, Clive Street (cables "Cuaco," Calcutta); Bombay 9, Wallace Street, Fort (cables "Cuaco," Bombay) Madras Christian College Buildings (cables, "Cuaco," Madras) Codes: Murray's, A.B.C. 5th Edition and Bentley's.

**Bankers.**—Bank of England, Westminster Bank Ltd., Barclays Bank Ltd., Lloyds Bank Ltd., Midland Bank Ltd., National Provincial Bank Ltd.

**NORTH BRITISH AND MERCANTILE INSURANCE CO. LTD.**—North British Building, 101-1, Clive Street, Calcutta. Incorporated in Great Britain. Among the affiliated companies are the Ocean Marine Insurance Co. Ltd., Railway Passengers' Assurance Co., Fine Art and General Insurance Co. Ltd., and Insurance Office of Australia Ltd. Cables: "North," Calcutta.

**NORTHERN ASSURANCE CO. LTD.**—Indian Branch Allen House, 7, Hare Street, Calcutta. Transacts marine, fire, life, burglary, motor-car, motor-vehicle, lift, personal accident, plate glass and transit insurance. Head offices London and Aberdeen. Cables "Indemnity," Calcutta. Codes A.B.C. 5th Edition, Marconi and Private.

**NORWICH UNION FIRE INSURANCE SOCIETY LTD.**—8, Old Court House Street, Calcutta. Incorporated in Great Britain. Founded 1797. Transacts fire, marine, accident, motor, loss of profit and workmen's compensation insurance. Cables, "Norunion," Calcutta. Codes Bentley's Phrase, A.B.C. 5th Edition, Murray's and Pyro.

**SCOTTISH UNION AND NATIONAL INSURANCE CO.**—6, Lyons Range, Calcutta. Established 1824. Transacts fire, life, burglary, motor-car, motor-vehicle, personal accident, etc., insurance. Cables: "Fortior," Calcutta. Codes: A.B.C. 5th Edition and Bentley's.



A GENERAL VIEW OF SIMLA

## CITY OF SIMLA

By E. J. BUCK, C.B.E., Author of "Simla Past and Present."

**T**HERE is only one correct answer to the question "What is Simla famous for?" and that is, "It is the summer headquarters of the Government of India." It is true that the Governor of the Punjab, with his Secretariat and satellites, resides in Simla in the summer months, and also that the Commander-in-Chief and Army Headquarters form no small portion of the population from year to year but these administrations sink into insignificance by the side of the Imperial Government.

Had it not been for official patronage Simla would never have come into being. She owes, as will be shown, her very existence to officialdom, and her character as an official centre is her main trait to-day. Thus it comes that the city has been constantly described as the "Home of the heaven born" (the covenanted civilians), "The abode of the little tin gods," "The Capua of India," "Olympus," and at other times by titles scarcely as complimentary. To be caught up to the Supreme Secretariat has long been, and still is, the ambition of many a budding civilian, and countless have been the reputations made and blasted, numberless the hopes and fears, the joys and disappointments that have centred round these famous Himalayan hills.

Simla is situated on several small spurs of the Lower Himalayas in Northern India, at a mean elevation of 7,100 feet above sea level. Its distance from the plains below is about 60 miles, and a wonderful little hill railway, which cost over £1,300,000 and which

possesses 107 tunnels aggregating five miles in length, with innumerable viaducts, cuttings and stone walls, carries the passenger from Kalka at the foot of the hills to the capital. The railway is a triumph of engineering skill and the journey up in the rail motor car an experience well worth making. According to "Simla Past and Present" Simla derives its name from "Shimla," as pronounced by the hill people, and was first discovered by a British officer who when moving Gurkha troops through the hills in 1816, was struck by the cool temperature of the place. The first Governor-General to visit Simla was the Earl of Amherst in 1827, and he resided with Major Kennedy, then Political Officer of the district at "Kennedy House" believed to be the first residence erected in the station but now the site of Government offices. It was Lord Amherst, by the way, who said "The Emperor of China and I govern half the human race, and yet we find time to breakfast."

Since his day no less than 25 Governors-General and Viceroys have resided for various terms of office in Simla, and the place has grown from an obscure village into a flourishing town of some 50,000 inhabitants. The fact that Lord Auckland in 1842 owned his own residence as well as the house which accommodated his staff, and sold them both on relinquishing the Vice-royalty for Rs.16,000 (then about £2,000), while the Lodge in which the present Viceroy (Lord Irwin) lives has cost 38 lakhs (some £300,000), is a striking indication of the station's growth.

The Commander-in-Chief (Field Marshal Sir William Birdwood Bart.) has a fine residence at "Snowdon" originally the property of Earl Roberts, and later on vastly improved by Lord Kitchener, and the Governor of the Punjab (Sir Malcolm Hailey) resides at "Barnes Court," a delightfully situated and picturesque house. The three big officials mentioned alone have the privilege of using motor cars in the station.

### ADMINISTRATION, BUILDINGS, ETC. -

Simla is under Municipal rule, the President is the Deputy Commissioner of the district, and nine official and non-official members assist him. The place boasts of good roads, excellent electric light and water schemes which have cost about £550,000, several churches of various denominations, a well-run United Service Club and several less important institutions, a moderately good little theatre where the Amateur Dramatic Club since the eighties has produced many remarkably successful plays, and numerous delightful private estates, including those of the Maharajas of Bharatpur, Patiala, Faridkot and Sirmoor. The main Government offices are imposing, the Cecil Hotel is the finest hotel in the Himalayas, and the municipal offices are neat buildings, but the remains of a dilapidated town-hall have long been a disgrace to the Summer Capital. The European shops in the upper bazar are distinctly good, if somewhat expensive, there are half a dozen well-known banks, and the big Indian bazar on the southern slope of the town, usually thronged by Tibetans and

by hill people from villages beyond the Sutlej, is wonderfully constructed, and is an interesting spot to visit.

The neighbouring suburb of Mashobra, where the Viceroy's beautiful "Retreat" stands in a magnificent forest carpeted with maidenhair and other ferns, and the Mahasu Ridge, which boasts of several beautifully situated villas, are popular week-end resorts. In May the Sipi Fair at Mashobra, in the Rana of Kotli's State is attended by hundreds of hill men and women in gay and picturesque costumes, and throughout the year the lovely woods are constantly resorted to by Simla residents. Simla, despite all opinions to the contrary, is a very beautiful spot and the Earl of Lytton, who recently officiated as Viceroy, has rightly described it as "a place of remarkable historical interest." It has been the birthplace of a Governor-General and of a Commander-in-Chief and the temporary residence of the greatest Generals of the British Army, also of many brilliant civilians. Despite the croakings in certain interested quarters to the effect that New Delhi will be the permanent headquarters in future for the Government of India both in summer and winter, there is overwhelming evidence from Viceroys downwards that Simla is the fitting place for India to be ruled from in the scorching days of the Indian hot weather, and there is really little reason to fear that the Queen of Hill Stations will be deprived of her present dignity and prestige for many a day to come.

**CLIMATE.**—The climate of Simla may be divided into four seasons of about three months each. The first quarter, beginning with January is rough, snowy stormy, and raw, the second is dry and sunny, with gradually increasing dust and heat, the third is rainy, damp, and relaxing, the fourth is bright, clear and bracing.

In May and June the mean maximum temperature is about 73 degrees, in January and February the mean minimum temperature is about 36 degrees. The average number of rainy days in a year is 87, during which 64 inches of rain are received. In no country perhaps are the seasons' periods of such rapidly changing extremes. The most trying is the rainy season, but "it is doubtful whether in the whole world there is a more magnificent landscape than the cloud scenery which spreads over the deep valleys and the mountain ranges that beyond Simla ascend in huge waves to the summits of Tibet. During breaks in the rains cloud masses form over them in giant steps and tiers which are lit up, as the day proceeds, by tints and colourings that are at once the delight and despair of the artist, and which mount in a Titan ladder to the everlasting snows. Well can one believe in the Olympian mansions of the gods when gazing on the glorious cloud-cities which surround the dazzling pinnacles of those snow-clad ranges that seem to end the world."

Towards the conclusion of September commences the period of the most delightful climate in the world. In October and November clear, bracing, exhilarating air invigorates the body and makes the soul rejoice. The sportsman carries his gun over mountain ranges that would have appalled him a few weeks earlier, and cavalcades of men, women, children stream out along the road on ponies, on foot, or in rickshaws and dandies to the glorious woods of Mathiana and Huttoo, some forty miles distant on the Hindustan-Tibet high road. Life is no longer existence, it is life.

**GOVERNMENT OF INDIA.**—To those who would read what is probably the best account of the Government of India in the eighties, General Sir George Chesney's "Indian

Polity" can be confidently recommended. The origin of this august body which permanently located itself in Simla for the months during Sir John Lawrence's rule in 1865, and has since continued to recess in the Himalayas in the scorching heat of the Indian summer may be briefly described as follows. "In the early days of 'John Company Bahadur' the settlements at Madras and Bombay and in Bengal were governed by Councils of the principal merchants, the senior being the President of the Council (hence the term Presidency). Each settlement was independent of the others, and transacted trade and administrative business directly with the Court of Directors in London. When worthy Job Charnock founded the City of Calcutta the Bengal settlement was a very small concern and it was not until Clive's jagir endowed it with the fertile provinces of Bengal, Bihar and Orissa that it became the most important of the Company's possessions. In 1773 the 'Regulating Act' of that year appointed a Governor-General and four Counsellors for the Government of Bengal and declared the supremacy of the Bengal Presidency over those of Madras and Bombay. As the possessions of the Company became gradually welded into a dominion, the control exercised by the Governor-General of Bengal in Council increased and at last he was declared by an Act of the year 1833 to be the Governor-General of India. He still continued to rule Bengal until a Lieutenant-Governor was appointed to that province in the year 1853." The Governor-General in Council now became the general controlling authority over the various provinces of India and the circumstances which led him to establish his summer capital at Simla have been set forth by the writer. As Sir George Chesney has explained, "the decision was arrived at rather as a gradual outcome of circumstances than of deliberate purpose from the first, and it is probably far from being the best possible arrangement."

**COUNCIL OF STATE.** At first the Council of the Governor-General was a purely consultative body, every case was circulated to each member of the Council, and after the several opinions had been recorded the decision was given by the Governor-General. Business, however, soon increased to a point at which this arrangement threw an impossible amount of work on the Governor-General, and after Lord Dalhousie had recorded a strong opinion on the subject, Lord Canning introduced the present system under which each member of the Supreme Council holds charge of one or other of the principal departments of business. To day the Viceroy is in charge of the Foreign Office, the Commander-in-Chief controls the Army branch, and the other departments are Finance, Industries and Labour, Legislative, Commerce, Education, Health, Lands and Home.

**LEGISLATURE.**—As everyone knows, the question of Indian Reforms has been a burning one for many years past. In the history of the country nothing is more striking than the rapid advance made in this direction in recent years. In the nineties the supreme Legislative Assembly consisted of some 16 members, who met in the chamber at Viceregal Lodge, now used as a billiard room by the aides-de-camp to the Viceroy. In Lord Minto's time the Imperial Legislative Council sprang from 16 members to 60. When Lord Chelmsford ruled India the Montagu-Chelmsford reforms resulted in a Council of State (53 elected and 27 nominated members) and a Legislative Assembly (104 elected and 41 nominated). Handsome buildings have been erected to house the Legislature in Simla, and the Viceroy fre-

quently exercises his prerogative of summoning one or both Chambers for the purpose of addressing them, either at the prorogation or opening of a new Assembly. When this happens the occasion is always fully state and brilliant.

#### **SIMLA SOCIETY AND SOCIAL LIFE.**—

Simla for many years undoubtedly had a reputation which she has not deserved. She has been generally termed wicked and frivolous, and her population has been accused of indulging in one long term of gaiety, flirting, gambling, and enjoyment. On this subject many writers and visitors from 1840 to the present day have written and expressed their opinions, among these having been Colonel S. Dewe White, of the Bengal Staff Corps. Dr. W. I. H. Russell, the famous "Times" correspondent (1858), Mr. John Lang, the "Nathaniel Gubbins" of the "Sporting Times", General Francis Rawson Chesney, R.A., the explorer of the Rupirates, Mr. Andrew Wilson, author of the "Abode of Snow", Mr. Val C. Prinsep, the well known artist, and in later years Mr. Rudyard Kipling who resided in Simla for a couple of summers in the eighties. I am inclined to think that Kipling's "Plain Tales from the Hills"—brilliantly clever as these short stories are—did much to lead the outside world to look on Simla as a centre of frivolity, jealousy and intrigue, and to induce many to believe that it was only peopled by "Mrs. Hawksheds" by frivolous grass-widows, idle hill captains, and the genus known as "bow-wows". The fact is that there have always been two distinct sides to Simla life, viz. the official and the social. There are to-day two communities, the bees and the butterflies. The former are the working classes, the men who conduct the work of Empire, the latter are those who come up from the plains for a holiday with the express intention of getting as much enjoyment as possible out of that holiday.

In a considerable measure too, the Anglo-Indian journals have been much to blame in that Simla has attained a reputation for frivolity, for a few years ago they devoted columns each week to social gatherings which in any other capital would pass unnoticed.

Simla, of course, is more or less deserted in the winter time, when the Government moves down to Delhi from November to the end of March.

**FESTIVITIES.** The principal summer festivities may be said to consist of balls at Viceregal Lodge and at the residences of the Governor of the Punjab and Commander-in-Chief, some eight or nine plays by the Amateur Dramatic Club, tennis and polo tournaments, weekly gymkhanas at Annandale, and constant tennis, dinner, bridge and evening parties. Dances at the Cecil Hotel, the Masonic Hall and at Messrs. Davicos' ballroom, and meetings of the rifle, polo, cricket and football clubs are naturally of frequent occurrence. The dances of the season, however, are those which are given by the most "Hospitable Order of the Black Heart." This Order, established by the late Colonel Newnham Davis (The Dwarf of Blood of "Sporting Times" fame), consists of a Grand Master, Prelate, and a limited number of Knights. Then fancy dress dances are most brilliant affairs, maidens take precedence of matrons in the State Lancers, and the Viceroy of the day always selects one of the youngest damsels for his partner. The knights wear a picturesque uniform, and the absence of formality is one of the reasons why their dinners and dances are so successful, and invitations to them so eagerly sought after.

There is a delightfully picturesque golf course of nine holes on the Naldera spur,

some twelve miles from Simla where enthusiasts camp out in May and June, and there are a couple of good cinemas in the station. Add to these an official garden party or two, a few concerts, picnics for which the surroundings are particularly well adapted, an occasional bazaar or fete for charitable purposes, and there is little more to mention.

**SOCIAL CHANGES.**—There is no doubt, however, that conditions regarding society have changed greatly in the last twenty years. The strict orders regarding official precedence, so marked a feature to visitors from foreign countries, continue to be observed but society as a whole has become less "chiquey" it is larger and more tolerant. Indian ladies and gentlemen now join far more freely with their European friends in games and in social entertainments. Many Indian ladies have emerged from the "purdah", some have taken to bridge and others to joining in dances.

In conclusion, Simla society is by no means so black as it has been painted. The wives of the Viceroy, for at any rate the last fifty years, have set examples which have excited the admiration of all who have known them. The great benevolent works for Indian women and children accomplished by Lady Dufferin, Lady Curzon, Lady Minto, Lady Hardinge of Penshurst, Lady Chelmsford, and last, though by no means least, by Lady Reading, are all duly recorded in the history of India.

**LORD ROY'S VERDICT.**—In his rare well-spoken at the United Service Club at Simla in October 1915 Lord Hardinge of Penshurst said: "When I read, as I have sometimes read, in the English Press that English women in India are frivolous and think only of amusement I grow fairly indignant for though it may have been the fashion in the past for certain journals to write of Simla as an abode of frivolity and the home of scandal, I can honestly say that during the five summers I have spent here I have never seen or heard of any but the most harmless and healthy amusement, nor has the breath of scandal ever reached my ears." Let Simla be content with this verdict.

**SPORT.**—Shooting in the vicinity of Simla is chiefly confined nowadays to "Kalege" pheasants, a few chukor (hill partridge) and an occasional black partridge. Now and then a Himalayan black bear or leopard is despatched, or a "guriel" (chamois) or "Karkar" (barking deer) is added to the bag. If the sportsman wanders out to more distant hills he may secure a "koklass," "chir," or monal pheasant, but these three latter birds are only rarely added to the local bag, the red argus has practically disappeared. There are several reasons why game is scarce and shooting difficult to obtain, firstly, many of the jungles have been shot out by shikaris or poachers for the Simla market or neighbouring rest bungalows, secondly, several of the best known jungles near Simla are now preserved by the local hill Rajas for their own shooting, or are kept for the entertainment of high officials or their personal friends, thirdly, the cost of shooting is now high, distances are great, and necessitate the expense of camping out. Thirty or forty years ago reliable beaters with dogs could be readily obtained at eight annas a man, now it is difficult to get an experienced shikarry for Rs 1/8/- a day. The dogs, I may say, form as a rule a wonderfully nondescript pack, and unless a bird is picked up immediately it is shot, it at once disappears, feathers and all, down the throats of "Tippoo," "Ruby," "Whiskey," "Tiger" and Company.

#### PHASANTS IN THE HIMALAYS.

In Dharm State, about twelve miles from Simla, there is a beautiful reserved forest in which the Viceroy usually shoots for a couple of days in the autumn. But even here with six or seven guns and possibly a thousand beaters the bag is not over 60 or 70 head in two days. It is true that the lovely surroundings and glorious weather in October compensate to a great extent for the lack of sport. Walking of course is hard work and at times difficult if not dangerous, and a hill pony is essential if shooting is to be indulged in in comfort. And here let me say that in the opinion of men who have shot all over the world there is no more difficult bird to bring down than the Himalayan pheasant. An old cock "kalege" with flexed wings whizzing down a precipitous slope will tax the skill of any gunner, however good he may be. To the keen sportsman there is no shooting to compare with it. The best snipe and pigeon shots in India have often cut a poor figure at pheasants on the hills slopes round Simla. Lords Minto and Kitchener some twenty years ago endeavoured to rear "kalege" pheasants in a forest adjoining the station and the place was strictly preserved. The aid of forest officials was enlisted, neighbouring hill chiefs were asked to assist by sending in pheasant eggs, special hens to sit on the nests were purchased, and Gurkhas were engaged to guard the preserves. But, alas! many of the lot of five hundred eggs which arrived were "addled" and less than thirty young pheasants made their appearance. Most of these on being turned out apparently became victims to the foxes, jackals, pneumartens and other enemies which appreciate unsophisticated youthful pheasants. At any rate when the big shoot came off the bag was only 14 pheasants and a barking deer, and each bird must have cost well over a hundred rupees. The attempt to raise more pheasants was then abandoned.

As mentioned previously, the Viceroy of the day has his own preserve, and no keener Governor-General ever shot there than Lord Reading, who has just left India. Although he only began to use a gun when nearly sixty years of age, he became as keen a sportsman as the Simla hills have ever witnessed, and more than once stated that he enjoyed his informal outings in the neighbouring valleys more than any of the big organised battues in the plains.

**SEASON.**—The shooting season runs from September 15 to March 10 for all animals scheduled. Bear and leopard, however, can be shot at any time. The shooting of muskdeer and peafowl is prohibited throughout the year. Permits to shoot in the various forests are issued through the Superintendent of Hill States.

**WATER SUPPLY.**—The Simla water supply is derived from five sources, viz. the Upper Gravitation Pipe Line, the Cherut Nullah, the Lower Gravitation Pipe Line, the Chair Nullah, and the Guma Scheme. The last named takes its water from the River Nauti where five million gallons are available per day. The water is passed to large natural sedimentation tanks then treated with alum and sent through coagulating tanks to the Paterson rapid gravity filters. It is next pumped by special pumping machinery operating under a total head of over 4,000 feet, this is believed to be the highest single-lift pumping operation in the world. At the top of the hill the water is finally chlorinated by the Paterson system and allowed to flow on to the town of Simla.

E J BUCK

#### SUPPLEMENTARY DATA

**DISTRICT OF SIMLA.** The district of Simla covers an area of 104 square miles, and is characterised by hills clothed with forests of deodar, also rhododendrons up to the perpetual snow limit. South and east of Simla the ranges between the Rivers Sutlej and Tons centre in Chor Mountain 11,982 ft. above sea level. The chief rivers watering the Simla district are the Sutlej, Pabai, Gari, Gambhari and Sarsa.

**HILL STATES.** The cession by the British Government of the territory forming the district of Simla dates from the close of the Gurkha War (1815-16), whereby a tract of country between the Gogra and Sutlej Rivers was secured. Kumaon and Dehra Dun were added to the British possessions, but most of the remaining territory was given or restored to the Rajas from whom it had been seized by the Gurkhas. Garwhal State was attached to the North-West Provinces, the other principalities, 28 in number, are classed as Punjab dependencies, being known as the Simla Hill States. Chief among them are Baghal, Bishahr, Bilaspur, Hindur, Jubbal and Keonthal.

**INSTITUTIONS.**—Among the numerous libraries and institutes with which Simla is furnished the chief is the United Service Institution which enjoys a Government subsidy. The Walker Hospital, founded by Sir James Walker, C.B., and the Ripon Hospital are the principal medical institutions. Educational foundations include Bishop Cotton's school for boys, the Mayo industrial orphanage for girls, certain aided schools for Europeans, and two Anglo-vernacular schools for natives.

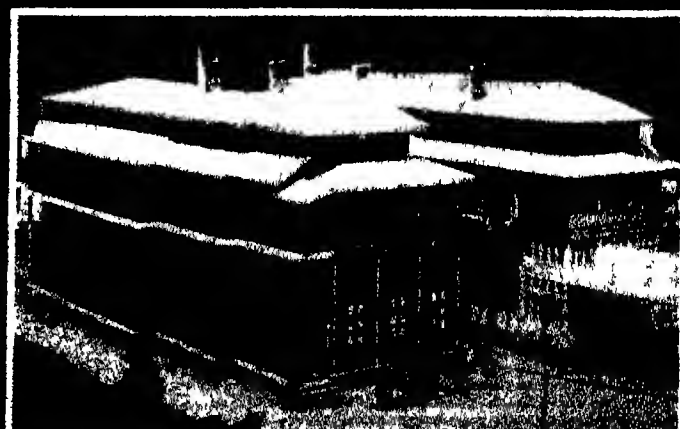
**MINOR SANATORIA.** To the south of Simla lie the minor sanatoria of Dagshai, Kasauli, Sabathu and Solon.

**KASULI.** Fine views may be obtained from this station, situated as it is 6,322 feet above sea-level and overlooking the Kalka Valley. Here are located the principal Pastern Institute of India, the Central Research Institute of the country, and the Kasauli Club. Three miles distant is Sanawar, the site of the Lawrence Royal Military School.

**POPULATION.**—A midsummer census of Simla in 1921 recorded a population of 43,997, in midwinter the population is estimated at about 26,430.

**SURROUNDINGS.**—To the north of Jakko is a picturesque wooded spin known as Elysium Hill on which Lord Auckland and his sisters had their residence. On the south side of Jakko is the long slope of Chota Simla, on which Barnes Court, occupied by the Governor of the Punjab, is situated. The western part of Simla is Boileauganj.

Some three miles west of Simla is the cantonment of Jutogh, with a station on the Kalka-Simla line. Sometimes designated the "playground" of Simla, owing to its provision for the enjoyment of sport in various forms, Annandale is a plain located to the north-west of the station, lying in the valley some 1,200 feet below the Ridge. Among its distinctive features are the fine Gardens, the cricket ground and the racecourse which surrounds it. Westward of Annandale is the beautiful woodland valley known as the Glen. Mashobra, five miles from Simla, is the site of a summer retreat of the Viceroy, some eight miles distant is the forest of deodars known as Nakdera.

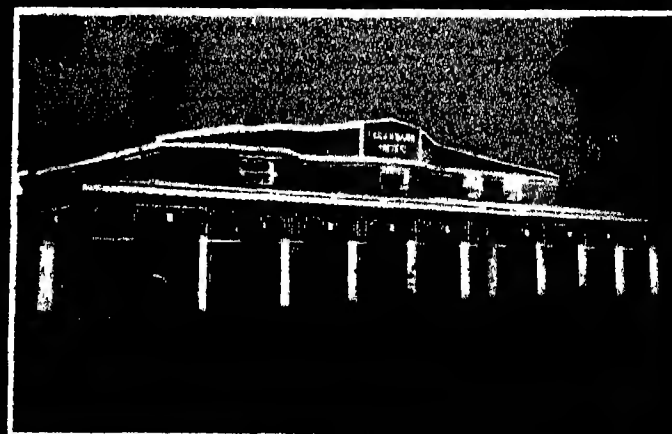


THE ASSOCIATED

3. Cornstorphan's Hotel, Simla.  
7. Faletti's Hotel, Lahore.

1. The Cecil Hotel (with Annexe on right).  
4. Dining Room, Cecil Hotel, Simla.  
6. Cecil Hotel, Murree.





HOTELS OF INDIA, LTD.

2. Maiden's Hotel, Delhi  
 5 & 6. Dining Room and Drawing Room, Maiden's Hotel.  
 9 & 10. Main Building, Flashman's Hotel, Rawalpindi.

(See letterpress, page 74.)



# THE ASSOCIATED HOTELS OF INDIA, LIMITED.

**Activities.** This enterprising company, of which Chevalier Faletti M.V.O., is managing director, owns some of the best-known and most popular hotels in India. These establishments, situated at Simla, Delhi, Lahore, Rawalpindi and Murree, are respectively dealt with below.

**CECIL HOTEL, SIMLA.—SITUATION.** This hotel, which stands at an elevation of about 7,500 feet above sea level, has been described by many visitors to the summer capital of the Government of India as the hotel *par excellence* of the East. Like many other famous institutions it had a modest beginning, the original property changing hands 25 years ago for the comparatively small equivalent of £3,000 sterling. To day the grounds and buildings on the estate are valued at something like £150,000 sterling, a result mainly due to the efforts of Chevalier Faletti.

**ACCOMMODATION.** The Cecil accommodates nearly 200 guests, and, being within a few minutes of the railway station, Viceregal Lodge and Government Offices, and but 12 to 15 minutes' journey from Annandale, the famous playground of the station is used largely by the official classes. It is fitted with all the latest conveniences, including the most modern sanitary arrangements. There is a first-class orchestra, also a splendid dining and ball room and the weekly dances are among the chief events of the Simla season.

**CUISINE.** This is excellent, and all the important official and non-official banquets given during the Simla season are held at the Cecil.

**CORSTORPHAN'S HOTEL, SIMLA.—SITUATION.** Few hotels can boast of a more glorious view of the everlasting snows than Corstorphane's, which, perched on the side of Jakko, the famous Simla mountain immortalised in several of Kipling's "Plain Tales from the Hills," looks out over Snowden, the residence of the Commander-in-Chief of India, to the great snowy range of the Himalayas, where scores of snow-peaked summits, ranging from 17,000 to 23,000 feet, are visible on a sunny day.

**ACCOMMODATION.** The hotel is comfortably furnished, and possesses the latest improvements and modern sanitary arrangements. There are bedrooms to accommodate 100 guests, and the usual public rooms. Corstorphane's has always enjoyed a great reputation as a first-class family hotel, and

its patrons are loud in praise of the homely comforts, excellent cuisine and general arrangements.

**MAIDEN'S HOTEL, DELHI.—**Within recent years The Associated Hotels of India Ltd., have spent large sums of money on improvements to this renowned hotel, which is now one of the most sumptuous in the East, being often described by visitors as the "Shepherd's" of India.

**ACCOMMODATION.** This provides for over 200 guests, the hotel being the recognised rendezvous of the elite of Delhi and patronised by visitors from all parts of the world, among whom it is highly esteemed for its cuisine, comforts, amenities and charming surroundings. In the winter, during the Legislative Session of the Supreme Government, it is the meeting place of the Indian political world.

**Facilities.** Special arrangements are made by the management for guests to visit the historical places of Old Delhi, such as the famous Ridge where continuous fighting raged during the Mutiny in 1857, the wonderful Kutub Minar, many historic buildings and the famous Chandni Chalk, the richest street in Asia.

**Functions.** Maiden's Hotel possesses an excellent ball room and orchestra, and the Imperial Horse Show Ball held yearly in February is attended by people from all parts of the country. Many notable and historic functions have been held in the magnificent public rooms of the hotel, the chief being the banquet given by the Ruling Princes to H.R.H. the Prince of Wales on his visit to Delhi in 1922.

**Cables.** "Maidens" Delhi.

**NEW DELHI.** Raising, the new Imperial city is being raised on the desert plains six miles from Old Delhi, but the ancient city and Maiden's Hotel will ever remain the centre of attraction to visitors to the capital.

**FALETTI'S HOTEL, LAHORE.—**This, another of the company's celebrated establishments, is named after Chevalier Faletti, the managing director who reconstructed it in 1912. If it lacks in a measure the magnificent luxury of Maiden's Hotel, Delhi and the Cecil Hotel, Simla, it can boast of an advantage that neither of these possesses. Delightfully picturesque, with charming grounds and gardens, it contains semi-detached blocks of residential rooms which are extremely comfortable and much sought after.

**SITUATION.** The hotel is conveniently situated in Lahore, the capital of the Punjab and one of the most advanced cities in India,

being blessed with ample canal irrigation and cleverly laid out, while its wonderful gardens are well worth seeing.

**ACCOMMODATION.** The building can accommodate about 100 guests, but during Christmas Week, when Lahore is *en fete*, the number is increased to 180, the extra visitors being lodged in tents, thus forming a delightful camp and enjoyable dances are then held in the spacious ball room.

**Cables.** "Faletti's" Lahore.

**FLASHMAN'S HOTEL, RAWALPINDI.—**This hotel is named after the founder, who established it on a very small scale in the 'nineties. It has been taken over by the company under notice who have improved it beyond recognition. Now what may be termed an excellent and popular residential hotel, it is very largely patronised by military officers and their families.

**SITUATION.** Rawalpindi, well termed the Aldershot of India, lies on a plateau at the foot of the Himalayas and is one of the big bases for military frontier operations.

**ACCOMMODATION.** The hotel, which can accommodate 100 guests, is fitted with the latest improvements and has a most excellent cuisine. It is the main halting-place for travellers to and from Kashmir.

**Cables.** "Flashman's" Rawalpindi.

**CECIL HOTEL, MURREE.** This first-class hotel is the latest addition to the undertakings of The Associated Hotels of India, Ltd.

**SITUATION.** The Cecil Hotel at Murree stands in a superb position overlooking the plains of India, and is close to the famous Kashmir mountain ranges. Murree, which is on the road to Kashmir, is nearly 8,000 feet above sea-level, it is most picturesque, and from it can be made many charming excursions to the surrounding hills. It is the summer headquarters of the Northern Command of the Indian Army, and, being only 30 miles from Rawalpindi by an excellent motor road, it is a very popular centre for week-end visitors from that military station and the neighbouring gullies.

**ACCOMMODATION.** Although smaller than the other establishments owned by The Associated Hotels, the Cecil at Murree provides the same excellent cuisine and an equally high standard of comfort.

**Cables.** "Cecil," Murree.

**Company's Head Offices.**—The Associated Hotels of India, Ltd., Cecil Hotel Annexe, Simla (cables "Ahi," Simla) (See illustrations, pages 72-73.)





1. AN EARLY MORNING VIEW OF THE HIMALAYAS FROM SIMLA.  
CENTRE. PANORAMA OF SIMLA. THE OFFICES OF THE RAILWAY BOARD DOMINATE THE LEFT FOREGROUND.  
2, 4, 5, 6, 7 and 8. VARIOUS ASPECTS OF SIMLA.



# TRANSPORT

## RAILWAYS

### RAILWAYS

**B**Y far the most important of all the means of communication in India is the railway system, which although it may at first sight appear gigantic and has beyond doubt expanded enormously during the half century since 1872, is yet far from adequate to the needs of the country. Of the progress made the statistical information which follows will give some idea, but it may here be recalled that in the year just named the total mileage of the Indian Railways amounted to only 5,300, whereas by the end of 1925 the figure was approximately 38,500 miles. But this mileage, large as it seems, has, it must be remembered to serve the needs of nearly 320 million people. England so small by comparison both in population and area, has 50,000 miles, and the United States 250,000 miles. It is obvious then that there is great need for expansion of the Indian railway system.

The two years 1923-24 and 1924-25 witnessed solid progress by all classes of the Indian Railways towards recovery from the effects of the War period and the post-war financial difficulties. The Central Administration has been completely reorganised, railway finances have been separated from the general finances of the country, and railway property has been gradually rehabilitated and improved. It is difficult to foresee the full results of the measure of independence afforded to the Railway Board and Railway Administrations in the management of their affairs on commercial lines and by methods which look first and last to the transportation needs of the country.

**ABSTRACT OF HISTORY.**—The history of the Indian Railways very closely reflects the financial vicissitudes of the country. Not until a considerable time after the first English railway was an accomplished fact was the laying of lines in India even thought of, the earliest proposals for the construction of a railway being put forward in 1843-44. The first line was opened on April 18, 1853, and ran for 21 miles from Victoria Terminus, Bombay, to Thana. During the next two years it was extended to Kalyan and Vasind, making a total length of about 50 miles. The first railway out of Calcutta, a length of 23 miles from Howrah to Hooghly, was opened on August 15, 1854, and was extended within the next two years to Raniganj, a total distance of about 120 miles, in the Madras Presidency the first railway was opened in 1856. By the end of 1859 contracts had been entered into for the construction of 5,000 miles of line, at a capital expenditure of some 52 millions sterling. This scheme laid the foundation of the Indian Railway system as it exists to-day.

**GUARANTEED COMPANIES.**—Until 1869 railway construction in India was carried on by guaranteed companies with headquarters in London. India needed railways, but could not find the money with which to build them, and the raising of the necessary funds was left to companies who were guaranteed certain minimum dividends by the State. From 1869 the formation of

## AIR, RIVER AND ROAD

guaranteed companies ceased and except in a few cases, such new lines as were built during the next ten years were constructed by the Government, being operated and managed directly by it. The contracts with the original guaranteed companies ran for 50 or 60 years, but in every case the Government reserved powers to terminate the contract and buy out the companies at some intermediate date. These powers have been in each instance exercised by the Government. The form in which the purchase-price has been paid has varied, in some cases it has been in cash, sometimes in stock, at other times in terminable annuities.

### OWNERSHIP AND MANAGEMENT

Although the Government of India acquired a preponderating share of the ownership of railways, it retained direct management of few, in fact, until it took over the management of the East Indian and Great Indian Peninsula lines in 1925, the only State managed lines were the North-Western, Oudh and Rohilkand and Eastern Bengal railways. The position in March 31, 1926, was that out of a total mileage of 38,552, 27,430 miles or 71 per cent were owned by

## SHIPPING

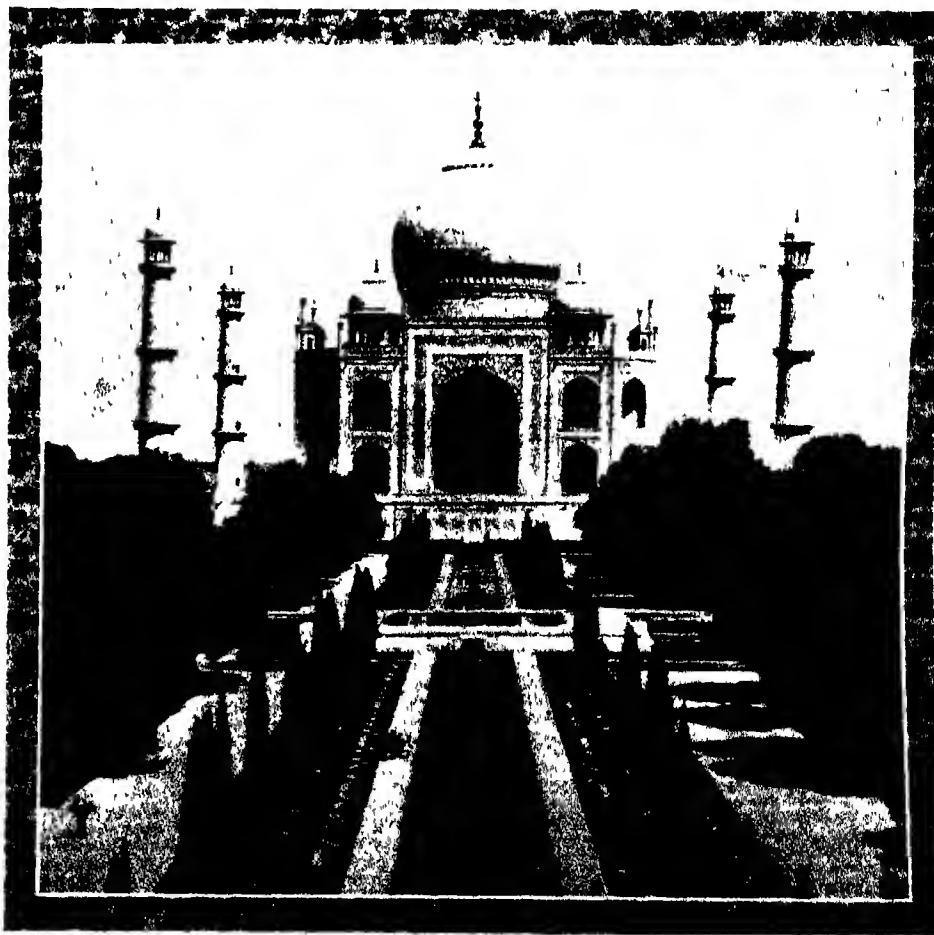
the State, while the mileage directly worked by the State stood at the figure of 15,504 or 40 per cent of the total extent. The purchase of the Delhi Amballa-Kalka Railway, with effect from April 1, 1926, increased the mileage of State-owned lines by a further 210.

### PROGRESS OF CONSTRUCTION

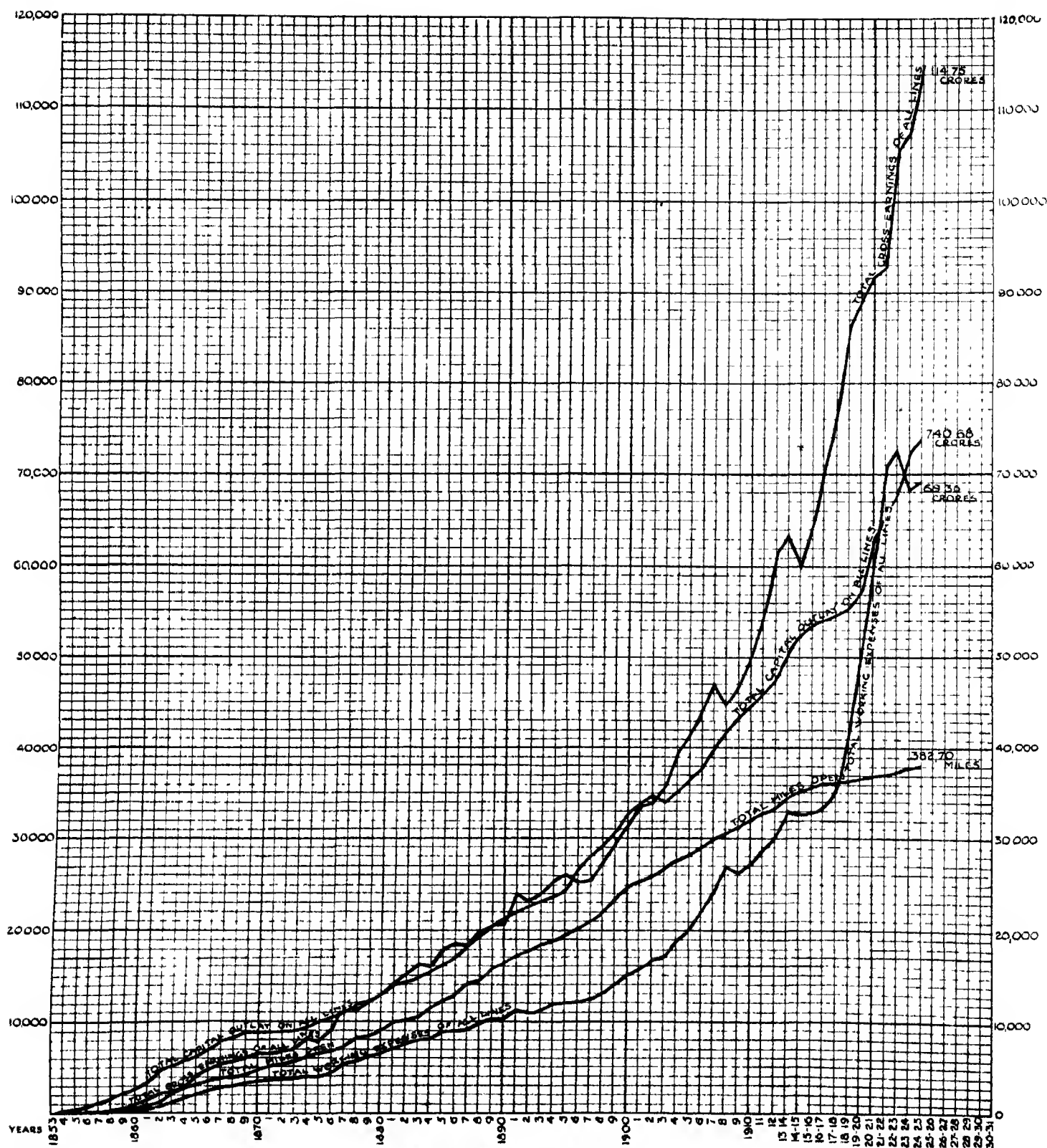
The following table shows the growth of the mileage of Indian railways and the capital outlay to the end of March 1925.

YEAR	MILES OPENED FOR TRAFFIC	CAPITAL EXPENDITURE (IN LAKHS OF RUPEES)
1850-60	838	20,00,00
1861-70	3,033	63,34,50
1871-80	4,225	38,50,41
1881-90	7,408	85,10,13
1891-1900	8,348	1,15,86,30
1901-10	7,347	1,09,51,39
1911-20	4,630	1,27,33,04
1921-25	1,535	1,74,30,04
Total	38,270	Rs 7,40,68,41

It will be seen that the average number of miles constructed per year during the first decade was less than one hundred. In



TAJ-MAHAL, at Agra. (E.I. and B.E. & C.I. Railways).



## RAILWAY SYSTEM OF INDIA.

Diagram Showing 70 Years of Progress, giving

(1) Total Capital Outlay on all Lines (2) Total Gross Earnings of all Lines (3) Total Miles Open (4) Total Working Expenses of all Lines.

the fifth decade (1891-1900), which marks the greatest progress in the construction of railways in India, the average number of miles constructed per year rose to 800

The length of new lines opened in 1925-26 was 264 miles, compared with 233 miles in the preceding year; in 1926-27 it was expected to be 239 miles.

**ADMINISTRATION.**—See text of "Railway Board" following in this section  
**ADVISORY COUNCILS.**—See text of "Railway Board" following in this section.

**CLEARING HOUSE.**—Proposals have several times been made for the establishment of a Clearing House, but it is considered that the distances are too great. The work which

would ordinarily be done by the Clearing House is carried out by the Audit Office of each railway.

**COAL SUPPLY.**—In 1925 the coal mined in British India amounted to 19,969,041 tons, against 20,256,034 tons in 1924, or a decrease of 286,993 tons.



The total quantity of Indian coal consumed on the Indian Railways during the three years ending March 1925 and the quantities obtained from railway owned collieries were as follow -

YEAR	COAL CONSUMED TONS	QUANTITY OBTAINED TONS
1922-23	5,476,041	1,628,034
1923-24	6,060,693	1,602,876
1924-25	6,594,875	2,033,468

**ELECTRIFICATION.** See later "Traffic (Facilities for Handling)"

**ENGINEERING WORKS (SOME NOTABLE).** There are many engineering works on the Indian Railways which rank with some of the greatest railway engineering feats in the world. These may be classified as Bridges, Mountain Railways and Tunnels, and the more important are briefly summarised as follow

**BRIDGES.**—The largest Indian railway bridge is the Godavari, on the Madras and Southern Mahratta Railway. It has a total length of 9,000 ft. and consists of 56 spans of 150 ft. and also one span of 40 ft., the gauge being 5 ft. 6 in., single line. The Mahanadi Bridge, on the Eastern Bengal Railway, has a total length of 6,912 ft. (64 spans of 100 ft.), and the Pamban Viaduct, on the South Indian Railway, one of 6,739 ft. (141 spans of 40 ft., one of 38 ft. and one of 200 ft.). The Harding Bridge, on the North Western Railway (5 ft. 6 in. gauge, double line), over the Ganges, has a total length of 5,894 ft. and consists of 15 spans of 345 ft., six spans of 75 ft., and two spans of 12 ft. The 16 main piers are carried on wells sunk by open dredging to a depth of 150-160 ft. below the lowest water level. These are believed to be the deepest foundations of their kind in the world.

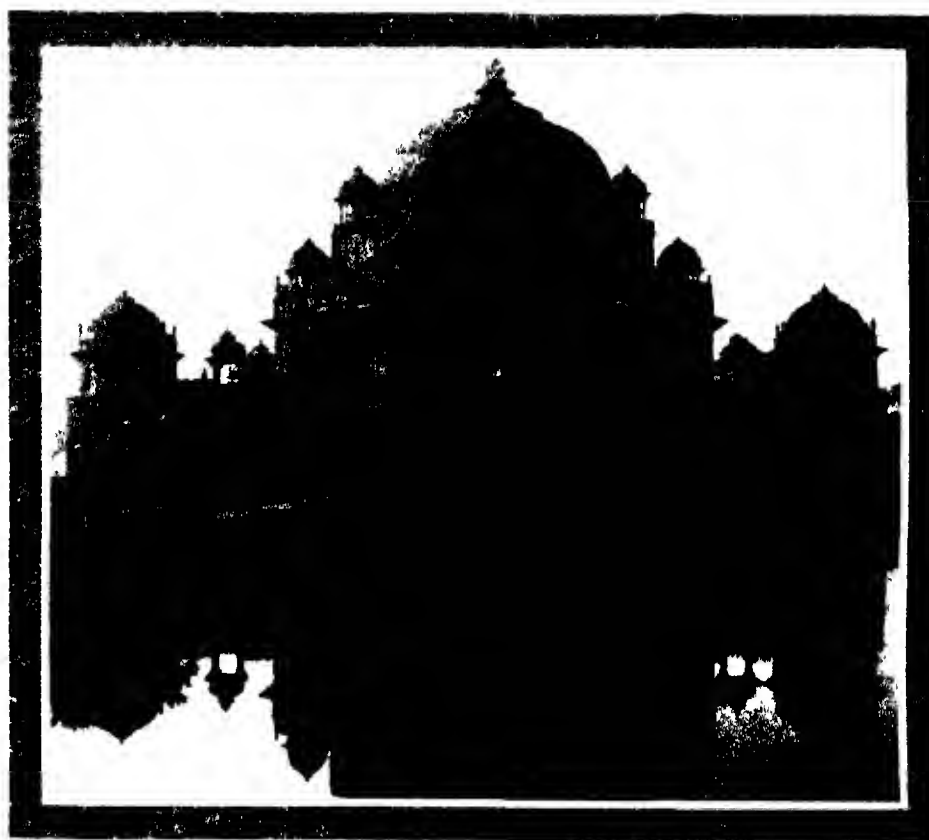
The Goteik Viaduct, on the Burma Railways (3 ft. 3 in. gauge, single line) has a total length of 2,260 ft., consisting of seven 60 ft. spans, ten 120 ft. spans and sixteen 40 ft. spans. The viaduct is erected on steel trestles and the height of the highest trestle is 320 ft. For 281 ft. at one end and 341 ft. at the other this viaduct is on a curve of 800 ft. radius. Although only a single line is laid at present, the trestles have been built to accommodate a double one.

**MOUNTAIN RAILWAYS.**—The three most notable mountain railway engineering feats are the following:—

**Darjeeling-Himalaya Railway.**—The Darjeeling-Himalaya Railway, 2 ft. gauge, is 51 miles long, and rises to a maximum height of 7,000 ft. in the first 4½ miles. The steepest grades are 1 in 24 and 1 in 23 uncompensated, with short lengths of 1 in 20, and the sharpest curve is 60 ft. radius. There are 5 loops and 4 reversing stations on this line, which runs through country unsurpassable in its beauty of scenery and in the magnificent views of some of the highest peaks in the Himalayas, including Mount Everest. Darjeeling is the summer seat of the Bengal Government and the great health resort of Calcutta in the hot weather. It is about 7,000 ft. above sea level.

**Kalka-Simla Railway.**—See text of "North Western Railway" following in this section.

**Nilgiri Railway.**—The Nilgiri Railway, 3 ft. 3 in. gauge and 28.96 miles long, of which the last 12 miles is a rack railway, leads up to a superb natural plateau of some 900 square miles, standing about 7,500 ft. above sea level. The principal town is Ootacamund, the summer headquarters of the Madras Government. The steepest gradient on the "adhesion" section is 1 in 25, and on the "rack" section 1 in 12.5.



SASARAM TOMB (East Indian Railway)

The sharpest curve is 318 ft. radius, and the total rise is about 4,550 ft.

**TUNNELS.** The longest tunnel on any Indian railway is the Khojak, in Baluchistan, on the North-Western line, 12,800 ft. in length. The Pannu and Nishpa Tunnels, which are similar to the Khojak in that the track is of 5 ft. 6 in. gauge, double line are also in Baluchistan; they are 3,218 ft. and 2,680 ft. long respectively. On the Kalka-Simla Railway the Barog Tunnel has a length of 3,752 ft. Two tunnels on the Great Indian Peninsula Railway, the Parsik and the Hull Ghat No. 2 are 4,322 ft. and 1,525 ft. long respectively.

**FATALITIES AND ACCIDENTS.**—During 1924-25 there were increases of 127 in the number of persons killed and 211 in the total of persons injured on all the Indian railways as compared with the figures for 1923-24, the details being as follow:—

	1923-24	1924-25
PASSENGERS		
Killed	372	418
Injured	1,272	1,312
RAILWAY SERVANTS		
Killed	417	460
Injured	1,420	1,489
OTHER PERSONS		
Killed	2,029	2,061
Injured	755	857
Totals	6,265	6,603

Out of the total of 2,945 persons killed in 1924-25 on the railways, 1,665 were trespassers and 262 committed suicide.

**FINANCES.**—In the year 1924-25 the Railway Budget was for the first time separated from the General Budget. The results of that separate Budget were described by the late Viceroy, Lord Reading, in his speech of January 20, 1926, in which he pointed out that the railways had been able satisfactorily to consolidate their finan-

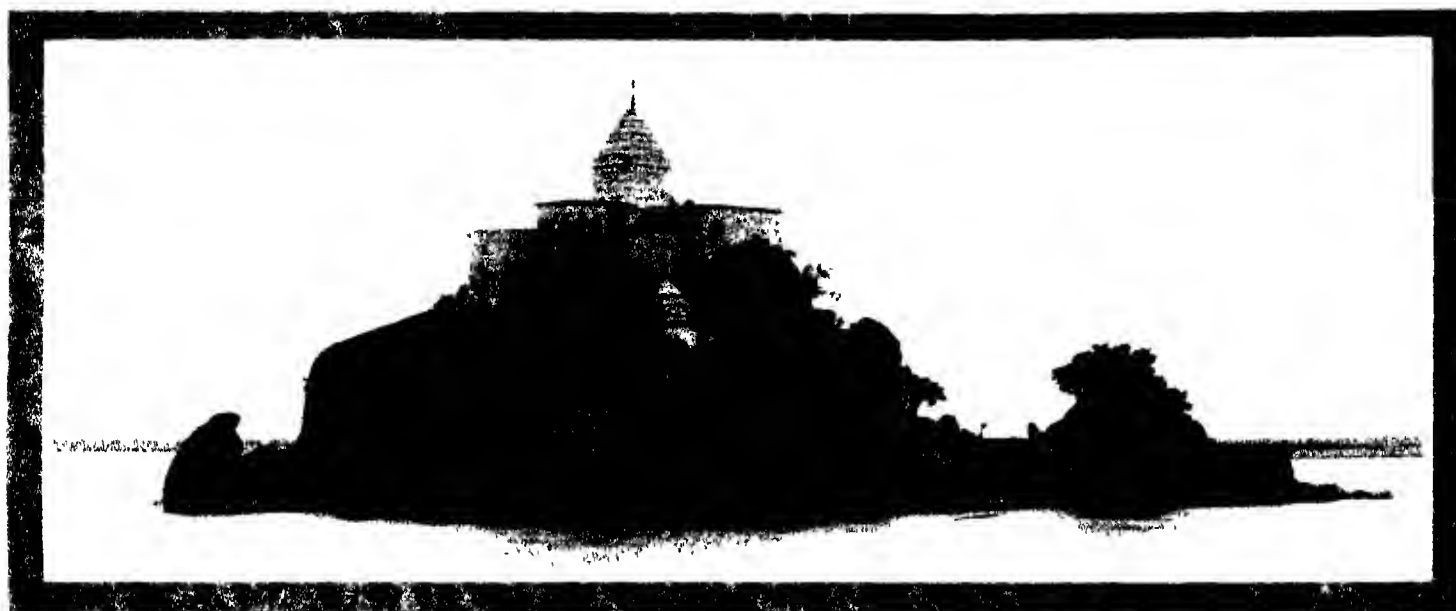
cial position and that they were now in a position to make a beginning in the direction of reducing fares, concrete proposals for which were under consideration. His Excellency also stated that it was the Government's intention to set up a Rates Advisory Committee, which would adjudicate between the railways and the public on disputed questions of the rates and fares levied. The Railway Budget for 1926-27 was presented in the Legislative Assembly on February 18, 1926, by Sir Charles Innes, the Railway Member. This showed that the financial results of 1924-25 were better than had been expected, and represented a return of 5.85 per cent. Thus the net contribution made by the railways was 678 lakhs of rupees instead of 564 lakhs, and 638 lakhs were carried to the Railway Reserve, instead of 410 lakhs as on the previous occasion. The revised estimates were not quite so satisfactory: the drop in earning had been entirely on goods traffic, mainly in respect of wheat and coal. The gross receipts were 99.81 crores of rupees, or 153 lakhs less than the Budget estimate, while the gross revenue-expenditure was 89.36 crores, or 118 lakhs less. The falling off in the net profits was only 35 lakhs, but the revised estimates included 37 lakhs in respect of concessions to railway company officials. The railways contribution for 1925-26 was 532 lakhs net, and 345 lakhs was to be added to the Railway Reserve. The announcement in December 1925 of the suspension of the cotton excise duty was greatly facilitated by the stabilisation of the railway contribution resulting from the separation of the Railway Budget. The Budget estimate for 1926-27 was 102.58 crores gross receipts and 92.13 crores gross expenditure. The loss on strategical lines was 173 lakhs, and the contribution to the

general exchequer was 601 lakhs, the transfer to the Railway Reserve being 270 lakhs. The reduction in fares would mean the loss of 160 lakhs, the greater part of which was in lower-class traffic, while a reduction of approximately 10 per cent in freight charges for long distance (400 miles) coal traffic would mean a loss of 38 lakhs.

the purchase of the Delhi-Amballa Kalka Railway Rs 15.44 crores for open works, and Rs 6.56 crores for new construction.

**FINANCIAL POSITION, 1925-26.**—The following table summarises the financial position of the railways with which the Central Government is directly concerned in the years named—

constituted, consisting of one nominated official member of the Legislative Assembly who should be Chairman and eleven members elected by the Legislative Assembly from its body. This Committee was duly elected and held its first meeting in January 1925. All important estimates of railway expenditure are placed before the Committee for



ISLAND TEMPLE OF GAIBINATH, ON THE GANGES RIVER (East Indian Railway)

**CAPITAL EXPENDITURE.**—The total capital at charge on all railways, including those under construction up to the end of March 1925 amounted to Rs 740.08 crores, of which Rs 655.21 crores represented the capital at charge on the State-owned railways inclusive of premiums paid in the purchase of companies' lines, the balance having been provided by Indian States, Companies and District Boards.

The capital at charge in regard to State-owned railways for which the Government is responsible is made up as follows:

	£
Liability and debt incurred in purchase of railways	150,109,209
Less liability and debt cancelled by the operation of Annuities and Sinking Funds	29,223,926
Net amount outstanding	120,885,373
	Rs in 1,000's
Converted at Rs 15 = 1	1,81,32,81
Direct expenditure by Government	4,73,88,32
Total	6,55,21,13

Of this amount, Rs 6,07,85,90 is Government capital and Rs 47,35,23 the capital of the companies.

The total capital outlay on all railways during 1924-25 was Rs 15.50 crores, of which Rs 15.47 crores were spent on State-owned lines. This compared with a total of Rs 19.71 crores expended in 1923-24 and Rs 19.03 crores in 1922-23. Expenditure in 1925-26 rose to Rs 21.25 crores, the figure being exceeded by that of Rs 26 crores which was budgeted for capital expenditure during 1926-27, the latter including Rs 4 crores for

	IN LAKHS OF RUPEE	1924-25	1925-26
		Rs	Rs
Traffic receipts from Government railways		1,01,01,56	
Interest on depreciation and reserve fund balances		21,22	
Government share of surplus profits from subsidised Companies' railways		30,16	
Total		1,01,55,94	99,81,00
Working expenses including depreciation		62,99,78	
Surplus profits paid to Companies		1,42,28	
Interest on Government debt		21,27,30	
Sinking fund			
Interest on capital contributed by Companies		2,07,17	
Land and subsidy to Companies		1,00	
Miscellaneous		13,22	
Total charges		88,43,84	89,36,00
Net gain		13,12,10	10,45,00
Contribution from Railway to general revenues		6,76,97	5,32,00
Railway reserve		6,35,13	3,45,00

After meeting all interest charges, the Government therefore received in 1925-26 a net profit of Rs 10.45 crores, as against profits of Rs 13.12 crores in 1924-25 and Rs 6.47 crores in 1923-24. On the capital at charge of the State lines the net receipts, that is the gross receipts minus the working expenses, have in recent years given the following return—

	PER CENT
1913-14	5.01
1921-22	2.64
1922-23	4.38
1923-24	5.24
1924-25	5.85
1925-26	5.23

**STANDING FINANCE COMMITTEE.**—When it was decided in 1924 to separate the railway finances from the general finances of the country, it was settled that a Standing Finance Committee for Railways should be

approval and the whole of the demands for grants for the ensuing year are examined by that body prior to their discussion in the Legislative Assembly.

**GAUGES.**—The standard gauge for India is 5 ft. 6 in. When construction was started the broad gauge was thought advisable in order to minimise the danger of cyclonic damage, but in 1870 when the State system was adopted, it was decided to find a more economical gauge. After much deliberation, the metre gauge of 3 ft. 3½ in. was approved, this decision being mainly influenced by the impression that the metric system was going to be adopted for India. The intention was to make the metre gauge lines experimental and they were built light so that they could easily be converted into broad gauge if necessary. But the surprising rapidity of the traffic expansion upset these calculations, and it was found cheaper to improve the carrying power of the metre gauge lines, rather than to convert them into broad gauge. Consequently, except in the Indus valley, where strategic considerations demanded a uniform gauge, these lines were improved, and they became a permanent feature of the railway system. At the present time there is a great metre gauge system north of the Ganges connected with the Rajputana lines and Kathiawar. Another system in Southern India, embracing the Southern Mahratta and the South Indian systems, is also metre gauge. Since the opening of the Barai line, illustrating the capacity of the 2 ft. 6 in. gauge, a tendency has developed to construct feeder railways on this rather than on the metre gauge.

**INDIANIZATION.**—As in every other department of the Administration, the question of the Indianization of the superior staff of the railways has attracted much interest and given rise to endless discussion. The progress that has been made in meeting

the aspirations of the Indian peoples may be gauged from the following figures. In 1913-14 the total number of Indian employees on all railways was 614,882, this figure being increased to 727,003 in 1923-24 and 740,854 in 1924-25. During the year 1924-25 the number of Indians (including Anglo Indians) in the higher subordinate grades increased from 4,586 in 1924 to 5,030 in 1925, while on State Railways the number of Indians rose from 1,180 to 1,283.

The Government of India has throughout maintained the attitude that every reasonable means should be adopted to increase the number of Indians in the higher grades of

**BENGAL AND NORTH-WESTERN RAILWAY** — This railway was constructed on the metre gauge principle by a company without any Government assistance other than free land and was opened to traffic in 1885. The system was begun in 1871 as the Tooty State Railway. In 1890 this line was leased by the Government to the Bengal and North Western Railway, and since then extensive additions have been made in both sections. It is connected with the Rajputana metre gauge system at Cawnpore, with the Eastern Bengal State Railway at Khulna and the Oudh and Rohilkhand Railway at Benares. The total

railways of India, had 3,836.97 miles of line open on March 31, 1925. It provides communication between Bombay, Surat, the important cotton centre of Ahmedabad, Baroda and the Central Indian and Rajputana States, working, in addition to its own valuable property, certain smaller lines owned by separate companies and Indian States. (See also text concerning the company following in this section.)

**BURMA RAILWAYS** — The railways of the Province of Burma are worked by the Burma Railways Company, Ltd., which was registered in 1896 and acquired under a guarantee the system which had previously been owned and operated by the Government. At present the system is an isolated one, and although various routes have been surveyed there is little prospect of its being connected with the railway system of India for some years to come. Generally speaking, the system runs north and south connecting the two largest cities of Rangoon and Mandalay with Myitkyna in the extreme north, lateral spurs tapping the rich districts of the Irrawaddy, the Salween, the Chindwin and the



the service in so far as such increase is consistent with efficiency and economy. The Government has accepted the recommendation of the Lee Commission that 'the extension of the existing training facilities in India should be pressed forward as expeditiously as possible in order that the recruitment of Indians may be advanced as soon as practicable up to 75 per cent. of the total number of vacancies in the Railway Department as a whole, the remaining 25 per cent. being recruited in England'.

**MAIN LINES.** — The following are the chief railway systems in India, the total number of separate railways, several often being



#### GREAT INDIAN PENINSULA RAILWAY

1. Kalpi Viaduct.
2. Ehagaon Viaduct
3. Banda Bridge.

(See letterpress page 103)

grouped under one management, amounting to no less than 170.

**ASSAM-BENGAL RAILWAY** — This railway, construction of which as a State line was commenced in 1891, consists of a main track running from Chittagong to Tinsukia, a distance of 573.79 miles, with about 300 miles of branch lines. Other lines which have been amalgamated with the ABR and now form part of the system bring the total open mileage up to 1,049. The Assam-Bengal Railway Company was formed in England in 1892, and took over the works commenced by the State.

On March 31, 1925, the total capital outlay on the Assam-Bengal Railway amounted to Rs 20,32,81,000, the net earnings for the preceding 12 months being Rs 1,64,02,000. The head offices of the company are at Bishopsgate House, London, E.C.

mileage open at the end of the year 1924-25 was 2,065, the capital at charge being Rs 19,60,04,000. Net earnings for the year were Rs 1,83,27,000. The offices of the company are at 237, Gresham House, Old Broad Street, London, E.C.

**BENGAL-NAGPUR RAILWAY** — The Bengal-Nagpur Line and the Northern section of the East Coast Railway, which make up the Bengal-Nagpur Railway system, are of 5 ft 6 in gauge, and had in 1925 a total open mileage of 2,954.45. The line serves the important industrial centres of Howrah, Cuttack and Katni and the coal fields of Bihar and Orissa, and connects with the East Indian Railway at Hariharpur. (See also text concerning the company following in this section.)

**BOMBAY-BARODA RAILWAY** — This Railway, one of the original guaranteed

Shan Plateau. In 1925 there were 1,705 miles open to traffic, the capital at charge of the Company being Rs 27,14,33,000, and the net earnings for 1924-25 Rs 1,76,48,000.

**EASTERN BENGAL RAILWAY** — The various lines owned by the late Eastern Bengal Guaranteed Railway Company were acquired by the State in 1884, the Northern Bengal State and Calcutta and South Eastern Railways being amalgamated for working by the Government under the name of the Eastern Bengal Railway. The railway serves the whole of the eastern portion of Bengal, runs to the foot of the Himalayas and connects with the Assam-Bengal Railway and Bengal-Dooars Railway. The total mileage open in 1925 was 1,721, the net earnings for 1924-25 amounting to Rs 1,81 lakhs, compared with Rs 1,51 lakhs in 1923-24. (See also text concerning the company following in this section.)

**EAST INDIAN RAILWAY** — This old and important railway gives the only direct access from Northern India to the Port of Calcutta, and is consequently fed by all the railway systems connected with it. Since 1925 the management has been in the hands of the Government. The railway had in 1925 a total mileage of 2,707, and its net earnings in 1924-25 reached the sum of Rs 7.11 lakhs, as against Rs 6.57 lakhs in the preceding year. (See also text concerning the line following in this section.)

**GAEKWAR'S BARODA STATE RAILWAYS**—These lines, with a total open mileage in 1925 of 339, are the property of His Highness the Maharaja Gackwar of Baroda, being maintained and worked by the Baroda and Chhota-Udaipur Durbars. The net earnings of the State Railways proper in 1924-25 were Rs 7,15,523 and of the Chhota Udaipur Railway Rs 31,900.

**GONDAL RAILWAY**—The three lines of this system, aggregating 189 miles in 1925, are owned and worked by the State of Gondal, for which they were constructed by Government agency.

**GREAT INDIAN PENINSULA RAILWAY**—This is India's premier line in point both of age and importance. It was begun in 1853 and was the first part of the railway system connecting Bombay with the eastern ports. At Raichur and Jubbulpur respectively the Great Indian Peninsula connects with the Madras and East Indian Railways. The feature of this line is the passage of the Western Ghats, these sections being 15½ miles on the Bhore Ghat and 9½ miles on the Thull Ghat which rise 1,131 and 972 ft. The Government of India took over the working of the line in 1925, the mileage open being 3,446 and the capital at charge Rs 1,04,87,08,000. Net earnings for 1924-25 were Rs 6,39 lakhs compared with Rs 4,99 lakhs in 1923-24. (See also text concerning the line following in this section.)

**JODHPUR RAILWAY**—This system is made up of the Jodhpur Railway of 3 ft 3½ in gauge (which, running from Kichaman Road through Jodhpur to the Marwar Frontier, has with numerous branch lines a mileage of 687.09) and the Jodhpur Hyderabad Railway the British section of which extends over 123.98 miles, together with three smaller lines, the total mileage of the system in use in 1925 being 858.42. The railways are worked under an agreement between the Government of India and His Highness the Maharaja of Jodhpur, the Jodhpur Railway being his exclusive property.

**MADRAS RAILWAY**—The Madras Railway, which in 1925 had a total open mileage of 3,041, was the third of the original railways constructed as experimental lines under the old form of guarantee. It was projected to run in a north-westerly direction in connection with the Great Indian Peninsula Railway and in a south-westerly direction to Calcutt. On the expiry of the contract in 1907 the line was amalgamated with the Southern Mahratta Railway, a system on the metre gauge built to meet the famine conditions in the Southern Mahratta country, and was re-leased to a large company called Madras and Southern Mahratta Railway Co., by whom the above two and other associated lines are now worked. The latter include the Kolar Goldfields, Tenali-Repalle, Bangalore Harihar, Bezwada-Masulipatam, Dhone-Kurnool, Hindupur, Kolhapur State, Sangli State and West of India Portuguese Railways. The total mileage is 3,041 and the net earnings for 1924-25 were Rs 3,74 lakhs, compared with Rs 3,28 in 1923-24.

**MYSORE RAILWAYS**—These lines, which in 1925 had a total mileage of 317.52, are the property of His Highness the Maharaja of Mysore. They are of metre gauge and are worked by the Mysore Government, and in 1924-25 returned net earnings at Rs 2,73,977.

**NIZAM'S RAILWAYS**—(See page 108).

**NORTH-WESTERN RAILWAY**—This was originally known as the Sind-Punjab-Delhi Railway, which in 1886 was acquired by the State and amalgamated with the Indus Valley State and Punjab Northern State Railways under the present title of the North-Western State Railway.

It is the longest railway in India under one administration, having a total mileage in 1925 of 5,827. Starting from the port of Karachi, it serves the greater part of Sind and the rich province of the Punjab, connecting with the imperial capital of Delhi Meerut Lahore, Amritsar, Malakwal, Peshawar, and through British Baluchistan with Quetta. In 1925 the capital at charge stood at Rs 1,22,16,38,000, and the net earnings increased from Rs 5,07 lakhs in 1923-24 to Rs 6,77 lakhs in 1924-25.

**Khyber Pass Railway**—This new line, though technically a branch of the North Western Railway deserves special notice. It was opened to traffic on November 3, 1925, marking an interesting stage in the development of India's great railway system. Previously the railway stopped short at Jamrud, a few miles from Peshawar on the Indian side of the Khyber Pass. This pass has been the main trade route to India from the north from the earliest days, and most of the trade with far distant Central Asia still follows this route in picturesque caravans.

The total length of the line, which is a single broad gauge track is 277¼ miles from Jamrud to the Afghanistan frontier. The level at Jamrud is 1,496 ft., at Landi Kotal, the summit, 3,495 ft., and at Landi Khana 2,622 ft. The ruling gradient from Jamrud to Landi Kotal is 3 per cent., and to Landi Khana 4 per cent. for a 7 deg curve. The line is the first on the 5 ft 6 in gauge to be constructed to the new Indian standard dimensions, and allows for a maximum running width of 12 ft with a height of 15 ft 6 in, instead of 10 ft and 13 ft 6 in respectively as hitherto. All the bridges are built to the latest Indian standard, that is for axle loads of 24 tons.

The line passes through no fewer than 32 tunnels, with a total length of over 2½ miles. While most of them are short, some are of substantial length, the Kator Tangi tunnel, for example, being 1,335 ft long and the Gorse Hill tunnel, No 3, 1,004 ft. Rather more than half the total length of the line is on curves. New and extremely powerful engines are provided, and the safety devices include catch points to stop runaway trains. Crossing numerous high bridges over deep gorges, the line rises continually from Jamrud to Shahgar, an ascent of 1,000 ft in five miles as the crow flies. From that station it plunges into the gorge of Ali Masjid, of which the traveller will see very little save tunnels. The last part of the climb to the head of the pass at Landi Kotal is eight miles in length, and at intervals there are impressive views of barren sun-scorched hills, with huts and towers perched like eagles' nests high above the track. From Landi Kotal the railway drops steadily through its last five or six miles to Landi Khana. Between these two points a series of rough ridges has to be surmounted, and this the line does in a great sweeping zigzag. (See also text concerning the company following in this section.)

**ODISH AND ROHILKHAND RAILWAY**—This railway is another of the lines constructed under the original form of guarantee. It began from the north bank of the Ganges, running through Rohilkhand as far as Saharanpur, where it joins the North-Western State Railway. It was not until 1887 that the bridge over the Ganges was completed and the line connected with the East Indian Railway. To effect a connection between the metre gauge systems to the north and those to the south of the Ganges, a third rail was laid between Bhuriwal and Cawnporc. The Company's contract expired in 1889, when the railway was purchased by the State and has since been worked as a State Railway. As from

July 1, 1925, the working of this railway was amalgamated with that of the East Indian Railway. The total mileage of open line in 1925 was 1,620.56, and net earnings for 1924-25 amounted to Rs 97,40,783.

**ROHILKHAND AND KUMAON RAILWAY**—This system, of 3 ft 3½ in gauge throughout consists of the Rohilkhand and Kumaon line (259 m) and the Lucknow-Bareilly line (312 m). The Company, which originated in 1882, has expended a capital sum of Rs 1,84,92,954 and Rs 2,34,77,911 respectively on its two railways the net earnings of which for 1924-25 totalled Rs 33,35,106. The head offices of the Company are at 237 Gresham House, Old Broad Street, London, E.C.

**SOUTH INDIAN RAILWAY**—The lines formerly owned and worked by the Great Southern India and the Carnatic Railway Companies were amalgamated in 1871 under the title of the South Indian Railway, which on January 1, 1891 was purchased by the State and handed over, together with the Villupuram-Cumtaka State Railway, for working as one undertaking to a new company the existing South Indian Railway Company, with offices at 91, Petty France, Westminster London, S.W. The system is at present made up of the South Indian Railway, which runs on a 5 ft 6 in gauge from Jalapet to Mangalore and on a metre gauge from Madras to Dhanushkodi, Tuticorin and Tutuvelly and several subsidiary lines, of which the Tanjore District Board, the Travancore, the Morapur Hosur, and the Shoranur-Cochin are the most important. The total mileage open for traffic in 1925 was 1,870.19, some 226 miles being also under construction or sanctioned. The net earnings for 1924-25 were over Rs 2,48,07,000 the capital at charge amounting to Rs 28,43,16,000.

**MILEAGE.** The total route mileage of the Indian Railways at the end of March 1926 was 38,552, consisting of

Broad gauge (5 ft 6 in)	18,957
Metre gauge (3 ft 3½ in)	15,880
Narrow gauge (2 ft and 2 ft 6 in)	3,715

During the year 1925-26, 282 miles of new lines were opened for public traffic and at the end of March 1926 some 1,800 miles were under construction.

In addition to the lines owned and worked by the Government or Companies, some 4,933 miles are owned by Indian States, of which 3,092 miles are worked by the States themselves and 1,841 miles by the adjoining main line administrations. In addition, there is a small miscellaneous mileage of 271, consisting mainly of District Board lines.

**NEW CONSTRUCTION (PROGRAMME OF).**—The separation of the railway finances from the general finances of the country has given an impulse to a large programme of new construction. The policy has been to examine the country in different areas roughly corresponding to the areas served by the various railway administrations, and continuous projects of survey and construction are being prepared, these being subject to revision each year in the light of the needs of the Local Governments and the recommendations of the Railway Administration. The total length of projects which had either been sanctioned or were being investigated by the end of March 1926 amounted to between 6,000 and 7,000 miles, and it is hoped that, when all arrangements in this direction are in full swing, the yearly addition to the extent of Indian railways will be in the neighbourhood of a thousand miles.

The areas which are recognised to be among those requiring the most urgent

development by means of railway extensions are Burma, South India and the coalfields area in Bihar and Central Orissa. In Burma which is clamouring for improved communications several lines are under construction or in the programme.

**IGRA-BAH**—This line will open out an irrigated tract of the Agra District situated at the head of the Jumna Chambal Doab, at present devoid of railway communication.

**CALCUTTA CHORD RAILWAY**—This line starts from a point near Dankari Station on the Budwan-Howrah chord of the East Indian Railway, and joins the Eastern Bengal Railway near Dum Dum Station. It is about eight miles in length and includes a bridge over the Hooghly River at Bally. This connection is primarily intended for the export of coal from the East Indian Railway but it is likely in the near future also to be used for coal from the Bengal Nagpur Railway fields. With the developments anticipated in the terminal arrangements at Calcutta and the electrification of the lower portion of the Eastern Bengal Railway a large proportion of the suburban passenger traffic will eventually pass over it.

**COALFIELDS DEVELOPMENT**—An extensive gap of undeveloped country will be traversed by what is known as the Central Coalfields Railway. Investigation has shown that good coal in large quantities is available in the area lying between the East Indian and Bengal Nagpur Railways running westward from the Jheria coalfields as far as Katni in the Central Provinces. The proposal set out in the annual report of the Railway Board is to provide lines to serve as outlets toward the north and west of India. The railway will run from Daltonganj to Hutur, a distance of 17 miles, and there will bifurcate: one line going to Mesla, 103 miles, and the other to Anuppur, 18 miles. Besides giving an estimated return of nearly 7 per cent on the capital outlay, these lines will reduce the cost of transporting coal to the west of India, with corresponding benefit to industrial undertakings in the Bombay Presidency and to the working expenses of the railways serving Bombay.

**KANGRA VALLEY RAILWAY**—This 2 ft 6 in gauge line, taking off at Pathankot and running through the Kangra Valley to Shanan, a distance of 100 miles, will open up the rich Kangra Valley and at the same time make the Kulu Valley more accessible. Shanan, the terminus, is the site of the power station for the Mandi Hydro-Electric Power Scheme, and the railway is the joint enterprise of the Government of India and the Provincial Government.

**MADRAS (NEW CONSTRUCTION IN)**—The long-standing complaint of Madras that she has been starved of railway development is being met by the Railway Board taking up four projects in the south of the Presidency covering some 300 miles. The Villupuram-Trichinopoly chord will form an alternative route between Madras and Trichinopoly, and afford such relief to the existing line as will defer the necessity of doubling it for many years. The chord, which will be 100 miles in length, will open up and develop new and populous country. The Virudunagar-Tenkasi Railway, 76 miles in length, will also open up new country and help to relieve main line congestion. The list of accepted projects further includes lines from Dindigul to Pollachi and from Trichinopoly to Karaikudi. A very important undertaking will be the extension of the standard gauge from Shoranur to Nilambur, 41 miles.



MUSSOORIE, 6,653 feet above sea level, reached via Dehra Dun (E I Railway)

**VIDALHOLE NARSIPUR AND GUDILADI BHIMMIRAH RAILWAYS**—These lines, which branch off the Madras and Southern Mahratta Railway System, will provide railway communication with the densely populated portions of the Krishna and Godavari deltas where, owing to the number of canals existing communications are inconvenient. It is anticipated that both lines will be opened for traffic in 1928.

**NORTH-WEST INDIAN RAILWAY**—The construction of a 2½ ft gauge railway has been authorised to extend from Hindubagh to Kila Saifulla in the Zhob district of British Baluchistan, a distance of about 30 miles along the right bank of the Zhob River. This line is to furnish transportation for the coal mines at Hindubagh.

**PUNJAB RAILWAYS**—Three construction projects in the Punjab have been recommended. The Lyallpur-Jaranwalla Railway, 21½ miles long, at a cost of Rs 1,405,000, which is expected to yield a return of 5.48 per cent and will serve an irrigated area of about 84,000 acres; the Rohtak-Gohana-Pampat Railway, 45 miles in length, costing about Rs 2,800,000, which will tap a rich and fertile area, thickly populated and irrigated, and from which a return of 64 per cent is expected; the Jassar-Shakargarh-Chak-Amru Railway, 26 miles long, costing approximately Rs 1,500,000, which will serve a thickly populated area and from which a return of 6 per cent is anticipated.

**RAIPUR-VIZIANAGRAM RAILWAY**—A most important project in hand is the completion of the Raipur-Vizianagram line, 260 miles in length, with which is intimately connected the construction of a new harbour at Vizagapatam. Work on the port has already commenced, and has been placed under the control of the Railway Board.

**Vizagapatam Harbour**—The first section of the development of Vizagapatam as a

major harbour is estimated to cost Rs 193 lakhs and includes a wharf 1,500 ft long capable of taking three or four steamers, moorings for two vessels in the harbour and accommodation at the oil jetty for oil tankers or oil burning steamers. The wharf will be constructed so as to give a depth of 30 ft below low water, and a channel dredged to the same depth will connect up the harbour to the sea. The wharf will be provided with the necessary cranes and railway sidings. A Dharmisala waiting room and customs examination sheds will also be established for dealing with passenger traffic. Orders have been placed for a large suction dredger, also a rock breaker and dipper dredger. In the meanwhile a grab dredger has been working continuously since December 1925 with the object of providing a berth for the suction dredger. A hydrographical survey of the bar and creek has been carried out, considerable work has also been done in the way of constructing bunds and providing temporary arrangements for carrying on the trade of the port during its development.

**ROLLING STOCK (STANDARDISATION OF)**—The Locomotive Standards Committee appointed by the Railway Board submitted in 1925 a modification of their previous report on the Standardisation of Locomotives. As a result of their discussion in March 1926 with the Consulting Engineers (Rendel, Palmer and Tritton), detailed drawings of the standard locomotives are being prepared by the Consulting Engineers, and locomotives of the following types have been ordered for trial—

	2-6-2			2-8-2		
	BRANCH LIGHT			HEAVY LIGHT HEAVY		
Broad Gauge	6	28	12	13	14	—
Metre Gauge	—	4	5	11	—	—

All questions regarding standardisation and improvements and alterations to standard types of locomotives are referred to the Locomotive Standards Committee.



There is a similar expert Committee to deal with standardisation and improvements to carriages and wagons. This Committee which is known as the Carriage and Wagon Standard Committee, is at present engaged in revising the existing standard designs, and it has also prepared standard designs of any other types for which there might be a demand.

**AUTOMATIC COUPLERS** — As a result of further investigations of this difficult problem, it has been considered advisable to ask the Consulting Engineers to prepare detailed drawings and estimates of alterations required to be carried out to each of the various types of broad gauge stock now in existence in order to obtain a more reliable estimate of the cost of this project before embarking on it. In the meantime railways are continuing to experiment with various types of automatic couplers and transition devices. On receipt of the report of the Consulting Engineers revised estimates of the entire cost of the conversion will be prepared.

**STAFF.** — The total number of railway employees at the end of the financial year 1924-25 was 740,854, as compared with 720,754 in the previous year. This is an increase of 20,100 as compared with 1923-24, but a decrease of 8,826 compared with 1922-23 in spite of an increase in mileage of over 650 during the two years 1923-25. On March 31, 1925, the number of European employees was 6,299, of Anglo-Indian 11,965, and of Indian 722,590, compared with 6,565, 11,500 and 702,089 respectively twelve months previously. The cost of the staff employed on Class 1 railways (excluding the Jodhpur Railway) during 1924-1925 was Rs 32,64,70,254, compared with Rs 31,41,64,008 in 1923-24. In the year ended March 31, 1925, the number of Indians in superior appointments rose from 378 to 415.

**STAFF (TRAINING OF).** — The marked development in the science of transportation, together with the increase in operating expenses with which railways throughout the world have been faced since the War, have emphasised the necessity for increased efficiency in working. It follows that not only must the material be of the best, but that a higher standard must be obtained from the staff. To meet this problem the Railway Board has devised a system of Transportation Schools, which it is hoped will give the staff much fuller instructions in transportation duties than anything that has been attempted hitherto. The scheme is being applied first of all to the State Railways, but it is hoped that company-worked Administrations will see the advantages it offers and will start similar schools of their own.

The State Railways are to be divided into Areas conforming more or less to the existing Divisions between the different lines, and for each Area there will be a school, such schools to have two distinct functions —

- (1) the training of probationers who have not yet commenced their railway service, and
- (2) the provision of periodical "Refresher" courses for those already in the railway service.

As regards the training of probationers, for the present men for the transportation and commercial sides only are taken. These fall into three groups:—

- (1) the Station-masters' group, comprising telegraph signallers, assistant station-masters and station-masters,
- (2) the Commercial group, comprising coaching and goods clerks, and

- (3) the Train Staff group, comprising guards.

**"REFRESHER" COURSES** — The second function of the school — the provision of "Refresher" courses — is intended to provide courses of training at intervals of say, five years for men already in the service. At present the largest school is situated at Chandanui, and the accommodation for instruction consists of

- (1) The Transportation School of which the most important feature is a complete 2½ in gauge model railway operated by electrically-driven locomotives controlled by signals, with ten stations of different types complete with double and single line block instruments, interlocked lever frames, signals, points, etc.
- (2) The Locomotive and Carriage School, with apparatus for demonstrating the working of the vacuum brake, sectioned locomotive fittings, valve gear models and train lighting apparatus.
- (3) The Commercial School, and
- (4) The Telegraph School, complete with the necessary instruments, batteries, etc.

The school has its own electricity supply, an excellent water supply and a well-thought out scheme of sanitation. The grounds cover nearly a hundred acres, where tennis, cricket, football and hockey are provided. There is a school dispensary and a Sub-Medical Officer, who is under the supervision of the Civil Surgeon of Moradabad.

While it is realised that the theoretical education provided at Chandanui can never be sufficient in itself to take the place of practical experience, it is confidently hoped that as a supplement to such practical experience it may prove of very real value, enabling the Indian Railway man to attain to that high standard of efficiency which is so vitally necessary to the successful working of railways under modern conditions.

**STATE RAILWAY WORKSHOPS.** — In view of the continued increase in rolling stock and the consequent importance of arranging for an increase in the outturn of workshops in the most economic and efficient manner, a Committee of experts under the Chairmanship of Sir Vincent Raven, KBE, formerly Chief Mechanical Engineer of the North Eastern Railway (England) and President of the Institution of Mechanical Engineers, was appointed by the Railway Board to examine the question and submit a report. The Committee held its enquiry from January to March 1926, and its report, which has since been published, is expected to lead to great improvements in the matter of outturn of work from the State Railway Workshops within the next few years.

**STATISTICS.** — The following table shows the main results of the working of all the Indian Railways treated as one system for the two years named —

PARTICULARS	1923-24	1924-25
Mileage open ..	38,039	38,270
Total capital outlay (in thousands of Rupees) ..	Rs 7,17,03,02	7,33,37,38
Gross earnings (ditto) ..	1,07,79,66	1,14,75,20
Gross earnings per mile open ..	28,350	29,765
Gross earnings per train mile ..	6.78	7.01
Total working expenses (in thousands of Rupees) ..	68,44,77	69,36,68
Working expenses per mile open ..	17,992	17,992
Working expenses per train mile ..	4.31	4.24
Percentage of working expenses to gross earnings ..	Per cent. 63.50	60.45
Net earnings (in thousands of Rupees) ..	Rs 39,34,89	45,38,52
Net earnings per mile open ..	10,348	11,780
Net earnings per train mile ..	2.48	2.77

PARTICULARS (cont.)	1923-24	1924-25
Percentage of net earnings on total capital outlay ..	Per cent. 5.48	6.19
Coaching train miles (in thousands) ..	Miles 64,184	68,964
Goods train miles (ditto) ..	57,538	59,993
Mixed train miles (ditto) ..	99,221	99,643
Total, including miscellaneous train mile (ditto) ..	158,943	163,619
Unit mileage of passengers (in thousands) ..	19,105,879	19,010,350
Freight ton mileage of goods (in thousands) ..	18,827,873	21,268,691
Number of passengers carried ..	596,277,000	605,998,000
Earnings from passengers (in thousands of Rupees) ..	Rs 38,07,82	38,75,31
Tonnage of goods carried (in millions of tons) ..	Tons 72.54	84.02
Earnings from goods traffic (in crores) ..	Rs 55.47	64.92

**STORES.** The Railway Administration has steadily adhered to the policy of purchasing railway stores in India wherever possible, but at present the supply of suitable material is not equal to the demand. During 1924-25, out of a total purchase of stores to the value of Rs 20.83 crores (against Rs 27.66 crores in 1923-24), the value of imported material was Rs 12.46 crores, compared with Rs 18.70 crores in the preceding year. In 1924-25 for instance the value of rolling stock purchased in India was only Rs 0.37 crores, against Rs 5.75 crores paid for imported material while electric plant imported was valued at Rs 1.10 crores against Rs 0.01 crores paid for indigenous material. On the other hand material for permanent way and tools and stores were largely purchased in India. No locomotives are manufactured in the country though with the aid of State subsidies the wagon industry is making fair progress. This industry is equivalent to about 150,000 a year.

**TRAFFIC (FACILITIES FOR HANDLING).** — A large portion of the capital expenditure on improvements is directed towards facilities for the better and more efficient handling of the present traffic on railways, also to meet the natural expansion and further to stimulate that growth of traffic. This applies particularly to the problem of suburban traffic in and around the three Presidency towns of Bombay, Calcutta and Madras.

**ELECTRIFICATION** — The introduction in 1924-25 of electrified services on the Harbour Branch of Bombay, which have since been extended to Pandra, forms only the first step in the general scheme at present in hand for the electrification of the suburban and main line of the railways centring on Bombay. This scheme includes the suburban section from Victoria Terminus to Kalyan and Church Gate to Borivli and the main lines from Victoria Terminus to Igatpuri and Poona.

The electrification of these sections will enable the provision of a faster and more frequent suburban service than is possible with steam working, and this will undoubtedly help towards a better distribution of the dense population of Bombay.

The Madras suburban problem is being dealt with by the provision of additional tracks on the Madras-Tambaram metre gauge section of the S I Railway, and several important schemes for improving the broad gauge M & S M Railway terminal facilities have been taken in hand.

The question of the electrification of the Madras-Tambaram section and of other portions of the South Indian Railway is being investigated, but it is dependent to some extent on the prospects of a hydro-electric supply.

The Calcutta suburban traffic problem is receiving attention, and a scheme for the electrification of the suburban lines and improved terminal facilities is being drawn up.



**STATION IMPROVEMENTS**—Apart from the foregoing, the various through routes in India are not being neglected. Most of the important junctions whose limited capacity has been a severe handicap to traffic are being remodelled, the chief remodelling schemes being at Ahmedabad, Lucknow and Trichinopoly.

The outlay on improved facilities for the comfort of lower-class passengers forms an appreciable share of the expenditure on the general improvements of stations.

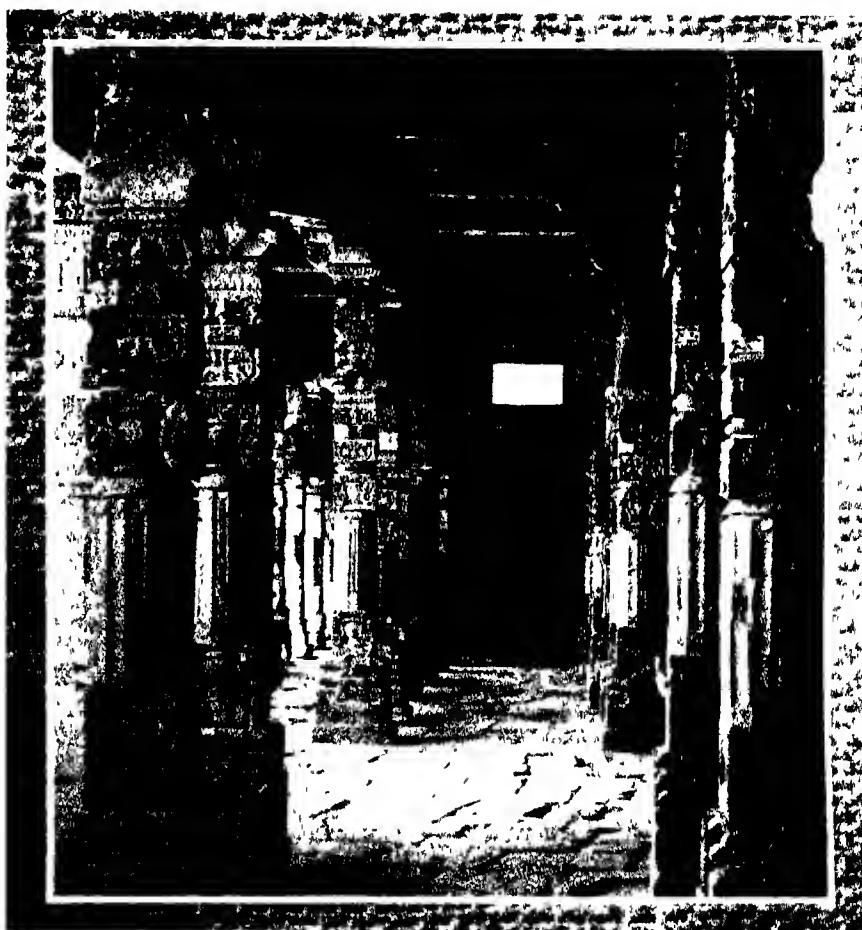
The Bombay-Poona section of the Great Indian Peninsula Railway is to be improved by eliminating the reversing station at Bhore Ghat, the doubling of the Grand Chord of the East Indian Railway is approaching completion, the Bombay Baroda and Central India line into Bombay is being quadrupled, and the Ishirdi-Gopalpur section of the Eastern Bengal Railway is being doubled.

**TRAFFIC (GOODS).** The total earnings from all goods traffic carried on the Indian Railways during 1924-25 were Rs 66.83 crores or 58.24 per cent of the total earnings of the lines as compared with Rs 60.64 crores or 56.25 per cent, in the preceding year. On Class I railways the number of tons of freight originating rose from 72,540,000 to 84,020,000, the largest increases in earnings being those from wheat and coal and coke.

There was a very satisfactory increase of nearly 2,000,000 tons in freight traffic in 1925-26, but in spite of it earnings from this source decreased by approximately Rs 20,000,000. The drop was occasioned by a decrease from 273 to 250 miles in the average distance over which consignments were carried, chiefly, no doubt, because there was little export of wheat from the Karachi district.

**TRAFFIC (PASSENGER).** Of the total earnings of Rs 114.75 crores in 1921-25, Rs 38.76 crores or 33.78 per cent, were derived from passenger traffic, as compared with Rs 38.99 crores in 1923-24, the total number of passengers carried (including holders of season and vendors' tickets) being 576,315,400, as against 507,322,800, an increase of 9,922,600. In 1925-26 some 599,000,000 passengers were carried on all railways, an increase of 23,000,000 over the figures for 1924-25, as a result, passenger earnings increased by Rs 7,000,000. Third-class passenger traffic has for many years shown increases both in numbers and earnings, but the railways are carefully watching this traffic and wherever necessary are introducing concessions or reduced fares. Upon the introduction of the 1926-27 Railway Budget it was announced that 31 lakhs of rupees were to be spent on amenities for lower-class passengers.

**TRAFFIC (TOURIST).**—The total number of tourists coming to India from overseas during 1925 represented a 75 per cent increase on those who came in 1922, when the tourist traffic was about equal to that of the last pre-War year. This remarkable growth of traffic is partly due to the energy with which the Great Indian Railways have sought to attract visitors. They have, during the last few years, carried on active propaganda in the United States, Canada, South Africa and Australasia, and a cinematograph film which has been shown all over the American Continent illustrating the more famous places reached by the Great Indian Peninsula Railway and the Bombay, Baroda and Central India Railway has no doubt made many of those who saw it eager to see something of the East. Moreover, the Indian Railways treat the visitor well; they provide exceedingly comfortable tourist cars and



The Kutb Minar Mosque, at Delhi (N.W.R.), converted from an ancient Hindu Temple.  
(See letterpress, p. 86.)

special trains, for example from Bombay to Delhi via Jaipur and Sewai Madhopur, or from Bombay to Delhi, Agra, Benares and back, with accommodation for 60 or 80 passengers. One railway alone received orders from various travel agencies for eight special trains during the 1926-27 cold season. All of the lines report a marked increase in this kind of traffic, expedited no doubt by the recent reduction of railway fares. (See special article on "Tourist Resorts.")

**VARIOUS ACTIVITIES.**—Besides providing transport facilities, the railways of India have from time to time taken up other subsidiary functions, either in order to transport product cheaply or to facilitate its sale. Such are the acquiring of railway-owned collieries, the purchase and manufacture of sleepers, ticket printing, catering, and the provision of steamer services.

**CATERING**—Railway catering is a matter in which the travelling public is greatly interested. The needs of the higher-class passengers who partake of food and refreshments prepared in European style are attended to in refreshment rooms situated at the more important stations and junctions, also *en route* in the dining cars attached to most of the mail and long distance trains. These arrangements have, for a considerable time, been worked on the contract system, the responsibility of the railways having been limited to the provision of accommodation and other facilities, also to seeing that fair rates are charged. In 1914-15 the Bengal-Nagpur Railway took the catering business into its own hands, and the change is admitted to have been a success. Other

railways have followed in the footsteps of the Bengal-Nagpur, and the greater satisfaction of the travelling public seems to be assured at no higher expense. The Bengal-Nagpur Railway also runs a hotel at Ranchi, an attractive health resort 2,000 feet above sea level and the summer headquarters of the Bihar and Orissa Government, as also one at Puri, a seaside sanatorium much frequented during week-ends.

**COLLIERIES**—For the running of locomotives the quantity of coal required is enormous, and for this the railways have for a long time depended on private collieries, though the East Indian Railway has worked a colliery of its own for over 40 years. Early in the present century the Great Indian Peninsula Railway acquired a colliery, and shortly before the War the East Indian and the Bengal-Nagpur Railways jointly procured another, from which coal began to be raised in 1910-17. The Great Indian Peninsula Railway commenced working a second colliery in 1917-18.

Railway administrations have thus long been alive to the fact that it is neither safe nor economical to depend entirely upon private supplies of coal, and this has been emphasised of recent years. Moreover, the prices charged have gone up considerably and contract supplies are not always sure, owing to recurring labour troubles in the coalfields. Certain Railway Administrations have, therefore, arranged within the last few years to lease some coal areas situated in Bihar and Orissa, and to work them for themselves. It is proposed to introduce electric working in connection with several

of them. In 1923-24, out of 6,060,693 tons used by the Indian Railways, some 1,692,876 tons were raised in railway collieries (See previously, "Coal Supply").

**PRINTING.**—Besides the four State-managed railways, viz., the North-Western, the Oudh and Rohilkhand, the East Indian and the Eastern Bengal Railways, some of the company-worked railways have their own presses, where the bulk of their printing is carried out. Others are contemplating the acquisition of presses for all of their work.

**SLEEPERS.**—As may be easily imagined, the demand for sleepers is enormous, some four millions per annum having been purchased by the Indian Railways during the last ten years. In the near future the demand is expected to be considerably greater. Most of the sleepers acquired are of wood, Indian timber such as deodar, sal and pyinkado forming the bulk of the supply. Foreign wooden sleepers of creosoted pine, Australian jarrah and karri and fir are imported only to a small extent. Iron and steel sleepers are also used, and the manufacture of these has been taken up by some of the principal railway administrations. Reinforced concrete sleepers are likewise being manufactured in India, and some railways are laying them as an experimental measure. An investigation has recently been in progress in regard to the possibility of opening out new forest areas, of substituting new varieties of indigenous timbers (suitably treated if necessary) for the sal, deodar and other sleepers that have been used in the past, and of utilising more largely steel, cast-iron and ferro-concrete sleepers in place of timber, for the treatment of which it has been decided to erect certain installations.

**STEAMER SERVICES.**—For several years the Eastern Bengal Railway ran its own service of steamers in competition with the Indian General Steam Navigation Company between Goalundo and Narainganj and Goalundo and Cachar. Later on, an agreement having been arrived at between the two as regards their respective shares in the traffic offering, the railway discontinued this steamer service. For many years the South Indian Railway has, in connection with the through Indo-Ceylon service, maintained a service of steamers between the railheads of Dhanushkodi and Talaimannar.

Some of the railways also maintain ferry services, a notable instance being the service across the Indus between Mari Indus and Kalaibagh maintained by the North-Western Railway. The Eastern Bengal Railway system is cut up in many places by the Ganges, with the result that several pairs of stations are connected by ferries only. The Bengal-Nagpur Railway has a wagon-ferry service across the Ganges from Shalamar to Kidderpore Docks.

## THE RAILWAY BOARD.

**Origin.**—The evolution of satisfactory administrative machinery for the railways of India has been a long and difficult undertaking. In the early years of railway construction by the agency of companies, control was vested in the Public Works Department of the Government of India. When in 1869 the Secretary of State agreed with the Government as to the advisability of railway construction by State agency, and a vigorous programme of construction was commenced, it became necessary to constitute a new Railway Branch of the Public Works Department to deal with railway matters, and this was done in 1870. In the following year a Consulting Engineer for State Railways was appointed and a Director for State Railways

in 1874, the latter appointment being in 1879 converted into that of Director-General of Railways, the Director-General being ex-officio Deputy Secretary to the Government of India in the Railway Branch of the Public Works Department. In 1897 the appointment of the Director-General was merged into that of a Secretary, and this system of control continued until 1907, in which year, following the report of the late Mr. Thomas Robertson, the appointment of a Railway Board, which should assume full control and management of the railway system in India, was decided upon.

**Early History.**—The first Board consisted of three persons—a chairman and two members. In the Chairman was vested the control of all questions submitted to the Board and the power to act on his own responsibility subject to the confirmation of the Board. The old system of control over the proceedings of railway companies was to some extent abolished, but Government Inspectors were appointed and a certain measure of control was maintained in order adequately to protect Government interests. In 1920-21 the Ackworth Committee criticised adversely the working of the Railway Board as then constituted, considering that the proper function of that Board was not to carry out routine duties, but to shape policy, to watch, to think and to plan, and as a result of its deliberations important changes were introduced into the system.

**Functions.**—The Government of India has varied functions to perform in respect to railways as (a) the directly controlling authority of the State-worked lines, aggregating over 15,000 miles, (b) the representative of the predominant owning partner in systems aggregating over 27,000 miles, (c) the guarantor of many of the smaller companies, and (d) the statutory authority over all railways in India. These functions are exercised by the Railway Board as a Department of the Government of India.

**Organisation.**—The Railway Board as reorganised consists of a Chief Commissioner, a Financial Commissioner and two Members, the Chief Commissioner being the head of the Board with the rank of Secretary to the Government. In him is vested the power of over-ruling the other members of the Board. The work of the Railway Department is divided between the Financial Commissioner, who is the representative of the Finance Department of the Government of India, and the two Members of the Board on the basis of financial, technical and general. The Board is assisted by five Directors for Civil Engineering, Mechanical Engineering, Traffic, Establishment and Finance, each Director being responsible for one or more of the several branches of the office. These Directors are executive officers, and have the power to decide questions which do not affect the policy of the Board.

**Personnel.**—The present personnel of the Board is as follows: Chief Commissioner—Sir Clement Hindley, Kt.; Financial Commissioner—Mr. G. G. Sim, C.I.E., I.C.S.; members—Messrs. P. C. Sheridan, C.M.G., and F. A. Hadow, C.V.O. The member representing Railways on the Council of the Governor-General is Sir Charles Innes, K.C.S.I., C.I.E., I.C.S.

**Branch Organisation.**—Working under the Directors are Deputy Directors of Traffic, Stores, Projects, Ways and Works and Establishment, and an Assistant Director, Technical, in charge of the Drawing Branch. In addition, a Deputy Director in charge of Statistics has been appointed.

The Deputy Directors are immediately in charge of branches dealing with definite phases of the working. The Traffic Branch

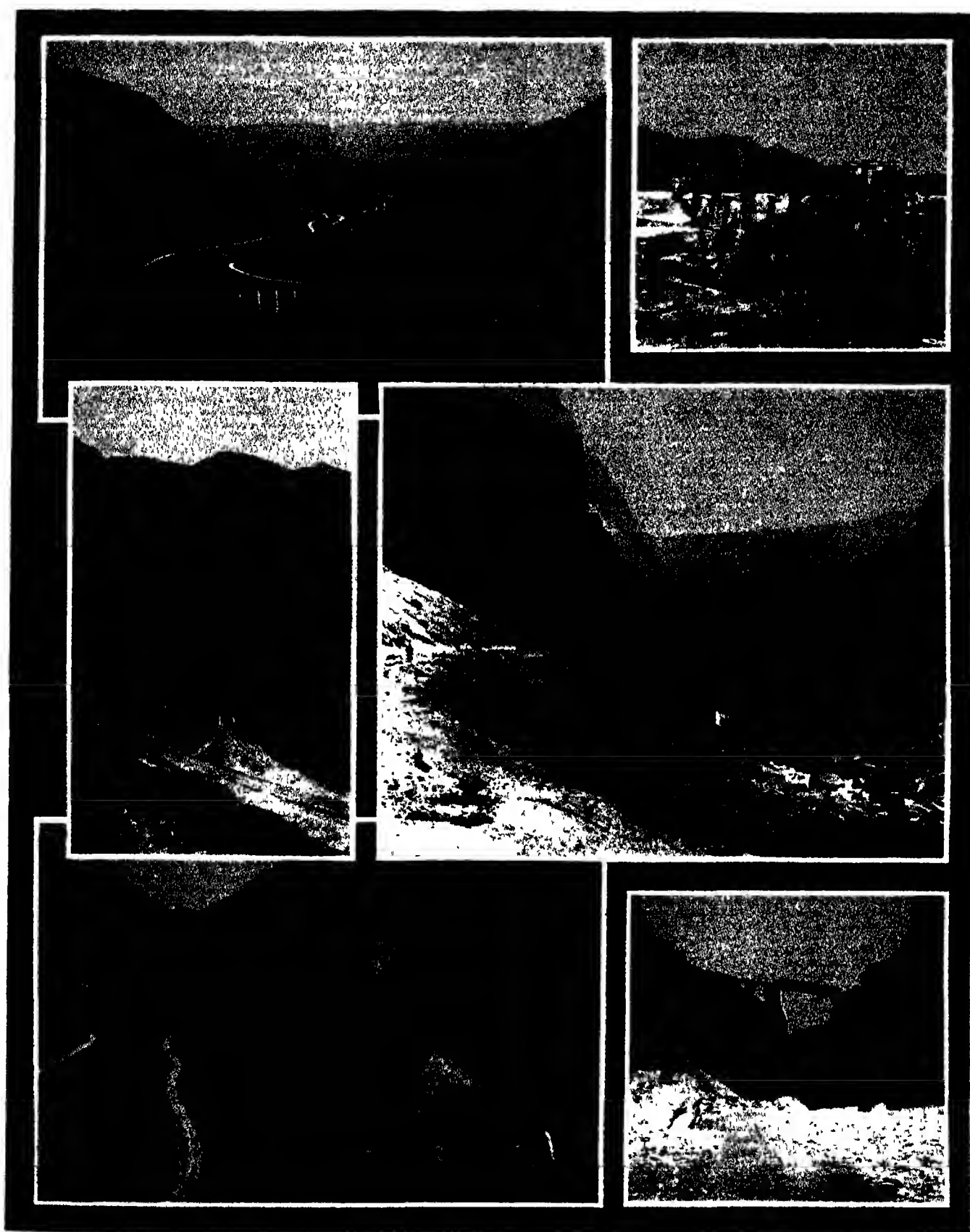
handles both the operating and commercial sides of traffic working, in the Project Branch are considered all questions of new construction and developments, and the Ways and Works Branch deals with all works on the open line.

**Railway Administration.**—The General Managers, as they would be called in other countries, of the various railway administrations in India are almost invariably styled Agents. Until recently all the Railway Administrations were organised on the departmental basis, but India has lately followed the example of other countries and introduced on several lines the divisional system of organisation. Under this system the entire administrative responsibility for the movement and handling of traffic, including the direction of engine power and running powers of engines and vehicles, also for co-ordinating these factors with the upkeep and movement of ways and works, is vested in the Chief Operating Superintendent. At the same time, the responsibility for executive work is placed on a single authority in each locality termed the Divisional Superintendent.

**Accounts.**—The question of transferring the supervision of accounts on State Railways from the Finance Department of the Government of India to the Railway Board has been under consideration for some time, and in accordance with a resolution adopted by the Legislative Assembly in 1925 a start has been made with the transfer of the supervision of railway accounts on the East Indian Railway. At the same time a separate Audit Staff has been appointed, which reports direct to the Auditor-General. If the revised procedure proves successful, it will be gradually transferred to other railways.

**Advisory Councils.**As a result of the report of the Committee appointed by the Secretary of State for India to enquire into the administration and working of the Indian Railways (1921), Advisory Councils were formed at the headquarters of the Government of India and at the headquarters and principal centres on the railways. The Central Advisory Council is composed of 26 members. These include the Chief Commissioner of Railways and the Honourable Member in charge of the Railway Department, who is the Chairman of the Council. The remaining 24 comprise the 12 members of the Standing Finance Committee for Railways, which consists of one nominated official as its chairman and 11 members elected from amongst the Legislative Assembly, together with six nominated members representing the Council of State and six the Legislative Assembly. The Council meets four times a year and discusses subjects of general railway interest. The local Advisory Committee generally meets once a month under the Chairmanship of the Agent of the Railway concerned. The number of members varies from six to 12, and is composed of representatives of the Local Government in whose jurisdiction the headquarters of the railway in question is situated, the Legislative Council of the Province concerned (these members represent rural interests and the travelling public), the local Municipality or Corporation, and representatives of industries, commerce and trade.

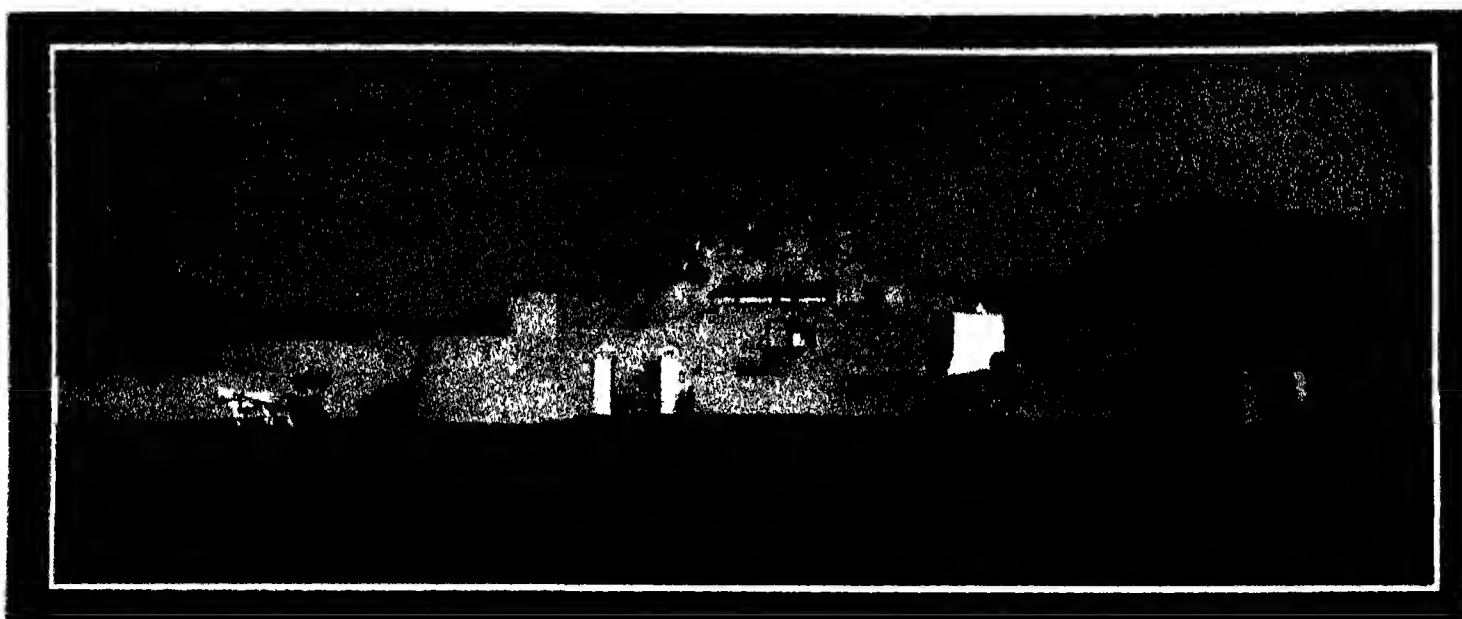
The functions of these committees are purely advisory, the subjects discussed by them principally relating to (a) alterations in time-tables and passenger services; (b) alterations of rates and fares and changes of goods classifications; (c) proposals in regard to new projects and extensions; (d) proposals in regard to new rolling stock; (e) any matters affecting the general public interest or convenience. Questions of personnel, discipline and appointments are not brought before the Committee.



## NORTH WESTERN RAILWAY.

1. The Khyber Pass, looking from Changi Reversing Station towards Peshawar.
2. Attock Railway Bridge, spanning the River Indus near where Alexander the Great crossed to the Plains 2,000 years ago.
3. Reversing Station between Medanak and Changi, on the Khyber Railway.
4. The Chappar Rift, crossed by one of the two lines which rise from the Plains of the River Indus to 6,000 feet, and passing Quetta, reach the Afghan Frontier at Chaman.
5. Ali Masjid Gorge, bottle-neck of the Khyber Pass, traversed by the Railway and two metalled roads.
6. The Chappar Rift Bridge (another view).

(See *Interpress*, page 86.)



NORTH WESTERN RAILWAY

Jamrud Fort at the foot of the Khyber Pass; a trade route into India of great antiquity.

#### NORTH WESTERN RAILWAY.

**Extent of System.**—The North Western Railway, the longest system in India under one administrative control, serves five of the most important provinces in that country. First comes the Punjab with its wide irrigated plains, dotted with important towns and large cantonments, then the Province of Sind, where extensive irrigation projects are now in hand. On the frontier, the North-West Frontier Province is served by a number of broad and narrow gauge lines, while Baluchistan is traversed by a strategic track over the Bolan Pass, with a lengthy extension to the Persian frontier. Lastly, in the United Provinces, the North Western Railway links up with the East Indian Railway at Saharanpur, Meerut City and Ghaziabad, with the Great Indian Peninsula Railway near Delhi, with the Bombay, Baroda and Central India Railway at Delhi, Hissar and Bhatinda, and with the Bikanir and Jodhpur Railways (both metre gauge) at Bhatinda and Hyderabad respectively.

**Origin.**—The beginning of the North Western Railway dates back to 1855 (two years before the Mutiny), when a company was registered under the title of the Sind, Punjab and Delhi Guaranteed Railway Company to improve the communications between Karachi and the Punjab, the only adequate means of transport at that time being the river Indus and its tributaries. In 1861 the section between Karachi and Kotri was opened, and soon afterwards a short length connecting Lahore and Amritsar, the principal commercial centres of the Punjab. In this connection it is interesting to note that the importance of these small original sections has never declined, and that to-day they carry the heaviest traffic on the system.

**Extension and Amalgamation.**—Year by year new sections were opened to traffic, either through the medium of private enterprise or by State agency, and by 1880 there was direct rail communication between Lahore and Karachi, with the exception of the Indus crossing at Rohri, which was not bridged until some nine years later. In 1886 the five separate Administrations which had been developing their respective areas—the Sind,

Punjab and Delhi Guaranteed Railway, the Punjab Northern, the Indus Valley, the Eastern Section Sind-Sagar and the Southern Section Sind-Pishin Railways—were amalgamated under State ownership and control, with the present title of North Western Railway.

**Strategic Lines.**—About this time the situation on the North-West Frontier demanded comprehensive improvements in the means of communication for that area, and the next fifteen years (1886-1901) saw the rapid growth of strategic lines, which to-day total no less than 1,680 miles. The most noteworthy of these was the line which threads the Bolan Pass to a height of 6,000 feet above sea-level, penetrates a further mountain barrier by means of the Khojak Tunnel (12,860 ft long), and reaches the Afghan frontier at Chaman. This development of military lines has gone on steadily to the present day, and now includes the frontier railheads at Durgai, Thal, Bannu, Manzar and Chaman, and also the important broad gauge line which traverses the Khyber Pass and ends at Landi Khana, while a 400-mile extension connects Quetta with the Persian border. This military section of the North Western system is for the most part unremunerative owing to the lightness of traffic.

**Hill Station Branches.**—At the same time that the strategic railheads were being pushed further to the North-West, branch lines to serve the hill stations along the slopes of the Himalayas were being developed. Many of these sanatoria can now be reached direct, as in the case of Simla, or from termini at the foot of the hills, as in the case of Abbottabad and Dalhousie. Again, the branch lines leading to Jammu and Havelian bring travellers to the frontier of Kashmir, while Rawalpindi is only some 32 miles from the hill station of Murree, which is the usual jumping-off place for Kashmir, the capital, Srinagar, being 200 miles distant by the road, over which there is an extensive service of motor cars and other transport.

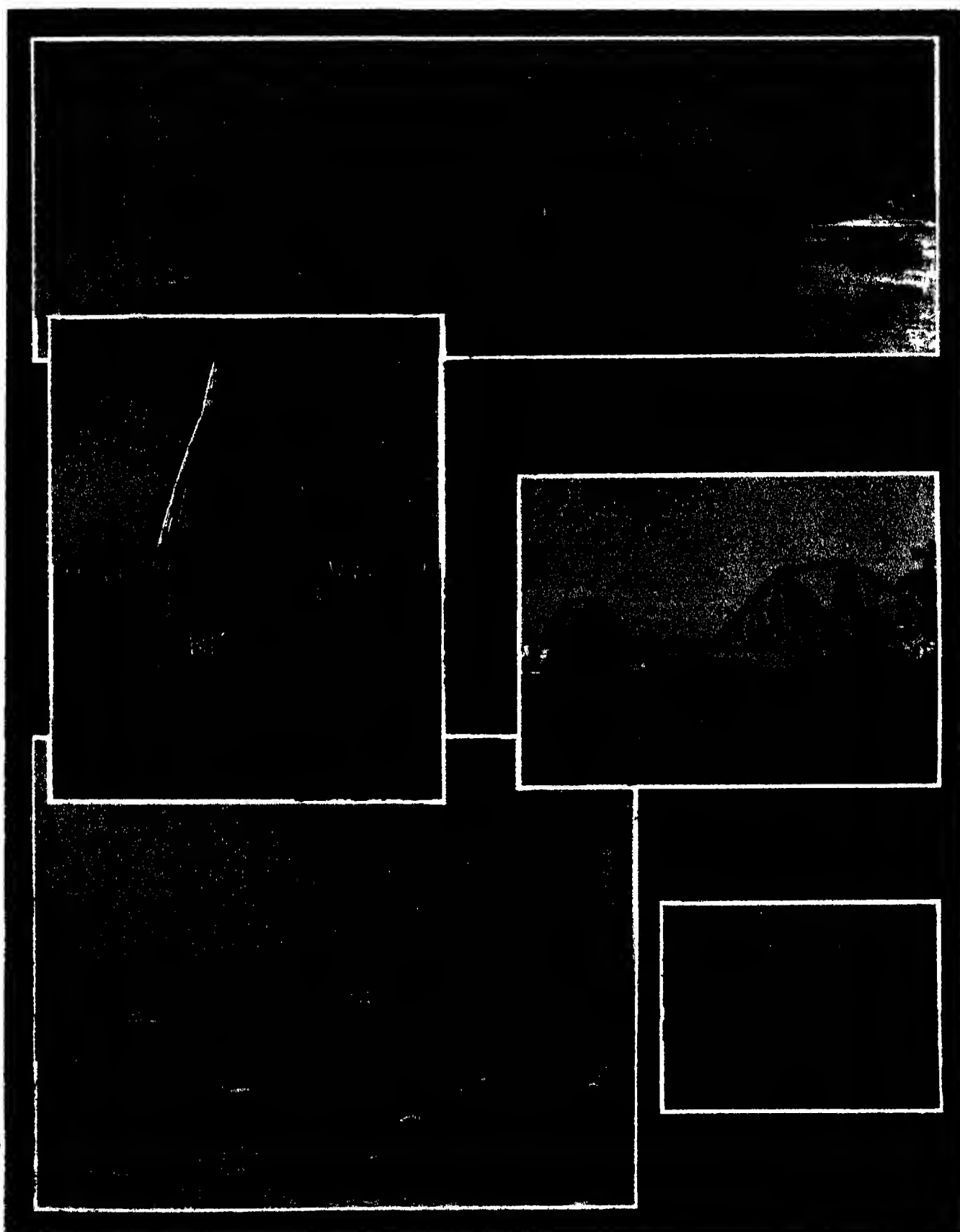
**Main Lines.**—The main lines of the system extend from Delhi, the winter capital of the Government of India, to the Afghan frontier

beyond the Khyber Pass, and from Simla, the summer capital, through the fertile plains of the Punjab to the port of Karachi, the third in importance in India. Some 4,500 miles of the line are owned by the State, while 1,400 miles are owned by various private companies, but are worked by the State as part of a single system. The same applies to some 250 miles which are the property of Native States.

**Kalka-Simla Railway.**—This railway (2 ft 6 in. gauge) was originally constructed by, and at the cost of, the Delhi Umballa-Kalka Railway Company, and was purchased by the State in 1906, being made over to the North Western Railway administration with effect from January 1, 1907. The line has a mileage of 59.92, the steepest gradient being 1 in 33 uncompensated, and the sharpest curve having a radius of 120 ft. There are 103 tunnels on this track, the length of the longest, the Barog Tunnel, being 3,752 ft. This mountain railway connects the plains of Upper India with Simla, the famous summer capital of the Viceroy, the Government of India, Army Headquarters, and the Punjab Government. Simla is situated among the hills of the Lower Himalayas at an average height of 7,220 ft above sea level, and commands magnificent views of mountain ranges and snows. From Simla there starts the well-known Hindustan-Thibet road.

**Khyber Pass Railway.**—The building of this Railway through the famous Khyber Pass at the extreme North-West frontier of India was sanctioned in July, 1920, and in November of that year, after various preliminary difficulties had been overcome, the work of construction actually commenced. Owing to the peculiar and arduous conditions under which construction had to be carried out, five years elapsed before the section from Jamrud to Landikotal, a length of about 21 miles, was completed and opened for public traffic on November 3, 1925. The remaining portion of seven miles from Landikotal to Landikhana was opened on April 3, 1926.

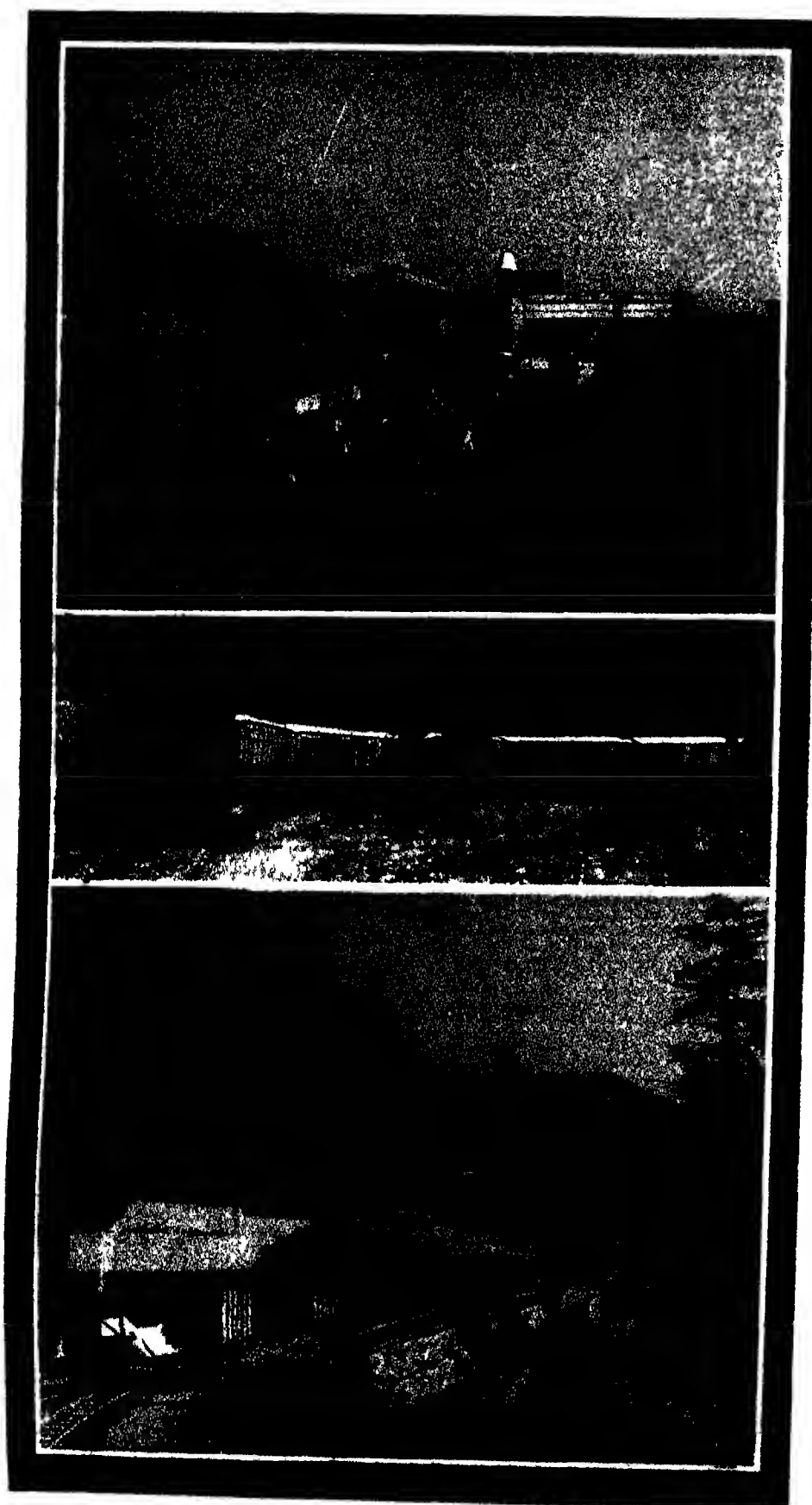
This is the first 5 ft. 6 in. gauge line which has been built to the new standard dimensions, and allows for a maximum running



NORTH WESTERN RAILWAY.

1. Adamwahan Bridge.
2. Landsdown Bridge, spanning the Indus at Sukkur and connecting line from Quetta with the Afghan Frontier.
3. The same Bridge over the Indus at Sukkur.
4. Port of Karachi, linked by the N.W. Railway to the fertile plains of the Punjab.
5. Bridge over the River Ravi at Lahore which carries the Main line joining Delhi to Peshawar.





NORTH WESTERN RAILWAY (Kalka-Simla Line).

1. Kalka Railway Station.
2. Passenger Train at Summer Hill.
3. Simla Railway Station.

width of 12 ft and running height of 15 ft 6 in. The great engineering difficulties which have had to be overcome and the standard to which the railway has been built render it a technical achievement ranking with the greatest engineering works carried out by railway engineers.

The line is situated entirely outside the administrative border of British India in the strip of tribal territory which separates it from Afghanistan. The trade that passes through the Khyber Pass is already considerable and it is hoped that the railway will still further increase its volume thereby bringing profit and employment to many who in the past have subsisted with difficulty on the meagre agricultural and other resources of the country which it traverses.

**Mileage.** The present route mileage of the whole system is slightly over 6,300 while the track mileage including sidings exceeds 9,000 miles. In respect of length of track therefore the North Western can bear comparison with the greatest systems in the world.

**Gauges.** Of the total length of 6,300 miles 5,800 are of the Indian broad gauge (5 ft 6 in) the remainder being of either 2 ft 6 in or 2 ft gauge. Several lengths of line which were at first constructed to the metre or to a 2 ft 6 in gauge have since been converted to the broad gauge.

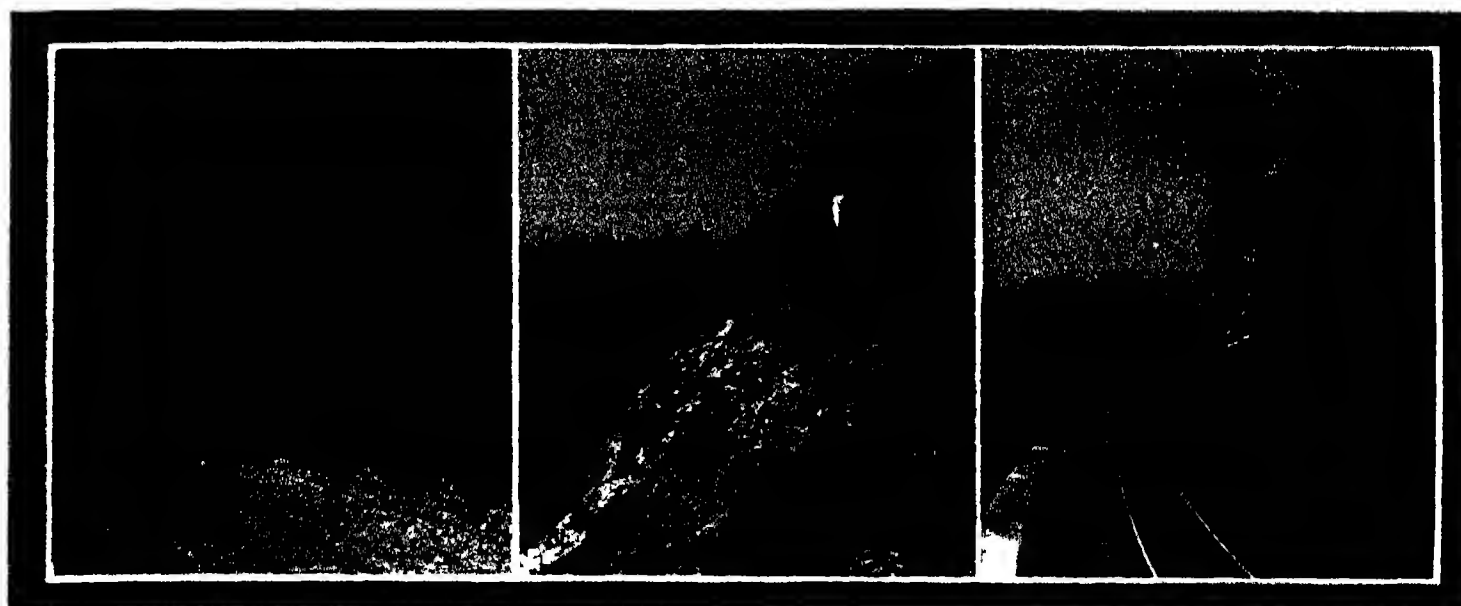
**Permanent Way.** The permanent way is of various types. On the single line of iron rails there are 60 lb flat footed of steel rails there are 60 lb, 60½ lb, 61 lb, 62 lb, 75 lb, 8 lb and 90 lb flat footed, 64 lb, 68 lb and 75 lb double headed, 68 lb, 73 lb, 77½ lb, 84 lb and 85 lb bull headed and 60 lb, 75 lb and 90 lb British standard section. On the double line the steel rails are 68 lb, 73 lb, 77½ lb and 85 lb bull headed and 75 lb, 87 lb, 90 lb and 100 lb flat footed. The present extensive re-laying programme provides for a 90 lb track on all main lines with 75 lb rails on all branch lines. The sleepers are chiefly of wood but cast iron plates (oval or round), cast iron pots, fowler box and Denham Olpherts plate, ferro concrete and steel transverse sleepers are also used. The line is ballasted throughout with sand, bricks, broken stone and shingle.

**Gradients.**—The ruling gradient of the greater part of the railway is about 1 in 350, with the following important exceptions: Between Karachi and Kotri 1 in 190, between Luki and Schwan 1 in 150, between Lalamsa and Peshawar 1 in 100, beyond Sibi 1 in 40 with 1 in 25 banking sections between Jullundur and Hoshiarpur, 1 in 200, between Sialkot and Jammu 1 in 150, between Gurdaspur and Pathankote 1 in 170, between Taxila and Haripur 1 in 100, between Haripur and Havelian, 1 in 50, between Daudkhel and Campbellpur 1 in 83, between Rawalpindi and Kohat, 1 in 70 except between Khushalgarh and Jand which is 1 in 50, and between Peshawar and Jamrud 1 in 50. The sharpest curve is of 455 ft radius.

**Rolling Stock.**—On March 31, 1925, the broad gauge rolling stock of the North Western Railway consisted of 1,607 locomotives, possessing a total tractive power of 33,027,196 lbs, 24 rail motors, 3,697 coaching vehicles of various grades, and 30,037 goods vehicles.

**Stores.**—In 1924-25 the value of stores (excluding coal, coke and ballast) purchased by the North Western Railway aggregated Rs 2,85,76,000. Of this total, Rs 73,84,000 represented stores imported direct, Rs 30,97,000 stores purchased in India, and Rs 1,80,95,000 stores of Indian manufacture or indigenous origin.





NORTH WESTERN RAILWAY (Kalka-Simla Line).  
En route for Simla.

**New Construction Programme.**—It might be thought that, with the growth of transport facilities described already, the requirements of the different areas served would be fully met. This, however, is not the case. The vast irrigation schemes undertaken by the Government of the Punjab, which have done so much to increase the fertility of the Province, and the inception of similar schemes in Sind have created a demand for a network of feeder lines. This demand is being met by a heavy construction programme, which is expected to add over 1,000 route miles to the North Western Railway during the next five years, while at the same time comprehensive improvements in track, bridges and station yards are being carried out on the open line to meet the requirements of the ever-increasing traffic.

**Passenger Traffic.**—Passenger traffic is

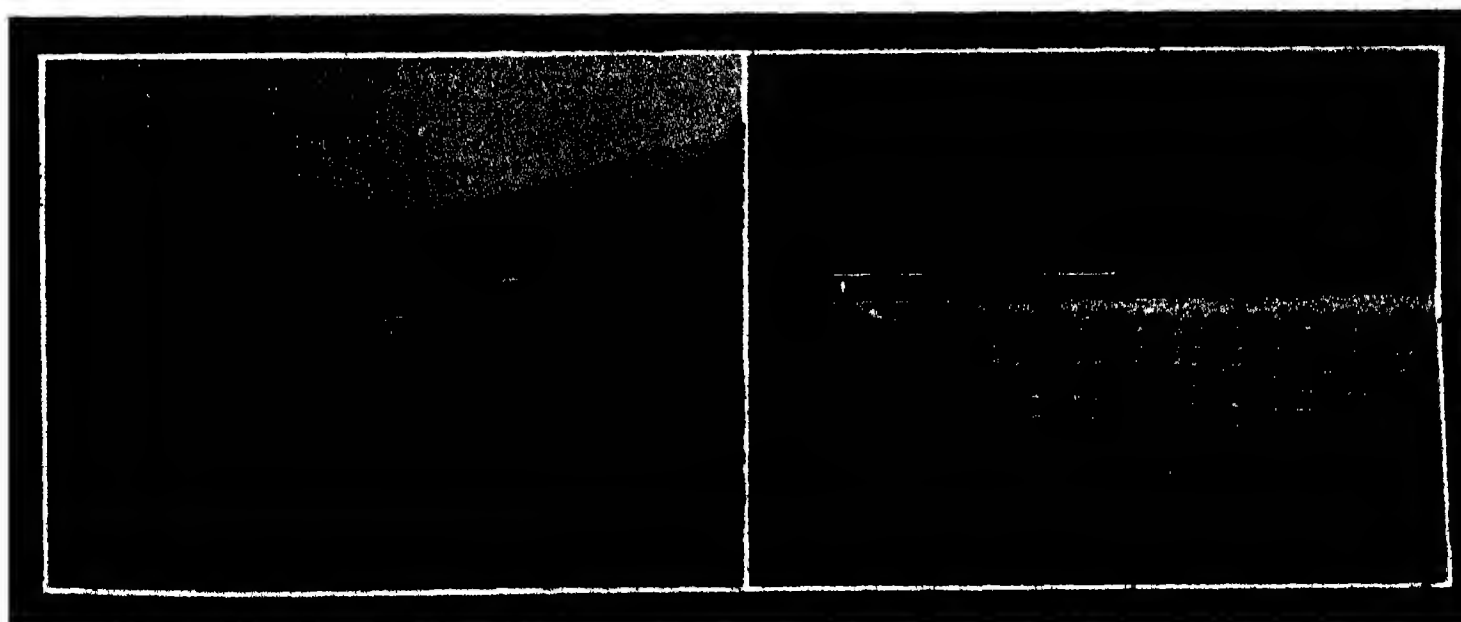
lucrative, notwithstanding the low fares charged, which bear comparison with any in the world, as may be gathered from the fact that a third-class journey of 100 miles costs the equivalent of under half a crown. During 1925-26 over 87,500,000 passengers were carried, as against 78,000,000 in 1924-25. Of the latter total, nearly 73,000,000 were conveyed over the commercial lines. The earnings from passenger traffic amounted in 1925-26 to nearly eight crores of rupees, compared with Rs 7.3 crores in the preceding year.

**Goods Traffic.**—The total tonnage of goods carried over the broad gauge sections of the North Western system rose from 12,651,000 tons in 1923-24 to 13,778,000 tons in 1924-25, the revenue therefrom also increasing from Rs 9,13,70,000 to Rs 11,14,01,000. The in-

creased exports of wheat from India in 1924-25 had a marked effect on the earnings of the North Western Railway.

**Staff.**—The wide-flung system of the North Western Railway is divided into seven divisions, each with a Divisional Superintendent, and has a staff of over 116,000 British and Indian employees.

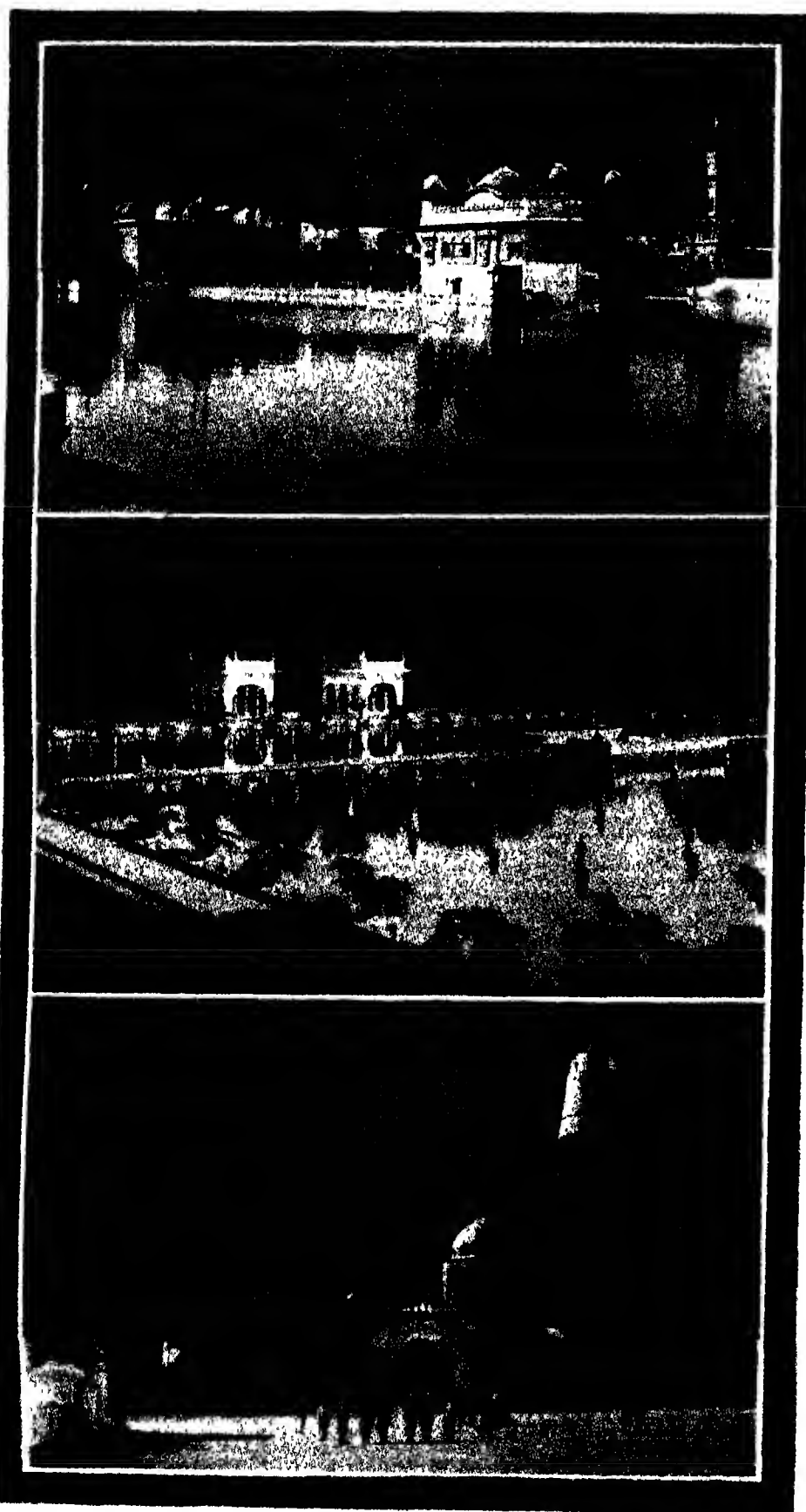
**Working Costs.**—With regard to working costs in general, the great distance of the line from the sources of fuel supply must be borne in mind. Coal, which is used on a great part of the line, has to be hauled from the Bengal coal-fields, while oil, which is employed in the Karachi Division, comes from the head of the Persian Gulf. These facts need to be taken into consideration when comparing the operating and financial results with those of other lines.



NORTH WESTERN RAILWAY (Kalka-Simla Line)

1. The Bridge below Dharanpur, showing the Horse Shoe Curve.

2. Gallery Bridge on the Kalka-Simla Track.



NORTH WESTERN RAILWAY.

1. The Golden Temple at Amritsar, the religious centre of the Sikh community and the second city of commercial importance in the Punjab.
2. The Shalimar Gardens at Lahore, Capital of the Punjab.
3. View of Sukkur, where a rocky island in the River Indus facilitates the crossing of the line to Quetta.

**Financial Results.** The following table shows the financial results of the working of the North Western Railway for the two years named —

	1923-24 (Rs 1,000)	1924-25 (Rs 1,000)
Total Capital Outlay	1,21,03,76	1,22,16,38
Gross Earnings	17,14,01	19,31,39
Working Expenses	12,06,62	12,54,10
Net Earnings	5,07,99	6,77,23
Percentage of Net Earnings on Total Capital Outlay	4.19	5.54
Government Share of Surplus Profits (less payments made on account of rebate to worked lines)	20,76	24,01
Total Income	5,28,75	7,01,24
Percentage of Total Income on Total Capital Outlay	1.36	5.74
Interest	3,73,98	3,09,24
Amorty and Sinking Fund	70,89	19,32
Gain or Loss to the State	17,68	1,73,93

**Gross Earnings.** The total gross earnings of the railway increased from Rs 17,14,010 in 1923-24 to Rs 19,31,390 in 1924-25, the receipts from various sources being as under —

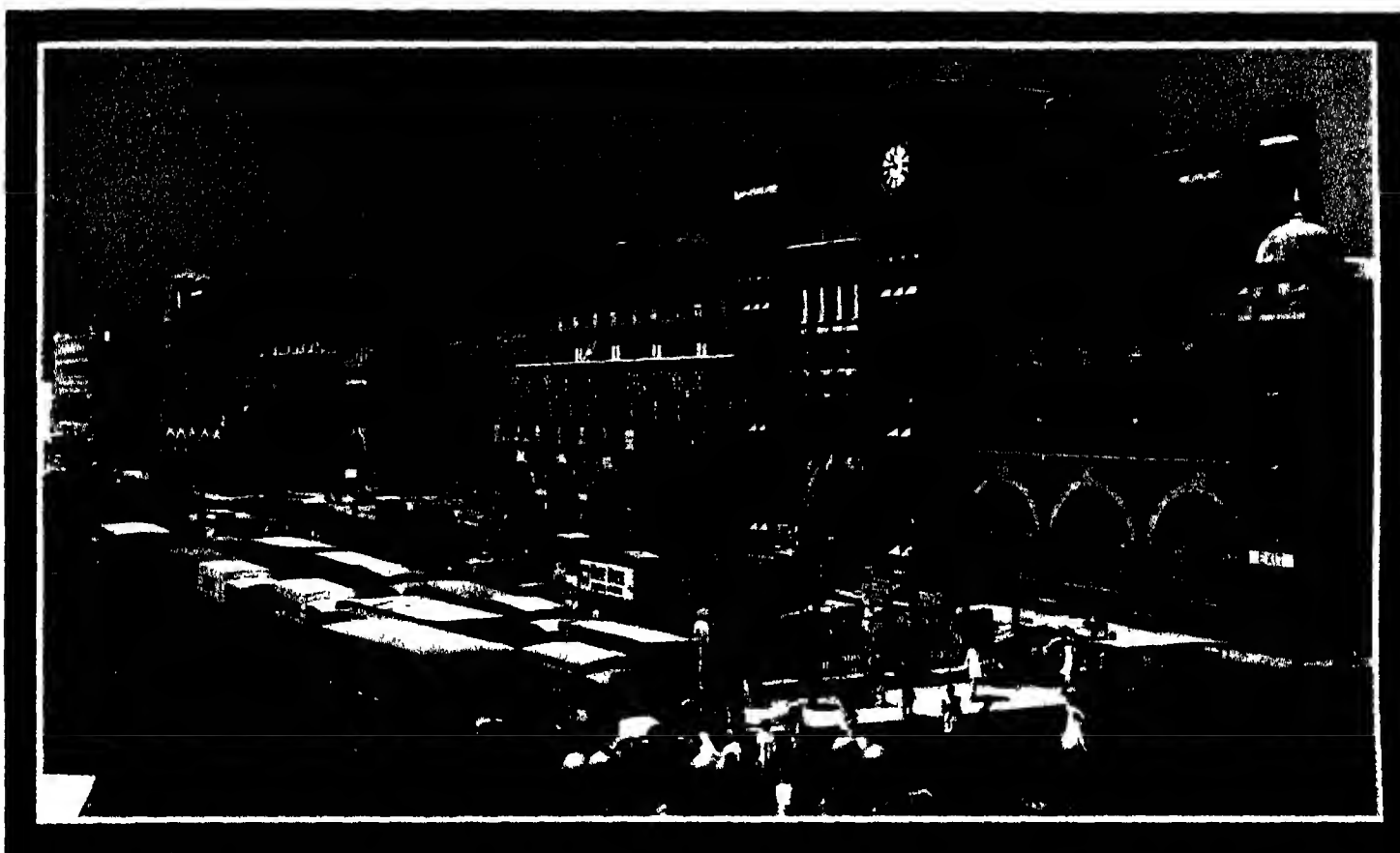
	1923-24 (Rs 1,000)	1924-25 (Rs 1,000)
Passengers carried	6,10,89	6,36,56
Other Coaching Earnings	93,16	95,46
Total Coaching Earnings	7,13,95	7,31,92
Total Goods Earnings	9,51,46	11,54,84
Electric Telegraph Earnings	2,06	2,26
Steamboat Earnings	2,81	2,59
Sundry Earnings	42,23	39,78
Total Gross Earnings	17,14,01	19,31,39

**Weekly Earnings.** The following table shows the earnings per mile per week during 1923-24 and 1924-25 on the commercial and military sections respectively and on the entire North Western Railway, excluding the worked lines —

	1923-24 Rs	1924-25 Rs
Commercial Section — Earnings per mile per week	912	1,080
Proportion of Expenses to Earnings	68.15	60.95
Military Section — Earnings per mile per week	204	186
Proportion of Expenses to Earnings	110.83	122.45
Entire Line — Earnings per mile per week	654	744
Proportion of Expenses to Earnings	73.00	66.70

**Working Expenses.** — The totals of Rs 12,06,62,000 and Rs 12,54,10,000 working expenses for the years 1923-24 and 1924-25 respectively were thus apportioned —

	1923-24 (Rs 1,000)	1924-25 (Rs 1,000)
Maintenance of Structural Works	2,84,02	2,75,56
Maintenance and Supply of Locomotive Power	4,81,34	4,79,15
Maintenance of Carriage and Wagon Stock	1,20,52	1,86,29
Maintenance and Working of Ferry Steamers, etc.	1,36	96
Expenses of Traffic Department	1,93,77	1,81,92
Expenses of General Departments	77,65	72,56
Miscellaneous Expenses	44,96	57,72
Total Working Expenses	12,06,62	12,54,10



EAST INDIAN RAILWAY  
Howrah Station, Calcutta.

#### EAST INDIAN RAILWAY.

**Inception and Development.** The original East Indian Railway Company was formed in or about the year 1845, surveys being at once made for the construction of the main line to Delhi and other important centres. It is worthy of note that one of the earliest portions to be built was a section from Howrah (Calcutta) to the coal-bearing district which is now so widely known as the Ranee-gunge Fields. The first section to be opened for traffic on August 15, 1854 (30 years after the construction of the first railroad in England and nearly three years before the Mutiny), was that running from Howrah to Hooghly, a total length of 23 miles. The initial objective of the new company was Delhi, the line being intended to pass through Patna, Benares, Mirzapur, Allahabad and Agra in order that the trade carried on by boats on the River Ganges between these and other places might be captured.

Notwithstanding the difficulties and delays caused by the Mutiny in 1857, a through train service between Howrah and Delhi was established in 1867, direct communication with the city and port of Calcutta being thus secured. Although the natural terminus of the East Indian Railway is at Howrah, situated on the west bank of the river Hooghly, through the exercise of running powers the East Indian Railway has direct access to the Docks of Calcutta, situated on the East Bank, and to Budge Budge, the centre of the kerosene oil trade. This direct access is obtained by crossing the Hooghly at Bandel over the Jubilee Bridge opened in 1887 and thence via Naihati over the Eastern Bengal Railway system. To-day this important transportation system extends over 3,928 route miles and serves an area with an estimated popula-

tion of 32 millions, in which are situated some of the most important industrial enterprises of the country.

**Transfer to State.** The property owned by the old East Indian Guaranteed Railway Company, which was purchased by the State in 1879, was worked by a reconstituted company to the end of 1924, when all the contracts then subsisting between the Secretary of State and the company were determined and the line was brought under direct State management with effect from January 1, 1925. The arrangements which had been previously made for the transfer of the staff to the Government Service enabled that transfer to be made smoothly and without any change in the services rendered to the public. The Agent of the Railway (Mr G. L. Colvin, C.B., C.M.G., D.S.O.) has been invested with the powers of an Agent of a State Railway, and such of the functions of the Home Board of the company as have come under the direction of the Government of India have been assigned to the High Commissioner for India.

**Amalgamation.** An important administrative change which was sanctioned in 1924 was the amalgamation of the East Indian and Oudh and Rohilkhand Railways, which was effected from July 1, 1925. From every point of view this was a desirable measure. The economy which must follow the abolition of a separate central administration requires no special proof, and in respect of efficiency the advantages of the unified control of the alternative routes traversing the Gangetic Valley are almost equally obvious. Apart from this, the pooling of rolling stock and repair facilities and stocks of reserve material will provide means both for actual economy and for more efficient working.

**Reorganisation.** The East Indian and Oudh and Rohilkhand Railways have lately been reorganised and the divisional system of administration introduced, with effect from February 20, 1925, the East Indian Section being divided into four divisions with headquarters at Howrah, Asansol, Dinapore and Allahabad, and the Oudh and Rohilkhand Section into two divisions with headquarters at Lucknow and Moradabad.

As a sequel to the acquisition of the East Indian Railway by the State and its reorganisation and with a view to securing the operative, administrative and economic advantages which accrue from assigning clearly defined zones to different railway administrations, it was decided that after April 1, 1925, the Delhi-Ghaziabad Section and the working agency of the Delhi-Umballa-Kalka Railway should be transferred to the North Western Railway, the Naini-Jubbulpore Section being handed over to the Great Indian Peninsula Railway as from October 1, 1925.

**Geographical Position.** The East Indian line passes in a north-westerly direction from the Port of Calcutta through the Provinces of Bengal, Bihar and Orissa, and the United Provinces of Agra and Oudh, i.e., it serves the entire Gangetic Valley of India, and the country lying between the Jumna and Ganges Rivers. Through its junctions with the North Western Railway with the Great Indian Peninsula Railway with the Bombay Baroda and Central India Railway, with the Rohilkhand and Kumaon Railway with the Bengal and North Western Railway, with the Bengal Nagpur Railway and the Eastern Bengal Railway, the East Indian Railway also affords direct access to all parts of India.

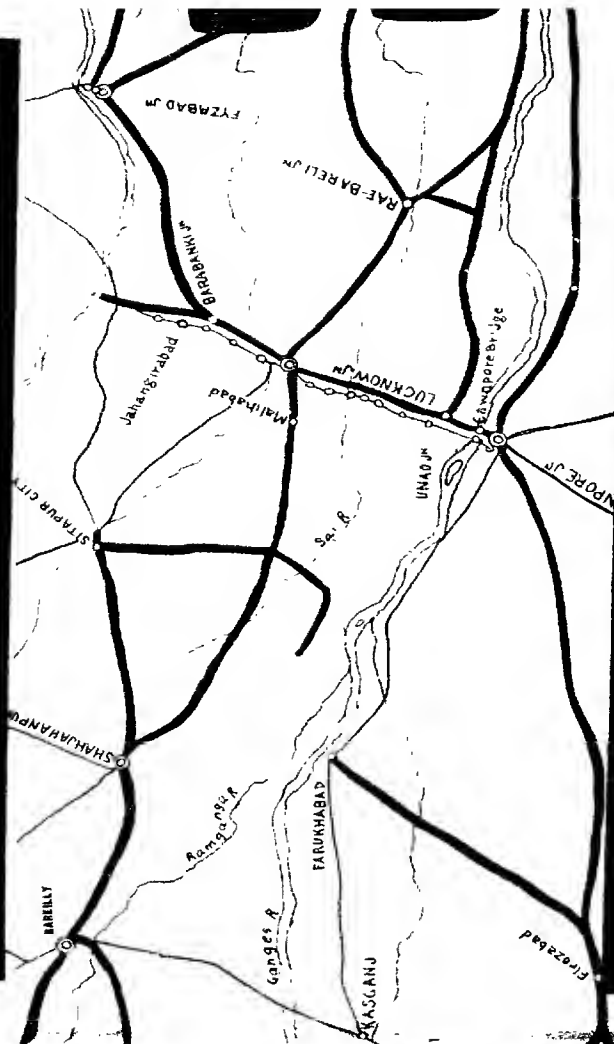
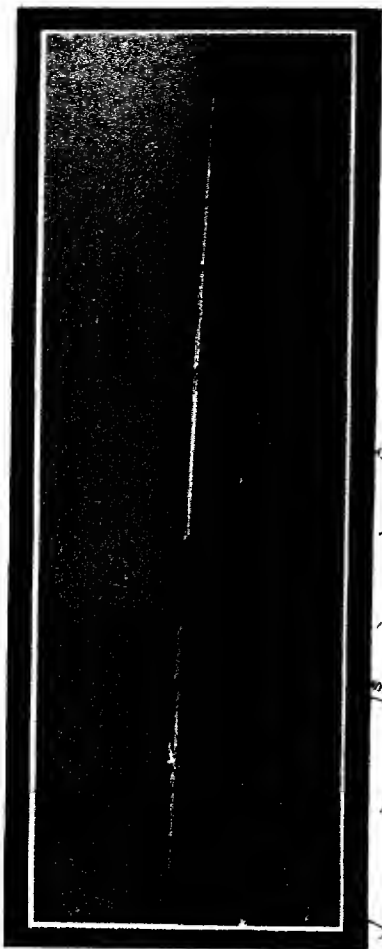


**Permanent Way.**—The line was originally laid with 75 lbs rails. To meet present-day needs, rails of 85, 88½, 90 and 100 lbs are either already laid or being laid according to requirements. In certain portions it is proposed to lay rail sections up to 115 lbs per yard. The track is ballasted throughout with stone.

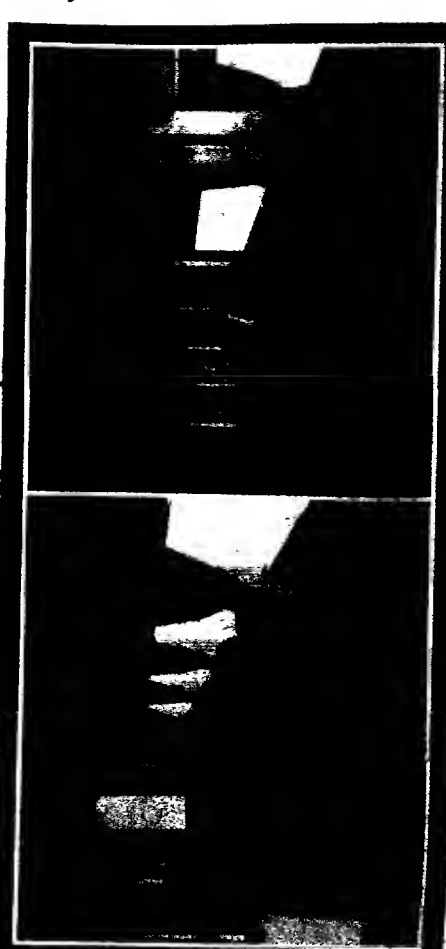
**Workshops.**—The workshops of the carriage and wagon sections of the Mechanical Department of the railway are at Ferozshah, about three miles distant from Haridwar, and at Alambagh, Lucknow, where the locomotive works are at Jansingh in the district of Meerut, in the province of Bihar and Orissa, and at Chhatrapati Sagar and NO.

The Lilloah shops and employments for about 15,000 men and the Malabar shops for about 3,000 men in the construction, maintenance and repair of every class of rolling-stock. The Lilloah shops cover an area of over 100 acres, which has been laid out as a garden town, planned and owned by the

company, and containing a club, an institute for railway employees, golf links, bowling green, fishing tank and other recreation grounds. The locomotive shops at Jansingh have been frequently enlarged since they were constructed in 1862, and now cover an area of considerably over 100 acres. About 12,000 hands are also employed here. The most complete equipment of modern machinery and plant is being installed for the repairing of locomotives, also a large section of the works is for the manufacture of iron sleepers and other permanent-way fittings, points,



1. Bagmati Car.



1. Tourist Special.

EAST INDIAN RAILWAY.

2 and 3. Tourist Saloon.

(continued over)

# TRANSPORT RAILWAYS

crossings, signalling, interlocking and other appliances, and the supply of locomotive and carriage and wagon details to the other workshops on the railway. The locomotive repair shops at Charbagh, Lucknow, now in process of rebuilding on the most up-to-date lines, employ about 2,500 men.

**Rolling Stock.**—The passenger coaches are of the most modern type, and every advantage has been taken of the generous scope afforded by the 5 ft 6 in. gauge to provide ample accommodation with well-fitted interiors, including electric lights and fans and separate lavatories to each compartment.

Restaurant cars are run on all the principal trains, and are fully equipped on up-to-date lines. Tourists' saloons, luxuriously appointed, are available at all times for touring and other purposes. A touring cinema car is another example of the up-to-date stock of the East Indian Railway. This car, which allows accommodation for a

complete cinema plant, films, a cinema operator and mechanic, tours the entire system and free open-air displays are given at most of the stations where the visits of the car form the only break in the monotony of the lives of the inhabitants. Railway propaganda is also worked into these displays.

A carriage of the following dimensions is also being fitted up as a Pullman Demonstration Car, and will tour the line:

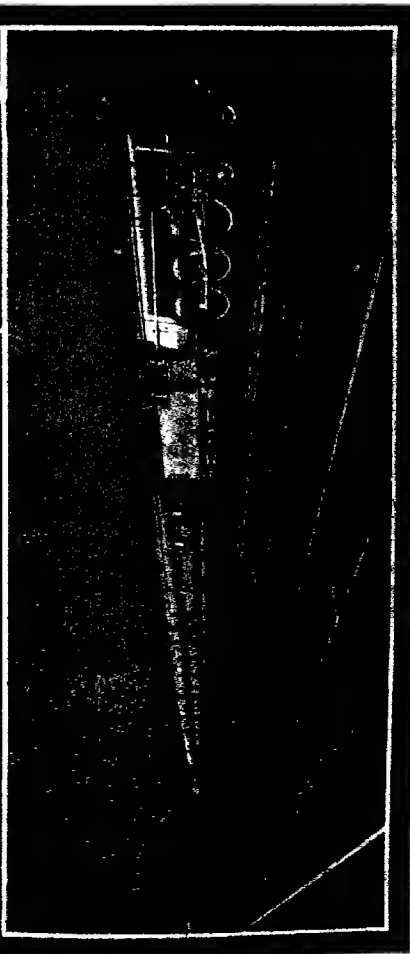
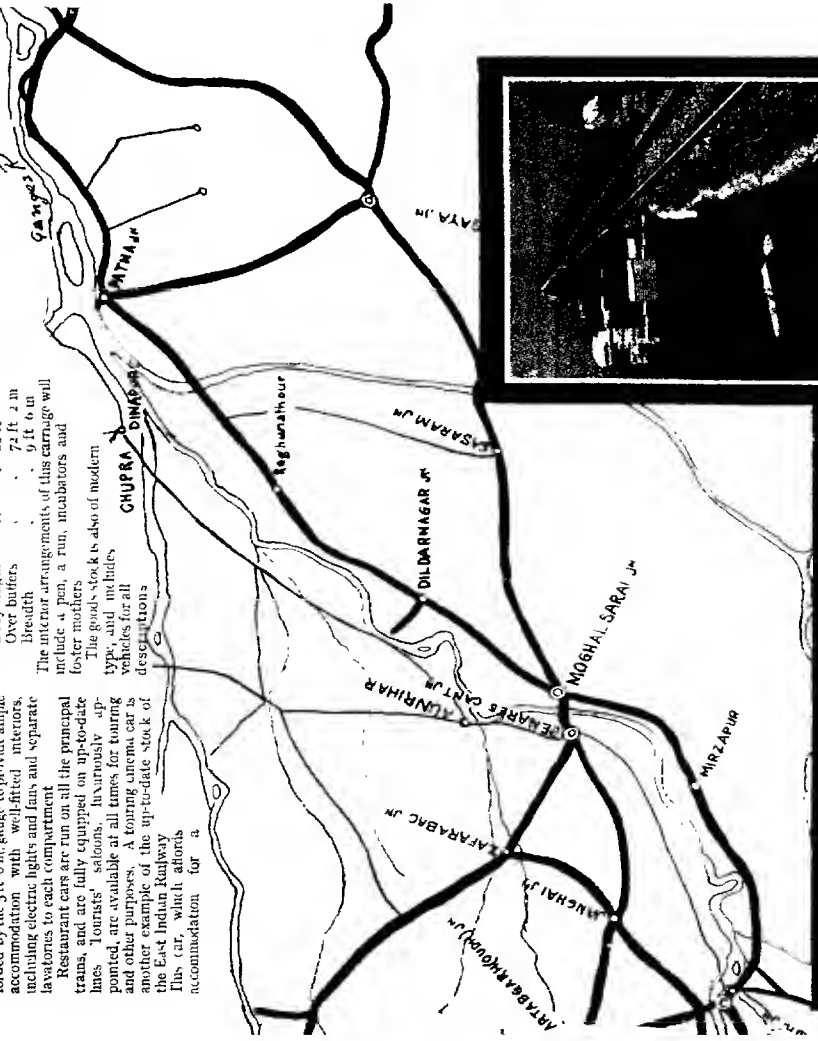
Body length	108 ft
Over breadth	73 ft 2 in
Breadth	9 ft 6 in

The interior arrangements of this carriage will include a bar, a bar, incubators and lavatories for mothers.

The goods stock is also of modern type, and includes vans for all descriptions of goods.

of traffic requirements. Special locking devices and other safeguards against pilferage are regularly maintained in connection with this part of the service.

**Stations.**—About 700 railway stations lie along the East Indian Railway route, and are all connected by telegraph and telephone. The stations are largely provided with raised platforms, reaching to the floor level



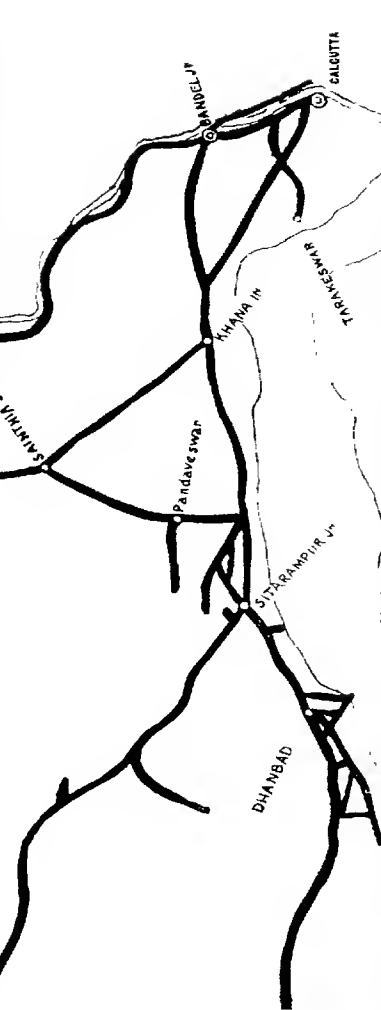
1. Upper Son Bridge.  
2. Bombay Mail crossing Allahabad Bridge.

# TRANSPORT RAILWAYS

with the Bengal Nagpur Railway of the Bokaro, Sising and Kailash collieries situated in the Bokaro-Bansbari Coal fields. The average annual output of these collieries already exceeds 200,000 tons.

**Staff.**—The total number of the staff employed on the East Indian Railway on March 31, 1926, was 17,570, of which 1,092 were Europeans, 2,581 Anglo-Indians, and 14,897 Indians.

**Revenue and Expenditure.**—During the financial year April 1, 1925, to March 31, 1926, the gross revenue of the Railway from all sources was approximately Rs 20 crores (215 millions), whilst the expenditure, which amounted to Rs 12 crores, represented 60.55 per cent of the total revenue. The net



of the carriages, waiting-rooms or sheds for passengers, and sites suitable for the display of advertisements. At the more important stations, refreshment rooms, fruit stalls, book-stalls, and stalls for the sale of the miscellaneous indigenous products of local crafts and artisans serve to satisfy more completely the needs of the traveller or the acquisitive visitor to India. The peripatetic vendor of the cheaper brands of cigarettes, of Indian confectionery, of tea, aerated waters, etc., and the fruits of the season is also to be encountered at most stations.

**Collieries.**—The East Indian Railway owns the Kailash coal fields near Giridih, the terminus of a branch from the main line at

Madanpuri, near Bihar and Orissa, and the average annual output of the mines now amounts to approximately 200,000 tons. A special feature of these collieries is that they are worked upon thoroughly modern principles, and that certain valuable commodities are being manufactured from the by-products, thus adding greatly to the value of the property. For instance, there was for many years an unsatisfied demand for coke in all parts of India, but some years ago the East Indian Railway not only introduced a modern oven plant for the burning of it, but further utilised the gas produced for driving engines and for providing electricity for pumping and lighting purposes in the mines. The East Indian Railway is also a joint owner

of the chief commodities transported as goods, in the order of the volume of each carried, were Coal and coke, railway stores, grain and pulses, marble and stone, rice, oil seeds, wheat, salt, and iron and steel.

**MAIL AND OTHER TRAINS.**—The East Indian Railway maintains fast daily through mail train services between Howrah and Bombay in connection with the Great

earnings were, therefore, about Rs 8 crores (80 millions).

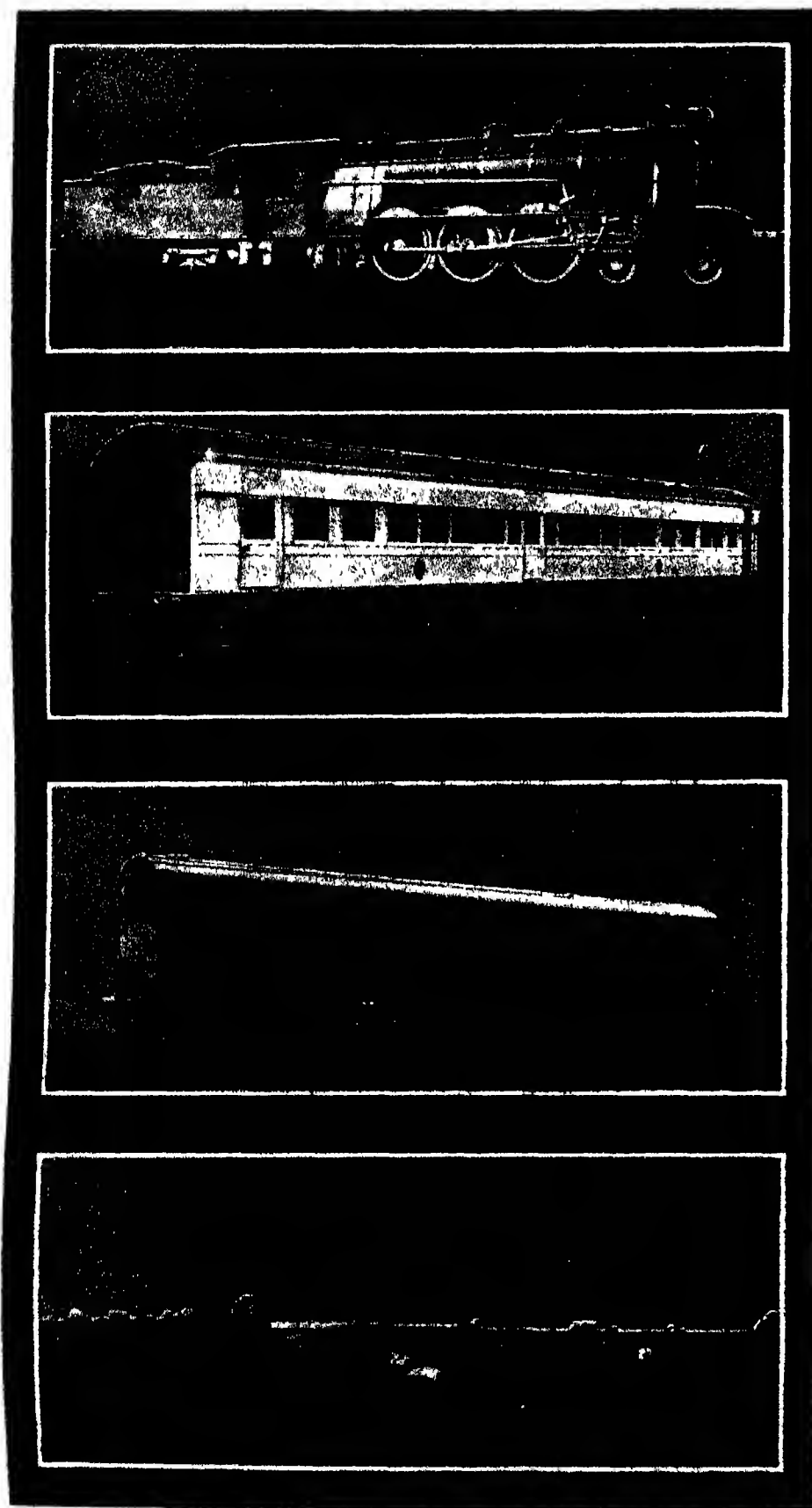
**Traffic.**—During the financial year 1925-26 the Railway carried 72 million passengers, 13 million tons of coal, 8 million tons of general merchandise, and in addition a heavy traffic in parcels and live stock.

The chief commodities transported as goods, in the order of the volume of each carried, were Coal and coke, railway stores, grain and pulses, marble and stone, rice, oil seeds, wheat, salt, and iron and steel.

**MAIL AND OTHER TRAINS.**—The East Indian Railway maintains fast daily through mail train services between Howrah and Bombay in connection with the Great

Howrah Bridge from the Calcutta side. The station is seen in the distance.

# EAST INDIAN RAILWAY.



FAST INDIAN RAILWAY.

1. P.S. type Engine No. 1139 in use on the Mail Service.
2. Tourist Car.
3. Restaurant Car.
4. Another view of Howrah Yard.

Indian Peninsula Railway, and between Howrah and Simla and Peshawar in conjunction with the North Western Railway. For the carriage of the Home Mails and of first-class overseas passengers by the Royal Mail Boats a special boat train, known as the "Imperial Indian Mail," is run weekly between Calcutta and Bombay, directly from and to the Mole at the latter port. This train, the most luxurious in the East, reproduces the chief features of the Continental boat trains in the matter of comfort and conveniences.

**TOURIST ATTRACTIONS**—Probably no other country offers more varied attractions to the traveller than India, and much that is of historical, geographical and archaeological interest is situated along the route of the railway under notice. Some of the chief places in this connection are

**Calcutta**—formerly the capital of India, but still "the second city of the British Empire" known in history and tale as "the City of Palaces" on account of the general magnificence of its buildings. It is intimately associated with the Mutiny and is the main terminus and headquarters of the East Indian Railway. The station at Howrah on the right bank of the Hooghly, opposite Calcutta, is an imposing building having been greatly enlarged in recent years.

**Gaya**—the holy city of the Hindus, second only to Benares in sanctity, about 12 miles from which are the Barabar caves, dating back to B.C. 250. About 300,000 pilgrims annually make the journey to Gaya.

**Buddh Gaya**—famous down the avenue of time by its mythological, spiritual and archaeological significance, contains the great temple of Buddha, reputed to be over 1000 years old. An officer is detailed by the Public Works Department to conduct visitors round the temple.

**Monghyr**—a landmark in the history of British supremacy in India. In the neighbourhood is the reputed hermitage of Buddha, with numerous rock-cut remains and traces of the Saint. Situated 5½ miles from Jamalpur junction, Monghyr provides much attractive river scenery.

**Patna**—the ancient Pataliputra, capital of India in 321 B.C. and the scene of the coronation of the great Asoka in 269 B.C.

**Benares**—the holiest of the many holy cities of India and one of the oldest cities in the world, being mentioned in the very ancient Hindu Shastras, became the headquarters of Buddha in the 6th century B.C. Near by, an ancient tower marks the spot where Buddha first preached the doctrine of Nirvana. The great northern centre of the worship of Siva, Benares is visited yearly by at least a million pilgrims.

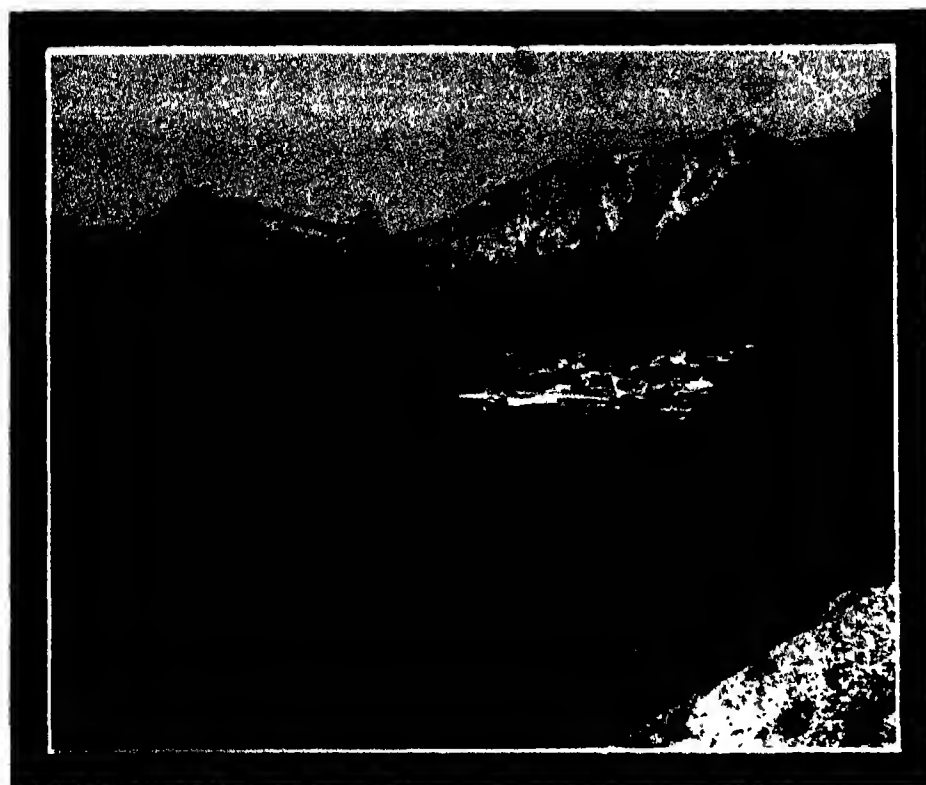
**Lucknow**—"The City of Gardens," contains perhaps the finest specimens of the magnificence and grandeur of Mohammedan architecture. It was the scene of many famous incidents during the great Indian Mutiny, chief among them being the defence of the Residency.

**Cawnpore**—the Manchester of India, and full of memorials of the great Indian Mutiny.

**Agra**—possesses one of the world's greatest wonders in the famous "Taj Mahal," the well-known "Dream in Marble," also many other mausoleums and monuments of the renowned Akbar, including his great Fort.

**Fatehpur Sikri**—25 miles from Agra, is likewise intimately associated with Akbar, by whom it was founded.





NAINI TAL, 6,400 feet above sea level, reached via Bareilly (E I Railway) and Kathgodam (Rohilkhand and Kumaon Railway)

*Delhi*—the present Capital of India and a very ancient city, being mentioned in Hindu Chronicles as far back as B.C. 1400. It is full of buildings and monuments of the greatest historical and archaeological interest.

**HILL RESORTS.**—A number of popular hill resorts situated in the mighty Himalaya Mountains are directly served by the East Indian Railway, e.g. —

- Simla —elevation above sea level, 7,116 ft
- Mussoorie —elevation above sea level, 6,053 ft
- Naini Tal—elevation above sea level, 6,400 ft
- Almora— elevation above sea level, 5,494 ft
- Ranikhet—elevation above sea level, 5,836 ft.

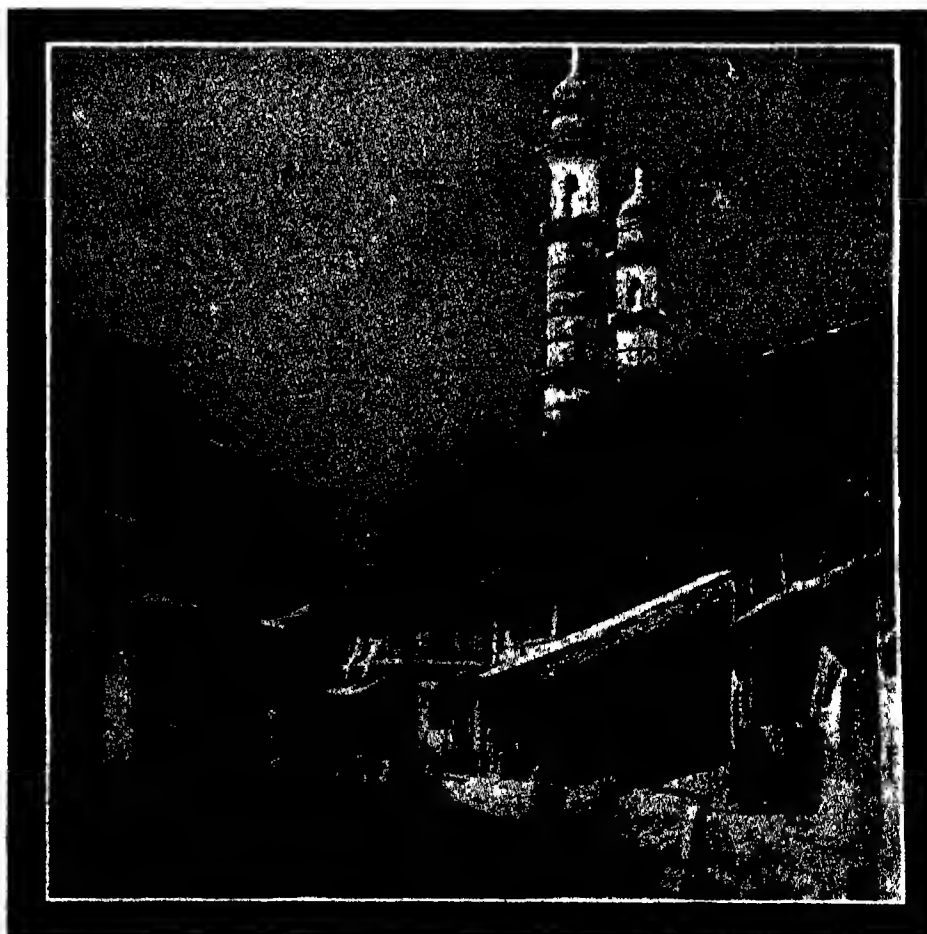
**Industries.**—The East Indian Railway serves rich and important rice, gram, pulses, oil seeds (including linseed), sugar cane and wheat producing tracts of country, principally along the Gangetic Valley.

Starting from Calcutta, the headquarters of the jute, gunnies and hides industries, where there are also numerous flour and oil mills, shipbuilding yards and engineering works, the line passes by Bally with its bone mills, the Naihati Paper Mills, Konnagore with its chemical works, the cotton mills of Serampore, and also Durgapur and Ranee-gunge with their pottery works and paper mills. Beyond lies Asansol, which, besides being the headquarters of the Ranee-gunge coal fields, is the site of the Indian Iron and Steel and Indian Standard Wagon Works. On the loop line, in the vicinity of Tinpahar, Rajmehar and Pakur, are extensive stone quarries and rich deposits of china clay. At Monghyr an important cigarette factory is established.

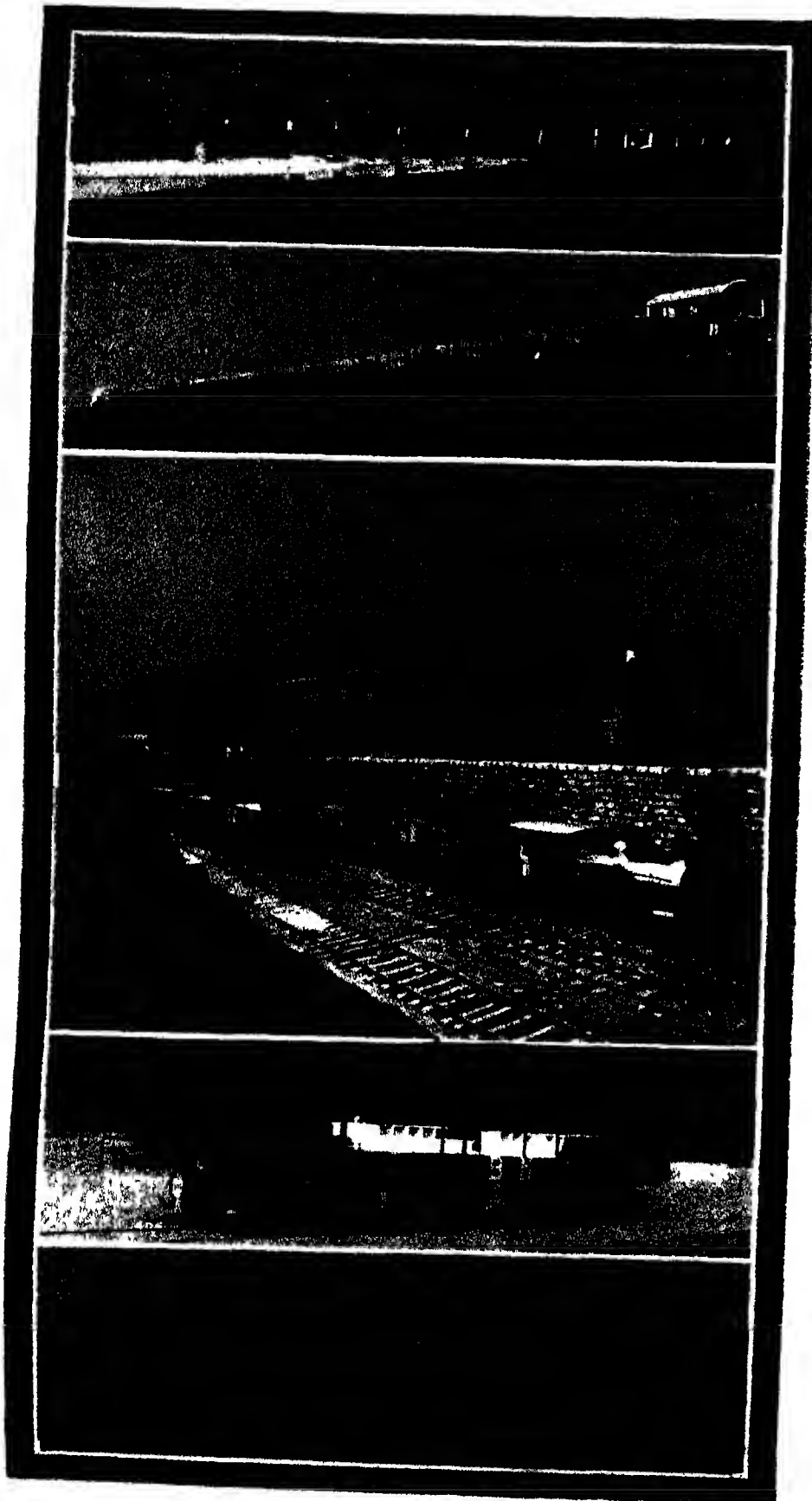
The Bengal Iron Co., Kulti, the Kumard-hubi Engineering Works and other important firebrick and engineering concerns are situated on the Grand Chord line. On the same section are Dhanbad, the centre of the Jherriah Coal fields, the largest in India, and Kodarma, known for its mica mines. Coal fields, lime quarries and cement factories along the Daltonganj branch of the Grand Chord line bear eloquent witness to the mineral wealth of the district. A sugar refinery is located at Arrah on the Main Chord line, while Mirzapore, in addition to being the home of the carpet industry, boasts a cotton mill and an important lac industry.

On entering the United Provinces of Agra and Oudh, the line passes through the districts where cloth weaving (as around Shah-ganj), glass works, flour and cotton mills, and sugar works (as at Allahabad), flom and paper mills (as at Lucknow) contribute their share to the industrial effort of the country. At Cawnpore are numerous cotton and woollen textile works, oil and flour mills, sugar refineries and perhaps the largest factory in India for the manufacture of footwear and other leather goods.

**New Projects.** That the growth and development of the East Indian Railway have not ceased is evidenced by the fact that it has at present under construction or examination no fewer than 30 projects for extension of the System involving about 1,300 miles of new line. The chief of these projects is the Central India Coalfields Railway which is intended principally to link up and open out extensive coal bearing tracts lying in the Hutar and Karanpura Coal Fields Areas.



BURHAMPUR: Street Scene (E.I. Railway).



BENGAL-NAGPUR RAILWAY.

1. Evelyn Bridge, over the Dumoodai in the Coal District.
2. Train of C.H.B. Type Coal Hopper Wagons.
3. Train of K.O. Type Iron Ore Hopper Wagons being loaded at Gurumahesini.
4. L.B.C. Type Rail Truck.
5. Double-headed Coal Train.

**BENGAL-NAGPUR RAILWAY COMPANY.**

**Origin.** The Bengal Nagpur Railway which serves Bengal Bihar and Orissa, the Central Provinces and the northern portion of the Madras Presidency, has developed from very small beginnings into one of the most important lines in India serving as it does rich coal and mineral districts, the industrial centres of Janshedpur and Burnpur, the temple towns of Bhuvaneswar and Jagannath Puri, the beautiful inland sea of Chilka Lake and the important port of Vizagapatam. The construction of the line dates from 1887 when the newly formed Bengal Nagpur Railway Company took over the Nagpur-Chattisgarh State Railway and the Bilaspur-Etawah State Railway.

**Gauge and Mileage.** The total mileage of open lines on the system is 3,163 11/16, 2,221 9/16 miles of which are broad gauge and 941 1/2 miles narrow gauge.

**Works under Construction.** The works at present (1926) in hand are the South Karanpura Railway (29 miles), the conversion into broad gauge of the Jansar-Jerodi line, the Talchur Coalfield Railway (61 miles), the Hesia (handil) line (70 miles), the Rapur-Vizianagram (260 5/8 miles), and the construction of the harbour at Vizagapatam.

**Services.** The Company runs two mail services, one across India via Nagpur from Calcutta to Bombay in conjunction with the Great Indian Peninsula Railway, and one from Calcutta skirting the East Coast to Madras in conjunction with the Madras and Southern Mahratta Railway. The latter route is the main one to Colombo.

**Tourist Services.** Travel over the Bengal Nagpur Railway is *de luxe* and yet not expensive. A large party can book a coach fitted to serve as a drawing room by day and convertible into bedrooms at night, provided with facilities for catering for reasonable wants at a cost working out slightly above the ordinary fare. Two tourist cars for parties desiring to travel independently of hotel accommodation have recently been built and these are much in demand among wealthy tourists and Indian nobles.

**Haulage.**—On the level portions of the Bengal Nagpur Railway the mail trains are hauled by 4-cylinder compound Atlantic De Glehn engines. To deal with these heavy trains on the hill sections a new class of 4-6-0 type engine has been introduced which gives entire satisfaction. To handle the heavy mineral traffic from the Jhermah Coalfields a new 2-8-0 engine known as H.S. is in use. Actually 145 of these engines have been put into service and they are capable of hauling 2,200 tons on the level.

**Rolling Stock.** The rolling stock of the company comprises 761 locomotives, 2,268 coaching vehicles, 22,589 broad gauge wagons and 2,189 narrow gauge wagons.

**Repair and Maintenance.**—In order to keep the greatly increased number of locomotives in repair, considerable extensions have been made in the railway shops at Khargpur, a definite programme having been laid down for dealing with each locomotive and its component parts during the 12 weeks allowed for a general repair. Recent additions to carriage stock include seven mail rakes, each consisting of six bogie carriages and a dining car, four for the Madras-Calcutta service and three for the Bombay-Calcutta service.

**Wagon Shops.**—Repairs to broad-gauge wagons are chiefly carried out at Khargpur, where the wagon shop, which started full working in 1917, consists of reception sidings, light and heavy repair shops, and a lifting shop, all served from the reception sidings by a traverser capable of handling three four-wheelers or one bogie wagon. There is a fourth large shop, with a smith bay, machine

bay, vacuum fitters' and carpenters' bay, and store bay. New wagons manufactured in England are sent out as components and are erected in the shops, where a yard, specially planned and equipped with pneumatic plant, is able to deal with 1,500 four-wheelers per year.

The lifting shop has a capacity of 48 four-wheeled wagons and is served by two 15-ton overhead electric cranes. Three wheel lathes and one journal lathe at the end of the shop enable wheels for tyre turning to be dealt with at a minimum of handling. Air compressors for light and heavy repair shops are on order, and extended use is to be made of pneumatic drills and rivetting hammers, also of rivet cutting machines.

**New Wagon Shop.**—A new wagon shop has been built at Adra, the gateway to the coal-fields. The shop is a double bay 315 ft long with one 60 ft and one 40 ft bay, saw-tooth roofs and north lighting. A 15-ton electric overhead travelling crane runs the full length of the shop, with weigh bridge and store yard at the west end. Machinery and smiths' fires are provided for the repair of parts, no production work being undertaken.

**Surveys.**—During the last weeks of 1926 it was announced that the Railway Board had sanctioned the carrying out by the Bengal-Nagpur Railway of several surveys. Two detailed surveys were so authorised: one of a line from Titlagarh to Sonapur, a distance of about 68 miles, on the 5 ft 6 in gauge; the other of a line from Dhanitani to Kanker, about 43 miles, on the 2 ft 6 in gauge. Further surveys sanctioned comprised the following: a line from Berhampore to Ruseikonda of some 50 miles; Bhadrak to Chandbali about 30 miles; Contai Road to Contai, 34 miles; Jagatpur to Kendrapara, 33 miles; Jajpur Road to Jajpur, 15 miles; and Bilaspur to Kawarda, 65 miles. The surveys will be known by the respective names given to them above.

**Vizagapatam Harbour Construction.** At a meeting of the Vizagapatam Harbour Advisory Committee held at the close of 1926, the Engineer-in-Chief reported considerable progress on the construction of the quay wall. The Committee decided that a ferry for carrying both passengers and lorries or carts should replace the existing ferry across the creek. It was proposed to erect two storage sheds as well as the two transit sheds already projected, and to construct a canal along the front of the storage sheds, providing access by water in addition to the rail facilities.

**Traffic Figures.**—The ton mileage of goods transported over the Bengal-Nagpur system in 1925-26 amounted to 2,392,854,000; passengers carried to 24,640,000, and gross earnings to Rs 8,42,54,000.

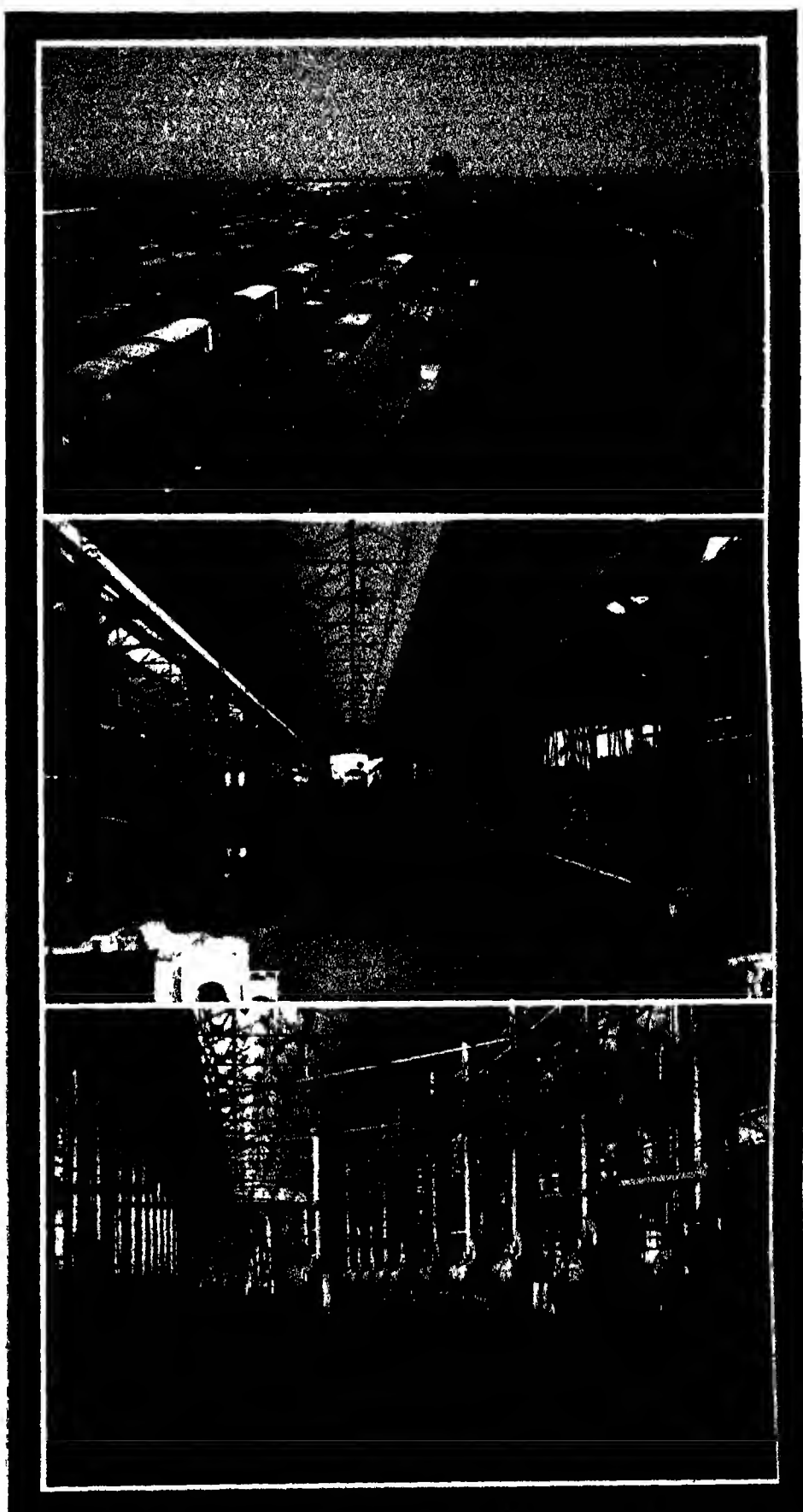
The principal traffic items are coal and coke, iron ore, manganese, salt, rice, paddy and oilseeds.

**Administration.**—The Board of Directors is composed as follows: R. Miller (chairman), Sir Ernest Bell, Kt., C.I.E. (Government director), G. A. Anderson, A. Brereton, C.S.I., Sir C. S. Wilson, K.C.I.E., and F. Schooling. Auditors—W. B. Peat & Co. and Gerard van der Linde & Son.

**Bankers.**—Lloyds Bank, Ltd.

**Agent.**—J. Greenham.

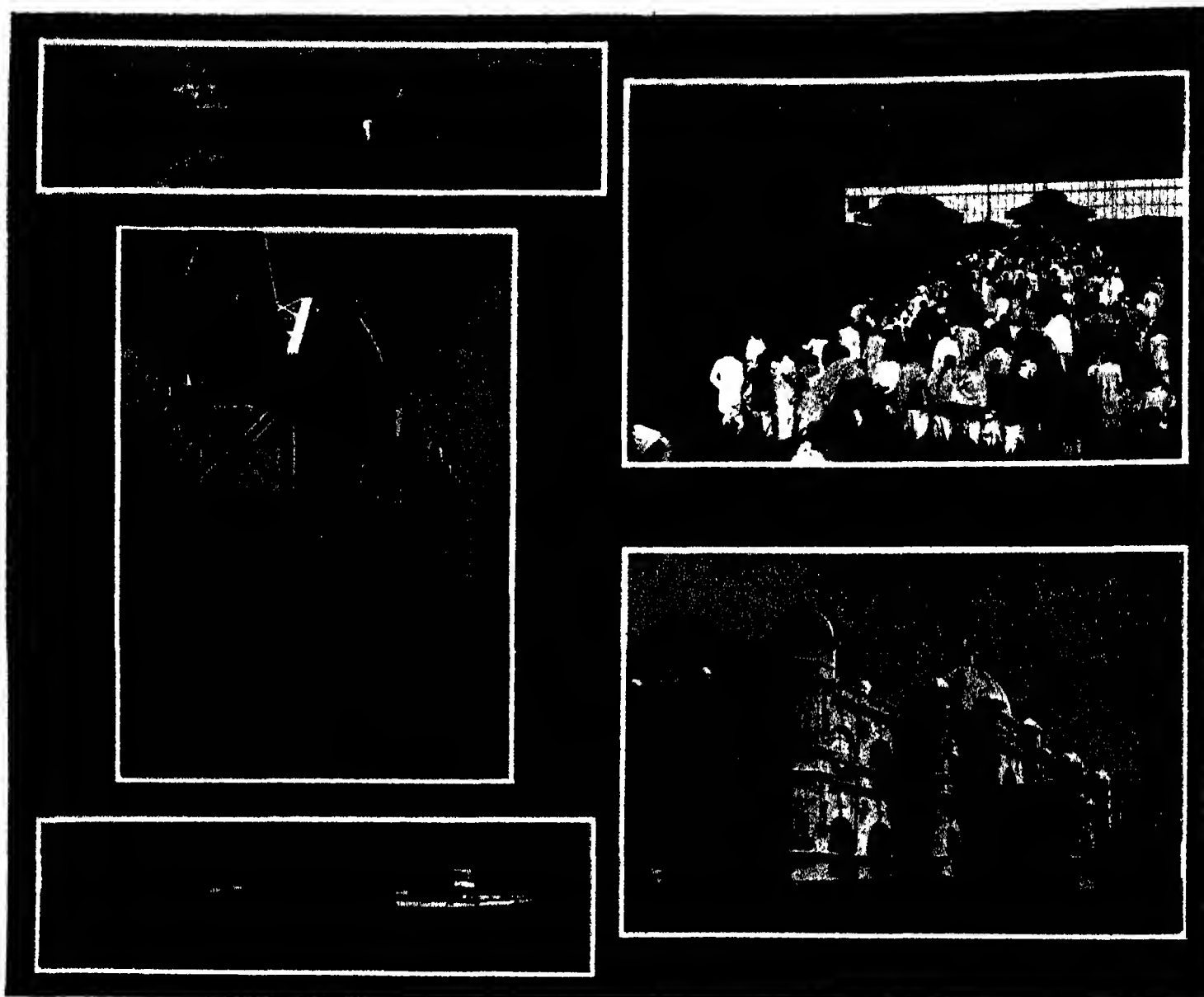
**Offices.**—The head office of the Company is 131 Gresham House, Old Broad Street, London, E.C.2. The Indian Headquarters are at 12 Garden Reach Road, Calcutta.



BENGAL-NAGPUR RAILWAY

1. Khargpur Station.

2 & 3. Two aspects of the splendidly-equipped Machine Shops at Khargpur.



1. Sealdah Station, Calcutta.
2. Hardinge Bridge over the Ganges, showing the girders and flooring from below.
3. Loaded Wagon-ferry Flat crossing from Fulchari to Bahadurabad.
4. Arrival of morning Suburban Train, Sealdah South Station.
5. The Clem Browne Institute for Railway Employees, Calcutta.

#### EASTERN BENGAL RAILWAY.

**Inception and Development.**—The Eastern Bengal Railway system originated with the lines owned by the late Eastern Bengal Guaranteed Railway Company, the first of which was opened in 1862. These lines were acquired by the State in 1884 and in 1887 other lines were amalgamated with them the whole being worked by the State as one undertaking under the name of the Eastern Bengal State Railway. In 1915 the word "State" was omitted from the title of the Railway to bring it into conformity with the practice in regard to Government-owned lines in India.

**Administration.**—The railway is administered on the departmental system under an Agent, who constitutes the Local Government under the control of the Railway Board, Government of India. The present Agent is Mr. N. Pearce, while the Traffic Manager is Mr. G. S. Bocquet, C.I.E.

**Area Served.**—The railway traverses low-lying country, which is for the most part subject to floods from the many rivers intersecting it, being in consequence very rich and

fertile. The chief products of this area are jute, tea, rice and paddy. As Bengal is renowned for its jute, so is Calcutta famous for its jute mills, and jute is the staple commodity transported by the Railway.

The line provides communication between Calcutta and North and East Bengal, also with Lower Assam and Eastern Bihar, in addition, three short suburban branches run southwards to Diamond Harbour, Canning and Budge Budge.

**River Difficulties.**—The railway system is intersected by the two great rivers of Eastern India, the Ganges and the Brahmaputra. In the early days the passage of the rivers in the lower reaches marked the termination of the broad gauge on the south and the commencement of the metre gauge on the north. Various methods have been adopted to overcome the transport of passenger and goods traffic across these rivers. Formerly the crossing of the Ganges at Sara was effected in the case of passengers by specially designed steamers, and in that of goods traffic by a combination of wagon ferries and high

capacity barges. The construction of the fine Hardinge Bridge at Sara and the extension of the broad gauge to the northern bank have done much to accelerate traffic at this point. At other crossings wagon ferries form part of the railway system, between Goalundo and Naravanganj and between Sirajganj and Jagannathganj connections are maintained by Inland Steamer Companies, passenger traffic being transported by steamers and goods traffic by steamers and high capacity barges. The Hardinge Bridge ranks as one of the finest achievements of railway engineering in view of the difficulties that had to be surmounted owing to the shifting nature of the river bed, the strong current and the enormous volume of water carried by the river. Its 16 main piers supporting 15 spans each of 350 ft. are carried on wells sunk to a depth of 160 ft. below lowest water level. These are the deepest foundations of their kind in the world.

**Mileage.**—The total open mileage of the system in 1926 was 1,709.48, of which 676.58 miles were broad gauge, 987.90 metre gauge, and 45.0 miles narrow gauge.



**EASTERN BENGAL RAILWAY**  
Loading Jute into Flats at Japannathganj.

**Receipts and Expenditure.**—The gross railway earnings for year ended March 31, 1926, were Rs 6,40,55,000, working expenses Rs 4,70,90,000, net earnings, Rs 1,78,65,000.

**Traffic.**—Passengers carried by the railway in 1925-26 numbered 46,527,000, compared with 43,514,000 in the preceding year, receipts from coaching traffic totalling Rs 2,66,63,000, as against Rs 2,75,18,000. Goods carried aggregated 6,868,000 tons (Rs 3,36,08,000), compared with 5,837,000 tons (Rs 3,22,00,000).

**Hill Stations.**—No account of the Eastern Bengal Railway would be complete without a reference to the hill stations it serves; these are Darjeeling and Kurseong in the Himalayas and Shillong on the Khasi Hills in Assam. The extension of the broad gauge to Siliguri has resulted in a considerable saving of time on the journey to Darjeeling and Kurseong, one change only at Siliguri to the narrow gauge hill railway is now necessary, the journey taking about 18 hours.

The first part of the journey to Shillong is by broad gauge to Santahar. This occupies about five hours, and well-appointed corridor stock is provided. Then follow a night journey to Amingaon, a short river crossing to Pandu, and an enjoyable motor-car drive to Shillong, the whole journey occupying about 26 hours. On account of the relatively short time taken by the journey, these beautiful hill stations attract large numbers of visitors from the plains during the hot weather.

**Welfare.**—The Eastern Bengal Railway has always shown great interest in the well-being of its staff, for most of whom quarters are provided, generally rent free, a matter of great importance at the smaller stations, where usually it is impossible to rent outside

accommodation. At all the larger stations separate institutes have been formed for the European and Indian members of the staff, all kinds of social and athletic facilities being provided. The eight-hour day has been generally adopted, at the smaller stations, where the work is intermittent and not continuous, the eight hours of duty are spread over a period not exceeding 12 hours.

An important development in recent years has been the constitution of district welfare meetings, at which the District Traffic Superintendent meets a committee elected by and representative of the principal categories of the staff to discuss matters of mutual interest. These meetings are held to be of great value, particularly in regard to matters which, but for such discussion, might crystallise into grievances, on the other hand, they provide a means of ascertaining the views of the staff on such questions as improved methods of working, new types of quarters, etc.

**Educational Facilities.**—For many years the railway has maintained Training Schools—one in Calcutta and one in Saidpur in Northern Bengal, in which members of the staff are trained in the duties attached to the more responsible posts of the Traffic Department. It is hoped that the formation in 1925 of a Selection Committee by which all applicants for employment must be approved before appointment, combined with the educational facilities provided, will result in the attainment of a definitely higher standard of intelligence and personality among employees, and that the measures adopted in regard to welfare generally will tighten the bonds of loyal co-operation which have at all times existed between the staff and management.

## **BOMBAY, BARODA AND CENTRAL INDIA RAILWAY COMPANY.**

**Origin.**—The first Bombay, Baroda and Central India Guaranteed Railway Company was registered in 1855. The original contract ran to 1880, but was extended to December 31, 1905, on which date it was renewed under revised conditions. The purchase price of the old railway was fixed at the sum of £11,685,581, and the Secretary of State agreed to create and issue to the company India 3 per cent stock to the amount of £10,089,146 in satisfaction of £9,685,581, part of the purchase price, the company raising a new stock capital of £2,000,000, being the unpaid balance of the purchase money.

**Lines.**—In addition to its own property (the B B and C I Railway proper), the company works certain other lines owned by separate companies and States, the more important being Gackwar's Mchvana Railway (230 miles), Jaipur State Railway (170 miles), Tapti Valley Railway (156 miles), Ahmedabad-Parantij Railway (89 miles), and Dhrangadra Railway (54 miles).

The B B and C I Railway itself is divided into two sections—the one of 5 ft 6 in gauge running from Bombay to Baroda, north-westward as far as Kharaghoda and north-eastward via Rutlam and Nagda to Agra and Mithra, and the other of metre gauge running from Ahmedabad in a north-easterly direction to Delhi. In 1925 there were 1,008 miles of broad gauge open and 1,884 miles of metre gauge on the B B and C I line proper.

**Territory.**—The B B and C I Railway traverses Central India and that extensive territory Rajputana, and forms the quickest route to those places of interest which have such a wide appeal to the tourist—Agra, Delhi, Fatehpur Sikri, Jaipur and Amber, Ajmer, Mount Abu, Udaipur, Chitorgarh, Ahmedabad and Baroda.

**Rolling Stock.**—In 1925-26 the number of locomotives used on the broad-gauge lines was 447, with a tractive effort of 9,505,435 lbs. On the metre-gauge lines 521 locomotives were in use, with a tractive effort of 5,743,226 lbs. Covered and open wagons totalled 10,519 (205,000 tons capacity) broad-gauge, and 9,395 (110,130 tons capacity) metre gauge.

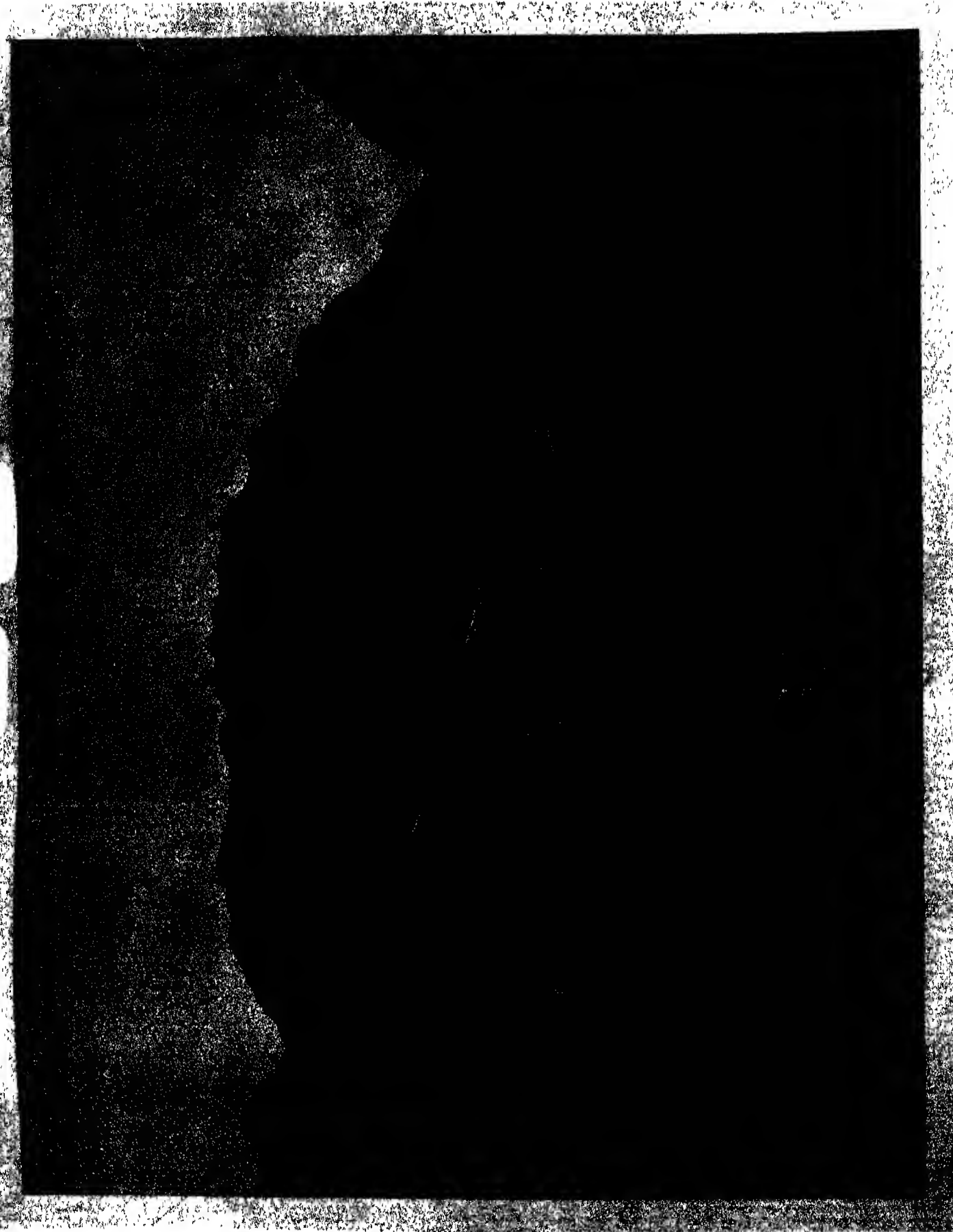
**Passenger Traffic.**—The total number of passengers carried over the system in 1925-26 was 66,829,511, earnings aggregating Rs 4,21,19,425.

**Goods Traffic.**—During the year ended March 31, 1926, goods to the amount of 5,905,460 tons were carried by the B B and C I Railway, as against 6,011,967 tons in 1924-25. Earnings from all goods traffic amounted to Rs 6,88,96,613, compared with Rs 6,96,71,009.

**Financial Results.**—The general results of working for the year 1925-26 of the B B and C I Railway (exclusive of the subsidiary lines) were as follow (1924-25 figures in brackets)—Gross earnings, Rs 12,25,14,963 (Rs 12,32,28,850), working expenses, Rs 7,54,39,392 (Rs 7,09,34,425), net earnings, Rs 4,70,75,571 (Rs 5,22,94,425). Company's share of surplus profits, Rs 10,01,906 (Rs 13,72,683).

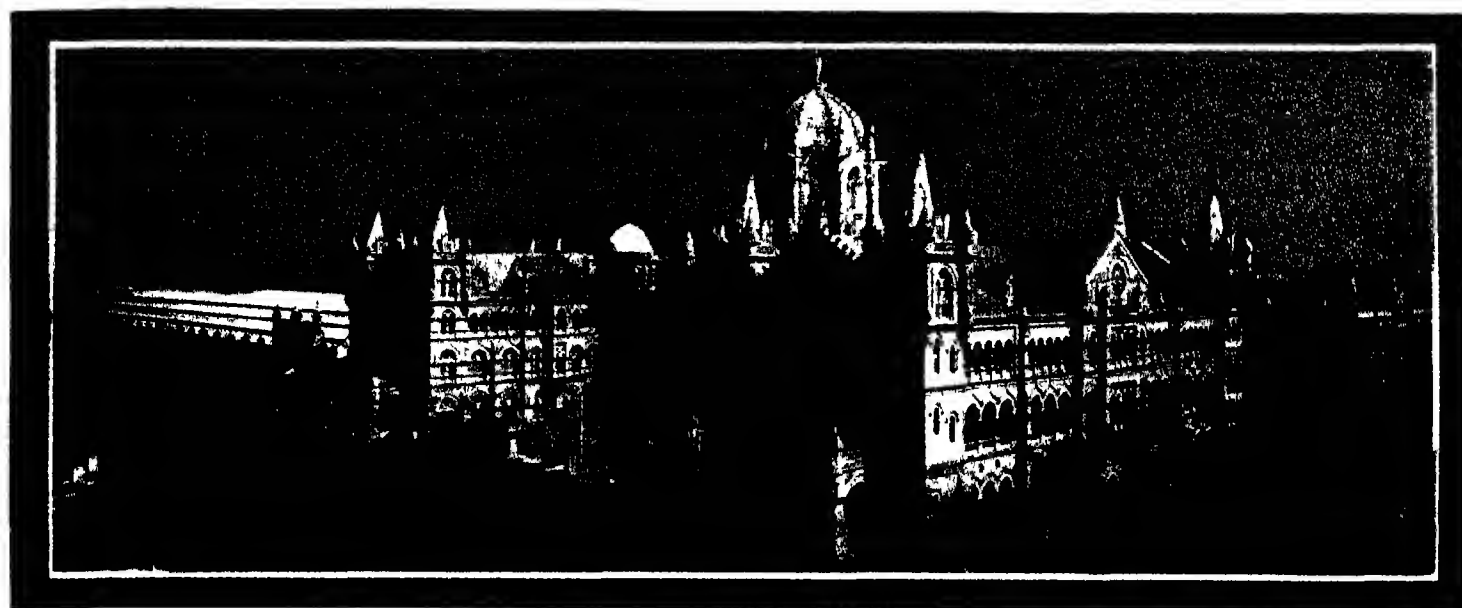
**Board of Directors.**—Major A. D. G. Shelley, R.E. (chairman); Sir E. K. C. Olivant, K.C.I.E. (deputy chairman), W. Stantall, C.I.E. (Government director), A. R. Barrand, Sir Henry P. Burt, K.C.I.E., C.B.E., Colonel W. V. Constable, R.E. J. S. Wardlaw Milne, M.P. Bankers—The National Provincial Bank Ltd. Secretary—Mr. S. G. S. Young.

**Offices.**—The head offices of the company are at White Mansion, 91 Petty France, Westminster, S.W.1. The Indian Establishment Office is opposite Church Gate Station, Bombay. Agent—Sir Ernest Jackson, Kt., C.I.E. Telegraphic address—"Bombarda." (See illustration p. 102.)



BOMBAY, BARODA & CENTRAL INDIA RAILWAY  
Delhi Mail passing over the Tapu River Bridge, the shortest and quickest route to the Punjab  
(See letterpress p 101)





GREAT INDIAN PENINSULA RAILWAY  
Victoria Terminus, Bombay

#### GREAT INDIAN PENINSULA RAILWAY.

**A Pioneer Railway.** The Great Indian Peninsula Railway, whose motto is "Arte non ense" has the distinction of being pre-eminently the pioneer line of India. It has also the great distinction of having surmounted what to many must have seemed at the time almost insuperable constructional difficulties. The gigantic engineering problem of the Ghats confronted the first engineers of the line, for the formidable geological barrier of these hills not only blocked access to the port of Bombay, but also obstructed the exit from the city and island to the vast areas beyond the hills. Regarded from any point of view, the rail conquest of the Ghats was a big undertaking, and when at length the mighty task was completed and the first trains had traversed the Bhor and Thull passes, the event might be claimed to have heralded the dawn of the railway era in India.

**Extent of System.**—In all other respects the G.I.P. may be regarded as a typical Indian railway—typical of the country and, for the most part, typical of the entire Indian railway system generally. Its lines, broad and narrow gauge, traverse territory that is, more or less, characteristic of the whole country. From the great terminal and the directing centre at Bombay it has thrown out lines into the central, north-eastern, and south-eastern regions of India. It crosses the great central plain to Nagpur and Jabalpur, it extends south-eastward towards Madras into the heart of the Deccan, while in another direction it traverses Rajputana and the Central Indian Agency States to Cawnpore, Jhansi, and further north to the historic cities of Delhi and Agra.

It is a system with a variety of gradients, in one section passing for miles over a steep range of trap rock hills with summit altitudes of 2,000 feet, and with a ruling track gradient of 1 in 37. Beyond the Ghats, however, there is a general reversal of conditions, the various lines passing for hundreds of miles over the easy terrain of peninsular India and along great areas of the familiar "black cotton soil." Its railways extend into the most sequestered districts, through the most thinly, and also the most densely, populated zones; through highly cultivated and pro-

ductive agricultural regions, as well as through poor and arid tracts. And, throughout, the name posts on its five hundred odd stations are instructive indices to the traveller, revealing the principal languages of the territory traversed by the system: the chief vernaculars of the country—Hindi, Urdu, Marathi and Gujarati.

**Origin.**—In connection with the general schemes for railway construction in India which were formulated in 1843, plans were prepared for a line from Kurla to Thana, to be called the "Bombay Great Eastern Railway." In April, 1845 the scheme with some modifications, was approved by the citizens of Bombay, and an "Inland Railway Association" was formed "for the purpose of promoting enquiries into the applicability of railway communication on this side of India."

Meanwhile a company of English capitalists was formed for the same purpose in London under the title of the "Great Indian Peninsula Company," with the famous Robert Stephenson as consulting engineer, shortly after an influential committee was formed in Bombay to work in conjunction with the London Committee, and in August, 1845, Mr. John Chapman, to whose endeavours the formation of the company was largely due, was sent to Bombay to make enquiries on the spot.

**Birth of "G.I.P."**—After the country up to and including the Ghats had been thoroughly examined, the Great Indian Peninsula Railway Company was incorporated by an Act of August 1, 1849, the contract between the Directors of the East India Company and the Company under notice being made on August 17 of the same year.

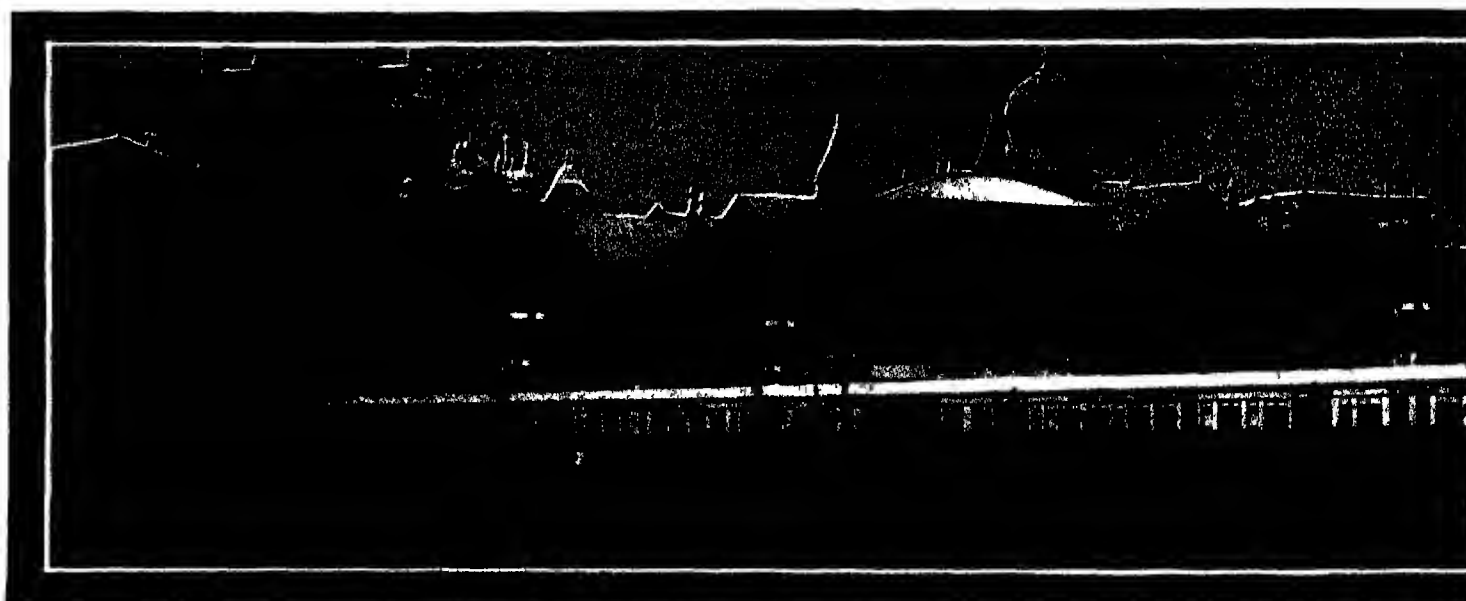
**First Construction.**—The year 1850 was occupied with a survey of the projected line to Thana and thence to Kalyan together with a short branch to the "Fort of Mahim," and early in 1851 a contract was made with an English firm for the construction of the first 21 miles of rail from Bombay to Thana, these being opened for traffic on April 16, 1853. The day was kept as a public holiday, and the Commander-in-Chief placed the garrison band at the disposal of the Company and arranged for the firing of salutes. This year also witnessed the registration of a second contract, providing (*inter alia*) for the

construction of a line from Kalyan to Shapur (now Asangaon) 54 miles from Bombay. On May 1, 1854 the extension to Kalyan was opened. New Year's Day, 1862, witnessed the opening of a line to Kasara at the foot of the Thull Ghats, and the Bhor Ghat incline was opened on April 21, 1863, amid great rejoicing. The Thull and Bhor Ghat routes were respectively completed in 1865 and 1863, but the laying out of the permanent way in districts beyond these altitudes had meanwhile been proceeding apace with the result that by the end of 1861 the line had been completed as far as Shegaon on the north and Sholapur on the south. The three termini at Nagpur (519 miles from Bombay), Raichur (442 miles) and Jabalpur (615 miles) were respectively reached on February 10, 1867, May 1, 1871, and March 7, 1870.

**Difficulties of Construction.** Great difficulties confronted the engineers during the construction of the Jabalpur section. These were particularly serious between Bhilsawal and Jabalpur (339 miles), where work had to be performed among the deadly jungles of Nimari and Asseer and where the many tributaries of the Nerbudda had to be crossed. In bridge-building it was found that beneath the surface rich soil sand and water extended to a great depth, and that the interlying layers of conglomerate offered great obstacles to the progress of the work. Further, cholera, smallpox, and other diseases prevalent in the Nerbudda valley caused a very heavy mortality among the labour force.

**Later Progress.**—As stated above, the last section of the important Nagpur Branch was completed in 1867. From the other side, however, the Bengal-Nagpur Railway did not effect a broad gauge connection until the 'eighties, thus opening a direct through route between Calcutta and Bombay. On the Midland section main line, including the Scindia State Railway, the Bhopal-Jhansi line was opened in 1889, Dholpur to Agra Cantonment in 1878, Jhansi to Chaurah in 1888, Chaurah to Cawnpore in 1886, and the junction with the Agra-Dellu Chord railway at Agra to the terminal point at Belanganj Depot in 1906.

**Victoria Terminus.** Any account of the G.I.P. system would be incomplete without at least a reference to its magnificent headquarters, Victoria Terminus, Bombay, which



GREAT INDIAN  
Poona Mail Train about to

has been described as "the finest modern building in India" and as a terminus which is "unsurpassed throughout the whole world in point of beauty." The construction of these offices was commenced in 1878 under the control of the architect, Mr. F. W. Stevens, and the cost amounted to Rs 16,35,562, while the amount expended on the station, excluding the track, was Rs 10,40,428, this important work having been carried out under the supervision of Mr. F. W. Pearson, District Engineer. The formal opening of the building, which was named "Victoria Terminus," in honour of

Her Majesty the late Queen-Empress took place on June 21, 1887.

**Lines.** The Great Indian Peninsula Railway of the present day comprises the line formerly owned by the old Guaranteed Company of that name (now the Great Indian Peninsula Railway proper) in amalgamation with that of the late Indian Midland Railway Company (now known as the Midland Section). The Guaranteed Company's Railway was purchased by the State in 1900 when all the contracts then subsisting between the Secretary of State and that Com-

pany were determined, and a new Great Indian Peninsula Railway Company was constituted. The transfer of the line from Company to State management took place in July, 1925.

The following lines, with their gauges and mileages, are included in the system: Great Indian Peninsula Railway (5 ft 6 in. gauge), 2,672.35 miles; Agra-Delhi Chord (5 ft 6 in.), 125.88 miles; Baran-Kotah (5 ft 6 in.), 40.29 miles; Bhopal-Harsi (5 ft 6 in.), 57.22 miles; Bhopal-Ujjain (5 ft 6 in.), 113.28 miles; Bina-Guna-Baran (5 ft 6 in.), 147.07 miles; Cawnpore-Banda (5 ft 6 in.), 76.21 miles; Dhond-Baramati (2 ft 6 in.), 27.26 miles; Ellichpur-Yeotmal (2 ft 6 in.), 117.66 miles; Pachora-Jamner (2 ft 6 in.), 34.62 miles; Pulgaon-Arvi (2 ft 6 in.), 21.83 miles; Matheran Light Railway (2 ft), 12.61 miles.

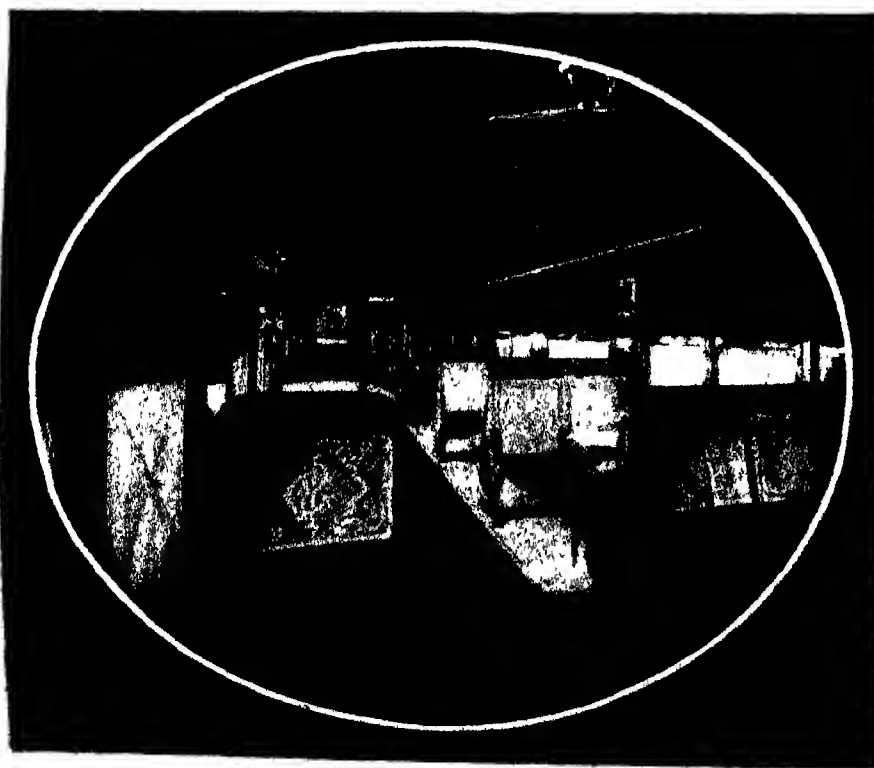
**Mileage, etc.**—The open mileage of the G.I.P. system in 1925 was 3,446.28. The number of stations was 526; the steepest gradient was 1 in 34.

**Employees.** At the close of the year 1924-25 the total number of employees of the G.I.P. Railway (open lines only) was 85,268.

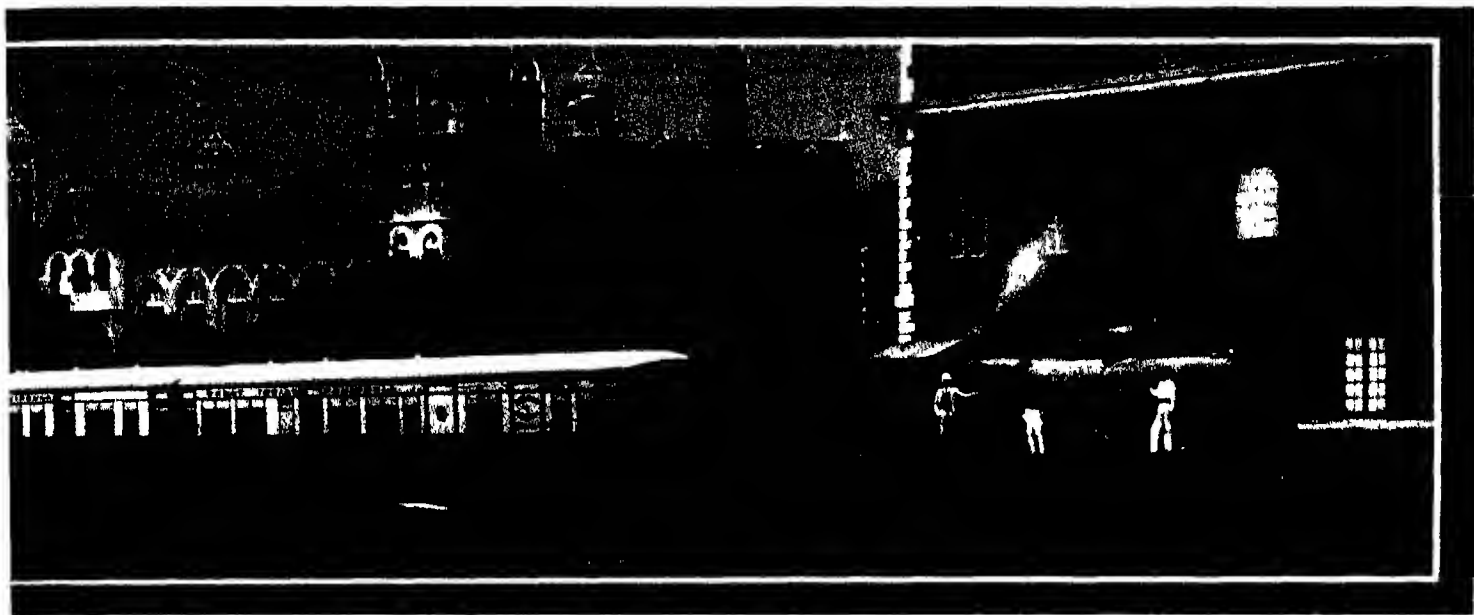
**Electrification.** On February 3, 1925, the Governor of Bombay declared open the first electric railway in India, the section being known as the Harbour Branch Extension of the G.I.P. Railway, from Victoria Terminus to Kurla, a distance of nine miles of double track. The G.I.P. has thus the special distinction of inaugurating railway electrification in India.

The electrification of the Harbour Branch Extension, however, forms only part of the various schemes at present in progress for the electrification of the Suburban and Main line services in Bombay, which on the G.I.P. system will eventually extend across the Ghats to Poona on the one side, and to Igat-puri in the other direction. On the local section, in addition to the Bombay-Kurla service, there has recently been an extension of electrification to Bandra via the Mahim Chord, thus connecting with the B.B. and C.I. Railway's local service.

It is anticipated that the introduction of electrification will result in a general acceleration of passenger traffic over each of the difficult Ghat sections of the G.I.P., in a considerable saving of time in the working of goods



GREAT INDIAN PENINSULA RAILWAY.  
Passenger Car.



INDIA. RAILWAY.

Victoria Terminus, Bombay.

trains, and, as the ruling gradient is 1 in 37, in a reduction of working expenses the present cost of working traffic being very high. The acceleration of passenger services between Bombay and Poona will undoubtedly help considerably in the expansion of the latter town, as there will be a saving in time of about one and a half hours for mail trains.

**Freight Train Braking.** The problem of devising such effective braking contrivances as would permit the movement of intact or undivided freight trains down the steep Ghat inclines has always been a pressing problem with the G.I.P. Automatic continuous braking has been the rule now for some years, and since 1922 there has been a complete vacuum-testing and repair installation in operation at Igatpuri and Lonavla to get the trains into effective condition to work over the Ghat inclines. The success of the working of the G.I.P.'s braking system, apart from the economic gain is proved by the uninterrupted movement of 1,450-ton intact freight trains down the Thull and Bhore Ghats.

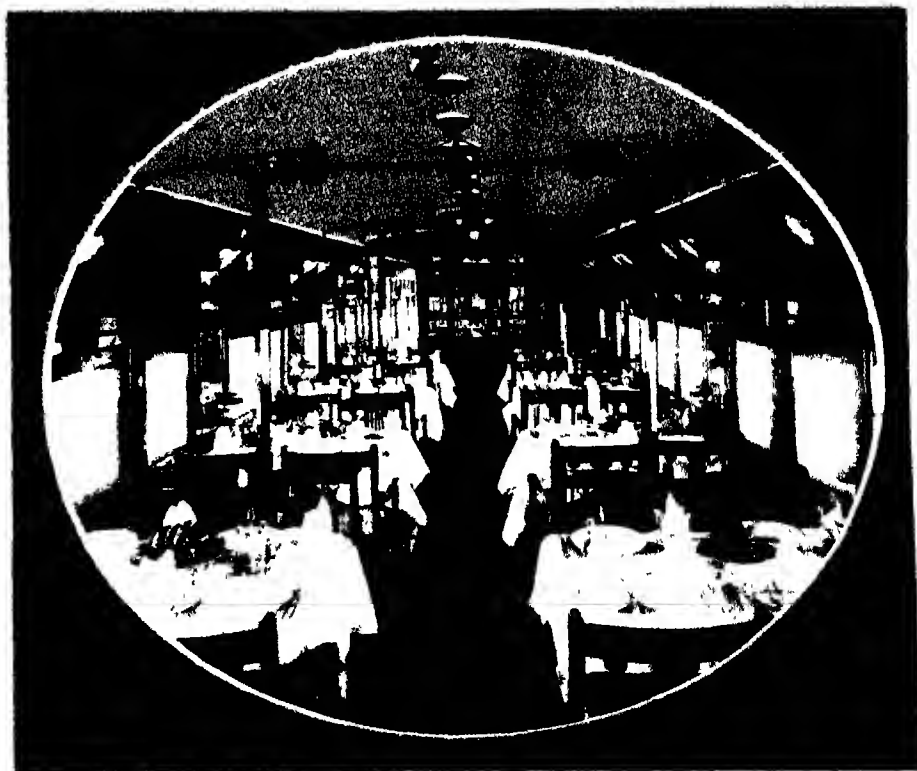
**Permanent Way.** On the Great Indian Peninsula Railway proper the main line is laid with 100 lb bull-headed, 90 lb flat-footed, 82 lb bull-headed, and 69 lb double-headed steel rails. The sleepers originally laid were chiefly wooden but these have now to a large extent been replaced by iron pots. The whole of the south-east line except the Ghat sections, is laid with iron pot sleepers. On the Midland section the whole of the main line, the Mankpur branch, the Cawnpore branch from Jhansi to mile 326.04 and the line from Bina to Katni are laid with 80 lb flat-footed steel rails on cast-iron pot sleepers, several of the branches are laid with 75 lb rails on steel sleepers. The main line between Bombay and Bhusawal, and Kalyan and Lonavla (except Victoria Terminus yard) has been re-laid with 100 lb bull-headed rails on wooden sleepers, while considerable lengths of the Bhusawal-Itarsi Sections have been re-laid with 90 lb flat-footed rails on steel sleepers.

The line is ballasted almost entirely with hard trap rock. With the exception of the Mohpani, Chalisgaon-Dhulia, Jalgaon-Amalner, and Warora-Baliarshah branches the G.I.P. railway proper is fully fenced. On the Midland section the main line is fenced throughout, and the branches are partially fenced.

**Curves and Gradients.** The sharpest curve has a radius of 600 ft. on the Bhore Ghat between miles 75 and 76. The next sharpest curve has a radius of 1,050 ft. on the Thull Ghat, between miles 78 and 79. On the G.I.P. Railway proper the ruling gradients on ordinary sections of the main line vary from 1 in 100 to 1 in 200, with 1 in 100 banking sections near Vasind and Asvali. The ruling gradient on the Ghat sections is 1 in 37. On the Midland section the ruling gradient between Bhopal and Jhansi is 1 in 200, between Jhansi and Agra 1 in 150, and between Jhansi and Mankpur 1 in 125. The Jhansi-Cawnpore

branch is practically level except at bridge approaches, where the gradients are 1 in 270 and 1 in 300, and between Jhansi and Gharman, where it is 1 in 200.

**Rolling Stock.** On March 31, 1925, the G.I.P. was equipped with a total of 1,313 steam locomotives, this representing a total tractive effort of 20,764,982 lbs. Coaching vehicles on the same date numbered 2,461 on the 5 ft. 6 in. gauge and 46 on the 2 ft. 6 in. gauge. The total number of goods vehicles on the broad gauge system amounted to 19,845 and to 153 on the narrow gauge.



GREAT INDIAN PENINSULA RAILWAY.  
Restaurant Car



GREAT INDIAN PENINSULA RAILWAY

1. First-Class Carriage, Electric Service.
2. First-Class Sleeper.
3. Reserved Saloon.

**Workshops.** The main locomotive workshops of the G. I. P. Railway are situated at Parel, about five miles north of Victoria Terminus. These works embrace a total area of 43 acres, of which 17½ acres are covered. The main carriage and wagon shops are situated two miles farther north, at Matunga; these shops occupy an area of approximately 80 acres, of which 17½ acres are covered.

A further large workshop exists at Jhansi, in which both locomotive and rolling stock repairs are carried out. These shops formerly dealt with the rolling stock of the Indian Midland Railway and are now being considerably extended to meet the increased requirements of the present day.

**Reorganisation.** In common with the other Indian Railways, the G. I. P. was adversely affected by the Great War, and by the year 1922 it had become clear that the line was not paying its way. With a view to economy and greater efficiency, the management planned an important scheme of reorganisation which came into operation in November 1922. The objects sought in this scheme have been substantially attained, and by the time (1925) that the system passed under State control the G. I. P. had opportunely put its house in order. There was thus a clear field for the introduction of the new regime.

Briefly the scheme involved the re-grouping of work in a manner somewhat similar to the reorganisation of American railways. It also resembled the system of working adopted by the Midland Railway in England when that line's financial results were poor and it had to make the necessary drastic changes. Up to November, 1922, there had been two departments of the G. I. P. Railway dealing with operation or transportation, traffic and locomotive. These have now been replaced by three departments: Transportation, Commercial and Mechanical.

**Transportation Department.**—The Transportation Department is responsible for the running of trains, their maintenance and upkeep after they leave the workshops, and the carriage of traffic of all kinds, and has under its control engines of all types, except those undergoing heavy repairs. The head of the department is designated Chief Transportation Superintendent, and he has under him five Divisional Transportation Superintendents.

**Commercial Department.**—This department is responsible for the securing, charging for, loading, despatching, unloading and delivering of goods and parcels. The head of the department is entitled Chief Traffic Manager, and he has under him six Divisional Traffic Managers.

**Mechanical Department.** The Mechanical Department is responsible for the design, specification, provision and heavy repair of all mechanical plant in use on the Railway, excluding certain plant in the Colliery and the Signalling Branches. In addition, this department is responsible for the supply and heavy repair of all electrical generating, distributing, traction and workshop equipment, also for the design and maintenance of the lighting and power installations in offices and staff quarters throughout the line. The Head of this department is designated the Chief Mechanical Engineer, and he is assisted by three Deputy Chief Mechanical Engineers and an Electrical Engineer.

**Results of Reorganisation : A Test Year.**—The year ending March 31, 1924, may be regarded as an important test year in the history of the G. I. P., since the results of that year's working are also those of the reorganised system which has just been described.

Thus, for the year 1923-24 the gross earnings of the line amounted to Rs 14,84,41,758, the net expenditure was Rs 9,94,58,187, and the net earnings were Rs 4,89,83,571, the expenditure being equal to 67 per cent of the gross earnings.

Trains of all descriptions run over the G.I.P. (excluding those run by the B.B. and C.I. Railway over the A.D.C. Railway) totalled 221,466, with the average mileage of 86. The average cost per train mile, passengers and goods, was Rs 4-11-5.

As in the case of other Indian railways, the immense preponderance of third class passenger traffic is a striking feature of the returns. For single journeys the percentage of third-class passengers amounted to 93.62. On the percentage proportion the contributions from the various classes were as follow: First, Rs 5.76; second, Rs 5.96; intermediate, Rs 1.84; third by mail, Rs 13.69; third by other trains, Rs 72.73.

During the year there were carried over the system 956,307 tons of coal and coke, 430,030 tons of cotton, 305,407 tons of wheat, 995,547 tons of other food grains, 600,332 tons of oilseeds, 3,407,888 tons of stores for revenue and construction—a total of 9,604,445 tons.

The earnings from this freight were returned as follow: Coal and coke, Rs 49,68,452; cotton, Rs 1,58,94,557; wheat, Rs 42,44,408; other food grains, Rs 1,30,01,848; oilseeds, Rs 80,59,807; other merchandise, Rs 3,87,82,691; stores, Rs 54,00,747; live-stock and miscellaneous receipts, Rs 7,96,207; a grand total of Rs 9,12,44,720.

Finally, during the year ended March 31, 1924, the G.I.P. Railway conveyed 50.99 per cent of all the cotton carried into Bombay.

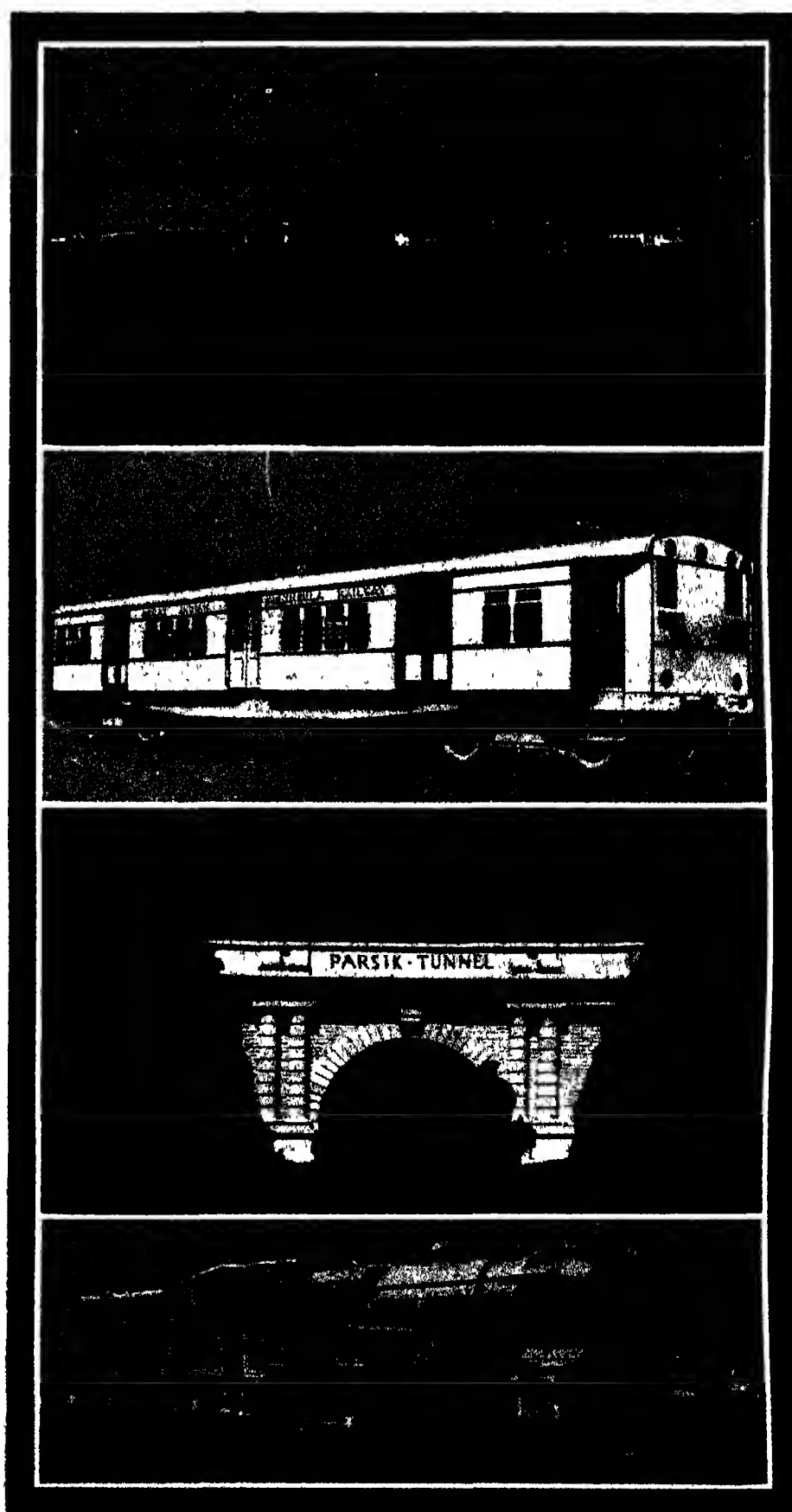
**Passenger Traffic.**—Tables giving the average number of passengers conveyed to and from Bombay City from 1870 onwards show that the number rose from 1,507,421 in that year to 15,479,854 in 1908, and to 56,370,380 in 1924-25, the earnings from this traffic in the last-named year amounting to Rs 4,52,84,000.

**Goods Traffic.** The tonnage of all goods carried over the G.I.P. system in 1924-25 amounted to 10,143,000, as compared with 9,624,000 tons in the preceding year, and the earnings from all goods traffic to Rs 9,74,64,000, compared with Rs 9,07,98,000.

**Earnings.**—The G.I.P. is a capital instance of a great concern that has grown enormously from a very small beginning. How small this was in a financial sense is shown by the fact that in the first year, 1854, the total receipts of the Company amounted to Rs 2,28,000 and the net earnings to Rs 1,03,000. By the year 1869, however, the total receipts had expanded to Rs 1,58,01,000, while the net earnings stood at Rs 52,97,000. In 1884 the total receipts amounted to Rs 3,36,56,000 and the net earnings to Rs 1,60,42,000. These were increased respectively to Rs 4,68,32,971 and Rs 1,76,86,213 in 1908, to Rs 14,84,41,758 and Rs 4,89,83,571 in 1924, and to Rs 15,09,28,000 and Rs 6,27,70,000 in 1925.

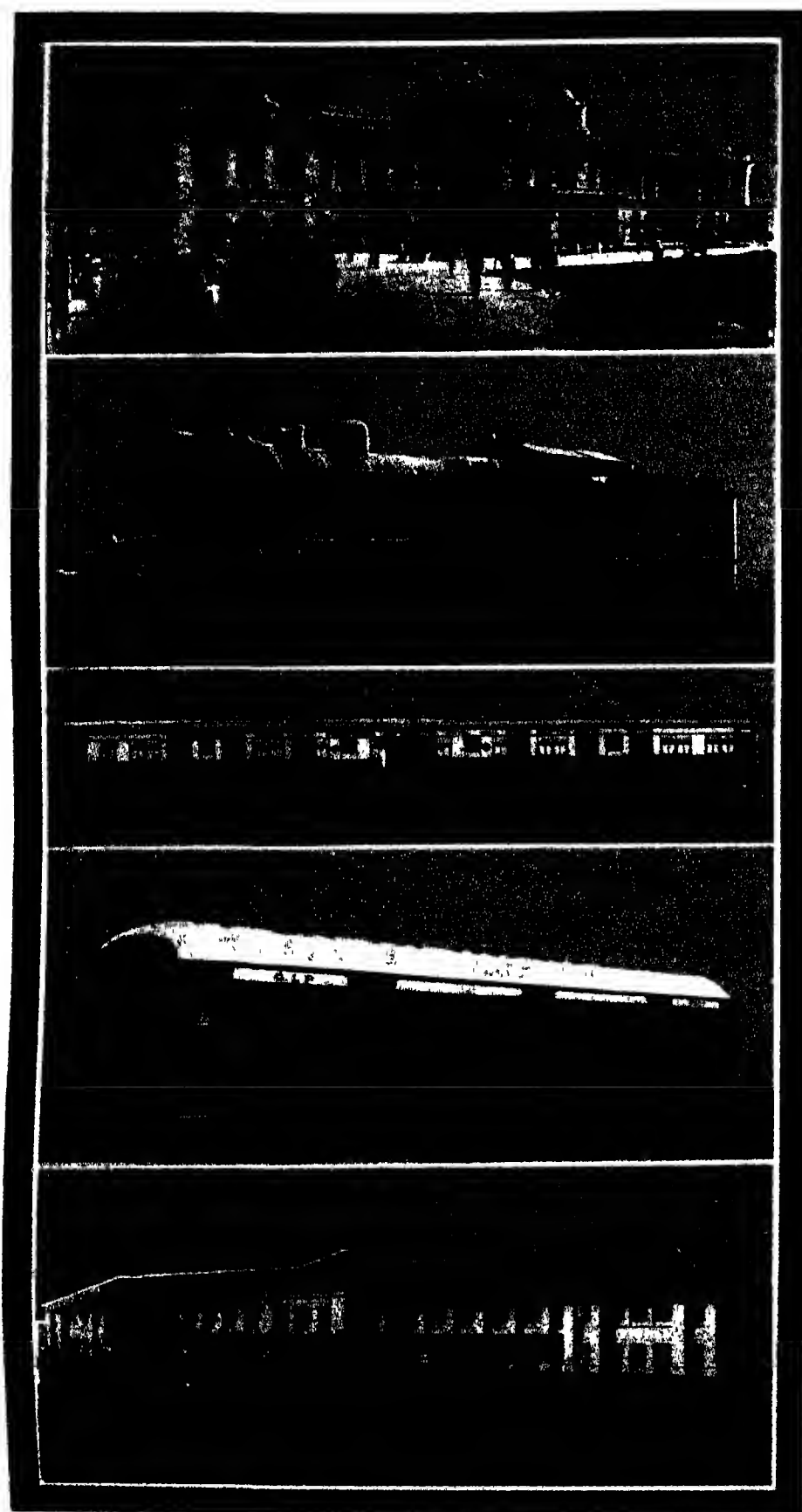
**Publicity.**—An important adjunct to the general organisation of the G.I.P., and one which for years has been steadily extending its usefulness, is the Publicity Branch of the Commercial Department at Victoria Terminus. From a small beginning some years ago its work has expanded in various directions. In the diffusion of useful information, in popularising places on the line and attracting tourists, this department has already rendered service of the highest value.

(See also illustration, p. 108.)



GREAT INDIAN PENINSULA RAILWAY

1. Eight-track Overhead Structures.
2. Motor Coach.
3. Parsik Tunnel.
4. Goods Locomotive.



GREAT INDIAN PENINSULA RAILWAY.

1. Nagpur Station.
2. Latest type Passenger Locomotive.
3. Articulated Carriage.
4. I, II, III-class Electric Service.
5. Poona Station.

**RAILWAYS IN H.E.H. THE NIZAM'S DOMINIONS.**

The first railway constructed in these dominions was between Sholapur and Thungabadra, 177 miles long, opened in 1871. It was built by the G I P railway to complete the direct connection between Bombay and Madras and not primarily to develop the country through which it passed. The subsequent development of railways within the Nizam's dominions proceeded as follows: Wadi to Secunderabad (121 miles) in 1874; Secunderabad to Warangal (87 miles) in 1886; Warangal to Bezwada (122 miles) in 1889; Secunderabad to Manmad (386 miles) in 1900; British Frontier to Latni (36 miles) in 1911; Purna to Hingoli (50 miles) in 1912; Secunderabad to Mahbubnagar (71 miles) in 1916; Mahbubnagar to Wanaparti Road (34 miles) in 1917; Wanaparti Road to Gadwal (13 miles) in 1922; and Kazipet to Ramagundam (58 miles) in 1924. The ownership of lines open for traffic and under construction in H E H the Nizam's Dominions is as follows:

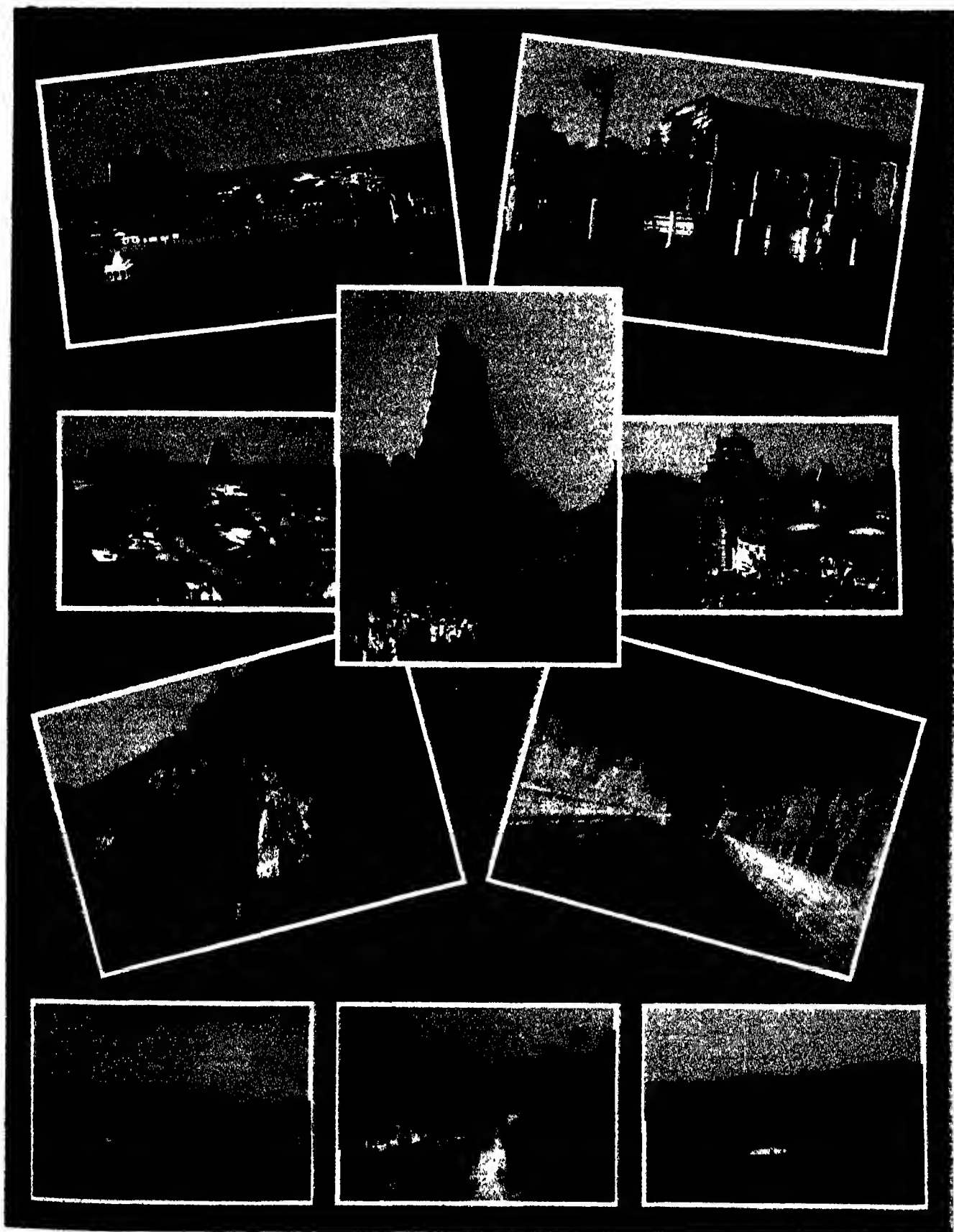
H E H Government	OPEN FOR UNDER CON		TOTAL
	TRAFFIC	STRUCTION	
Miles	Miles	Miles	Miles
Lines	214	157	371
N G S Railway Co	719	—	719
Foreign Railways	21	—	21

A large area near the north-east part of the dominions is not served by any railway. This region is bounded by the Nizam's Guaranteed State Railway on the south by the G I P and B N Railways on the north, the B N and M & S M Railways on the east, and the Secunderabad-Manmad line on the west. The traffic between the Madras Presidency and Northern India at present has to pass via Bombay or Calcutta, and to provide a more direct north and south route the Nizam's Government is constructing a broad gauge line between Kazipet and Belharshah, 150 miles long, the railway to be the property of the Nizam's Government. Construction was commenced in 1920, and the first section of the line was opened for traffic in 1923; the northern section will open up the Adilabad district which at present is very inaccessible. The following figures give details of the commercial traffic carried by the existing railways: Coal, 441,667 tons; grain, 264,200 tons; oil seeds, 222,805 tons; stone, 122,704 tons; cotton, 93,478 tons; salt, 56,908 tons; provisions, 36,456 tons; other imports for local consumption, 317,782 tons, making a grand total of 1,556,000 tons.

The financial results of the Nizam's Guaranteed State Railway system for 1923-24 were: Capital expenditure, Rs 1,398 lakhs, against Rs 1,372 lakhs in 1922-23; gross earnings, Rs 187 lakhs, against Rs 197 lakhs; working expenses, Rs 93 lakhs, against Rs 80 lakhs; net earnings, Rs 94 lakhs, against Rs 117 lakhs. In addition to the working expenses, certain amounts have been set aside as a reserve for renewing the permanent way and rolling stock, making the total working expenses Rs 80 lakhs in 1922-23 and Rs 93 lakhs in 1923-24. After deducting these working expenses from the gross earnings, the net earnings amounted to Rs 117 lakhs and Rs 94 lakhs respectively. The net earnings are utilized to pay interest on the share and debenture capital of the company and to provide a sinking fund for redeeming the capital. Out of the net earnings, Rs 26 lakhs were paid to Government in 1922-23 and Rs 21 lakhs in 1923-24; these amounts representing the profit on working Government lines and the surplus profits on working the Company's lines after having made the necessary provision for interest and sinking fund on the company's capital.

(See Interpress p. 103.)

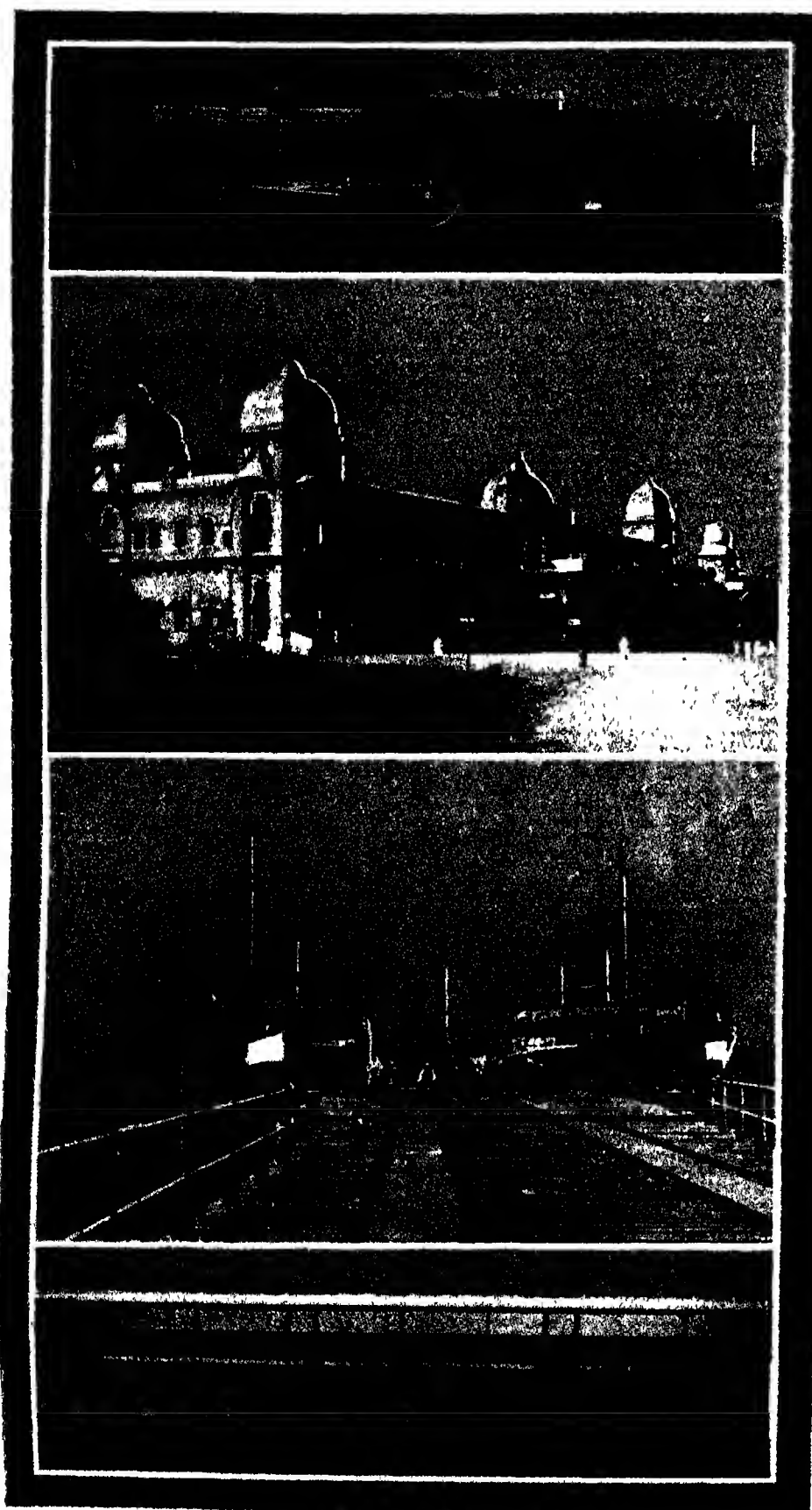




1. Trichinopoly Rock and Temple.
3. Srirangam Town Temple.
6. Tunnel on Nilgiri Mountain Railway.
8. Kodakkanal.

SOUTH INDIAN RAILWAY  
Centre.  
Madura Temple.  
Backwater view on West Coast  
(See letterpress p. 110)

2. "Great Bull," Tanjore
5. Mahamakham Bathing Festival, Kumbakonam
7. Great Corridor and Colonnades, Rameswaram Temple.
10. Golf Links, Ootacamund.



**SOUTH INDIAN RAILWAY.**  
 1. Mail Train Engine—Broad Gauge.  
 2. Egmore Railway Station.  
 3. S. I. Ry. Steamers, Dhanushkodi Pier.  
 4. Tourist Saloon.

#### **SOUTH INDIAN RAILWAY COMPANY, LIMITED.**

**Inception.** This Railway Company (incorporated in England) was formed in 1890, and on January 1, 1891, took over (on purchase by the State) the lines formerly owned and worked by the Great Southern India and the Carnatic Railway Companies, which since 1874 had been amalgamated under the title of the South Indian Railway.

**System.**—The system is a single track one serving the country south of Madras (see general map). It consists of a main line running from Madras to Dhanushkodi Pier (450.26 miles) and 21 branch lines, the longest of which are those from Madras to Trivandrum (243.67 miles), Mayavaram to Arantam (99.46 miles) and Villupuram to Katpadi (98.5 miles).

**Mileage, etc.** The system extends over 1,876.18 miles of track, of which 449.8 miles are of 5 ft. 6 in. gauge, 98.68 miles of 2 ft. 6 in. gauge, and 1,327.70 miles of 3 ft. 3½ in. gauge.

**Running Powers.** The company has also running powers over 219 miles of the Madras and Southern Mahratta Railway, from Madras Central Station to Jalapet and Bangalore, but exercises the powers over 132 miles only, as far as Jalapet.

**Main Line.** The main line from Madras to Dhanushkodi Pier is of 3 ft. 3½ in. gauge, and the company's steamer service connects India and Ceylon, the distance being 22 miles.

**Nilgiri Railway.** This important mountain railway, 28.66 miles in length, was purchased by the Government in 1903 and forms part of the South Indian system. It serves the important hill station and military cantonment of Ootacamund and Wellington and passes through very beautiful scenery. The ruling gradient on this line between Mettupalayam and Coonoor is 1 in 12 on the Ghat, where there is a rack railway. The distance from Coonoor to Ootacamund (11.97 miles) is covered by an ordinary adhesion line.

**Contract.** Though the South Indian Railway system is the property of the Government, it is maintained and worked by that company under a contract which may be terminated on December 31, 1915, or at the end of any succeeding fifth year by giving the company in England not less than 12 months' previous notice.

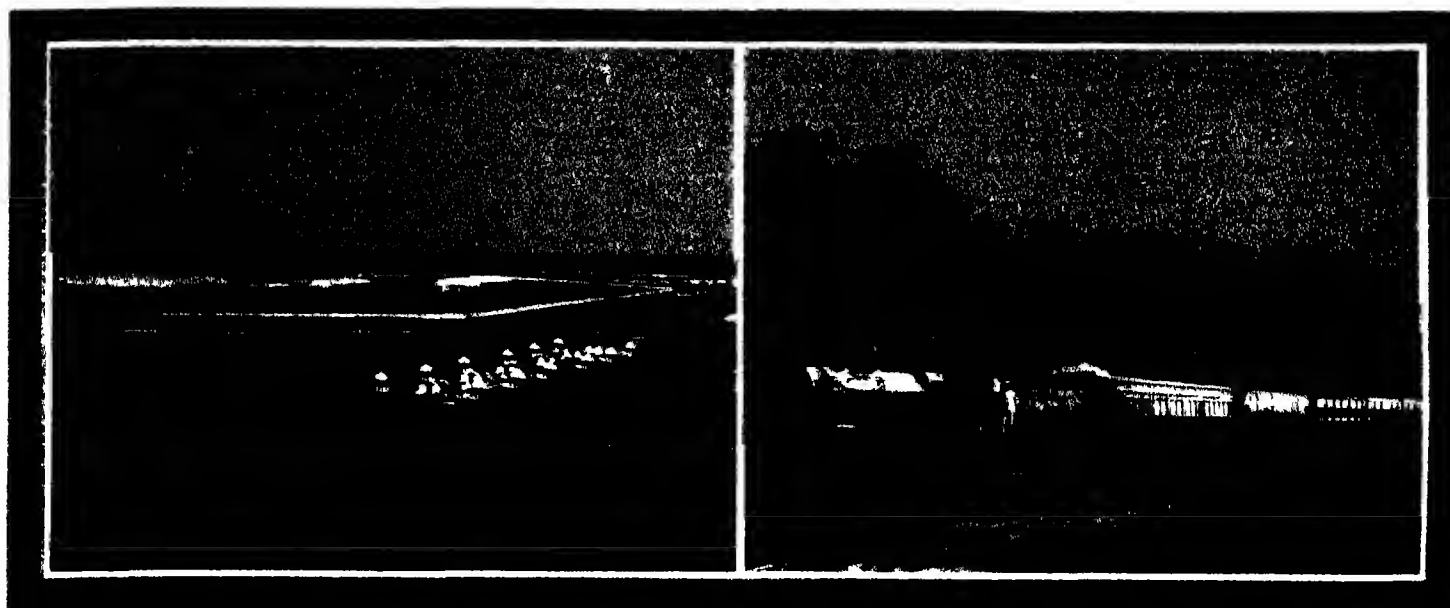
**Capital.** The capital of the company's undertaking is made up of its contribution of £1,000,000 (or Rs 1,50,00,000), irredeemable debenture stock of £425,000, Pamban debentures of £56,500 and registered debenture stock of £2,318,248 (on date), and the advances of the Secretary of State made from time to time for meeting capital expenditure on the line.

The Secretary of State's capital as on December 31, 1910, has been taken as £13,000,000 for the participation in surplus profits, while the advances made by him after this date also participate in such profits. The total advances made by the Secretary of State up to March 31, 1926, inclusive of the assumed capital of £13,000,000 (or Rs 19,50,00,000), was Rs 24,96,39,192.

The debentures and debenture stock do not participate in the surplus profits.

**Dividend.**—The annual dividend paid to the shareholders for the five years ending 1925 was 8 per cent.

**Construction.**—Great activity is now being shown in the development of South India by the extension of railway communications. In all, some 373 miles of new lines are under construction, while no less than 546 miles are scheduled for construction during the years 1926-1931. The metre gauge line between Madras and Tambaram (18 miles) is being doubled to cope with the ever-increasing suburban traffic, and at Golden Rock,



## SOUTH INDIAN RAILWAY

1. Locomotive Workshops and Railway Colony under construction
2. Mail Train Engine - Metre Gauge

13 miles from Trichinopoly, a combined metre and broad gauge locomotive and carriage workshop is being constructed at a cost of approximately Rs 3,15,00,000. This is expected to reach completion in 1928. Important harbour works are also in progress at Cochin and Tuticorin, which should greatly assist in the development of Southern India.

**Passenger Traffic.** During the year 1925-26 the South Indian Railway carried 49,507,675 passengers, an increase of 2,449,897 on the previous year's figure.

**Goods Traffic.** In the same year 4,890,861 tons of goods traffic were conveyed over the system, the chief commodities carried being cotton, coal, oil cake, for fodder, fruits and vegetables, paddy and rice, oil seeds, salt, sugar, jaggery, etc., and unwrought timber.

**Agricultural Products.** The vegetation and trees to be seen by passengers when travelling by the South Indian Railway indicate the varieties of country traversed. In the plains wet cultivation is the prevailing feature, paddy fields predominating. Betel leaf (in Tamil *thalai*) is a creeper grown on sticks about 10 ft. in height, the leaf of which is chewed by Indians; there are also sugar cane and plantain plantations. The dry crops are cotton, grains of various kinds, gram, tobacco and ground nuts. From the Nilgiri Railway are seen the tea, rubber, coffee and potato estates. The principal trees are jungle, teak and casuarina wood (used for firewood), coconut, palmyra (jaggery and toddy) and areca nut trees.

**Revenue and Expenditure.** The gross earnings of the company in 1925-26 were Rs 5,84,98,000, made up of Coaching traffic, Rs 298,47,000; goods traffic, Rs 263,58,000; and miscellaneous, Rs 22,93,000. The working costs amounted to 58.5 per cent. of these figures.

**Rolling Stock.** The whole of the rolling stock of the company is kept up to a high state of efficiency. First and second class carriages are equipped with electric lights and fans, and all the conveniences which make travel in the tropics comfortable are provided.

With a view to meeting the growing demand for a special kind of carriage for the exclusive use of tourists, Rajahs and high Government



## SOUTH INDIAN RAILWAY.

1. Refreshment Room, Egmore.
2. Restaurant Car.

officials such a type has been built, and several were placed on the line in 1925.

In designing these carriages the comfort of the occupants has been carefully considered. There are three compartments, the larger one being fitted with an upholstered seat, Chesterfield couch and a folding bunk, and providing accommodation for three passengers by day or night. The other two compartments are each furnished with an upholstered seat and a chair to accommodate one passenger. Adjoining these is a bathroom equipped with up-to-date fittings and a lavatory. Provision is made for servants, luggage and kitchen. Electric lights and fans are suitably arranged. The panelling of the main compartment is of white cedar inlaid with rosewood.

**Tourist Attractions.**—In Southern India there are many interesting places which are noted for their historical or religious associations, or for their scenic beauty. The scenery, especially on the west, or Malabar coast and on the Nilgiri Hills is magnificent and unrivalled in India, the temples and shrines, the people and their customs are entirely different from those of other parts of the country. South India was also the scene of the earliest struggles between the English and the French for supremacy in India.

**Places of Interest.**—No traveller should leave India without visiting some of the ancient and historic temples of Southern India, of which those at Rameswaram (half an hour distant from Dhanushkodi and near to Mandapam, a seaside resort, where there is good accommodation and bathing), Madura, whose temple is the finest in India, and Srirangam, near Trichinopoly, are the most notable. Trichinopoly itself, 96 miles from Madura, has

a famous Rock and Temple, and is also the headquarters of the South Indian Railway. It is noteworthy for its cigars, which are both good and cheap. Dindigul is also famous for its cigar factories, and the old Fort, built on a rock 280 ft. above sea-level, has been the scene of many sieges. Thirty-one miles north-east of Trichinopoly is Tanjore, an ancient town dating back to the second century A.D., and containing the palace of the Marhatta Rajahs, the ruins of an old fort, the great temple known as Brahadeswaraswami Koil and the huge bull (Nandi) fashioned out of black granite. Kumbakonam, 24 miles from Tanjore, is the centre of Brahminical religion and literature, and possesses 16 temples, 12 dedicated to Siva and four to Vishnu.

**Hill Stations.**—Many of the most popular hill stations and sanatoria of India are served by the South Indian Railway, the chief of these being Ootacamund, Coonoor, Wellington, Kotagiri in the Nilgiri Hills, Kodaikanal in the Pulney range and Yercaud in the Shevaroy Hills. The climate of these stations is superior to that of the best English summer, while the scenery is often unique and the shooting, golf, hunting and racing always excellent.

**Guide.** The South Indian Railway 'Illustrated Guide' which gives descriptive accounts of all places of any importance on the company's system, and the Time Table can be obtained at any of the principal stations at a reasonable price.

**Catering, etc.**—At all the places mentioned previously, and also at others (except at Rameswaram, the station for which is Mandapam), there are sleeping rooms and restaurants, while guides can be obtained to all the places of interest. Excellent food, prob-

ably superior to that provided on any other railway in India, is served on the restaurant cars and in the refreshment rooms. Such cars are run on the metre gauge mail trains. The contractors for catering are Messrs Spencer & Co., Madras.

**Touring Season.**—The period from November to February is the best time for a tour of Southern India, this being the coolest and most pleasant time of the year when the temperature varies from 60 to 70 degrees in the shade.

**Clothing.** The temperature just quoted will give a rough idea of the clothing that should be worn by tourists. It is very necessary to wear sun hats between 9 a.m. and 5 p.m., and travellers should take bedding everywhere. A waterproof valise containing a blanket, padded quilt, a pair of sheets and two pillows is all that one requires.

**Special Trains.** If sufficient notice is given, special trains or tourist cars can be provided by the company. All inquiries should be addressed to the Chief Commercial Superintendent, South Indian Railway, Trichinopoly.

**Coupon and Enquiry Agents.** The following companies issue first and second class coupons for travel in India and can supply information in regard to fares and times of trains: Messrs Thomas Cook & Son (who have branch offices at Colombo and Madras), Grindlay, Groom & Co., Cox & King's Shipping Agency, Ltd., Balmer, Lawrie & Co., The American Express Co., and the Canadian Pacific Steamships, Ltd.

**Head Office.**—91, Petty France, London, S.W. Managing director Mr. A. Murrehead, C.I.E.

**Agent in India.**—Mr. P. Rothera, O.B.E., Trichinopoly.

(See also illustration, p. 109.)

## AIR, RIVER AND ROAD

### AIR

**3**N the year 1924 India welcomed an unprecedented number of long-distance flyers from overseas among whom was the intrepid airman Mr. Alan Cobham, who in 1925 was to accomplish the journey to the Cape and back and in 1926 the round trip from England to Australia, via Karachi. That city has been selected as the eastern terminus of the new dirigible service between England and India, its topographical situation and climate alike making it superior to Bombay as an aerial port, while the fact that the military aircraft depot is already located there has doubtless weighed with the selectors.

**EGYPT-INDIA SERVICE.**—An important step was taken by the British Government in 1925 to develop aerial communication between the West and India when it decided to institute a regular civil air service between Egypt and India, the fortnightly service which existed between Kantara and Bagdad being extended to Karachi. At the time of writing only mails were being carried from Bagdad to Karachi, and a saving of from four to five days in the passage of letters from Great Britain to India was thus effected. It was hoped later to extend the service to Burma and Singapore, in order to link up with services from other parts of the Empire and with an airship service between England and India and Australia.

The Imperial Airways plane which opened

the new service from Egypt to India left London on January 1, 1927, with Sir Samuel Hoar, Bart., C.M.G., the Secretary of State for Air, and Lady Hoar as passengers. The service from Cairo to Karachi was inaugurated by a flight over the desert to Bagdad and across the Persian Gulf to Karachi. Machines were scheduled to leave Cairo for Basra at fortnightly intervals until April 6, 1927, on which date experience in operating the route having been gained, the last section from Basra to Karachi was to be opened commercially.

**FARES.**—The fare from Cairo to Karachi was to be £72, from Cairo to Bagdad, £41, from Cairo to Basra, £51, from Bagdad to Karachi, £37, from Basra to Karachi, £30 and from Bagdad to Basra, £9. The fare includes not only transport, but quarters at night and meals throughout the journey.

**NEW TYPE OF AIRCRAFT.**—The five large passenger aircraft to be used over this route have been supplied by the De Havilland Aircraft Company. The type is known as D.66 to the makers, and as the Hercules type to Imperial Airways. The planes are fitted with three Bristol Jupiter radial air-cooled engines, have a total weight of 14,800 pounds, and are designed to fly with full load on two engines. They will take 12 passengers with baggage and a certain amount of mail matter and will carry one pilot, a mechanic-pilot, and a wireless operator. From Basra to Karachi the passenger load will be reduced to eight, and, as the landing places on this stretch will not have a full ground staff,

the machine will carry a second pilot and two mechanics in addition to the wireless operator.

**INTERNAL AIR SERVICES.**—Several experiments in long-distance internal flights have been made by the Royal Air Force, but at present there is little or no encouragement for civil aviation. It is generally held that much more knowledge of the effect of the Indian climate on flying is needed before there can be any expectation of a network of air lines over so enormous a country. Thus far, night flying is not practicable, and until it has become so the long cross-country routes in India cannot be satisfactorily tackled from the air. The shorter routes, such as those from Calcutta to Rangoon, Karachi to Bombay, Karachi to Lahore and Delhi and Lahore to Kashmir are being tentatively explored.

### RIVER

The Brahmaputra, Ganges, Indus, and Irrawaddy, with their many tributaries, are the chief means of inland navigation in India. Being snow-fed, they remain full during the hot weather, whereas other of the larger rivers, such as the Nerbudda and the Tapti, are, by reason of their rocky beds and swift floods, practically useless for navigation except at their mouths. The Indus, the Ganges and the Brahmaputra are navigable by steamers all the year round, or for the

greater part of the year, for hundreds of miles above their mouths, or above the heads of the navigable canals traversing their deltas.

**BRAHMAPUTRA.**—The Brahmaputra, with its tributary, the Surma, conveys the traffic of Eastern Bengal and of Assam to Calcutta. It is the great natural highway to the north-east, and is navigable for steamers as far as Dibrugarh, 800 miles from the sea. Steamers go up the Surma to Sylhet.

**GANGES.** The Ganges and its tributaries carry a large amount of cheap and bulky goods up and down the Great Plain, but the many railways have robbed them of much of their steamer traffic. The Ganges, with its tributaries, still, however, has more boat traffic than any other river in the world except the Yangtse-Kiang. River steamers ascend as far as Cawnpore and the Gogra along to Fyzabad. The Nadia rivers, which comprise the upper waters of the Hooghly, are navigable by steamers during the rainy season.

**INDUS.** The Indus carries goods from the Southern Punjab and Sind, Karachi being its port. The river is constantly changing its bed, and is therefore not easy to navigate. The railway along the Indus Valley has taken away all the steamboat traffic.

**IRRAWADDY.** This river brings down teak and timber, rice and oil to Rangoon. It is navigable as far as Bhamo, and there is an excellent service of steamers on the waterway, as also on the Chindwin.

**NAVIGABLE CANALS.** The most important canals in India are intended for irrigation purposes, but some have been specially designed for navigation by small boats, while several of the large irrigation works are also used in this way. The largest irrigation canals which are also important navigable systems are the Godavari and Kistna in the Madras Presidency. The total length of the main canals and branches of these systems is 506 and 372 miles respectively, of which 493 and 352 miles are navigable. During many months of the year these canals carry away all or nearly all the river supply, and so cut off the upper waters of the rivers from the seaboard. They traverse flat and fully populated deltas, in which there are no great falls to be overcome, and which are poorly provided with roads and other means of communication, while the people on the coast are accustomed to the use of boats. Something like 80,000 boats are estimated to enter the two systems annually, with a tonnage varying from 700,000 to 800,000, and there is also a small amount of raft traffic. In Bengal the Orissa and Midnapore canals are both used for navigation, and there is a good deal of raft traffic on the Western Jumna Canal in the Punjab. Other smaller canals in India are used for navigation purposes, but speaking generally it may be said that, outside the deltaic tracts in Bengal, Orissa, Madras and Sind, navigable canals will never be of much use or value as a means of inland communication.

## ROAD

The total extent of metalled and unmetalled roads now existing in India is fairly large (about 220,000 miles), though the country is still insufficiently provided with communications that are efficient in the rainy season. As the need for substantial roadways was not severely felt in the earlier past, their provision only began to be seriously undertaken about 1850, and as since then the work has been greatly handicapped by political disturbance and financial stringency, it is permissible for Indians to regard the present state of affairs with some degree of satisfaction.

**ANCIENT ROADS.**—The oldest roads in India were those trade routes which existed from almost immemorial times. Among these were the important roads from Mirzapur to the South (known as the Great Deccan Road) from Agra to Ajmer, and from Allahabad to Jubbulpore, which were kept open by the British until after the Mutiny. There were also two or three established trade routes from Delhi, one passing through Muttra to Agra and thence, via Etawah, to Allahabad, another running via Garhmuktesar, Moradabad, Bareilly, Sandi and Rae Bareilly to Benares and on to Patna, and a third following the alignment of the present Grand Trunk Road from Delhi to Aligarh.

**CLASSIFICATION.**—All roads in India are now classed as follows:

Class I—Metalled (a) With bridges and ferries and drained throughout, (b) Partially bridged and drained.

Class II—Unmetalled (a) With bridges and ferries and drained throughout, (b) Partially bridged and drained.

Class III—Banked and surfaced, but not drained.

Class IV—Banked, but not surfaced, partially bridged and drained.

Class V—Cleared, partially bridged and drained.

Class VI—Cleared only.

Most of the Class I (a) roads and some of the others have avenues of trees planted along them, and although it is no longer necessary to build *chaudikari* huts on the main routes, it is usual to provide rest-houses and *sarais* for travellers upon all roads on which the amount of traffic justifies the expenditure.

**GRAND TRUNK ROAD.** This road runs from Calcutta to Peshawar, passing through the important cities and trade centres of Allahabad, Cawnpore, Aligarh and Delhi. It was first taken in hand about 1840, and up to April 30, 1848, nearly 49 lakhs of rupees had been expended on its construction. The original road was extended to Meerut, then later to Aligarh and further north in consequence of military operations in the Punjab and the North-West Province.

**MAINTENANCE, COST, ETC.**—Most Indian roads are metalled with broken brick (*khoa*) or with *kankar* (nodular limestone) in the absence of stone and gravel, which over vast areas are not procurable. The expense of maintenance is somewhat high, and is greatly increased by the inferior character of the wheels of native conveyances.

The cost of building roads depends largely on the nature of the country through which they pass, and varies so greatly in different parts of India that to quote average figures would be misleading. Thus the roads are rendered expensive in Bengal by the necessary embankments, the large amount of drainage to be crossed, and the inferior nature of the metalling, in parts of Bombay and Madras by the hilly character of the country. The cost of maintenance varies from similar causes, and also, in the case of roads maintained by local bodies, with the amounts these can afford to allot.

In former times the roads were, in certain instances, built and maintained by forced labour, but this is no longer the case. It used also to be customary to levy tolls at all ferries and large bridges, likewise at many other intermediate spots. The number of places at which tolls for the use of roads are now levied is (except in Madras) comparatively small, and these are chiefly at ferries, where the toll is in the nature of payment for service rendered, and on hill-roads whose upkeep is exceptionally expensive.

**METHODS OF TRANSPORT.**—Roads and railways together have revolutionised the methods of transport, causing pack animals

to be almost entirely displaced by wheeled vehicles throughout the greater part of the country. In olden times "hackeries" hardly existed outside the large towns, and although Tavernier relates that heavy wagons drawn by five or six pairs of oxen were used in the plateaux and central tracts of Central and Southern India, these had to be steadied with cords at the river banks and other bad places, where too they often had to be unloaded. Light springless carts drawn by a pair of oxen could carry travellers 30 or 35 miles a day under favourable circumstances. The commerce of the country was, however, chiefly dependent on pack animals for transport, and enormous caravans of these used to traverse the Peninsula, carrying merchandise from one point to another. At the present time it is only where railways have not yet penetrated that pack transport has preserved any important share of long distance traffic, though in sandy or hilly tracts a considerable amount of local traffic is still dependent on this means of conveyance.

**MOTORING.**—The roads near all the large cities and the main roads connecting them are ordinarily good for motoring, and indeed have been greatly improved to meet the demands of motorists, who are now an influential section of the populace. The 1,400 to 1,500 miles tour from Bombay to Calcutta, to mention the chief route, gives opportunity for visiting many famous temples and shrines. The journey can be lengthened or shortened indefinitely to suit the time available, or the individual taste of the tourist. Another journey strongly recommended is from Delhi to Rawalpindi, and from thence into "the lovely vale" of Kashmir. Expeditions to places of interest, such as the rock-cut caves of Ajanta, which previously could only be made from some distant railway station by tediously slow country conveyances, can now be carried through easily and rapidly by motor-car. Many places of interest can be visited in a day trip from good centres such as Madras, Bangalore, Poona, or Benares.

**TOURING CONDITIONS.**—An import duty is payable on the tourist's car, but a refund of seven-eighths of the amount deposited is returnable on the re-export of the car within two years of entry. In addition to fees for registration and driving, payable at the chief police station of the port of arrival, a local tax has to be paid before the car can be used. For landing and getting ready for the road the cost at Bombay and also at Calcutta will not be less than Rs 100 (£7 10s). But the cold-weather visitor has many compensations for these and other expenses. Petrol is available in the large ports and at all the principal towns up-country. Such towns, however, are infrequent, and the traveller must not expect the facilities for repair and replenishment available in Western Europe. He should purchase the motor guides published in the Presidency towns, and carefully note the location of garages and petrol stores.

He should also bear in mind that, outside the Presidency towns, the chief hill stations and certain exceptional places, there are hardly any hotels in India up to the European standard of excellence. On occasion he must fall back on the rather comfortless dak bungalows established by the Government, where accommodation cannot be secured beforehand. The first comer has the preference, but after occupying the room for 24 hours the traveller must, if required, give place to a new comer. The tourist wishing to map out his itinerary so as to avoid risks of being stranded can obtain advice and assistance. There are a number of automobile associations, and at the principal centres both the R.A.C. and the A.A. are represented.



**STATISTICS.**—The collection of statistics regarding roads in India has never received much attention, for their classification, the circumstances under which they are constructed, the demands which they meet, and the funds available for their up-keep vary so greatly in different parts of the country that there appears to be no common object to be

served by their compilation. The following figures will, however, give a fair idea of the road mileage of British India in 1925. Total length of metalled roads about 67,000 miles, the up-keep of which is divided fairly equally between Government and local authorities; total length of unmetalled roads about

153,000 miles, of which about five-sevenths are maintained by local authorities. There are also a number of roads which are repaired or reconstructed at irregular intervals—e.g., during famines, and others which are maintained by the Forest Department or by the owners of large private estates.

## SHIPPING

**BEFORE** the opening of the Suez Canal foreign trade with India was conducted almost exclusively in sailing craft. Since that event the importance of steam-driven vessels has, needless to say, increased continuously, as shown by the following figures, which relate to vessels entered and cleared at ports in British India in the years named.

Sailing Ships	1884-85	1901-05	1921-25
No. of vessels	7,354	3,412	1,484
Tonnage	2,317,589	1,143,333	152,459
Steamships			
No. of vessels	2,084	4,372	5,152
Tonnage	4,332,181	6,812,489	7,624,473
TOTAL			
No. of vessels	10,338	10,577	6,636
Tonnage	6,649,770	8,255,822	7,776,932

While the number of sailing ships trading with India has thus largely decreased (by nearly 6,000 in 40 years), their size has also diminished: the tonnage recorded in 1924-25 being over 2,000,000 less than in 1884-85. A few ocean-going sailing vessels still visit Calcutta, but the sailing ships entering other ports are now almost entirely native craft engaged in trade with East Africa, Arabia, Persia and Southern Asia. In 1904-05 the tonnage of steamers was 82.5 per cent of the total, in 1924-25 the percentage was 98.03.

About 75 per cent of the trade of India is carried under the British flag, 60 per cent of the tonnage being included in entries from and clearances to the United Kingdom and British Possessions. Vessels belonging to foreign countries have, however, during the last 25 years obtained an increasing proportion of the carrying trade. Japan has now the second largest share, followed by the United States, Holland and Germany.

**COASTING TRADE.** The following table shows the tonnage of vessels, distinguishing their nationality, employed in the coasting trade of British India which entered and cleared with cargoes in the year 1925, compared with the years 1923 and 1924—

ENTERED	1923 Tons	1924 Tons	1925 Tons
British	11,102,040	11,062,788	10,836,282
Indian	1,731,934	2,121,286	2,234,353
Foreign	1,860,186	2,092,065	2,107,097
Native Craft	1,537,976	1,589,900	1,414,505
Total	16,232,136	16,866,039	16,592,237
CLEARED			
British	11,018,809	11,204,515	10,988,108
Indian	1,549,463	1,951,432	2,006,125
Foreign	1,816,292	2,111,012	2,147,780
Native Craft	1,503,028	1,577,706	1,484,713
Totals	15,887,592	16,844,665	16,626,726

**FOREIGN SHIPPING.**—The total number of vessels of all nationalities that entered and cleared from Indian ports including repeated

voyages) during 1925 compared with 1924, was as follows:

	No. of Ships	Tonnage
ENTERED		
1924	3,070	6,886,595
1925	3,043	7,026,798
CLEARED		
1924	3,747	8,399,205
1925	3,693	8,412,525

Taking the entrances for the years 1924 and 1925, the shipping was disposed by nationalities as follows:

	1924 VESSELS	1924 TONNAGE	1925 VESSELS	1925 TONNAGE
United Kingdom	1,085	3,762,014	1,046	3,847,272
Japan	191	697,473	211	740,129
Arabia	154	66,687	129	22,853
Germany	103	388,963	97	362,006
United States	90	408,445	100	423,001
Java	97	325,577	110	381,320
Italy	76	266,205	84	302,620
Persia	95	177,781	87	167,913
China	55	266,007	56	182,160
Egypt	15	90,004	10	30,956
Portuguese				
E. Africa	35	43,101	31	65,586
Belgium	10	73,887	43	152,572
France	8	33,569	7	30,919
Other countries	138	346,822	142	308,401

Totals 3,070 6,886,595 3,043 7,026,798

**STEAMSHIP SERVICES.**—The following are the principal steamship services to and from Indian ports or serving India indirectly—

**ANCHOR LINE.**—Monthly sailings from Liverpool to Bombay and Karachi. This line also maintains an Indian service to Calcutta, Madras and Colombo.

**BIBBY LINE.**—From Liverpool to Colombo and Calcutta via Marseilles and Suez Canal every fortnight.

**BOMBAY STEAM NAVIGATION CO., LTD.**—This line, operating from Bombay, runs a number of services to Karachi and the smaller ports of Mangalore, Gulf of Cutch, Bhavnagar, Dharamtar, Vizianag, Goa, etc.

**BRITISH INDIA STEAM NAVIGATION CO., LTD.**—Regular sailings from London to Bombay, Calcutta, Madras and Colombo. Services between Bombay and Karachi and all Indian ports. The company owns a fleet of 125 steamers (See also later "P. & O. S. N. CO.")

**ELLERMAN AND BUCKNALL S. S. CO., LTD.**—Regular sailings from Liverpool to Colombo and Calcutta, and also to Bombay and Karachi.

**ELLERMAN CITY AND HALL LINES.**—Regular sailings from Glasgow and Liverpool, via Suez Canal, to Calcutta and back to London, or Liverpool via Malta and Suez, also from Glasgow and Liverpool to Bombay and Karachi, and back to Marseilles, London and Liverpool.

**HENDERSON LINE.**—The 'Anchor-Brocklebank' fleet of steamers run from Glasgow and Liverpool to Madras and Calcutta.

**INDIAN CO-OPERATIVE NAVIGATION AND TRADING CO., LTD.**—This company's fleet of six steamers operates between Bombay, Dabhol, Malwan and Panjim (Goa) calling at intermediate ports.

**INDO-CHINA STEAM NAVIGATION CO., LTD.**—Regular direct service from Calcutta to the Straits, Hongkong, Shanghai and Japan.

**LLOYD TRIESTE S. N. CO.**—The steamers of this well-known Italian line leave Bombay regularly on the 1st of each month for Brindisi, Venice and Trieste, and on the 15th for Naples and Genoa.

**MARITIME ITALIANA S. N. CO.**—Service alternating with preceding line.

**MESSAGERIES MARITIMES.**—Fortnightly services to Bombay, Calcutta, Pondicherry, Colombo and the Far East.

**MOGUL LINE (BOMBAY AND PERSIA STEAM NAVIGATION CO., LTD.)**—Regular service from Bombay and Karachi to the Red Sea, Persian Gulf and Mauritius, also from Calcutta to Red Sea ports. A special pilgrim service is arranged from Bombay and Karachi to Jeddah during the Haj season.

**NEDERLAND ROYAL MAIL LINE.**—The well-appointed steamers of this line run fortnightly from Rotterdam, Antwerp and Southampton to Colombo, Java and Sumatra ports, passengers transshipping to Indian ports.

**NIPPON YUSEN KAISHA (JAPAN MAIL STEAMSHIP CO., LTD.)**—Services from Indian ports to Colombo, Singapore, Hongkong, Shanghai, Kobe and Yokohama.

**ORIENT LINE.**—The steamers of this line do not actually touch at Indian ports, but tranship passengers at Colombo.

**OSAKA SHOSHEN KAISHA.**—This important Japanese company maintains service between Bombay, Madras and Calcutta and Japanese ports.

**PENINSULAR AND ORIENTAL STEAM NAVIGATION CO.**—The services usually maintained by this company are those running from London via Suez to Bombay, Colombo, Calcutta, Singapore, the Far East, and Australia. P & O and British India tickets are interchangeable on routes common to the two companies.

**ROTTERDAM-LLOYD STEAMSHIP CO.**—Regular services from Rotterdam, Antwerp and Southampton to Colombo (transshipment to India ports) and Netherlands East India ports.

**SCINDIA STEAM NAVIGATION CO.**—This company, operating from Bombay, controls a fleet of seven well-equipped steamers serving all Indian and Burmese coast ports.

(See also "Ports" article following Calcutta, Bombay, Madras, and Karachi respectively.)





PLUCKING TEA.

## AGRICULTURE

### GENERAL DATA

**T**HOUGH much has been done during recent years to develop Indian industries, it seems plain that for a lengthy period agriculture must remain the main occupation of the people. It, indeed, supports 224,000,000 persons, or 71 per cent. of the total population, while almost the whole of the inhabitants of the Empire are dependent upon the success of indigenous food crops. In the development of Indian agriculture, therefore, lies perhaps the readiest method of advancing the prosperity of the country as a whole. While it must be difficult to estimate the extent to which the Central and Provincial Agricultural Departments have added to the wealth of India, it is indisputable that much yet remains to be done, notably in the development of better varieties of existing crops, which are many and varied. Of food crops, rice is the most important, followed by the different classes of millet and by wheat. Of high commercial value also are the cotton, jute, linseed, sesamum and tobacco crops, and the tea industry has become one of the greatest assets of the country.

**CAPITAL AND EQUIPMENT.**—India is a country of small holdings, and the vast majority of the people cultivate patches varying in size from one to eight acres. Large holdings are in the main unknown, and are principally confined to the planting

industries. Farming throughout the country is carried on with a minimum of capital, there being practically no outlay on fencing, buildings or implements. The accumulation of capital is prevented by the occurrence of famines, the high rate of interest and extravagance of expenditure in marriage celebrations. The organisation of co-operative credit, which has proved so successful in many provinces, must undoubtedly lead to an increase in agricultural capital.

**EQUIPMENT.**—For power the ryot depends chiefly on cattle, which, as a rule, are light and active, but possess little hauling capacity. The necessary tilth for crops is brought about by frequency of ploughings, but the soil is seldom tilled as it should be. This is due not so much to want of knowledge on the part of the people as to lack of proper equipment. The Indian agriculturist, as a rule, possesses an intimate if limited knowledge of the essentials of his own business, and fails generally through lack of ways and means.

**IMPLEMENTS.**—Agricultural implements in India are generally made of wood, although ploughs are usually tipped with iron points, and there is a great similarity in their shape and general design. The introduction of iron ploughs has made much progress in the last few years, and many hundred thousands are now in use. The levelling beam is utilised throughout the

greater part of the country in preference to the harrow and roller, and in Northern India the plough and the levelling beam are the only implements possessed by the ordinary cultivator.

In the heavier soils of the Deccan a cultivating implement consisting of a single blade resembling in shape a Dutch hoe, is much used. Seed drills and seed hoes are in use in some parts of Bombay and Madras, but throughout the greater part of the country the seed is either broadcasted or ploughed in. Hand implements consist of various kinds of hoes, the best known of which are the *kodal*, or spade, with a blade set at an angle towards the labourer, who does not use his feet in digging, and the *khurpi* or small hand-hoe. Of harvesting machinery there is practically none, grain being separated either by treading out with oxen or beating out by hand, while winnowing is effected by the action of the wind.

**CO-OPERATIVE MOVEMENT.**—There were in 1925 more than 50,000 co-operative credit societies in India engaged not only in financing the farmer, but also in raising the general standard of farming methods and of his well-being generally. First established in India in the early 'nineties, the co-operative credit society has proved the best medium for the extension of credit to the Indian farmer. Capital is provided by central societies and individuals,

as well as by the members' own deposits. The operations of these societies differ in various provinces, but, in general, they function on the lines of the Raffles system, which has been so successful in Central Europe. Many of these societies are exceedingly progressive, especially those in the Bombay, Madras and Bengal Presidencies, the Punjab, the State of Mysore and Burma.

**CULTIVATION.**—Cultivation at its best is distinctly good, but in most of India there is still great room for improvement, agriculture generally suffering through a lack of organisation and equipment. Owing to the necessity of protection against thieves, the people in most parts live in villages, many of them at considerable distances from their land. Again, holdings, though they are small, have become sub-divided without any regard to convenience. Preparatory tillage generally consists of repeated ploughings, followed as seed time approaches by harrowings with the levelling beam. The *rabi* crops generally receive a more thorough cultivation than the *kharif*, a finer seed bed being necessary owing to the dryness of the growing season. Manure is generally applied to the maximum extent available, both to *kharif* and *rabi* crops. Seeding is either done broadcast or by drilling behind a wooden plough or drill. Thinning and spacing are not nearly so well applied as they might be, and intercultivation is generally too superficial. Harvesting is done by sickle where the crops are cut whole, and there is little waste involved. In the main, the methods of the ryot, if carried out thoroughly, would be quite satisfactory, but it is doubtful if this can ever be done with the limited number of cattle at his disposal.

**EDUCATION AND RESEARCH.**—In 1925 there were twenty agricultural colleges and schools open in India, containing 999 students. The Pusa Institute is the principal seat of agricultural research, and has cost nearly £150,000, including equipment. A part of the outlay was met from a sum of £30,000 placed at the late Lord Curzon's disposal by Mr. Plunpp, an American visitor to India. This example of munificence was followed by Sir Sassoon J. David, who gave the sum of £53,300 to the Government of Bombay for the establishment of vernacular agricultural schools and the improvement of agricultural methods in commemoration of the visit of King George and Queen Mary to India. At the Pusa Institute post-graduate courses in agriculture and the allied sciences have been introduced, with the object of qualifying those who pursue them for responsible positions in the Agricultural Department.

**IRRIGATION.**—Owing to insufficient rainfall and the vagaries of the monsoon, irrigation is necessary over a large part of India in order to grow full crops on the land. In some parts of the country the rainfall of every season is insufficient to bring the crops to maturity, while in other divisions it is liable to uneven distribution, or to such deficiency as to render the tract concerned famine-stricken in the absence of artificial aid. It has been estimated that between the area in which the annual rainfall is invariably sufficient and that in which it is so scanty that no agriculture at all is possible without an irrigation system there lies a tract of nearly a million square miles which without the aid of irrigation is exposed to the uncertainty of the seasons and to the scourge of famine.

**CLASSES OF WORKS.**—The Government irrigation works of India may be divided into two main classes, those provided with artificial storage, and those dependent throughout the year on the natural supplies

of the rivers from which they have their origin. In actual fact, practically every irrigation work depends upon storage of one kind or another, but in many cases this is provided by Nature without man's assistance. In Northern India, upon the Himalayan rivers, and in Madras, where the cool weather rains are even heavier than those of the South-west monsoon, the principal non-storage systems are found.

The canals which rely solely upon the natural flow of the rivers for their supplies are known as perennial canals and inundation canals. The former are provided with head-works, which enable water to be drawn from a river irrespective of its natural level, some obstruction being placed in the bed so that the water may reach the height required to secure admission to the canal. Within this class fall the great perennial systems of the Punjab and the United Provinces. Inundation canals have no such means of control, and water only finds its way into them when the natural level of the river reaches the necessary height. The most important inundation canals in India are those of Sind, but they also exist in the Punjab.

The expedient of storing water in the monsoon for utilisation during the subsequent dry weather has been practised in India from time immemorial. In their simplest form such storage works consist of an earthen embankment constructed across a valley or depression, behind which the water collects, and those under Government control range from small tanks irrigating only a few acres each to the huge reservoirs in the Deccan, capable of storing over 20,000 million cubic feet of water. The projected Cauvery Reservoir in Madras will be equal to impounding 90,000 million cubic feet of water.

**GROWTH OF IRRIGATION.**—There has been during the last forty-five years a steady growth in the area irrigated by Government irrigation works. From 10½ million acres in 1878-79 the extent annually irrigated rose to 19½ million acres in 1900-01 and to 28½ million acres (a record) in 1922-23. During the year 1923-24 the figure fell to some 26½ million acres. In 1900-01 about 30,000 miles of Government channels were in operation, by 1923-24 the total length of main and branch canals and distributaries amounted to about 67,000 miles, while the estimated value of the crops supplied with water from Government works was Rs 147½ crores. The area irrigated was largest in the Punjab, where about 10·2 million acres were served during the year. In addition, 573,000 acres were irrigated from channels which, although drawing their supplies from British canals, lie wholly within the Indian States. Next among the provinces came the Madras Presidency, with an area of nearly 7 million acres, followed by Sind with 3·4 million acres and the United Provinces with nearly 2 million acres. The total capital outlay on irrigation and navigation works, including works under construction, amounted at the end of 1923-24 to Rs 89·34 crores. The gross revenue was Rs 10·65 crores, and the working expenses Rs 3·77 crores, the net return on capital was 7·70 per cent.

**METHODS OF IRRIGATION.**—There are various methods by which irrigation is accomplished in India. A very large area is watered without assistance from Government by the cultivators themselves, the principal means employed being wells, tanks, and temporary obstructions to divert water from the streams on to the fields. Well irrigation is particularly important in India, and although exact figures regarding the number

of wells and the area irrigated from them are not available, it is known that twenty years ago there were approximately two and a half million wells irrigating some twelve and a quarter million acres. The capital invested in this form of irrigation is probably now not less than Rs 100 crores. Almost every known system of raising water is simultaneously practised in India, ranging from the primitive plan of hand-lifting to the modern device of power pumping, which, thanks to the efforts of Government engineers, is gradually growing more common. But the means principally employed is cattle power, and experiments made before the War show that in certain districts, where the wells average from 35 to 40 feet in depth, the cost of irrigation with such power was Rs 70 per acre at the prices which then prevailed, per annum. The field for the introduction of small power pumps of a standardised pattern is thus very great for it is estimated that land now producing crops worth Rs 15 to Rs 30 per acre can easily be made to yield produce of much greater value when more efficient methods of water raising are available.

**PROJECTED WORKS.**—The principal irrigation works either in course of construction or projected in the near future are the Cauvery Reservoir, the Lloyd (Sukkur) Barrage, the Mysore Irrigation Projects, the Nira Valley Development Project, the Sarda Canal and the Sutlej Valley Canals.

**Cauvery Reservoir.**—The Madras Presidency stands second only to the Punjab in the vastness of the area of cultivation brought within the scope of irrigation work. The Northern Province has some 10,500,000 acres of land under irrigation each year, and the Southern Province about 7,000,000 acres, while the remaining provinces put together have less than 10,000,000 acres. But while the area irrigated in the Punjab represents 38·2 per cent of total cultivation, the proportion in Madras is under 10 per cent.

Many important irrigation works were completed during 1921-24, and other substantial schemes were in progress in 1926. These, however, are of minor consequence in comparison with the Cauvery Reservoir project, which was sanctioned in March 1925, and the estimated cost of which amounts to Rs 612 lakhs (£4,590,000). The project has been framed with two main objects in view, the first is to improve the existing fluctuating water supplies for the Cauvery delta irrigation of over a million acres, the second is to extend irrigation to a new area of 301,000 acres, which will, it is estimated, add 150,000 tons of rice to the food supply of the country. The scheme provides for a large dam at Metur on the Cauvery to store 90,000 cubic feet of water, and for a canal nearly 88 miles long with a connected distribution system. It is expected to yield a net revenue of £300,000, which represents a return of 7·6 per cent on the estimated capital cost.

**Lloyd Barrage.**—The Lloyd (Sukkur) Barrage project in Sind, which is the greatest irrigation scheme now under construction, was finally sanctioned by the Secretary of State in 1923. Its object is to give an assured supply to and extend the irrigation now effected by the numerous inundation canals in Sind, which draw their water from the Indus. This will be achieved by the construction of a barrage, nearly a mile long between abutments, across the Indus, destined to be by far the biggest work of its kind yet built. From above the barrage seven canals will take off, irrigating about 6,000,000 acres, of which 2 million comprise existing inundation irrigation, to which an assured supply will be given, while

the remainder is at present entirely uncultivated. The cost of the scheme will be about £12,000,000, of which sum the barrage will cost over £3,500,000, or £1,000,000 more than the Assuan Dam. It will carry two bridges across the Indus, each of them nearly a mile long, or more than five times the length of London Bridge. Three of the seven canals will be wider than the Suez Canal, the Rohri Canal is to be over 205 miles long, with 2,300 miles of branches and tributaries, while the Central Rice Canal will have a discharge equal to that of the Thames. The excavation work to be done will be equivalent to four Suez Canals, and the irrigated lands will produce an estimated crop of 2,000,000 tons of gram and cotton.

**Mysore Irrigation Projects.**—At the end of 1925 the Government of Madras had under consideration two alternative irrigation projects for the native State of Mysore, about 50 miles east of Ootacamund, one consisting of a reservoir in the upper Bhavani and the other of a reservoir in the lower Bhavani. The former project, intended to irrigate dry crops over a large region at a total cost of Rs 48,700,000, would command an area of 1,203,000 acres, of which it is estimated that one-third or 420,000 acres, will require water in any one year. The lower Bhavani project for irrigating wet crops provides for a reservoir on the Bhavani River 10 miles above Satyanagaram, commanding a total area of 270,000 acres, of which about 40 per cent would be irrigated. The estimated cost of this project is Rs 20,700,000.

**Nira Valley Project.** The irrigation works in the Nira Valley in the Bombay Presidency consist of two canals, the water required for which is obtained from the great reservoir formed by the Lloyd Dam at Bhatghar on one of the upper reaches of the river. These works do not, however, exhaust the possibilities of irrigation in the valley. On both the canals there are extensive areas which would readily take water if available, and with the object of bringing these areas within the scope of the system an estimate amounting to £4,600,000 for the complete Nira Valley Development Project was sanctioned by the Secretary of State in November 1924. The new works proposed will bring under irrigation an additional area of 35,500 acres in a very precarious tract.

**Sarda Canal.**—This important irrigation work in the United Provinces, one of the largest in India, consists of a main canal from the Sarda River 17½ miles in length, diverging into three branches. The project comprises 478 miles of main canal and branches, 3,370 miles of distributaries, and 100 miles of escapes. The canal will irrigate 1,368,000 acres, and is expected to yield a return of 7½ cent on the estimated capital outlay of Rs 750 lakhs. Considerable progress has been made, and in May 1926 over 150 out of the 200 bridges needed had been completed, as well as the earthworks for 27 miles.

**Sutlej Valley Canals.**—The Sutlej Valley project consists of four weirs, three on the Sutlej and one on the Panjnad, as the Chenab is called below its junction with the Sutlej, with twelve canals taking off from above them. The total area to be irrigated from the project is 5,108,000 acres, or nearly 8,000 square miles. Of this, 2,075,000 acres will be perennial and 3,033,000 acres non-perennial irrigation, 1,942,000 acres will be in British territory, 2,825,000 acres in Bahawalpur and 341,000 acres in Bikaner. The total cost of the project is estimated at R.1,460 lakhs. The real value

of it will be appreciated from the statement that as a result, 3½ million acres of desert waste will become available for cultivation. This scheme, which was sanctioned in 1921, is nearing completion, the first section having been ceremonially opened on April 12, 1926.

**LIVE STOCK.**—Live stock in India consists mainly of cattle, buffaloes and goats, horses not being used for agricultural purposes. Sheep are of secondary importance. For draught purposes cattle are in more general use than buffaloes, especially in the drier parts of the country, but the latter are very largely utilised in the low lying rice tracts. For dairying buffaloes are generally more profitable than cows, as they give richer milk and more of it, but they require extra feeding. The poorer people depend largely on the milk of goats, of which there is an enormous number throughout India. Cattle-breeding is carried on mainly in the non-cultivated tracts in Central and Southern India, Southern Punjab and Rajputana, where distinct breeds with definite characters have been preserved. The best known draught breeds are Hansi, Nellore, Annamalai, Gujrat and Malvi and the finest milch cows are the Samwal (Punjab), Gir (Kathawar) and Sind. Owing however to the encroachment of cultivation on the grazing areas well bred cattle are becoming scarce, and some of the breeds are threatened with extinction. Efforts to improve the quality of the cattle of India are largely frustrated by the veneration which the cow commands among the Hindu masses, rendering the elimination of unfit and wasteful beasts impossible.

**DAIRYING.** Though little noticed, dairying forms a very large indigenous industry throughout India. The best known products are native butter (ghu) and cheese (dahi). During recent years a considerable trade in tinned butter has sprung up in Gujrat (Bombay Presidency). While pure ghu and milk can be procured in the villages, it is difficult in the towns to buy dairy products unadulterated.

An interesting experiment has been recently undertaken with a view to demonstrating the possibility of sterilising and transporting milk from rural areas, where it is relatively cheap, to urban centres, where it is dear. An up-to-date sterilising plant has been set up on the Karnal (Punjab) farm, and milk is now being successfully despatched to Calcutta, a thousand miles away. Should this experiment develop it will open a vista of great possibilities for the Indian dairying industry.

**PESTS.** The study of pests, both vegetable and animal, is a matter of great moment to India. The damage annually done to such crops as rice, sugar-cane and cotton is very serious. It has been estimated by the Imperial Entomologist that the depredations of insects alone cost the country Rs 200 crores (£133,000,000) each year. The main difficulty encountered by the Agricultural Departments is in persuading the cultivator that it is possible to control these outbreaks, which are endured in many cases with apathy as a visitation from the higher powers. Some idea of the loss suffered annually from animal pests may be gathered by taking the specific instance of the rat. In addition to spreading plague, this rodent constitutes no inconsiderable burden upon the food supply. It has been calculated that an adult rat consumes nearly an ounce of grain each day. Since, at a moderate computation, the rat population of India must be at least 800,000,000, the loss caused to the country by the grain which these animals eat must be nearly £15,000,000 per annum.

The Agricultural and Public Health Departments are closely co-operating in facing the problem of rat elimination. Methods of storing grain in such a manner as to protect it from damage, the construction of rat-proof dwellings and similar measures are being carefully investigated.

**ROYAL COMMISSION.**—In 1926 a Royal Commission was appointed in India to investigate the conditions of agriculture, with special reference to the necessity of increased productivity, better marketing facilities and the provision of subsidiary industries. The Chairman of the Commission is Lord Linlithgow. The first meeting was held at Simla in October 1926.

**STATISTICS.**—The following tables show (a) the area under cultivation and (b) the yield of crops in India during recent years.

A - Area under cultivation (in acres)

CROP	AVERAGE FOR FIVE YEARS 1919-20 TO 1923-24		YEAR 1924-25	
	1919-20	1920-21	1924-25	
Rice	80,311,000		81,338,000	
Wheat	29,194,600		31,788,000	
Sugar cane	2,663,000		2,530,000	
Tea	704,860		710,200	
Cotton	21,722,000		26,465,000	
Jute	2,290,780		2,770,000	
Linseed	3,097,800		3,605,000	
Rape and mustard	5,029,800		6,376,000	
Sesamum	4,913,800		5,167,000	
Groundnut	2,258,200		2,838,000	
Indigo	258,620		111,900	
Coffee	124,760		135,600	
Rubber	124,260		120,500	

B - Yield of crops

CROP	AVERAGE FOR FIVE YEARS 1919-20 TO 1923-24		YEAR 1924-25	
	1919-20	1920-21	1924-25	
Rice	tons	50,944,800	31,007,000	
Wheat	"	9,258,400	8,702,000	
Sugar cane	"	2,907,400	2,537,000	
Tea	lbs	336,730,120	375,255,000	
Cotton	bales	4,823,600	6,070,000	
Jute	"	6,438,000	8,062,000	
Linseed	tons	424,200	541,000	
Rape and mustard	"	1,087,600	1,172,000	
Sesamum	"	354,000	504,000	
Groundnut	"	1,024,600	1,450,000	
Indigo	cwt	48,240	21,700	
Coffee	lbs	22,688,500	20,318,000	
Rubber	"	12,567,120	15,601,300	

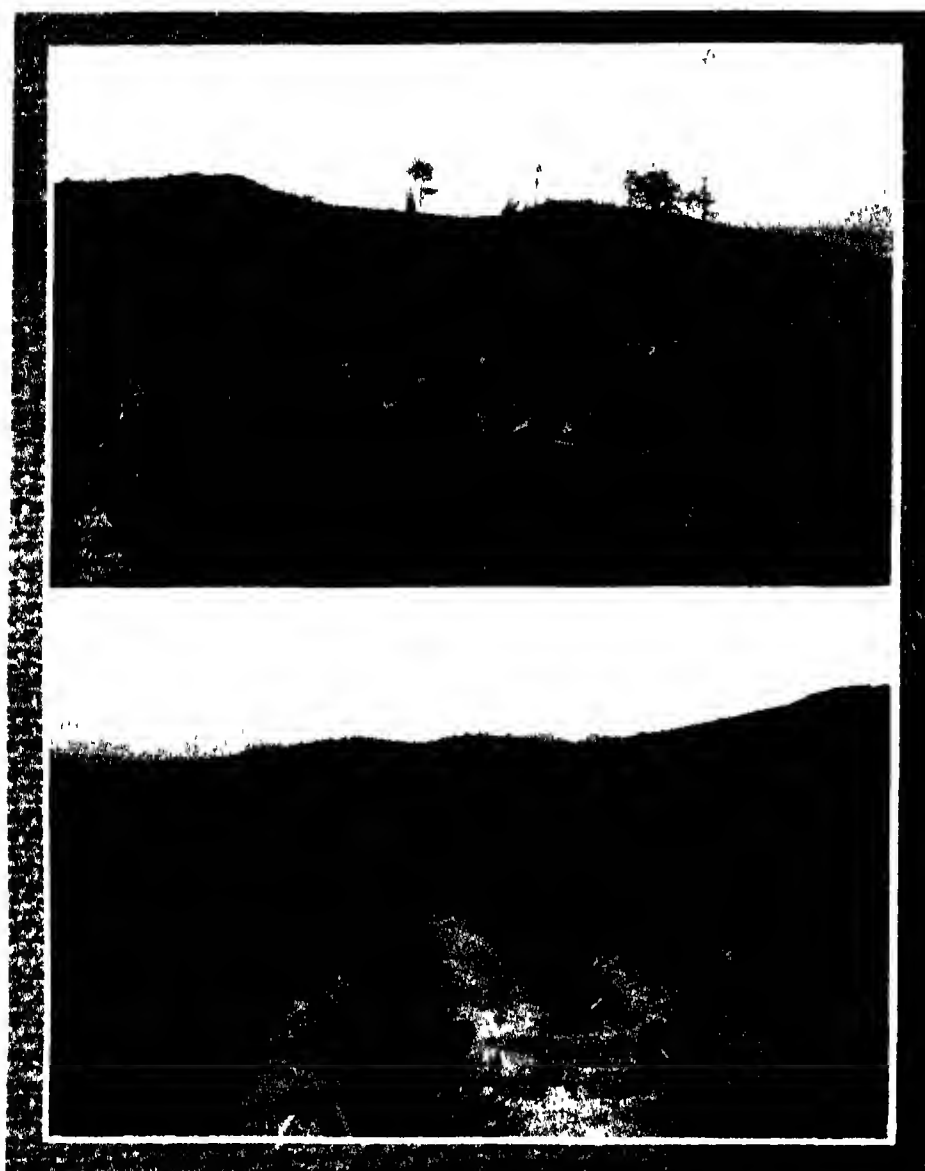
## PRODUCTS

**AJWAN SEED.**—Ajwan seed, the source of the valuable antiseptic thymol, is obtained from *carum copticum*, a herbaceous plant cultivated all over India as a spring crop. No statistics of production are available, but the internal consumption is known to be large, and there is a growing export trade.

**BAJRA.**—See "Millets."

**BARLEY.**—This is chiefly grown in the United Provinces, Bihar and the Punjab, these being responsible for about 6,500,000 acres out of the total of 6,970,000 under cultivation in British India in 1924-25. In addition there were some 300,000 acres in the Indian States, chiefly Jaipur, Alwar, Bharatpur and Gwalior. Barley is a *rabi* crop sown in October or November, and reaped in March or April. Exports are comparatively inconsiderable.

**BETEL NUTS.** The betel nut, which is the fruit of the areca palm, forms, in conjunction with the leaf of the betel vine and a little lime and clove or nutmeg, the common masticatory of the East, known all over India as *pan supari*. The areca palm is confined almost entirely to the moist tropical tracts that fringe the coast line, it is seldom found more than 200 miles from the sea. In Southern India a full-grown tree is calculated to yield 250 to 300 nuts annually, but else-



1 and 2. AGAVE SISALANA SISAL (Fraserpet Estate).  
(See letterpress, page 122)

where the output is much lower (See also under "Commerce")

**CARDAMOMS.**—The cardamom plant is indigenous to the humid forests of Western and Southern India, where it is extensively grown at elevations from 500 to 5,000 feet. There are about 20,000 acres under cultivation in the Madras Presidency (chiefly the Malabar and Madura districts), Mysore, Coorg and Travancore, and 5,000 acres in Bombay (principally in the Kanara district). Cardamoms are mainly used for medicinal purposes, for flavouring cakes and liquors, and as an ingredient in German sausages. (See also under "Commerce")

**CASTOR SEED.**—The castor oil plant has long been cultivated in India, and in 1925 returns were furnished of some 1,400,000 acres under crop, with a yield of 124,000 tons. These figures are exclusive of the area and yield in either Assam or Kashmir, and are for unmixed crops only. The plant is principally grown in Madras (particularly in the Ceded Districts, Hyderabad State, Bombay and the Central Provinces) (See also under "Commerce")

**CINCHONA.**—All the varieties of cinchona from which the commercial barks of to-day

are obtained are represented in India, and the Government owns extensive plantations in the Darjeeling district, other large plantations in the Nilgiri Hills, Coimbatore and Tinnevely in the Madras Presidency being in private ownership. The bark is either exported or bought by the Government, which has established two factories (one at Neduvattam, near Ootacamund in the Nilgiris, and one at Mungpoo in the Darjeeling district) for the manufacture of sulphate of quinine and cinchona febrifuge. These factories meet to some extent the large internal demand for quinine from malarial areas in India, and the Government-manufactured sulphate of quinine is on sale at post offices all over the country.

An extension of the area under cinchona is advocated in order to make the British Empire independent of Java and other foreign sources of supply.

**CINNAMON.**—This is grown largely upon the Western Ghats in Southern India at altitudes up to 6,000 feet. There is a small export trade from Tellicherry, on the West Coast. No statistics of area or production of cinnamon are issued, but the yield per acre is said to be about 150 lbs.

**CLOVES.**—These are cultivated in different parts of India, but chiefly on the foothills of the Western Ghats, in the Madras Presidency. A valuable essential oil is obtained from the dry buds, and is largely employed in perfumery. There are no statistics of acreage or yield.

**COCONUTS.**—No more than a rough estimate can be attempted of the acreage under coconuts in India, but it must be very considerable. The area cultivated in the Madras Presidency has been reckoned at 800,000 acres (of which more than half is assigned to Malabar alone), with a total annual yield of at least two millions of nuts. There are no large plantations in India under one management, the industry being chiefly in the hands of small cultivators. The produce of the Coromandel Coast, as of Bombay and Bengal, largely disappears in local consumption. The total consumption of coconuts in India has been estimated at 400 million nuts a year, but it is probably much higher.

It is considered that the value of the products of the coconut in the world's markets in the year before the Great War exceeded £70,000,000, or nearly double the value of the world's output of rubber. Of these products copra is the most important, this being the dried kernel of the nut. India no longer exports copra to such an extent as before the War, but Malabar copra has for many years commanded a higher price than any other in the foreign markets, because it is wholly sun-dried. Coconut oil, the resultant product of copra, is in great demand for the manufacture of edible oils and fats, and here too the best quality comes from the Malabar Coast, the bulk of the trade being from Cochin. Another product is poonac, valuable both as a food stuff for cattle and as a manure. Coir fibre is exported to a considerable extent, either in the raw or in the form of yarn rope. (See also under "Commerce" and "Industries")

**COFFEE.**—The systematic cultivation of coffee in India dates from 1830, and from then until 1865, when the coffee leaf blight made its appearance, the industry flourished in Southern India. This was the same disease which ruined the coffee estates of Ceylon, and between 1877 and 1887 no less than 263 plantations in the Wynnaad were abandoned, while those in South Travancore were practically wiped out. The industry is to-day largely confined to Southern India, the best estates being situated in Mysore, Coorg and the Madras Presidency. The total area under coffee has declined to some 91,000 acres. Most of that grown is prepared for export at Mangalore, Tellicherry, Calicut and Coimbatore, where there are large curing works. (See also under "Commerce")

**CORIANDER.**—This is cultivated all over India on account of its fruit and leaves, the former of which yields a spice and a volatile oil, while the leaves are eaten as a vegetable and form a valuable ingredient in curries.

**COTTON.**—See special article following

**CUMMIN SEED.**—True cummin is grown chiefly in the United Provinces and the Punjab, but is found in almost every province, the principal trade centres being Jubbulpore, Gujarat and Rutlam. Black cummin is also largely cultivated, and both are much used in the preparation of curries and confectionery. There is an export trade with Ceylon, the Straits Settlements and the Arabian and East African Coasts.

**FODDER CROPS.**—Crops grown purely for fodder form a very small proportion of the cattle food of the country, and for this reason have not in the past been subjected by the Agricultural Department to the same systematic treatment as staple crops. But the fodder question is now assuming increasing importance on account of the restriction of grazing areas through the rapid extension of arable cultivation, combined with a stricter conservation of jungles as forest reserve. More and more attention is being devoted directly to the problem of fodder raising and storing, and work of great value is being performed in demonstrating the possibility of new sources of supply. In Bombay improved methods have been introduced in the preparation of prickly pear as emergency fodder. In the United Provinces, also, it has been discovered that a troublesome weed known as *baisurai*, which seriously affects the yield of un-irrigated crops on account of its deep roots, can be advantageously utilised as cattle food. It is estimated that through the employment of this weed a saving of 220,000 tons of other fodder can be effected in the United Provinces. Since this quantity considerably exceeds the total amount imported into the Provinces during the severest fodder famines of recent years, the value of the discovery is unquestionable. As a result of large scale trials of berseem (*Egyptian clover*) at Pusa, this fodder is beginning to displace local varieties of fodder crops in certain localities.

**FORESTS.**—See article following.

**FRUIT.**—At present the fruit growing industry of India is in its infancy. Endeavours are being made by the Agricultural Department to popularise better varieties of fruit and to introduce improved methods of cultivation. The importance of careful selection of trees and proper tillage of soil has been amply demonstrated, and in several places special agricultural stations have been opened, where improved types of fruit trees are on sale. The future of the fruit growing industry seems promising, for a certain proportion of the educated classes, who do not take kindly to other branches of husbandry, are quite willing to adopt it as a calling.

**GINGER.**—This has been cultivated in India for centuries, the principal centre of cultivation being the Malabar Coast. It is also grown in the Surat and Thana districts of the Bombay Presidency, the Rangpur district in Bengal and the Kumaon district of the United Provinces. The sale of ginger in the bazars and its consumption for curries and medicinal purposes are considerable, while the export trade is valuable. (See also under "Commerce.")

**GRAM.**—This is one of the most important of the pulses grown in India, over 16,500,000 acres being cultivated in 1924-25. Of the total, the United Provinces accounted for 6,817,000 acres and the Punjab for 5,696,000 acres. Bihar and Orissa and the Central Provinces have also large acreages. The new crop comes on the market generally in April, and the bulk of the business is put through before the rains, the local consumption being very large. Exports are comparatively limited.

**GROUNDNUTS.**—The groundnut (*arachis hypogaea*), also known as peanut, earthnut and monkey nut, has been long cultivated in India, and is now one of the most important of the country's crops. The total area returned for the 1925-26 season was 3,886,000 acres, compared with 2,885,000 acres in 1924-25, or an increase of 35 per cent. The total yield for the same year was estimated at 1,908,000 tons of nuts in shell, as against 1,485,000 tons of nuts in 1924-25, or an increase of 28 per cent.

These figures represent the output of the provinces of Madras, Bombay and Burma and of the State of Hyderabad only, which provide nearly 95 per cent of the entire groundnut crop of India. In 1925-26 Madras had 2,548,000 acres under cultivation, Bombay, 649,000, Burma, 490,000, and Hyderabad, 190,000 acres. A large portion of the nuts produced in the country is consumed locally, but there is a considerable export trade, as also in groundnut oil. (See under "Commerce.")

**HEMP.**—The three leading varieties of hemp which India produces are known as *sann*, *sisal* and *Indian*, the last-named being cultivated not so much for its fibre as for the narcotic in the form of *bhang*, *charas* or *ganja* derived from it. As a source of hemp fibre it is now chiefly grown in two localities, the North-West Himalayas and (to a much smaller extent) Sind. *Sisal* hemp is obtained from the spiny leaves of *agave sisalana*, which is commonly grown as a hedge in many parts of India, particularly on railway lines. *Sann* hemp is now widely raised in Bombay, Bengal, the United Provinces and Madras being exported in the form of raw fibre. (See also under "Commerce.")

**INDIGO.** Indigo was used in both India and Egypt long before the Christian era, and at one time the industry was a highly important one. The manufacture of synthetic indigo has, however, hit it hard, and the total production is now less than a third of what it was thirty years ago. About 107,000 acres are cultivated with indigo, principally in Madras, but the total yield does not exceed 50,000 cwt.

**JOWAR.** See "Millets."

**KARDI (SAFFLOWER).**—The safflower plant grown extensively in Bombay, the Central Provinces and Madras, furnishes not only a useful dye, but also the valuable trade oil known as *kusum* or *carthamus*. Safflower is generally raised as a subsidiary to some other crop.

**LEMONGRASS.**—From this grass is extracted an essential oil of commercial importance. The cultivation of lemongrass may be described as a monopoly of the West Coast of the Madras Presidency, the main producing areas being the Indian States of Travancore and Cochin and the southern portion of the Malabar district. The grass is both wild and cultivated. The hillsides on which it flourishes are fired in January, and the first crop is ready to be harvested in July, the season of distillation extending to October.

**LINSEED.**—In India linseed is cultivated entirely for seed, and not for fibre. It requires a deep and moist soil, and is thus grown chiefly in Bengal, Bihar, the United Provinces and the Central Provinces. More than 2,500,000 acres were sown in 1924-25, but the yield is variable, ranging from practically nothing up to 500 or 600 lbs of seed per acre. The yield for 1924-25 totalled 541,000 tons. The seed is mainly exported, but a certain amount of oil pressing is done in the country. (See also under "Commerce.")

**MAIZE.**—The systematic cultivation of maize in India is confined to the United Provinces, Bihar and Orissa, the Punjab, Bombay and the Central Provinces, though small plots or patches are found practically everywhere. The area under tillage has shown a tendency to decrease slightly since the War, the return for 1924-25 being 5,347,964 acres, of which 1,593,800 acres were in Bihar and Orissa and 1,553,699 acres in the United Provinces. No figures of production are available, but the annual yield probably averages about 2,000,000 tons. The greater part of the crop is consumed locally.

**MILLETS.**—These constitute one of the most important group of crops in the country, supplying food for the poorer classes and fodder for the cattle. The varieties vary greatly in quality, height and suitability to different soil and climatic conditions. The two best known are *jowar* (*Sorghum vulgare*), a tall growing millet with large open head, and *bajra*, which has a close rat-tail head and thin stem. Bombay, Madras, the Central Provinces and Berar, the United Provinces and the Punjab have the largest areas of cultivation, the total acreage for British India in 1924-25 being 22,470,373 acres for *jowar*, 11,965,420 acres for *bajra*, and 3,980,093 acres for *ragi* or *niarna*, an ordinary millet. None of these is extensively exported.

**MOWRA SEED.** *Mowra* (*mahua*) seed, which contains a large amount of edible oil extensively used as a substitute or adulterant, is the product of a deciduous tree which grows widely in the Central Provinces, Chota Nagpur and Western India. The flowers of the *mowra* are a favourite article of food in the Central Provinces and a country spirit is also distilled from them.

**MUSTARD.** See "Rapeseed."

**NIGER SEED.**—Sometimes called black sesame, the African plant from which niger seed is obtained is a spring crop, largely sown mixed, the chief producing areas being Chota Nagpur, the Central Provinces, the Deccan and north-eastern Madras. No statistics of area or production are available. The seed is locally crushed and used for cooking, anointing the body and mixing with sesame and other more valuable oils.

**NUX VOMICA.**—*Nux vomica*, which is commercially important as the source of the alkaloids strychnine and brucine, is the name given to the seeds of a deciduous tree widely distributed over India. The fruits are collected between November and January, when the seeds are taken out and dried in the sun, the busy season for export on the West Coast running from February to the middle of May.

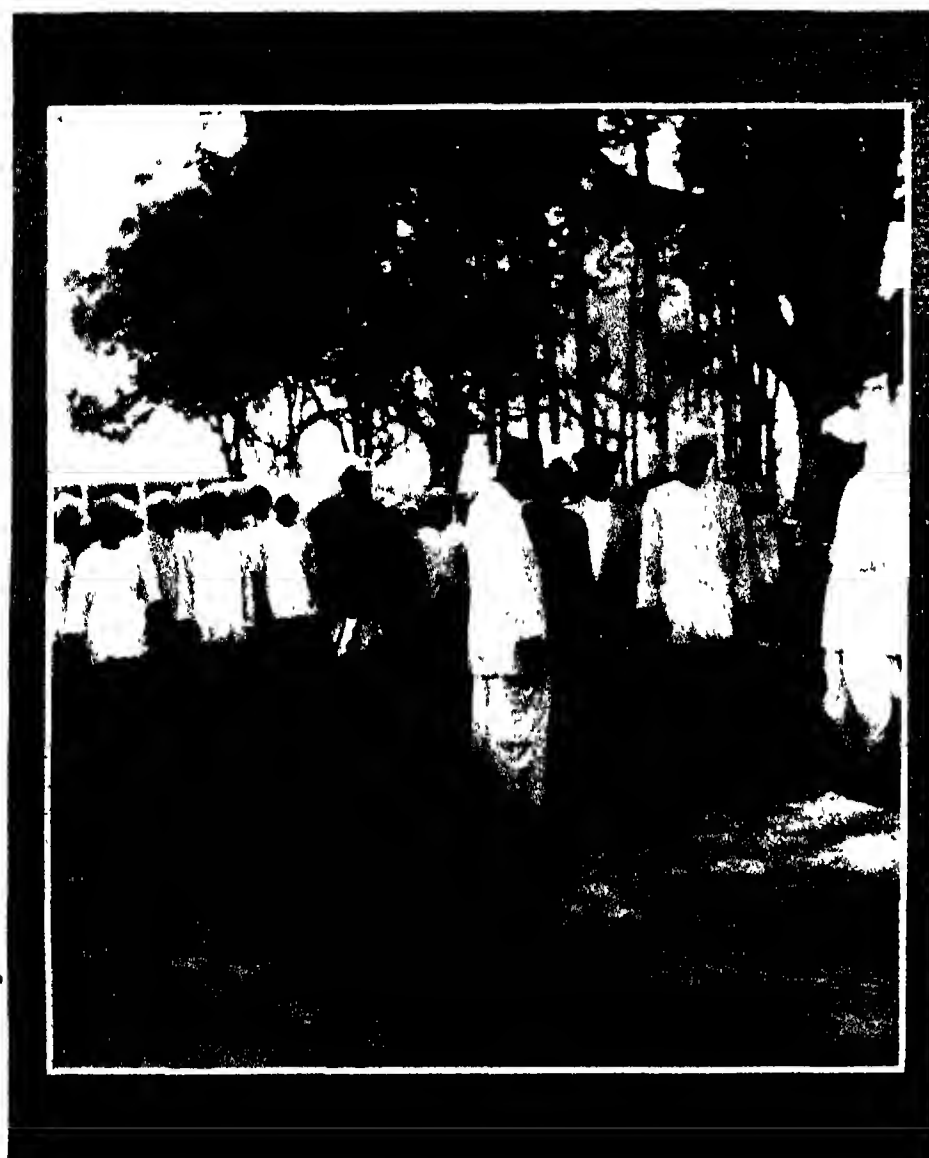
**OATS.**—The cultivation of oats in India is confined mainly to the Delhi and Hissar districts of the Punjab and the Meerut district of the United Provinces, where the cereal is grown as a spring crop, but it is raised also to a limited extent in the Poona, Ahmednagar, Satara and Ahmedabad districts of the Bombay Presidency. Elsewhere it is more frequently cut green for cattle fodder. There is only a small export trade.

**OIL SEEDS.**—See "Castor seed," "Groundnuts," "Linseed," "Mowra seed," "Niger seed," "Rapeseed," and "Sesame."

**OPIUM.**—Indian opium is derived from the opium-yielding poppy (*papaver somniferum*), which grows in certain districts of the United Provinces and the Central Indian States. The capsules or seed pods from which the drug is obtained are, while still green, carefully scarified with a four-bladed instrument, which causes them to exude a gummy sap, and this operation is repeated three or four times at intervals of two or three days until the discharge is exhausted. The juice is scraped off and when coagulated forms crude opium, for which the flower petals, carefully collected and steamed, are used as packing.

In Central India the opium collected (known as *malwa*) used to be sold by the cultivator to middlemen, from whom the large dealers obtained their supplies. Now that the export trade to China has ceased, practically the only purchaser of *malwa* opium is the Government.





Buyers of The Imperial Tobacco Company purchasing Bales of Leaf  
(See letterpress, p. 171)

In British India cultivation is permitted only under licence granted to cultivators, who obtain advances from Government free of interest to meet the cost of production on the understanding that the whole of their crop is sold to the Government factory at Ghazipur. In both British India and in the Central States the area under opium has been much reduced since the arrangement made with China in 1907 to curtail the opium traffic. In 1924-25 the total area under cultivation in the United Provinces was 125,875 acres.

**PEA NUTS.**—See "Groundnuts."

**PEPPER.**—This is the berry of a vine-like climbing plant which grows wild in the forests of Malabar and Travancore, and is extensively cultivated by Europeans and Indians in and below the Western Ghats from Karwar to Cape Comorin. It thrives in a hot, moist climate with an abundant rainfall. In Bengal pepper is grown to a limited extent only in the northern parts of Jessore, while in Assam, except in Sylhet and on the southern slopes of the Khasia Hills, very little is produced. In Bombay the Kanara gardens are well known,

and in Madras the principal producing areas are Malabar, Cochin and Travancore. Coorg and South Kanara also furnish a little. The vines are usually propagated from cuttings, and the first crop is obtained in the third year, the berries ripening in March. A vine in full bearing in a good year will carry about 1,000 clusters of fruit, yielding 4 lbs. of dried pepper. (See also under "Commerce.")

**PULSES.**—Under this heading may be grouped a large number of food grains, the most important being *arhar*, lentils, dhal, beans and peas. *Arhar*, or pigeon pea, is grown as a mixed crop in rotation with cereals. Lentils are raised as a winter crop all over India, especially in the Central Provinces, Madras and the United Provinces. Dhal is a common term applied to the split grain of a large variety of pulses. Of peas and beans, the Burma white bean is the most important. Statistics of the acreage and production of these crops are not available, but their aggregate yield is known to be very large, and the export trade is also considerable. (See "Gram," and also under "Commerce.")

**RAPESEED.**—India is the chief source of rapeseed, and in 1925 her crop totalled 1,137,000 tons. The bulk is crushed locally, the oil being used as an illuminant, also for edible and lubricating purposes. During recent years rapeseed oil has been used in the manufacture of margarine. Rapeseed cake and meal are good feed-stuffs and have a ready outlet as fertilisers, especially for highly cultivated crops, such as hops, rice, etc. In Upper India rapeseed and mustard are usually grown together, the average acreage under the two crops being over 6,000,000.

**RICE.**—See article following.

**RUBBER.** There are a large number of rubber-yielding trees indigenous to Indian forests, but the product is not sufficient to justify exploitation on a large scale. Excepting on the Tenasserim Coast of Burma and in Travancore cultivation has never proceeded much beyond the experimental stage. The area under rubber does not exceed 200,000 acres, of which nearly 50 per cent. is in Burma and about 35 per cent in Travancore. (See also under "Commerce.")

**SAFFLOWER.**—See "Kardh."

**SENNA.**—This plant is cultivated chiefly in the Tinnevely district of the Madras Presidency being grown on special plots of land, from which from 700 to 1,400 lbs. of leaves per acre can be obtained. Indian senna has a good reputation for quality and price.

**SESAME.**—The seed of *sesamum indicum*, an annual plant thriving in the tropical and sub-tropical parts of the world, and variously known to the trade as til, teel, gingelly or sesame, yields a valuable oil, which is used in India for cooking purposes, as an illuminant, or for anointing the body. The seed is generally grown in India, except in the United Provinces, as a pure crop, and a fair average yield is about 300 lbs. to the acre, in Southern India it is probably higher. Cultivation extends to almost all the provinces, but the crop is raised most extensively in Bombay, Burma, Madras and in the Central Provinces. The area under cultivation in 1924-25 totalled some 5,293,000 acres, and the yield was estimated at 513,000 tons, of which 436,000 tons were unmixd. The average yield of the preceding five years was 488,000 tons.

**SUGAR.**—India was probably the original home of the sugar cane, and the area under it is actually larger than in any other country, being returned for 1925-26 at 2,648,000 acres, against 2,532,000 acres in 1924-25. These totals are exclusive of a further figure of about 158,000 acres, which represents the area in Burma and certain native States. The yield, however, in India is very low, amounting in 1925-26 to 2,923,000 tons of raw sugar, against 2,548,000 tons in the preceding year, this total comparing unfavourably with the 5,374,000 tons furnished by Cuba and the 2,279,000 tons by Java from much smaller acreages. Actually the sugar yield per acre in India is only one-third of that obtained in Cuba, one-sixth of that in Java and one-seventh of that in Hawaii. In consequence of her own low crops India is obliged to spend about 20 crores of rupees a year on foreign sugar.

Of the total crop in 1925-26, the United Provinces furnished 1,403,000 tons (47.9 per cent), Bihar and Orissa 318,000 tons (10.8 per cent), and Madras 308,000 tons (10.5 per cent). The output of the United Provinces showed an increase of 31.5 per cent over 1924-25, and that of Bihar and Orissa one of 26.2 per cent.

**TEA.**—See special article following.

**TOBACCO.**—The tobacco plant is believed to have been introduced into India by the



Portuguese at the beginning of the 17th century. The only two species now cultivated are *nicotiana tabacum* in the Peninsula and the yellow-flowered *nicotiana rustiana* in Northern India. In Lower Burma and Arakan there is a considerable quantity of tobacco grown from imported Havana seed. The Government has made repeated efforts to improve the indigenous methods of curing and manufacturing, also to produce a better quality of leaf. The tobacco industry is now identified with three principal centres, viz (1) Eastern and Northern Bengal and Bihar, with headquarters at Rangpur and Monghyr, (2) Southern India, particularly the districts of Coimbatore, Salem, Trichinopoly, Madurai, Kistna, Godavari and Guntur, with Madras, Trichinopoly, Dindigul, Palghat and Coimada as the chief manufacturing and trading centres, and (3) Lower Burma, with Rangoon, Moulmein and Akyah as the principal centres.

It is generally raised after a summer fallow, and, except in irrigated tracts, depends largely on the conservation of the soil moisture from the previous monsoon. On irrigated lands two to four waterings are generally given. The crop is usually harvested in March and April, the threshing and winnowing going on to the end of May. In good years the surplus crop is bought up at once by the exporters, and no time is lost in putting it on the European market, as other supplies are then scarce. In years of famine the local price is generally sufficiently high to restrict exports.

**PRODUCTION** — India ranks third among the wheat producing countries of the world being led only by the United States and Russia. The estimated total world production in 1925 was 525,000,000 quarters, of which India's share was roughly 40,000,000 (a quarter 480 lbs.). The fol-

**YIELD PER ACRE** — On land liberally manured and irrigated yields of from 1,500 to 1,600 lbs. per acre have been obtained, but the crop is liable to damage by rust if there is rain or cloudy weather in February. On dry (i.e. un-irrigated) lands 800 lbs. is a good crop. The yield for all India in 1924-25 was 608 lbs. per acre, Delhi leading with an average of 1,007 lbs., followed by Bihar and Orissa with 936 lbs. and Baroda with 733 lbs. Hyderabad was lowest—187 lbs. per acre.

### REPRESENTATIVE AGRICULTURAL ENTERPRISES. THE JALLO TURPENTINE AND ROSIN FACTORY.

**Foundation.** One of two such manufacturing set up by the Government for the distillation of crude resin and its conversion into products of high commercial importance, the Jallo Turpentine and Rosin Factory is held



Bales of Tobacco in Transit from fields to Imperial Tobacco Company's Leaf Purchasing Depot

(See letterpress, page 171)

The Indian tobacco crop is suited only to small holdings, as it requires considerable attention and liberal manuring. The area under tillage now exceeds 1,000,000 acres, and the yield varies, according to the attention given to the crop, from 200 to as much as 3,000 lbs. of cured leaf per acre. Though harvesting goes on in some localities as late as June, the bulk of the product is gathered between February and April. The leaves are dried, sorted, then stacked and allowed to ferment, different qualities of tobacco being produced by varying the degree of fermentation allowed. (See also under "Commerce" and "Industries")

**WHEAT.**—This is the third largest of India's crops, being exceeded only by rice and millet. Unfortunately, Indian wheat is generally of low quality, and therefore does not command high prices in the foreign market. Much is being done by the Government's agricultural experts to encourage the introduction of strains possessing high yielding and rust resisting powers, improved length of straw, good milling and baking qualities. Wheat is grown widely throughout Northern India as a winter crop, the United Provinces and the Punjab supplying about two-thirds of the total area and probably about three-quarters of the out-turn in India.

lowing tables give (a) the figures of area and production for all India in 1923-24, 1924-25 and 1925-26 (estimated) and (b) those of production by provinces for 1924-25 and 1925-26 (estimated) —

(A) WHEAT PRODUCTION IN INDIA			
	Acres in Area	Yield in Tons	
1923-24	31,178,000	9,754,000	
1924-25	31,794,000	8,624,000	
1925-26	20,809,000	8,577,000	
(B) WHEAT PRODUCTION BY PROVINCES			
Provinces	Final Figures	1924-25	Estimated 1925-26
	(1,000 tons)	(1,000 tons)	(1,000 tons)
Punjab	2,927	2,808	
United Provinces	2,239	2,606	
Central Provinces and Berar	1,066	996	
Bombay	452	312	
Bihar and Orissa	491	441	
N W Frontier Province	234	259	
Bengal	30	28	
Delhi	20	17	
Ajmer-Merwara	4	2	
Central India	403	389	
Gwalior	413	357	
Rajputana	262	182	
Hyderabad	63	71	
Baroda	18	18	
Mysore	1	1	
Totals	8,624	8,577	

in joint proprietorship by the Secretary of State in Council for India and Raja Sir Daya Krishan Kaul, I.C.S.

**Development.** — The first serious attempt at the commercial utilisation of the immense pine forests of the Himalayas for the production of rosin and turpentine dates back only ten years. In this brief space of time the industry has been firmly established and the distilleries equipped with the latest plant. In 1914 India's production amounted to 20,000 cwt. of rosin and 60,000 gallons of turpentine, in 1925 the respective totals were 110,000 cwt. and 350,000 gallons. Of these amounts the Jallo Factory produced one-half. Following further development an annual production of 600,000 cwt. and 2,000,000 gallons respectively, the greater part available for export, will be obtained.

**Process.** — The trees are tapped for the crude resin, which is treated to remove impurities before being distilled by steam, or *in vacuo*, to separate the turpentine from the rosin. The turpentine spirits and steam are condensed and separated by gravity. The molten rosin is further heated until thoroughly dry and free from oil, carefully strained and finally poured into casks, in which, after



THE JALLO TURPENTINE AND ROSIN FACTORY, Lahore.

1. A Corner of the Laboratory.
2. Section of Distillery where gum is purified and stored ready for distillation.
3. Mixing Vats, in which the preliminary purification of the gum takes place, with the Still in the background.
4. Loading the special railway trucks used for transporting products to the coast for export.

(See letterpress, page 121)

solidifying and grading, it is shipped to market. Unlike American turpentine, the Indian variety requires redistilling to remove the high boiling terpenes it contains. After this process it is equal to American standards and has the additional advantages of being always absolutely uniform (an important consideration for paint and varnish manufacturers) and possessing a more pleasant odour.

**Packing.**—Indian turpentine is packed for export in welded galvanised steel drums holding from 5 gallons upwards, and the rosin in casks each containing 4 cwt net.

**Markets.**—Most of the turpentine produced by this concern is consumed in the British Empire, while Jallo rosin is supplied regularly to manufacturers in India, England, Australia, Italy, Holland and China. The Factory is anxious to develop its connections in China, and will welcome enquiries through its agents.

**Agents.**—Messrs Volkart Bros (Karachi) for India, the United Kingdom and Europe, Messrs. Wilkinson, Heywood & Clark (Sprott Road, Bombay) for India, and (at Shanghai) for China; and The Bombay Co (Madras) for India.

**Office.**—Lahore, Punjab (cables: "Resin," Lahore). Code: Bentley's.

**Distillery.**—Jallo, N. W. R., Punjab

#### FRASERPET FIBRE COMPANY, LTD.

**Inception.**—This company, for which Messrs Holmes Wilson & Co Ltd., Calcutta, are managing agents (see also page 270 in the Calcutta section of this volume), was floated in 1919 to acquire estates for the cultivation and manufacture of sisal fibre.

**Estate.**—The estate lies on the border of Coorg State, about 3,000 feet above sea level, and already some 600 acres have been cleared and planted, the work having been considerably delayed through damage done by wild animals, elephants and pigs being the worst offenders. The surrounding country abounds in big game, and it was necessary to protect the planted area with heavy and secure fencing. The estate is planted with *Agave sisalana*, the original stock being grown from bulbs imported from Mexico. This plant has a heavier and pulpier leaf than other species of *Agave*, and grows more rapidly. It was formerly supposed that sisal would only thrive in bare rocky soil, but recent experiments have disproved this theory. It has been found that the more the land is cultivated the better is the growth of the crop.

**Process.**—The fibre is obtained from the leaf of the plant by decortication, a simple process. The leaf is fed into the decorticating machine, which automatically grips it near the centre, and alternately each end is decorticated. Having passed through the machine, the fibre is washed and thoroughly

rinsed in order to extract the green colouring matter, which is fermentable and would not only detract from the selling value of such fibre, but would reduce its strength in subsequent use. The question of washing is, therefore, of great importance, and a plentiful supply of water is essential if the best quality of white fibre is to be produced. The fibre is next dried in the sun and then subjected to a brushing process, which not only removes the loose dirt and short lengths, but polishes and straightens the product.

**Use.**—The principal use of sisal fibre throughout the world is for making twine for reapers and self-binders.

**Output.**—It is anticipated that when the present estate of 1,000 acres is fully developed the output per annum of fibre will be 500 tons. Further concessions of land which adjoins the present estate, and which is equally suitable for the cultivation of *Agave*, can be obtained from the Government, and by this means the maximum output of the company can be appreciably increased. The total supply from the estate is shipped to and sold in London.

**Offices.**—Holmes, Wilson & Co., Ltd., Norton Buildings, Old Court House Corner, Calcutta (cables: "Benelliott," Calcutta). Codes: A.B.C. 5th Edition, Bentley's and private.

(See also illustration, p. 118).



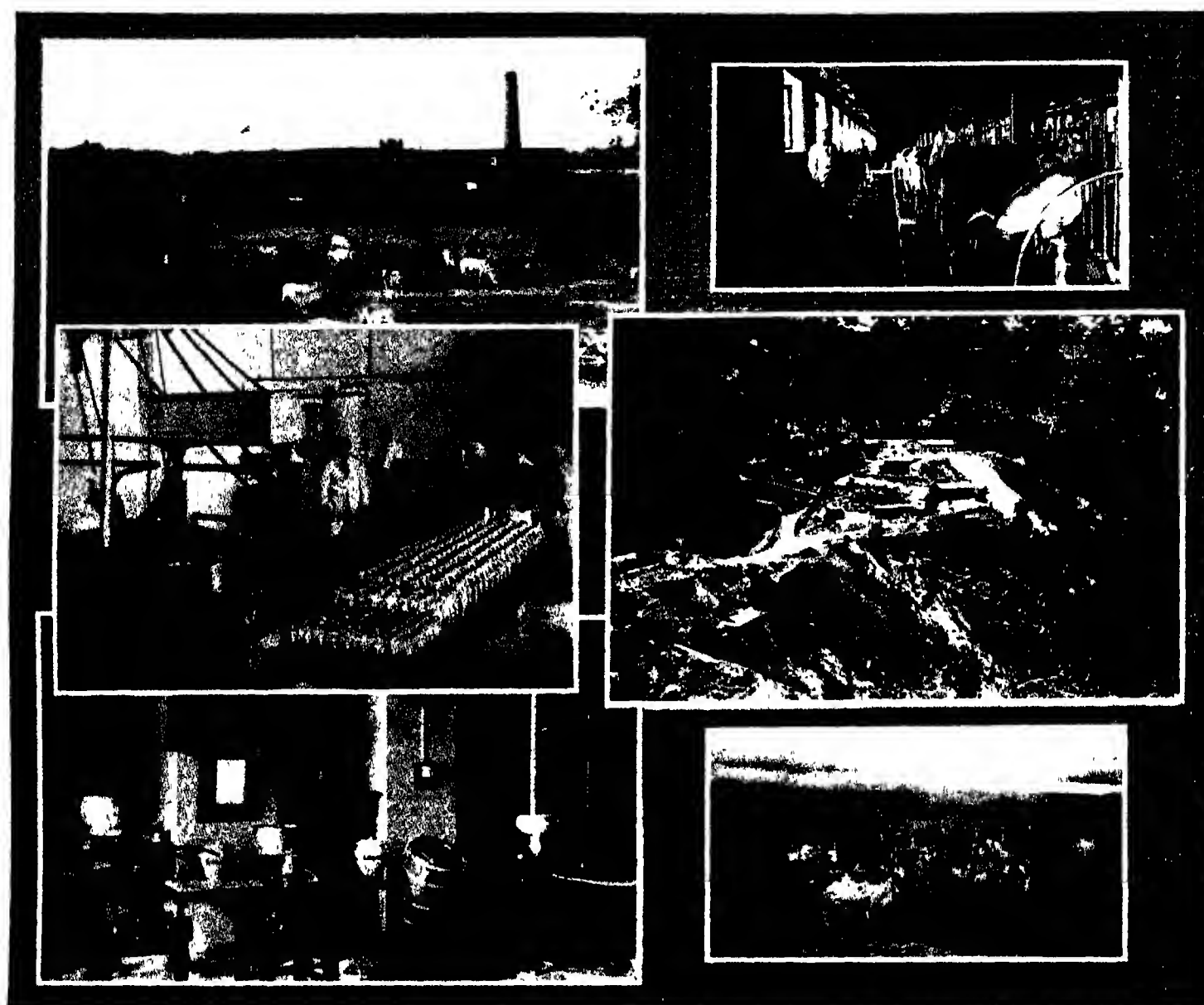
FRASERPET FIBRE CO. LTD., Calcutta  
(Managing Agents: Holmes, Wilson & Co., Ltd.)

1. Partial View of Factory and Store.
3. Two-year-old Sisal, leaves 8ft. long
6. Fibre on the drying ground.

Centre.  
A Plant on the clearing, planted  
in 1921 and cut in two years.

2. Aspect of a Plantation
5. Women beating out Fibre.
7. Carrying Baled Fibre to Store.

(See also "Calcutta" Section, page 270.)



1. Dairy Farm and Head Office at Aligarh, U.P.  
3. Portion of the Dairy at Calcutta.  
5. Part of the Showroom at Calcutta.

#### EDW. KEVENTER LTD.

2. Cow Sheds at the Dairy Farm, Simla, showing "Alfa-Laval" Milking Machines in use.  
4. The Farm at Simla, 7,000 feet above sea level.  
6. The famous "Sahiwal" cows at the Simla Farm.

#### EDWARD KEVENTER, LTD.

**Inception.**—Under the name of Edward Keventer this firm was founded in Aligarh during 1894, and was formed into the present limited liability company in 1922, with an authorised capital of Rs 15,00,000 and a paid up capital of Rs 861,850.

**Activities.**—The company specialises in all machinery and appliances essential to the milk and dairy-produce industry, and runs its own dairy farms for the production of certified milk, sterilized milk in hermetically sealed glass bottles, butter and cheese. There are five such farms, the largest at Aligarh producing approximately 500,000 lbs of butter annually, the others are at Calcutta, Darjeeling, Delhi and Simla, where the chief product is certified milk for immediate consumption. The farms are run on strictly commercial lines and are made to serve as demonstration centres for the dairy machinery and appliances for which the company holds the sole Indian agencies. Prospective buyers find it very instructive to watch these practical demonstrations, which

are undoubtedly of immense advantage to purchasers and sellers alike.

**Exhibition Awards.**—The firm spares neither expense nor labour when an opportunity offers to exhibit and demonstrate its dairy plant at Industrial Exhibitions and Shows, and the many awards conferred on it testify to the appreciation its enterprise has met with at the hands of the organisers. At the great Allahabad Exhibition in 1910-1911 the company won two gold and three silver medals for machinery, and a first prize and bronze medal for butter, at the Darjeeling Cattle Show (1913) three silver medals for dairy plant; first prize and silver medal for dairy products at the Food Products Exhibition, Calcutta (1918); and in 1923 at the Industrial Exhibition, Calcutta, the company was awarded a gold medal for butter and milk and one for the "Alfa-Laval" milking machine.

**Imports.**—Among the extensive imports of the organisation are the "Alfa-Laval" cream separators and milk clarifiers; the "Alfa-Laval" milking machines; the "Alfa" one-

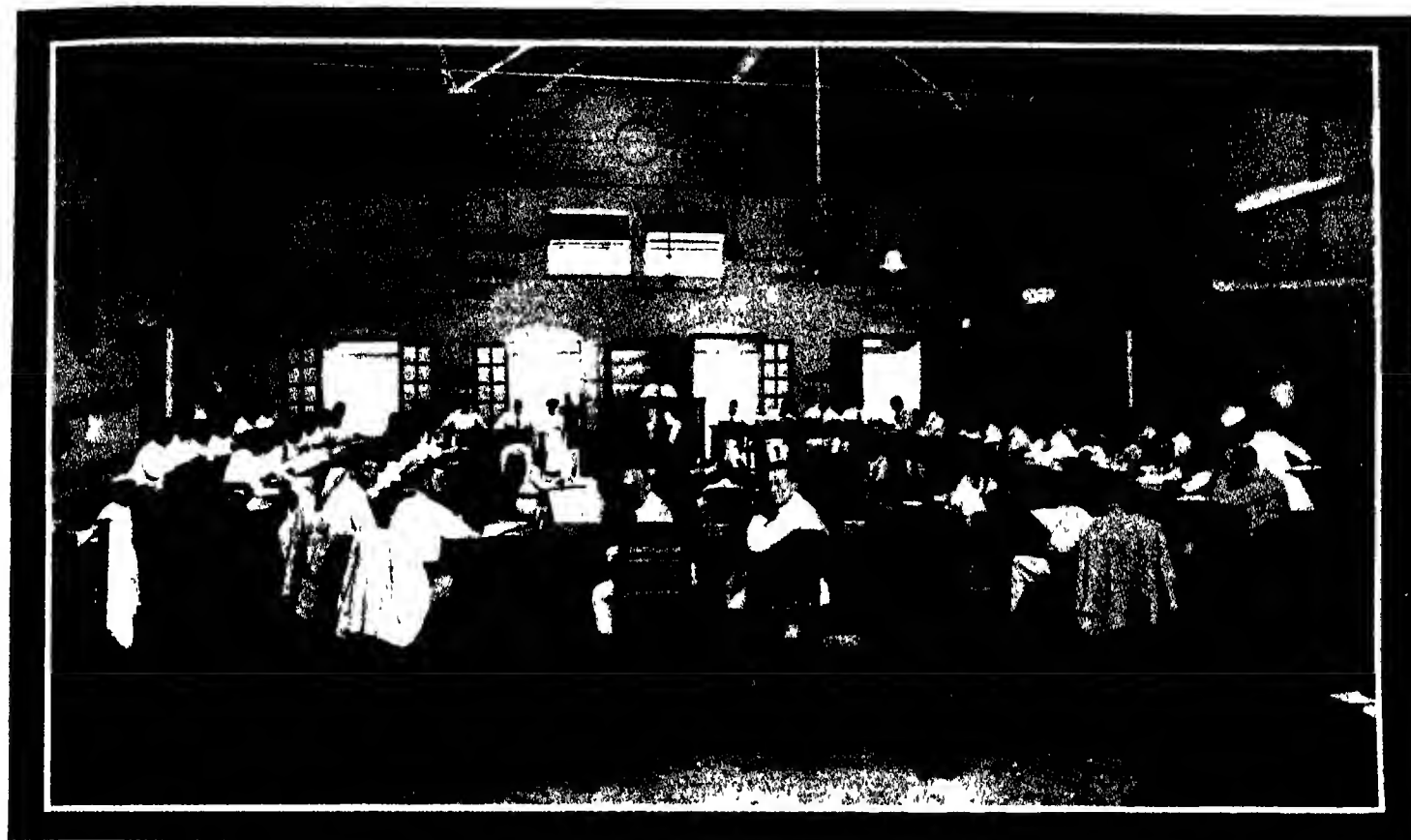
piece steel milk cans, the "Astra" churns, butter workers and milk coolers, the "Barnekow's" dairy preparations, the Dr N. Gerber's milk testing apparatus, and the Loudon cow shed equipments.

**Depôts.**—These have been established at Bombay, Calcutta, Darjeeling, Delhi, Karachi, Lahore, Rangoon, Ranchi and Simla, together with agencies all over India, the company employing 12 Europeans and a very large staff of Indians.

**Appointments.**—The firm has been appointed purveyors to H M the King Emperor, the Earl of Reading, Lord Chelmsford, the Earl of Minto, Lord Hardinge of Penshurst, Lord Curzon of Kedleston, and others.

**Management.**—The affairs of the company are under the direction of Mr. Edward Keventer, the pioneer of modern dairying in India, assisted by his nephew, Mr. W. Keventer (officiating managing director) and Mr. C. G. Mortenson.

**Offices.**—Aligarh, United Provinces (cables: "Keventer," Aligarh). Code A.B.C. 5th edition.



TEA AUCTION SALESROOM AT CALCUTTA

## THE INDIAN TEA INDUSTRY

By T. C. CRAWFORD, Chairman (1926) of the General Committee of the Indian Tea Association.

Area and Production	Para 6	Exports	Para 24	Labour	Para 19	Qualities (Best)	Para 21
Capital of Tea Companies	5	Fermentation	17	Manuring	12	Relative Values	22
Cultivation (Methods of)	11	First Tea Company	3	Markets (Leading)	23	Representative Associations	26
Different Types of Tea	8	First Sale	4	Number of Hands	20	Scientific Investigation	27
Distribution by Districts	7	First Tea Pruning	2	Pests and Blights	14	Shipments by Ports	25
Early Cultivation	1	Grading and Packing	18	Planting (Methods of)	10	Tea Cess Act	28
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THE question of the cultivation of tea in India is referred to as early as 1788, when it was considered that the world should not be solely dependent on China for its tea requirements. The East India Company did not in those early days encourage an investigation into the possibilities of tea in India, and it was not until about 1834, when it lost its monopoly of China tea, that action was taken by Lord William Cavendish Bentinck. Government then directed its attention towards investigating whether tea could be introduced as a commercial proposition, and a small official committee was set up, which was subsequently known as the Tea Committee, consisting of the following members—Messrs. J. S. Pattle, J. W. Grant, R. D. Mangles, J. R. Colvin, C. E. Trevelyan, C. K. Robinson, Rob. Wilkinson, Sir R. D. Colquhoun, Bart., N. Wallich, Radhakunt Deb and Ram Comul Sen. In addition, Messrs C. Macsween and G. J. Gordon were named as members.

**1. EARLY CULTIVATION.**—It is apparent that before this date (i.e. about 1824) tea was found to be indigenous in certain parts of India. On the other hand, it is interesting to note that the first definite steps to investigate its cultivation were taken by Government, and not as is customary, by private enterprise. The Committee arranged that one of its members (Mr G. J. Gordon) should proceed to China, and he brought back with him some tea seed which was distributed in Assam, Kumaon and the Madras Presidency. While he was absent in China definite proof was forthcoming that the tea plant was already existent in Upper Assam, and further investigations indicated that the region was suited to its cultivation. A deputation, at the instance of the Government, proceeded in 1835 to Sadiya in Upper Assam and visited the districts where the plant was indigenous. Following on this deputation, Mr C. A. Bruce, who was associated with the earlier private investigations into tea, was in April 1836 appointed Superintendent of tea culture by the Government, and was actively identified with the

earlier efforts to propagate the tea plant in Upper Assam. He is said to have been the first to obtain proof of the existing indigenous tea plant of Assam, but Capt. Andrew Charlton was awarded a medal as he was the first to establish to the satisfaction of the Committee the existence of the tea plant.

**2. FIRST TEA PRUNING.**—The following extract relating to the earliest tea pruning is taken from "An account of the manufacture of the black tea as now practised at Suddeva in Upper Assam by the Chinamen sent thither for that purpose, with some observations on the culture of the plant in China and its growth in Assam," by C. A. Bruce, Superintendent of Tea Culture (Printed at Calcutta by G. H. Huttman, Bengal Military Orphan Press, 1838).

### "TEA PRUNING.

"Last year the Government sent a deputation of three scientific gentlemen to examine the Assam tea plant, Dr. Wallich, Mr Griffith and Mr McClelland—the two former Botanists, the latter a Geologist. Dr



Wallich, who conducted the deputation, requested me to accompany them, being the only European who had ever visited the tea tracts, as the different localities are called. One day after having seen some tea in company with these gentlemen, and as we were returning, I was informed by some natives of another patch or tract of tea that had been cut down. We went and examined it, and found the plants just coming up, about 6 inches high. On enquiry we were told that the villagers took the tea plant to be so much jungle, and therefore nearly cut all of it down close to the ground, set fire to the whole, and then planted paddy or rice on the spot. The crop of paddy had just been cut and brought in, when we saw the plants the shoots were coming up from the roots and old stumps,

This would seem to be the earliest reference to pruning in India.

**3. FIRST TEA COMPANY (FORMATION OF).—**The first commercial flotation for the cultivation of tea was that of the Assam Company, which was formed about 1839 and is still existent. This company acquired two thirds of the Government's establishment, but the latter did not dispose of the remaining third until 1849. The Assam Company in the earlier days of its career was a commercial failure, and in 1846-47 its shares, on each of which £20 had been paid, were unsaleable. Subsequently, however, the management of the company was taken over by a Mr H B Young and a Mr S Murray, or Mornv, and it was under their direction that the company was converted into a payable proposition

of recent years that Indians have identified themselves with the tea industry, but there are now a good number of Indian-controlled concerns in existence.

#### 5. CAPITAL OF TEA COMPANIES.—

The capital of the joint stock companies at present engaged in the Indian tea industry is over £30,000,000, the greater part of which was raised in Great Britain only companies capitalised to the extent of about £6,000,000 having been floated in India. There are in addition a large number of private concerns particulars in respect to the capital of which are not available. The industry is one which from its inauguration has gone through many vicissitudes as owing to over-production, etc., the operating companies



CALCUTTA TEA MEN ABOUT 1883.

Back Row: Mr. Consolo, H. R. McInnes, Thos. Watson, W. S. Cresswell, John Davenport, Mr. Carter, Thos. Traill, J. G. McLaren, Luther Harp.  
Front Row: C. J. Sharp, W. L. Thomas, C. F. Inskip, Mr. Watson, Jr., Wilfred Oldham, Geo. Cheetham, John Carritt, Mr. Browning.

thick and numerous. Some tea plants I noticed had only been cut a foot, and some two to four feet from the ground, all these threw out numerous shoots and leaves an inch or two below where they had been cut. I afterwards converted this piece of ground into a tea garden on account of the Government, and now it is one of the finest I have, where there was formerly one tea plant, there are now upwards of a dozen, the new shoots from the old cuttings forming a fine bush, and showing a great contrast to some of the original trees, which I have permitted to stand, with slender trunks and a few branches only at the top. This tract or garden has yielded more tea this season than twelve times the same space of ground in the jungles would have done. I found that as the plants that had been cut down grew up again, the leaves acquired a yellowish tinge from their exposure to the sun, and were much thicker than those in the jungles, but this yellow tinge has worn off, and the leaves are now as green as those in the shade. As this tract answered so well by being cut down and set fire to, I tried the same experiment upon another tract close by, and it has come up to what I expected of it, eight to twelve new shoots having risen from the old stumps in the place of one. It is now a very fine tea tract."

In 1853 Mr George Williamson, joint founder of one of the premier tea agencies in India, Messrs Williamson, Magor & Co., took charge of affairs, and he was very closely identified with the commercial development of the tea industry in India.

**4. FIRST SALE.**—The first consignment of Indian tea appears to have been offered for sale in London in 1838, the amount involved being 280 lbs., which realised prices of from 16s to 34s per lb. The first public tea sale held in India took place in Calcutta on December 27, 1861. There is no record of the quantity involved, but it is reported that Flowery Pekoe realised Rs 2 2/- per lb., Pekoe Rs 1 4/- to Rs 1 5/-, Souchong 14 annas to Rs 1 4/- per lb., and Congous 10 annas to Rs 1 1/- per lb.

While investigations were being carried on in North India efforts were being made to grow tea in South India, and, as far back as 1842, there are references to Chinese workers having been brought in to train local labour. The Jorhat Company was the next sterling company to be floated in 1859, and during the years 1871-80 nine more were added to the list. In 1881-90 a further twenty-two companies were floated, while the period 1891-1900 saw a boom in the formation of these, no less than 103 having been launched during that period. It is only

frequently worked at a loss. It is noteworthy, however, that such slumps more particularly affected the estates producing the commoner types of tea, the Lebong Tea Company (Darjeeling district) has, since its foundation in 1862, declared unbroken dividends annually. There are also other concerns producing better class teas which have not missed dividend declarations over a considerable number of years. As recently as 1920-21 the industry was faced with a crisis following over-production, and many companies were forced into liquidation, while during the period 1900-01 to, say, 1906-07 the enterprise met with a series of set-backs. With increasing consumption, however, conditions have been more favourable of late years.

**6. AREA AND PRODUCTION.**—The area under tea in India, according to latest statistics, is 716,221 acres, as compared with the average for the five years 1885/89 of 310,595 acres. The average crop during the latter period was only 90½ million lbs., whereas during 1924 the total crop amounted to 375½ million lbs. The following statement, showing the progress of the area under tea



and production, is of interest. —

	AREA UNDER TEA (in acres)	PRODUCTION (in lbs.)
Average 1885 '1889	310,595	90,602,205
" 1890/1894	375,700	124,805,152
" 1895 '1899	467,201	158,371,806
" 1900 1904	524,720	201,385,969
" 1905/1909	540,299	242,386,233
" 1910/1914	592,913	290,000,243
" 1915/1919	664,272	374,265,437
1920	704,059	445,339,570
1921	709,006	271,263,771
1922	708,199	311,638,910
1923	711,209	375,355,689
1924	711,710	375,555,874
1925	725,812	463,506,571

The total area of land taken up by the tea industry in 1924 was 2,334,295 acres, i.e., 716,221 acres under tea and 1,618,074 acres of forest, jungle, dhan khēt, etc.

Indigenous, (3) Manipuri, (4) Naga, (5) Lushai or Cachai Indigenous, and all these belong to one species. The difference is usually distinguished by the method of growth and the number of veins in the leaves, while the leaf of the China plant is smaller than that of the indigenous or Manipuri. The tea leaf itself is green, concave on the upper surface, and very much elongated at its apex. The tea bush perpetuates its species by the usual method of reproduction obtaining amongst the higher flowering plants, and the fertilised cell takes about eight months to develop into the mature seed. Heavy cropping hardy species are carefully selected for seed bearing bushes, the general preference now being for a

is no doubt that labour is one of the most important, as, unless it can be obtained at low rates, the production costs would be such as ruled out tea cultivation on profitable lines. There are still many operations connected with the cultivation and manufacture of tea for which hand labour is required, for instance hoeing, pruning and plucking are three works which would be prohibitive in cost if carried out by labour paid according to Western standards. An additional factor is climate, a liberal rainfall being a necessity to free growth, and the minimum temperatures must not be too low in fact Dr H. H. Mann considers the temperatures (maximum and minimum) in the Darjeeling district the lowest at which successful tea culture is possible. The third



MEMBERS OF THE FIRM OF J. THOMAS & Co., 1883.

Back Row: H. R. McInnes, Robt. Innes, J. R. Thomas, J. P. Thomas, R. E. S. Thomas, Geo. Greenhill.  
Front Row: G. E. Thomas, J. Thomas, C. R. Hills, E. A. Thurnburn, Thos. Lecke, W. L. Thomas.

(See *Literpress*, page 134.)

**7. DISTRIBUTION BY DISTRICTS.** The Indian tea industry is divided into the following districts —

	ACREAGE (1924)	PRODUCTION (lbs.) (1924)	ACREAGE PERCENTAGE
ASSAM—			
Assam (Brahma putra Valley)	268,105	165,781,842	37 4/10
Sylhet	86,998	44,039,249	12 1/10
Cachar	57,756	27,332,019	8 1/10
Darjeeling	58,747	18,869,046	8 2/10
Doon and Terai	117,576	66,576,143	16 4/10
BENGAL—			
Chittagong	5,422	1,659,616	8%
Chittagong Hill Tracts	88	16,400	0%
Tripura	4,793	338,272	7%
SOUTH INDIA—			
Travancore	50,166	27,055,339	7 0/10
Madras	48,647	19,696,357	6 8/10
Other Provinces	17,923	3,891,591	2 5/10
Total	716,221	375,255,874	100 0/10

Burma produces a considerable quantity of letpet (wet pickled tea), which is eaten as a condiment and is therefore not included in the above figures. About 8,000,000 lbs of tea (black) imported into Burma from the Shan States is also excluded from the above figures.

**8. DIFFERENT TYPES OF TEA.**—There are five distinct types of the tea plant recognisable, namely (1) China, (2) Assam

Manipuri type of plant, and these bushes are allowed to grow in the thinly-branched conical shape of nature, often attaining a height of 40 m. Insects and fungi parasites have to be guarded against in the production of healthy seed-bearing bushes. The seed bush fruits annually on one year old twigs, the fruits being 1, 2, 3 or 4 seeded and the size of a marble. The setting free of the seeds takes place by the drying and splitting of the fruit, and it may be mentioned that the seed is never handpicked or shaken from the parent plant, but allowed to drop. Tea seed is not collected on all estates, but only on a small percentage, and of recent years there has been a profitable business done in the product.

#### 9. ESSENTIALS OF CULTIVATION.—

The selected seed is now planted in previously prepared nursery beds, 6 m by 6 m apart, and, in the plains, is left to develop from six months to a year before the young shoot is planted out in the estate. The time is considerably extended in the case of estates situated at a high elevation.

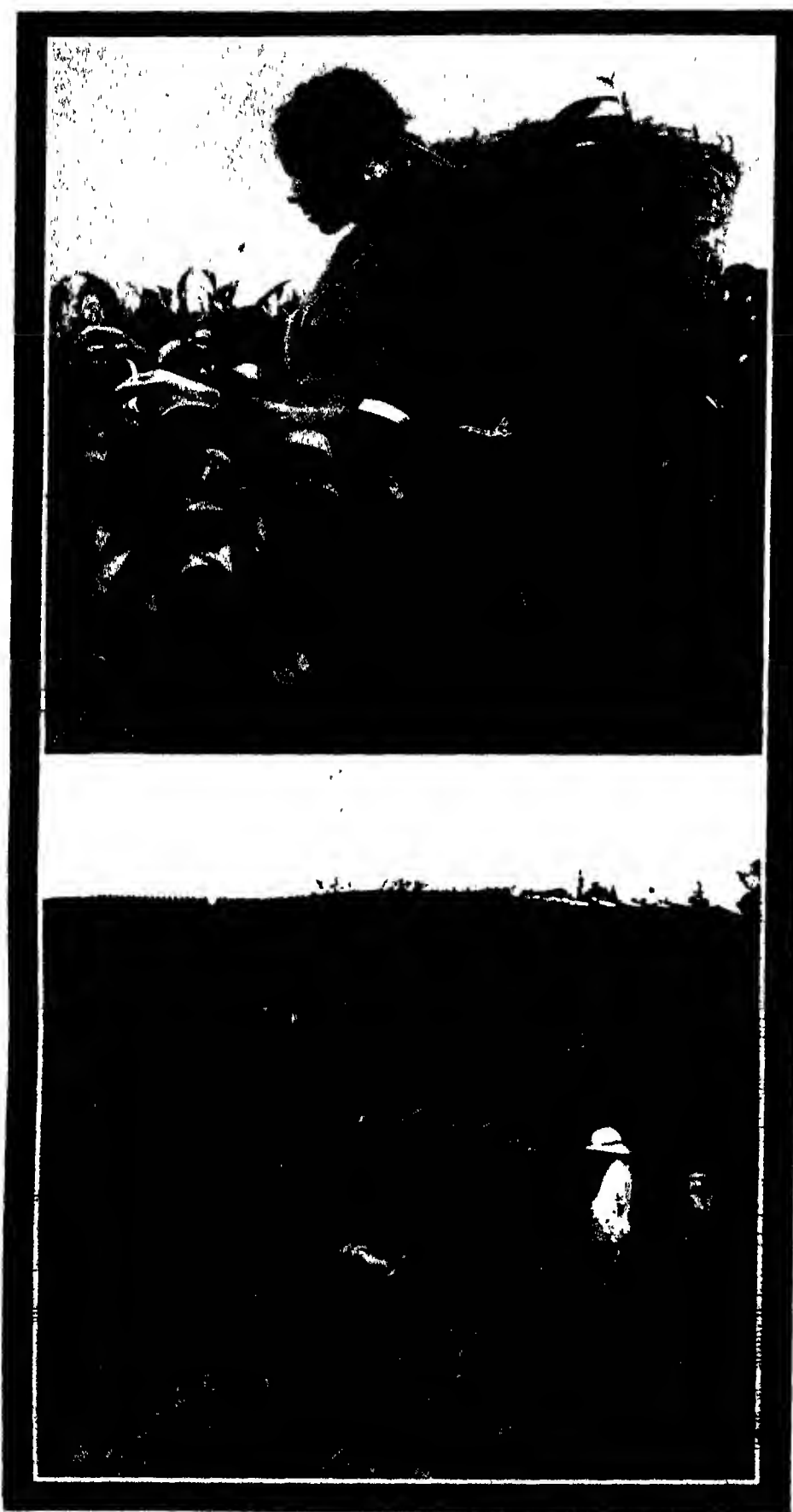
While it has been found that the tea plant will grow and even flourish under widely varying conditions, experience has shown that there are certain factors which must obtain before it can be grown as a commercial proposition. Of these factors there

important factor is soil condition, as there must be certain special characteristics. This question is, however, too involved and controversial to analyse in an article of this nature.

**10. PLANTING (METHODS OF).**—A tea estate may be planted out in either of the three methods enumerated.

- (1) Seed at stake: i.e. the area to be planted is cleared, drained, hoed and staked, say 5 ft by 5 ft triangular or 5 ft by 5 ft square, the seed dibbled in, carefully shaded and kept clean and free from weeds. This method is seldom practised nowadays.
- (2) Carrot planting: i.e. the pruning of the 1, 2 or 3 year old nursery seedling, both root and stem, and the dibbling in of the plant in the tea-bearing area. This method is wrong and is seldom practised, although it saves labour.
- (3) The most successful method on "plains" estates is the planting of year-old seedlings in the cold weather, with a ball of earth round the plant and with the tap root uncut. Planting out tea in the rains is not advisable.

There is considerable diversity of opinion with regard to the later treatment of the young plant, but the ultimate aim is to change the natural shape of the bush from



1. A Tea Garden Belle.

2. Hoeling; a seed garden is visible in the distance.

conical to square, and to bring it as quickly as possible to its full bearing capacity, having in mind the necessity of cultivating a deep rooted, broad and healthy bush. This is done by careful pruning. The bush generally takes seven years or so before it reaches its full bearing capacity. This period is lengthened in cases where soil, climate, elevation, etc. are unfavourable. The height of the bush must be kept down, otherwise the pluckers experience difficulty in taking off the leaf. With careful pruning on good soils, the tea bush is capable of bearing remunerative crops for over 50 years.

#### 11. CULTIVATION (METHODS OF).—

The system of tea cultivation differs on "hills" and "plains" estates, as on the former care must be taken not to over-cultivate, since this invites "wash" during the heavy rains. The principal objects of cultivation generally are to break or open up the soil and so invite aeration and to remove weeds which, if unchecked, would interfere with the growth of the tea plant.

On plains estates a deep hoeing to the depth of 8 in. or so is undertaken in the cold weather, and later on several rounds of light hoeing, the latter to a depth of 3 in. or 4 in., the number of rounds being regulated by the labour available. Trenching, i.e., narrow trenches 18 in. or so deep between alternate lines of tea, is greatly favoured, as this breaks up the pan formation, and, when the trenches are filled with green material such as boga, medeloa, etc., adds useful organic material to the soil. Draining is another important operation on a well managed plains garden, and narrow drains to a depth of 3 in. or so are laid throughout the tea, leading into larger drains. Estates on the hills are differently worked, a deep fork being substituted for a deep hoe, and cultivation in the rains is limited to prevent loss of surface soil. In South India weeding is substituted for hoeing, but some estates carry out a light forking. The growth of certain types of weeds is favoured on estates in the higher elevations in South India or on slopes, as these prevent loss of surface soil by wash. Terracing of slopes is carried out on steep estates so that wash may be prevented.

**12. MANURING.**—When the fertility of the soil is becoming exhausted, manuring is resorted to. There is considerable divergence of opinion in regard to the system of manuring to be followed, but much depends on the soil conditions, the state of the plant, etc. There is increasing support for artificial or inorganic manures, but until recent years estates in North India more or less depended on local material, such as cattle manure, castor cake, sterilised animal meal, etc. The Scientific Department, to which reference is made hereafter, is now available to advise managers in regard to the system of manuring best suited to their particular estates, and the literature issued by that Department has greatly added to the general knowledge of this important question. Castor meal is still extensively used by many managers, as it is procurable locally, while there is also a large importation into the tea districts of sterilised animal meal. The labour shortage does not permit of intensive top dressing being done with fresh soil where suitable soil is available, but cattle manure, which is readily obtainable on the large majority of estates, is used to the fullest extent possible. It is impracticable to deal with artificial or inorganic manures in detail, as conditions vary so much on different estates, and managers who favour this form of manuring are advised by experts as to the class of manure most suited to conditions in their

district. Sulphate of ammonia, nitrate of potash, nitrate of soda, sulphate of potash, lime (slaked or burnt) and superphosphates are a few of the manures imported into the tea districts, and there are indications that the use of this form of manuring is markedly on the increase.

**13. GREEN MANURING.**—Green manuring, in the form of annual leguminous green crops, which are hoed in, or biennial shrub shade the loppings of which are buried, is becoming increasingly popular. It is found that during growth these crops or shrubs improve the tilth by their root action, and the addition of the buried material increases the organic matter in the soil, apart from the fact that the shrubs provide light shade for the tea bush. It is also part of the policy on all estates to plant nitro-

of the many pests against which the planter has to be on guard. The use of various forms of spraying mixtures against these pests and blights is becoming more extended, and most estates now aim at spraying a large area annually.

**15. PLUCKING.**—The plucking of the young plant generally commences on the plains at three years from planting, and the tea planter has to exercise every care in the earlier treatment of the bush so that its outward spread is encouraged. Plucking consists of taking the youngest two leaves and a bud on each shoot, and the rate at which these develop is principally determined by climatic conditions. The leaf grows rapidly in moist warm weather, the heaviest yielding months in North India being July, August and September. The plucking season

the leaf is in the desired condition, it is transferred to the rollers which burst the cells of the leaf so that oxidation of the cell sap by bacterial action may develop. Rolling also gives "twist," adding to the attractive appearance of the tea. The time taken for rolling varies, but the general practice is two periods of 25 minutes each at this stage, so that the leaf does not get hot, causing too rapid fermentation. The leaf is thereafter passed through rough sifters or breakers, and the fine leaf separated from the rough, the latter is usually given another roll of 15 minutes or so after fermentation, but the fine leaf is not fermented quite so long.

**17. FERMENTATION.** The next process is fermentation, when the rolled leaf is placed in a darkened house where the temperature is maintained at about 78 F



HARRISONS AND CROSFIELD LIMITED, Calcutta Tea Tasting Room  
(See letterpress, page 131)

genous shade trees throughout the tea, say 40 in by 40 in apart, as experience shows that light diffused shade has useful effect on the tea, while the root action of such trees has a most beneficial effect on soil conditions.

**14. PESTS AND BLIGHTS.**—It is only necessary to make a passing reference to the pests and blights which affect the tea plant. These are numerous, and many still form the subject of scientific research. The most important of all, so far as North India is concerned, is mosquito blight, which is very common in some districts and shows signs of spreading in time to districts not at present affected. This blight has a very serious effect on production, for, when the garden is severely attacked, little leaf is obtainable. Research has not so far found any method by which this blight can be controlled or eradicated. Thrips, red spider, green fly, termites, various types of caterpillars, grubs, borers and crickets are a few

in North India extends from April to November, whereas in South India and Ceylon plucking goes on throughout the whole year, although certain months give a heavier flush than others. The plucked leaf is conveyed to the factory with as little delay as possible, and the process of converting it into black tea is somewhat as under —

**16. WITHERING.**—The leaf is first spread thinly on wire or hessian cloth racks in withering houses and allowed to wither for a period varying from 16 to 22 hours, depending on atmospheric conditions. On a large number of estates at high elevations artificial withering is resorted to during cold wet weather, hot air being led from the driers or special stoves, into the withering houses.

The object of withering is (1) to bring the leaf into the physical condition required to secure a good twist on the rolled leaf, (2) to allow enzymes (unorganised ferments secreted by the cell sap) to develop. When

to 82°F. This process introduces chemical action, which changes the colour of the rolled leaf from green to the bright coppery colour which is seen in the tea pot after infusion of the black tea. Fermentation takes two or three hours, much depending on the temperature of the fermenting house and the condition of the leaf, also whether flavour or deep liquoring teas are required. The fermented leaf, having reached the required stage of oxidation, is transferred to patent driers which are worked up to a temperature of 200° to 220°. The first firing (75 per cent) is usually done at a very high temperature so that the process of fermentation is stopped, otherwise the quality of the finished product is affected, but the second or final firing is usually at a temperature not exceeding 200°—more generally 180°. It requires about 40 minutes or so to thoroughly remove all water from the leaf. In the manufacture of green tea the process

is somewhat different, as fermentation must not be permitted. Consequently the leaf is placed in steamers immediately it arrives at the factory, after this process, which only extends to a few minutes, the leaf is spread out and allowed to cool. Thereafter the leaf is placed in the rollers, and the subsequent manufacturing processes are much the same as in the case of black tea. There is only a limited demand for green tea, the principal buyers being in America and the Frontier States of India. At one time polished green teas were greatly in request for America, but the importation of this class of tea is not now allowed. The Indian Frontier States still prefer polished tea. The liquors of green tea when infused should be of a pale lemon colour, if they show an orange tint, it is evident that fermentation has set in at some time during manufacture.

was imported from America, but this trade now appears to have ceased. There is a large mill in Assam which manufactures plywood from timber obtained locally, but fittings for these chests are imported. The chests are always lined with lead aluminium or some such material, as tea is very susceptible to taint. The weight of a chest of tea varies from 110 to 130 lbs., as a larger quantity of the broken grades such as fannings, can be packed in a chest than is possible in the case of leaf teas. There are also several sizes of chests, the largest being 24 in. by 10 in. by 19 in. and the smallest about 18 in. by 17 in. by 17 in., the latter being chiefly used for packing dusts. After packing, the tea is despatched from the factory to the port of shipment, or Indian auction. Of recent years communications in the tea districts have been greatly improved and

indolent and lacking in enterprise. It was necessary therefore to go further afield for labour, this has been recruited from the aboriginal tribes in Chota Nagpur and the agricultural castes in Madras, Central Provinces, United Provinces, Bihar and Orissa. Recruiting has recently extended to the Bombay Presidency. It was early recognised that following on abuses, legal powers were required to supervise the recruitment of labour for Assam. Accordingly an Act was passed in 1863 for the regulation of the transport of native labourers emigrating to Assam and Cachar. There have been certain amendments and or new enactments since that date and the recruitment of labour for the tea gardens in the Province of Assam is still protected by legislation. This legislation does not apply to the Dooars, where recruiting is free or to Darjeeling district which obtains



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Tea Tasting Room at Calcutta.  
(See letterpress, p. 134.)

**18. GRADING AND PACKING.**—The grading of the tea is the next process. It consists of cutting and sifting the fired tea through patent cutters and different sized meshes of rotary or other sifters until the grades, in the case of black tea of Orange Pekoe, Pekoe, Broken Pekoe, Broken Orange Pekoe, Broken Pekoe Souchong, etc., are secured. The grades in green tea are known as Hyson, Young Hyson, Fine Young Hyson, Twankay, etc. The tea is thereafter packed, and of recent years the packages have principally been made up from three ply wood. These chests are manufactured in Great Britain, although the plywood in some cases is prepared in Finland. Where the veneers are made up in Great Britain the timber is usually imported from Northern Europe. During the late War some plywood

many estates have laid down tram lines from their factories to connect up with the railway transport, but a large number of estates still depend on the bullock-drawn carts. The estates in Assam, sending their teas to Calcutta, use the Brahmaputra River extensively, and there is a regular service of inland steamers and towing flats maintained for the purpose of water transport.

**19. LABOUR.**—An article on the Indian tea industry would not be complete without reference to labour. The industry has developed enormous strips of forest and/or jungle which, in the majority of cases, were previously uninhabited, unless possibly by nomadic tribes. In the case of Assam it was found that the aboriginal or hill tribes in the Province were not attracted by tea garden life, while the Assamese themselves were too

its labour locally, i.e., from hill tribes in Nepal, etc. In South India also there are no restrictions on the recruitment of labour. The method of recruitment in North India is to send a labourer, known as a recruiter, to his district to recruit his own relatives or people of his own caste. The operations of such recruiters are supervised by the Tea Districts Labour Association, a body representing the tea interests in Assam and 88 per cent or so of those in the Dooars. It is interesting to note that in 1879 Messrs Williamson, Magor & Co., Messrs Begg Dunlop & Co. and Messrs Macneill & Co. formed a small association to recruit labour for their own interests from the plateau of Chota Nagpur, and this was the origin of the Association. The second named firm still retains the Secretaryship of the enlarged

organisation. The Assam Labour Board was constituted some years ago to control recruiting for the Province of Assam. This Board has a Government official "ex officio" as chairman, and the members are representatives of the Assam tea industry. The length of this article will not permit of a detailed analysis of the castes or types of labour employed on tea gardens generally, but it will suffice to say that the tea industry concentrates on the recruitment of the agricultural class, with a view to their settling with their families in the tea districts. Everything is done on the estates to ensure that the new emigrants are comfortably settled, and house accommodation is provided free, while they are also given a small piece of land on which to cultivate dhian (rice).

United Planters' Association of Southern India.

**20. NUMBER OF HANDS.**—The latest Government census records that there were 724,332 unskilled workmen actually employed on tea plantations in India, but this figure does not include dependents and non-workers. The last report on immigrant labour in the Province of Assam places the total number of working and non-working (i.e. dependents) labourers and children living in tea garden lines and on garden land at 991,820, which does not include the large number of people settled on adjacent land who find occasional employment on the estates. The area of Government land settled in Assam alone on ex-tea garden coolies amounts to over 325,000 acres.

**23. MARKETS (LEADING).**—As regards markets for Indian teas, in 1867-68 tea was only shipped to Great Britain and the Continent, the quantity exported being 7,811,429 lbs., and it was not until 1880-81 that any appreciable quantities were exported to outside markets. Australia then became a large consumer of Indian tea, commencing with 807,608 lbs. in 1880-81 and reaching a maximum of 10,090,005 lbs. in 1914-15. Unfortunately of recent years Java and Ceylon have been active competitors with Indian tea in the Australian market, and being more favourably situated geographically, have displaced the latter to a considerable extent. Russia was also a large buyer of Indian tea, and the direct shipments to Russian ports reached 33,398,209 lbs. during



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(See letterpress, p. 135)

or vegetables in their spare time. Further, special attention is directed to the provision of ample supplies of pure water, medical conveniences, etc., and each estate has a dispensary or hospital with an Indian doctor in charge. In addition, each group of estates employs an European Medical Officer, who supervises the work of the Indian doctors and advises on all matters in connection with the health and welfare of the labourer. Special care is also directed to infant welfare, and maternity allowances are paid by the majority of estates, if not all. The tea industry has taken a large part in developing the Province of Assam and the Dooars district, as an enormous number of ex-garden coolies have left the estates on the expiry of their period of service to occupy and cultivate Government land.

The method of recruitment in South India differs slightly from that of North India, as in the former the kangany (head man) makes arrangements for new coolies. Recruiting is supervised by the Labour Department of the

**21. QUALITIES (BEST).**—The best quality teas are produced in the Darjeeling district on the Himalayan mountains, where tea is grown up to an elevation of about 6,000 feet. The estates in the higher elevations of Travancore and Madras, and also in certain districts of Assam, produce high quality teas, and Dooars teas frequently have certain characteristics which make them greatly in demand. Speaking generally, India produces teas suited to all markets.

**22. RELATIVE VALUES.**—So that the relative values of the teas produced in the respective districts may be appreciated, the following averages obtained in the London auctions are recorded—

	1924 Per lb	1925 Per lb	1926 Per lb
Assam	18.11d	17.93d	21.05d
Cachar and Sylhet	16.42d	14.52d	18.62d
Darjeeling	20.69d	19.02d	22.36d
Dooars	17.52d	16.11d	19.87d
Southern India including Travancore	18.15d	17.80d	20.18d

It will be noted that Darjeeling heads the averages.

1913-14, quite apart from the shipments via London. After 1917-18 the shipments to Russia ceased, but during the last year or so trade has re-opened, although only on a limited scale. A portion of the North India crop is sold in Calcutta auctions, and during 1924-25 about 80,000,000 lbs. were so disposed of.

**24. EXPORTS.**—The following table gives particulars of the shipments to the principal consumers of Indian tea during the three years ended March 31, 1926—

	1923-24 lbs	1924-25 lbs	1925-26 lbs
United Kingdom	296,287,665	299,722,216	280,572,693
Russia	-	1,388,207	2,060,928
Europe (excluding U.K. and Russia)	1,883,514	1,335,760	1,540,444
Africa	3,678,638	4,880,103	6,086,958
Canada	12,177,980	8,890,260	7,951,242
United States	5,860,215	6,209,245	4,902,025
Other ports of America	1,751,919	1,120,331	1,740,005
Asia (excluding Ceylon)	9,389,031	8,252,298	11,149,602
Australia, New Zealand and Fiji Islands	4,772,039	5,105,514	6,301,970



The preceding figures do not include trade in tea done by land with such Indian Frontier States as Tirah, Waziristan, Tibet, Nepal, etc.

The following particulars indicate the quantity of Indian tea re-exported from the United Kingdom to certain foreign countries

	1923	1924	1925
Irish Free State	14,416,914	20,386,793	18,050,510
Russia	457,734	1,670,646	6,491,716
Continent of Europe (excluding Russia and Turkey)	5,896,430	9,604,321	9,191,759
Turkey	410,738	Not available	Not available
United States	2,767,957	3,886,702	7,549,508
Canada and New foundland	2,585,902	2,118,796	4,558,015
South Africa	464,066	Not available	Not available
Chile and Argentina	1,158,833		
Other countries	2,396,505	2,943,229	3,448,163

tea industry. The membership of the United Planters' Association of Southern India is not limited to tea, as coffee, rubber, cinchona and cardamom concerns are admitted as members. The members of the Indian Tea Association, Calcutta, represent an area of 517,510 acres. There is an Indian Planters' Association in the Dooars, which represents Indian planters in that district, but there are a good number of Indian-controlled concerns—those not controlled or managed by Europeans—who are members of the Indian Tea Association Calcutta. The headquarters of the latter association are the Royal Exchange, 2, Clive Street, Calcutta, the secretary and assistant secretary of the Bengal Chamber of Commerce acting ex-officio as secretary and assistant secretary. The United Planters' Association of Southern

who collaborate with the department in North India

**28. TEA CESS ACT.**—In 1903 the Indian Tea Cess Act IX was passed at the request of the Indian Tea Trade. Under this Act a duty, not exceeding  $\frac{1}{4}$  pie per lb., became leviable on all Indian teas exported, the proceeds of which were to be utilised for promoting the sale and increasing the consumption of Indian tea. In 1921 the Indian Tea Cess Amendment Act (No. 1 of 1921) was passed increasing the maximum amount of the cess from  $\frac{1}{4}$  pie per lb. to eight annas per 100 lbs., and cess is at present levied at the rate of six annas per 100 lbs.

**29. TEA CESS FUND.**—The cess is collected by the Customs authorities and



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(See letterpress, p. 134)

**25. SHIPMENTS BY PORTS.**—The principal ports from which Indian tea is shipped are Calcutta, Chittagong, Madras, Tuticorin, Cochin and Calcut, while a re-export trade to the Persian Gulf, etc., is done at Bombay and Karachi. Calcutta and Chittagong are the chief tea shipping centres, being the ports for the North India tea districts. The following figures show their relative output—

From --	1923-24 (lbs.)	1924-25 (lbs.)	1925-26 (lbs.)
Calcutta	225,358,772	220,000,121	207,672,918
Chittagong	71,410,746	79,656,604	72,351,597
South Indian ports includ- ing Travancore	39,102,231	38,514,720	43,944,793
Bombay and Karachi	3,411,939	2,637,372	2,571,831
Burma Ports	5,181	5,232	3,917

**26. REPRESENTATIVE ASSOCIATIONS.**—As regards organisations connected with the Indian tea industry, the Indian Tea Association, Calcutta, which was formed in 1881, represents concerns in North India, and the United Planters' Association of Southern India those in South India. The former is connected with the Indian Tea Association, London, and the latter with the South Indian Planters' Association, London. There are district branches or associations in North and South India to look after local affairs and generally to co-operate with the head associations in promoting the interests of the

India headquarters were recently transferred to Madras, and are now located in the Chamber of Commerce there.

**27. SCIENTIFIC INVESTIGATION.**—The Indian Tea Association, Calcutta, has maintained since 1900 a Scientific Department, which investigate the many and varied problems which confront the industry, and has published numerous pamphlets and articles dealing with same. The European staff consists of a chief scientific officer, a mycologist, three chemists, an entomologist and a bacteriologist, apart from an experienced staff of Indian subordinates. The Scientific Station is at Tocklai in Assam, and is equipped with up-to-date laboratories and a small garden where experiments in connection with tea cultivation are carried out. The cost of the Department is met by the Indian Tea Association, Calcutta, with certain grants from the branches, or affiliated associations, and the Government of Assam contributes Rs 10,000 (£666 13s 4d) annually, the Government of Bengal providing Rs 4,000 (£266 13s 4d). The Government of India also furnished support at one time, but its contributions have ceased. The Tocklai Station is considered to be one of the best equipped of its kind. The United Planters' Association of Southern India has also recently opened a scientific department with two European specialists on the staff,

paid into the Tea Cess Fund, which is placed at the disposal of a committee of twenty members, appointed by the Governor-General in Council on the recommendation of the following bodies and authorities: Bengal Chamber of Commerce (3), Madras Chamber of Commerce (1), Indian Tea Association, Calcutta (7), Assam Branch, Indian Tea Association (2), Surma Valley Branch, Indian Tea Association (2), Darjeeling Planters' Association and Terai Planters' Association jointly (1), Dooars Planters' Association (2), Dehra Dun Planters' Association (1), United Planters' Association of Southern India (1).

The total collections to March 31, 1926, amounted to Rs 120,00,000 odd (approximately £800,000), the funds having been expended as follows: United Kingdom, Rs 8,35,576/-; Continental Europe, Rs 18,00,574/-; Bonus on Green Tea Exported, Rs 3,91,120/-; America, Rs 39,68,110/-; India, Rs 41,94,818/-; Miscellaneous (South Africa, Tibet, Persia, etc.), Rs 17,504/-; Total, Rs 112,16,702; to which has to be added establishment and incidental expenses.

During the year April 1, 1926, to March 31, 1927, allotments were made as follows: India, Rs 4,50,000/- (£30,000/-); France, £10,000; America, £41,000; Sesquicentennial Exhibition at Philadelphia, £7,500.



In America during the post war campaign the expenditure to date has been on advertisements in newspapers, magazines and trade journals only. The Committee may shortly appoint a special Commissioner, as it is considered necessary in certain quarters to have an executive officer to keep in close touch with the American Tea Trade, also to keep the Committees in Calcutta and London advised of all matters concerning their interests.

In France the funds are expended mainly on demonstration work, advertising by distribution of posters and handbills, and to a small extent by newspaper advertising.

In India the funds are expended on organising and supervising arrangements for supplies of tea on railways, demonstration work in towns served by the railways and arrangements for supplies of tea in such towns, also advertising by distribution of posters and handbills.

T. C. CRAWFORD

### SUPPLEMENTARY DATA

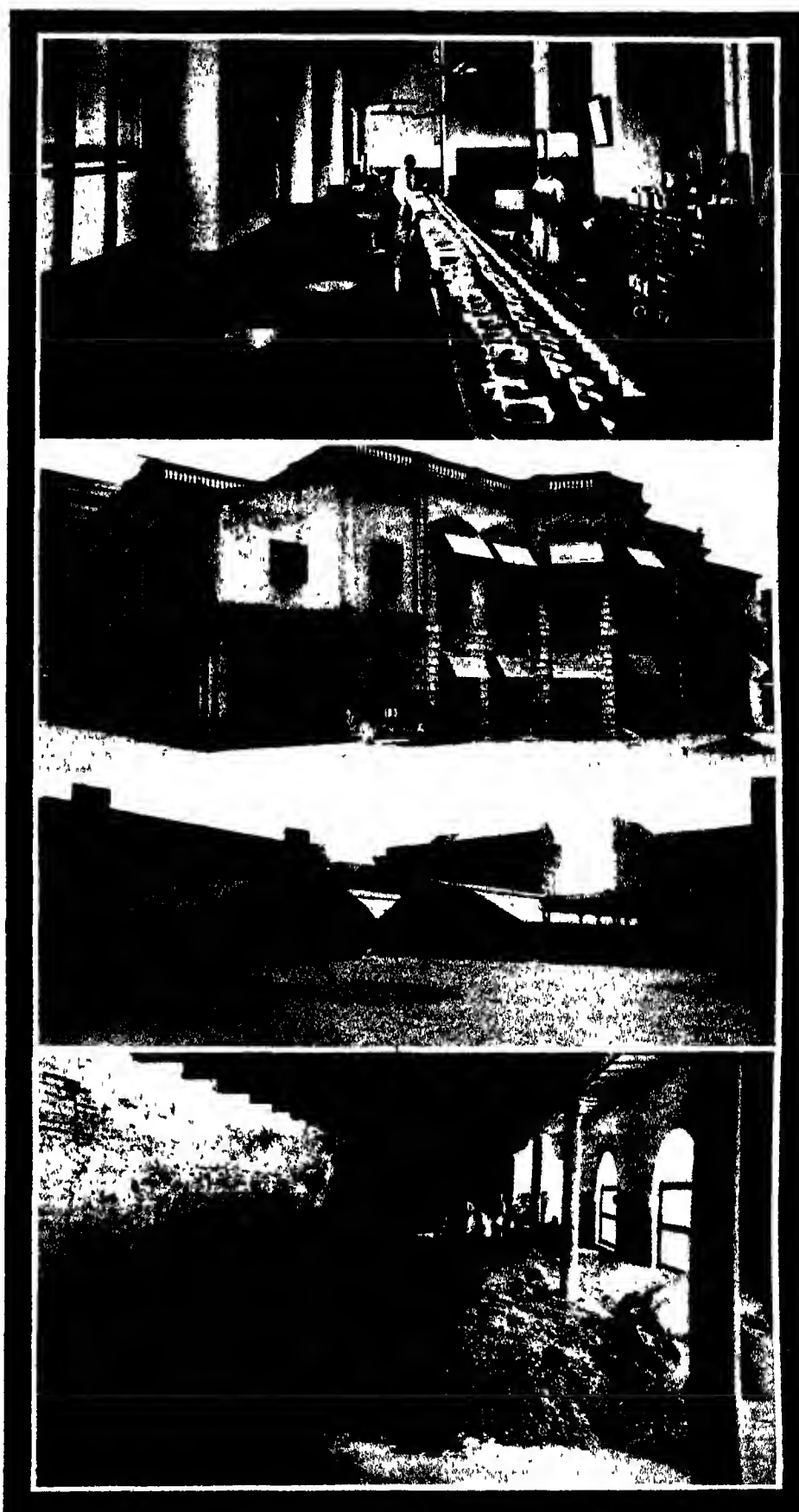
**AREA.**—The total area under tea in India in 1925 was 728,812 acres, which was nearly 2 per cent larger than in the preceding twelve months. The area abandoned in that year was 5,400 acres, while the new extensions (including replanting in areas abandoned in previous years) amounted to 19,500 acres. Thus there was a net increase of 14,100 acres during the period. Including estimates for non-reporting gardens, the total area under tea in 1925 was distributed among the different provinces as shown below, with the percentage increase or decrease as compared with 1924.

	AREA (acres)	INCREASE (+) OR DECREASE (-) Percent	NUMBER OF PLANTATIONS
Assam	416,500	+ 0.8	930
Bengal	193,100	+ 3.5	364
Southern India	101,200	+ 4.3	316
Northern India	16,100	+ 1.3	2,707
Bihar and Orissa	1,900		21

**LABOUR.**—The total number of persons employed in the tea industry in 1925 was returned at 825,200, of whom 758,900 were permanently employed and 66,300 were temporarily employed. Compared with 1924, there was an increase of 17,700 permanent employees and a decrease of 4,000 temporary hands.

**PLANTATIONS.**—The total number of plantations was 4,338 in 1925, as against 4,300 in the preceding year. The plantations vary greatly in size in the different provinces. In Assam 930 plantations were reported to have a total area of 416,500 acres under tea in 1925—that is, an average of 448 acres per plantation. In Bengal the average size of 364 plantations is 530 acres, and in Travancore the average area of 105 plantations is 486 acres. In Madras, the United Provinces, and Bihar and Orissa the average is much smaller, being about 237, 169, and 89 acres respectively. In the Punjab, where tea cultivation is conducted on a small scale, the average area is about 4 acres. These figures, which refer to the year 1925, relate only to tea-bearing areas; they do not include the area in the occupation of planters, but not under tea cultivation.

**PRODUCTION.**—The total production of both black and green tea in 1925 was reported to be 363,507,000 lbs. (of which black tea represented 358,864,000 lbs.), divided between



J. THOMAS & CO., Calcutta.

1. Tea Tasting Room.
2. The Calcutta Offices.

3. Partial view of Tea and Shellac Compound.
4. Turning over Shellac.

(See letterpress, p. 134)

the different parts of India as shown below —

	1924 1,000 lbs	1925 1,000 lbs
Assam	237,153	225,185
Bengal	87,459	85,279
Southern India	46,752	49,305
Northern India	3,678	3,500
Bihar and Orissa	214	238
Total	375,256	363,507

The average production in the whole of India was 520 lbs per acre plucked, as against 551 lbs in 1924.

**SHARES AND DIVIDENDS.** In 1925 there were 140 tea companies incorporated in India, having an aggregate paid-up capital of Rs 4.94 lakhs. Of these, 113 companies declared dividends for 1924 amounting to 46.7 per cent on their aggregate capital of Rs 4.12 lakhs. Up to November 1926 104 companies only had declared dividends for 1925, amounting to 28 per cent on their aggregate capital of Rs 3.96 lakhs. The value in March 1926 per Rs 100 of joint stock capital as calculated on the prices of shares quoted in the Calcutta share market was Rs 260 in 1924 for 123 companies, Rs 322 in 1925 for 128 companies, and Rs 286 in 1926 for 132 companies.

## SOME REPRESENTATIVE TEA COMPANIES

### J. THOMAS & CO.

**Inception.**—Mr Robert Thomas, founder of the old-established firm of produce brokers now under notice, went out to India between 1835 and 1840 to join an indigo company, Hickie, Barby & Co. He had previously been connected with a similar concern in London. The earliest records now available are of the firm of Thomas, Marten & Co in 1851, of which Mr Robert Thomas appears to have been senior partner. On the retirement of Mr Charles Marten (April, 1854) the company became R Thomas & Co, subsequently, after Mr Thomas's death in October, 1865, to be known as Thomas & Co. In June, 1866, owing to the collapse of the Agra & Masterman's Bank, the name was again changed, becoming J Thomas & Co.

**Early Activities.**—In the earliest days business was carried on in indigo, sugar, saltpetre, silk piece goods and raw silk. The indigo interest is the only one continuing to the present day, sugar having dropped out in April, 1863, saltpetre early in 1867, silk piece goods about 1869, and raw silk about the middle of 1885. The firm was also temporarily concerned with cotton broking, holding in November, 1861, what appear to be the first two public sales of cotton held in Calcutta, about 1,700 bales were then auctioned, realising Rs 16 to Rs 17 per maund. In 1873, however, dealing in that commodity was discontinued.

**Present Business.**—The present activities of Messrs J Thomas & Co cover tea, shellac, indigo, jute and gunnies, the tea department being considerably the largest. From the original foundation the firm has confined itself entirely to broking operations, and does not deal on its own account or carry on any shipping business.

**Trading Annals.**—The company still possesses all the fortnightly and monthly market reports issued from 1851 onwards, which make interesting reading.

On December 27, 1861, the first tea sale ever held in India took place, to be followed by another on February 19, 1862, at which 227 chests were sold. Sales took place at frequent though irregular intervals from then onwards, but until the late seventies the

volume of tea sold in Calcutta was small. In April, 1862, an invoice of tea from the East India Tea Co is mentioned, the Pekoe having fetched Rs 1.4 per lb.

Shipment figures of shellac and lac dye appear in those circulars from 1851 onwards, but the firm apparently did not do business in shellac until the end of 1871. Lac dye dropped out about a decade later, but the shellac transactions still continue.

The indigo business already mentioned formed by far the largest part of the firm's operations for many years but in 1896 the influence of synthetic dyes caused the manufacture of natural indigo to decline. To-day the total annual outturn is only from 500 to 1,000 chests.

In June 1873, dealing in jute was begun, but was discontinued in 1876 and does not appear to have been recommenced until 1903. In jute fabrics the firm commenced to do business in 1902.

**Premises.**—The building in which the company still operates was originally the residence of Gen. Sir John Clavering, a member of the Council of Warren Hastings. The main portion of the premises appears to have been very little altered since it was first built. The office of Messrs Hickie, Barby & Co was situated in this building, which in those days was only of very small extent. In March, 1854 the property was leased jointly to Messrs Robinson, Balfour & Co and Thomas, Marten & Co, but the business had probably been carried on at the same place for some years previously. The present site, including grounds, covers between six and seven bighas.

**Correspondents in Europe.**—Messrs Thomas Chamberledge & Moss.

**Office.**—8 Mission Row, Calcutta (P.O. Box No. 60) Cables: Nilhat, Calcutta Codes: A B C 5th Edition and Bentley's.

**Bankers.**—The Mercantile Bank of India, Ltd., Lloyds Bank, Ltd.  
(See illustrations pp 127 and 133)

### HARRISONS & CROSFIELD, LIMITED.

**Inception.**—A branch of the well-known English firm of the same name, whose business is mainly connected with tea, rubber, and other tropical produce, this organisation was opened in Calcutta in 1900 under the style of Lampard, Clark & Co., changed to the present title in 1908.

**Head Office.**—The firm was established about a century ago in Liverpool by Mr Daniel Harrison, at first alone and later in partnership with Messrs Joseph Crosfield & Smith Harrison. In 1840 the company opened in London at 3 Great Tower Street, where it has since remained, having twice built new premises on that site to suit the continual expansion of business.

**Capital and Board.**—In 1908 the firm was turned into a limited liability company with a capital of £307,500, its first directors being J B Crosfield, Charles Harrison, G T Crosfield, C Heath Clark, C A Lampard, G Croll and H E Miller. To-day the nominal capital is £2,525,000 and the working capital £1,877,180. Of the 1908 directors only Mr H Eric Miller, the present chairman, is left.

**Activities.**—The main interests of the Calcutta house lie in tea, of which it is a large buyer at the local auctions, and which is shipped to all parts of the world to be disposed of through the firm's numerous agencies. During the last seven years these shipments amounted to over 84 million pounds, representing about 17 per cent of the total quantity sold in the Calcutta auctions.

**Exports.**—Though shipping tea in all directions, the firm is intimately connected with the American and Canadian markets, in the

former through the associated company of Messrs Irwin-Harrisons-Whitney Incorporated (New York, Philadelphia, Chicago and San Francisco), and in Canada through its own branch in Montreal and agents in all other large centres. Exports from Calcutta to Australia are handled by Harrisons & Eastern Export, Ltd., an affiliated company which ships in addition to tea, oils, seeds, gunnies and other tropical products.

**Premises.**—The Calcutta warehouse, recently erected, contains about 28,000 square feet of space, providing storage for some 4,000 chests of tea in addition to ample room for bulking and packing. The illustration on page 129 shows the tea-room at 6 Church Lane, where all the tea is tasted and valued.

**Management.**—The manager at Calcutta is Mr Carl Reid, while Mr H L Puttock is in charge of the tea department and Mr J W McDonald controller of Messrs Harrisons & Eastern Export, Ltd.'s produce department.

**Offices.**—6 Church Lane, Calcutta.

**Cables.**—Harrisons & Crosfield, Ltd. Crosfields, Calcutta, Harrisons & Eastern Export, Ltd. "Yasmar" Calcutta. Codes: A B C, Western Union, Bentley's and Private.

**Bankers.**—Chartered Bank of India, Australia and China.

(See illustration, p 129)

### HEATH & CO. (CALCUTTA), LIMITED.

**Inception.**—This important tea buying firm was established in Calcutta a quarter of a century ago being a development of the original business of Heath & Co established in China in 1802. For upwards of twenty years the concern was styled Heath & Co., being a private partnership concern but in 1924 it was formed into a limited liability company, with large and influential London financial interests behind it. This development marked a new era in the history of the important business, the firm of Heath & Co (Calcutta), Ltd., now being one of the foremost tea buying concerns in the East.

**Activities.**—The company acts as special buying agents for tea importers practically the world over. It numbers among its clients some of the largest importers of tea in the United Kingdom, Australia, North and South America, Canada, South Africa, and the Continent. As one country seldom uses the same type of tea as another, it can be readily understood what a highly expert knowledge of the article is required to maintain and expand this world-wide connection.

**Staff and Godowns.**—The native Indian staff employed numbers about one hundred, and the firm's two largest godowns at the docks for warehousing, preparing the tea for shipment, etc., are among the best equipped of their kind in Calcutta.

**Directors.**—The Board consists of the following Messrs A R A Heath, C J Lyst, W J Gibson, H H Bentley, and R Cook.

**Offices.**—The Registered Office of the Company is at Grosvenor House, 21, Old Court House Street, Calcutta, and there is also a branch office at 11, British Indian Street, Calcutta.

**Cables.**—"Heathbird," Calcutta.

**Codes Used.**—Bentley's, A B C 5th and 6th Editions, Lieber's and Private.

**Bankers.**—The Chartered Bank of India, Australia and China.

(See illustration, p 130).

### BARRY & CO.

**Inception.**—This is one of the associated firms known as the Inchcape Group, and was established in 1872 at 5, Lyons Range, Calcutta, in premises which it occupied until 1923, when a move was made to the present quarters.

**Activities.**—Operating as general merchants and agents, Messrs Barry & Co are largely interested in the jute, oil seed and tea industries, insurance and the manufacture of paints and metal containers.

**Agencies.** The firm acts as secretaries and agents for Jute Mills. The Gourapore Co., Ltd. 1,354 looms, and Jansed Oil Mill. As managing agents for Jute Mills. The Nuddea Mills Co., Ltd., 1,008 looms, Paint Works, Jensen & Nicholson (India), Ltd. Drum and Keg Works. The Electric Welding and Manufacturing Co. (India) Ltd. Tea Gardens. Bhooteaching Tea Co., Ltd., Silombari Tea Co., Ltd. As agents for Insurance London & Lancashire Insurance Co., Ltd. and for Tea Gardens. Chandpore Tea Co. Ltd., Cheerie Valley Tea Co., Ltd., Craigpark Tea Co., Ltd., Eastern Assam Tea Co., Ltd., Khomkor Tea Estate, Moklabari Tea Co., Ltd., Sylhet Tea Co., Ltd., and Titachmoro Tea Estate.

**Tea Department.**—The company has its own tea blending and tasting departments, and exports tea to all parts of the world.

**Offices.**—2 Park Place, Calcutta (cables "Barrycoy," Calcutta) Codes A B C 4th and 5th Editions, Bentley's and private.

**Bankers.**—Imperial Bank of India, P & O Banking Corporation, Ltd., Chartered Bank of India, Australia and China, National Bank of India, Ltd.  
(See illustration p 132)

**A. W. FIGGIS & CO.**

**Inception.**—This well-known firm of tea-brokers was established 37 years ago by the present principal, Mr. A. W. Figgis, who came out to India some time prior to that period. After working with another enterprise for several years he decided to set up business on his own account, and the extent of his success is best gauged by the amount of tea now sold yearly by the firm.

**Activities.**—The nature of the company's activities is purely that of tea broking—in

other words, the selling of that commodity by public auction on behalf of the garden agencies to the tea buyers.


**Premises.**—The offices of Messrs Figgis are situated in the top floor of Clive Buildings, whence they command a fine view over Northern Calcutta. They are light, airy and spacious—three important attributes which greatly assist in the expeditious handling of tea. For accurate tasting and valuing a north light is essential, and in this respect it can fairly be said that the company's tasting room possesses a light that is second to none in Calcutta.

**Partners.**—The present partners in the business are Messrs A. W. Figgis, L. G. Notley and L. Squit.

**Offices.**—D " Block, Clive Buildings, Calcutta (cables "Fimaro," Calcutta), Code Bentley's.

**Bankers.**—P & O Banking Corporation Ltd.  
(see illustration, p 131)

## RICE

 If all the great crops in India rice is first in importance, its yield being a vital factor in the country's prosperity. That Empire's share of the world's total of some 90,000,000 tons of cleaned rice approximates to 32,000,000 tons and though the average exports seldom exceed 5 per cent of her estimated production, she is nevertheless the largest exporter of rice among the nations.

**ACREAGE AND PRODUCTION.** The total area for British India reported as under cultivation for 1925-26 was 81,461,000 acres, compared with 81,466,000 acres in the previous year. The yield was estimated at 30,357,000 tons of cleaned rice, as against 31,082,000 tons in 1924-25, or a decrease of 2 per cent. In addition to the areas included in this return, particulars of which are given below, rice is grown in other parts of India, e.g. in the Punjab, Ajmer-Merwara, North-West Frontier Province, Delhi, Manipur Pargana, and certain other Indian States, their total average acreage being about 3,700,000 with a yield of some 990,000 tons.

The following table gives returns by provinces of India's estimated rice crop for 1925-26, as compared with 1924-25—

**YIELD PER ACRE**—The average yield per acre for all India (excluding certain Federated States previously mentioned) worked out to 835 lbs. in 1925-26, as against 855 lbs. in 1924-25, 708 lbs. in 1923-24, 916 lbs. in 1922-23 and 909 lbs. in 1921-22. In Japan and Egypt the average yield per acre is considerably over 2,000 lbs.

The following table shows the yield per acre for the various Provinces and States in the years named—

PROVINCES AND STATES	YIELD PER ACRE IN LBS.	
	1924-25	1925-26
Bengal	829	872
Bihar and Orissa	921	767
Madras	1,011	1,050
Burma	937	877
United Provinces	718	651
Central Provinces and Berar	537	628
Assam	750	820
Bombay	1,020	862
Coorg	1,070	1,013
Hyderabad	862	1,011
Mysore	601	605
Baroda	365	373
All India	855	835

PROVINCES AND STATES	AREA (IN ACRES)		YIELD (IN TONS)	
	1924-25	1925-26	1924-25	1925-26
Bengal	4,857,000	5,139,000	1,400,000	1,481,000
Autumn crop	15,590,000	15,619,000	6,150,000	6,598,000
Winter " "	422,000	407,000	105,000	104,000
Summer " "				
Total Bengal	20,869,000	21,165,000	7,721,000	8,243,000
Bihar and Orissa	3,320,000	3,546,000	1,034,000	961,000
Autumn crop	11,190,000	10,698,000	4,077,000	3,914,000
Winter " "	37,000	40,000	12,000	15,000
Summer " "				
Total Bihar and Orissa (a)	14,653,000	14,284,000	6,023,000	4,890,000
Assam	791,000	778,000	206,000	211,000
Autumn crop	3,514,000	3,158,000	1,213,000	1,290,000
Winter " "	194,000	187,000	88,000	81,000
Summer " "				
Total Assam	4,499,000	4,323,000	1,507,000	1,582,000
Madras	10,870,000	11,050,000	4,908,000	5,182,000
Burma	12,121,000	12,121,000	5,007,000	4,743,000
United Provinces (b)	7,127,000	7,458,000	2,286,000	2,166,000
Central Provinces and Berar (b)	6,247,000	6,158,000	1,499,000	1,726,000
Bombay	3,408,000	3,216,000	1,553,000	1,235,000
Autumn crop (c)	25,000	23,000	11,000	12,000
Spring " "				
Total Bombay (c)	3,433,000	3,239,000	1,564,000	1,247,000
Coorg	81,000	82,000	99,000	40,000
Hyderabad	624,000	711,000	240,000	321,000
Mysore	693,000	696,000	186,000	188,000
Baroda	258,000	174,000	42,000	29,000
Grand total	81,466,000	81,461,000	31,082,000	30,357,000

(a) Excluding certain Federated States  
(b) Includes Indian States.  
(c) Includes Sind and Indian States.

**CLASSIFICATION.** Rice in the husk before hulling is known as paddy, after hulling it becomes rough rice, and after pearlying it is cleaned or white rice. The broken grains of rice are separated and sold as coodie or khood, while the higher grades are subjected to a further process of polishing on sheepskins with the object of removing any rice meal which may adhere to the grain. No chemicals whatever are used in this polishing process or in any other process connected with the milling of rice. Cargo rice contains from 5 to 20 per cent of unhusked rice, i.e. paddy, and if exported in this form to Europe is subjected to further milling on arrival there. The ratio of paddy to rice by weight depends entirely on the quality of rice produced. In the case of specials it may be taken as one of 85, but the ratio for better qualities is lower.

For boiled rice there is no market in Europe, but there is a considerable demand for the grain in this form in India, also in countries where Indian labour is employed, such as the Federated Malay States and Ceylon. The process may be roughly described as follows. The paddy is soaked in water for 40 to 80 hours according to grain and season, then boiled for 20 to 40 minutes and dried before husking. This business is largely in the hands of small millers in out of the way places where there is plenty of room to spread the rice after steaming to dry in the sun, though artificial drying is not unknown. This parboiled rice has a higher nutrient value owing to its lighter milling, and though when husked it has a yellow tinge, it becomes white when cooked and keeps better afterwards, which is a great asset when rice is prepared overnight to be eaten the following day.

For statistical purposes, exports of rice are divided into two heads—rice in the husk (paddy) and rice not in the husk (rice), the volume of the former seldom exceeding 50,000 tons in any year, the chief destination being Ceylon. Rice in the husk includes boiled rice.

**BENGAL RICE.**—The chief varieties of Bengal rice on the market are known as "Table or white Patna," "Broken table rice" or "Khood," "Patna," "Old Hard" and "Chinsukur," while among boiled or brown rice may be mentioned "Boiled Patna," "Dowdkhani," "Ballam" and "Raree." The principal variety of rice

exported is "Kazla," which goes to Ceylon. The chief market for white "Patna" before the War was Hamburg, but considerable quantities went also to Liverpool and Bremen, for "Old Hard," which is grown chiefly in the neighbourhood of Calcutta (the designation "Patna" having reference to the boldness of the grain and not implying locality of origin), Cuban ports, and for "hoiled Patna" and "Ballam," Trinidad, Martinique and the Persian Gulf. For "Karee" there is a considerable demand in Mauritius.

**BURMA RICE.**—Of Burma rice, the main variety, named generically "Rangoon," produces a well-shaped oval grain, white and free from yellow stains. Graded and highly finished in Western mills, its good colour and attractive price enable it to compete with all rivals. "Bassein," with practically identical characteristics, gives even superior milling results. "Moulmein," a large, soft opaque grain, is prized in many parts of the Continent, but is too "mushy" to be popular in the British Isles.

**CULTIVATION (METHOD OF).** Rice requires for its maturing a moist climate with a well-assured rainfall. The better qualities of the cereal are sown in seed-beds and transplanted in the monsoon. Broadcast rice is grown generally in low-lying areas and is sown before the monsoon, as it must make a good start before the floods arrive. Deep-water rice grows quickly and to a great height, and are as a rule able to keep pace with the rise in water-level.

For transplanted rice the soil is generally prepared after the arrival of the monsoon and is worked in a puddle before the seedlings are transplanted. The land is laid out in small areas, with raised partitions to regulate the distribution of the water supply. The seedlings are planted in small bunches containing from 4 to 6 plants each, and are simply dibbled into the mud at distances of 6 to 12 inches apart. Where available, irrigation water is given at frequent intervals, and the fields are kept more or less under water until the crop begins to show signs of ripening.

**EXPORTS.**—See under "Commerce."

**MARKETING.**—As a rule the paddy is taken over from the cultivator on the threshing floor either by middlemen acting on behalf of the mills, by speculators, or by local traders known as jungle brokers. The beginning of the paddy season corresponds

pretty closely to that of the calendar year, as harvesting commences generally towards the end of November and the crop comes commercially into sight in January. The crop is all hand-reaped (in Burma chiefly by coolies from Madras and Bengal, mechanical aids being unknown). The mills which own their own boats advance money to their paddy buyers on the security of the latter's land or other property. In some cases the paddy buyers mortgage their boats against the moneys received. In Burma a boat may do three or four trips per month according to the position of the paddy, but in bringing the product from the more distant and outlying districts a full month may be occupied in making one trip. As soon as the buyer obtains a boat he proceeds to the district, buys grain and brings it to the mill for measurement. Measuring is done fairly rapidly, and in very few cases occupies more than one day. When a boat of paddy is discharged a certain number of baskets are weighed and the average weight arrived at therefrom is taken as representing the weight of the whole consignment, credit being given to the seller for any excess over 16 lbs. and deductions made if the average weight is found to be less than 46 lbs. Storing facilities in the district, which were formerly limited, are now considerable, and at a rough estimate almost half the exportable surplus can be distributed in godowns up-country.

The barometer of the Rangoon rice market is the price of Big Mills special rice, which again depends upon and bears a definite relation to the current price of paddy. The unit of shipment in Rangoon is the bag which varies in weight from 168 to 225 lbs. net.

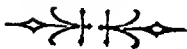
The unit of sale in Calcutta is the bazar maund, and shipment is made in bags of 164 or 224 lbs. net, while sterling quotations are based on the cwt. c.i.f. In Madras the unit of sale and shipment is the bag of 104 lbs. net. In Bombay, the bag of 168 lbs. gross, and in Karachi the kandy of 156 lbs.

**SEASON.** The usual busy season for paddy commences about January 15 and lasts till somewhere about April 15. By the latter date it is normally reckoned that half the exportable surplus has been marketed. The remainder of the crop is marketed throughout the year, and under normal conditions is delivered at the port of export by the middle of December. There has been a growing tendency of recent years to store rice so as to distribute the business more evenly during the 12 months. Co-operative

credit societies have enabled cultivators to hold up part of the harvest instead of rushing it down during the first three months of the season and glutting the market, with disastrous results to themselves.

**MILLING.**—In the cargo rice mill the paddy is put over shakers and sieves in order to remove extraneous matter, such as stones, dirt and straw, and is winnowed. It is then hulled, i.e. passed between the grindstones which remove the husk and winnowed again. It then becomes what is known as *loonzain*. "Five parts cargo rice" consists of 80 per cent *loonzain* and 20 per cent paddy. In white rice mills the *loonzain* rice is again milled by cones or pearlers, which remove the outer cuticle. The rice then goes through a further process of sieving, the sieves being so arranged and graded that the percentage of broken rice, which it is desired to remove from the whole rice, can be bagged off separately. It is then re-winnowed and bagged. In the higher qualities of rice, usually shipped to Europe, there is a further polishing in cylinders made of wood and wire gauze in which revolve rollers covered with sheepskin. This takes place after the rice has left the cones or pearlers, but before the final sieving process. Formerly the bulk of rice shipped was cargo rice, but now the proportion of white rice to cargo rice is practically the inverse of what it was twenty-five years ago.

**RICE MILLS.**—No exact figures are available as to the number of rice mills in Burma and their milling capacity, but there are over 300 employing twenty hands or more, and on a conservative estimate the output may be put at about 6,000,000 tons of "five parts cargo rice" per annum. In Burma, as in other parts of India, the capacity of mills is considerably in excess of the quantity of grain available for milling. The milling strength of a typical Rangoon mill may be put at about 30,000 baskets of 46 lbs. of paddy per day of 12 hours. The largest mill at Pazundaung is capable of turning out 700 tons of cargo rice a day. Mills generally run night and day for about three months in the year, and paddy husk is the only fuel used. The quantity of husk produced is always in excess of the fuel required, and until a few years ago the surplus used to be discharged into the creeks and rivers. Now, however, when fuel is expensive, many other industries are glad to purchase the available surplus.



## FORESTRY

**I**N every land which freely possesses them, forests constitute an important national asset; to a country like India, where an overwhelming proportion of the population is directly dependent upon agriculture, the part which they play in the economic condition of the people can hardly be exaggerated. Among the Indian peasant's greatest needs are firewood to replace manure, small timber for houses, wood for implements, and grazing and fodder for his cattle; all these the forests supply. Nor is it only in the direction of supplementing natural resources that forests can play so great a part; they have, in addition, a marked

effect on climate and on the maintenance of water-supply. They hold together the fertile surface soil, they store water and dole it out gradually, thus preventing disastrous floods and the formation of ravines, and by checking erosion they prevent good soil from being washed into the rivers and carried away to waste. Forests also directly increase the fertility of the land, being capable of forming rich vegetable mould even from mineral soils. Finally, in India, forests are a valuable asset in time of famine; for they yield vast quantities of fodder—though much of it is of poor quality—and provide edible fruits and roots, of which the poor readily avail themselves.

**ADMINISTRATION.**—The forest business of the Government of India is carried out by the Department of Education, Health and Lands. The Inspector-General of Forests is the head of the Forest Department, and is the technical adviser to the Government of India in forest matters.

**FOREST SERVICE.**—The forest service of India comprises three branches, viz., (1) The Indian (Imperial) Service, with a total personnel of 340 officers, including an Inspector-General of Forests, Chief Conservators, Deputy and Assistant Conservators. Most of these officers are recruited by direct appointment in the United Kingdom and India; about 40 are promoted from the

Provincial Service, (2) The Indian Forest Engineering Service (see later), and (3) The Provincial Service, which consists of Extra Assistant Conservators, Forest Rangers, Deputy Rangers, Foresters and Forest Guards. These officers are recruited and trained in India, their recruitment being a matter for the local Governments. The process of Indianization is proceeding steadily.

**TERRITORIAL CHARGES**—The various provinces are divided into one or more Forest Circles, each in charge of a Conservator of Forests, provinces containing three or more circles also have a Chief Conservator, who is the head of the Department for his province. Circles are divided into a number of Forest Divisions, in charge of members of the Imperial or Provincial Forest Service, each division contains a number of Ranges, in charge of junior members of the Provincial Service, or of Forest Rangers or Deputy Rangers. The Ranges are further sub-divided into a number of beats or protective charges held by Forest Guards, in some cases by Foresters.

**CONSERVATION OF FORESTS**.—The neglect of her forests in times past has exposed India to many penalties. The forests in the plains which once provided a hunting ground for the Mogul emperors have mostly disappeared, the land they once occupied has either come under cultivation, or now stands as a deserted tract with ever increasing ravines. On the hill sides the blind destruction of forests which continued for many centuries has also brought serious consequences in its train. Fortunately the danger was perceived before it was too late, and forest conservation has now been applied systematically for more than half a century. The reservation of large areas, the restriction of grazing rights, the embargo upon the felling of trees and lighting of fires have never been popular and have often been bitterly resented. But that they have checked the gradual process of deforestation there can be no doubt, and wherever possible the rigour of forest restrictions is relaxed in such manner as to meet the requirements of villagers without prejudice to future interests.

**FINANCIAL RESULTS**.—Despite the difficulty of securing the cordial co-operation of the general public, and the additional disadvantages of restricted staff and financial stringency, the Indian forests yield a considerable revenue to the State. In the first financial year of the present century the grand total of the forest revenue amounted in round figures to Rs 196.6 lakhs and the expenditure to Rs 112.7 lakhs, leaving a credit balance of Rs 83.9 lakhs. Since then there has been a progressive upward tendency, and the latest figures returned show a gross revenue of Rs 552.1 lakhs and an expenditure of Rs 395.7 lakhs, or a surplus of Rs 156.4 lakhs, the proportion of surplus to gross revenue being about 28 per cent.

**FOREST POLICY**.—The general policy of the Government of India in relation to forests was definitely laid down some 20 years ago by the classification of the areas under the control of the Department into four broad classes, namely:—

(a) Forests the preservation of which is essential on climatic or physical grounds. These are usually situated in hilly country, where the retention of forest growth is of vital importance on account of its influence on the storage of the rainfall and its prevention of erosion and sudden floods.

(b) Forests which afford a supply of valuable timbers for commercial purposes, such as the teak forests of Burma, the sal

forests of Northern, Central and North-Eastern India, and the deodar and pine forests of the North-Western Himalayas.

(c) Minor forests, containing somewhat inferior kinds of timber, and managed for the production of wood, fodder, grazing and other produce for local consumption, these forests are of great importance in agricultural districts.

(d) Pasture lands, which, though not forests in the generally accepted sense of the term, but grazing grounds, are managed by the Department as a matter of convenience.

These four classes of forest are not always sharply divided from each other, and one and the same tract may to a certain extent be managed with more than one object.

**FOREST RESEARCH**.—At the Forest Research Institute at Dehra Dun a great deal of valuable research and experimental work is carried out, and it is proposed shortly to open a new School of Tropical Forestry there. Specialists in wood technology, timber seasoning and testing, wood-making and pulp and paper-making are employed by the Government, and it was announced early in 1926 that the Standing Finance Committee had sanctioned the ultimate expenditure of £833,000 on the Institute. Hitherto the expenses of European training have placed Indian aspirants to the higher posts of the Forest Department at a disadvantage. It is hoped that the Institute will quickly be brought up to date to enable Indians to qualify direct for the gazetted grades.

**FORESTS (TYPES OF)**.—More than one-fifth of the total area of British India (including the Shan States) is under the control of the Forest Department. These areas are classified as reserved, protected, or unclassified State forests. In the reserved forests the rights of user in favour of individuals and the public are carefully recorded and limited, the boundaries being defined and demarcated, in the protected forests the record of rights is not so complete, the accrual of rights after settlement not being prohibited, and the boundaries not always demarcated, while in the unclassified forests no systematic management is attempted, and as a rule the control amounts to nothing more than the collection of revenue until the areas are taken up for cultivation or are converted into reserved or protected forests. The total forest area approximates to 250,000 square miles, of which about 100,000 square miles are reserved forests and some 8,000 square miles protected.

Throughout this vast forest area, extending from the Himalayan snows to Cape Comorin and from the arid juniper tracts of Baluchistan to the eastern limits of the Shan States, there is, as may be imagined, an infinite variety in the types of forest vegetation, depending on variations of climate, on soil and on other local factors. Broadly speaking, the following main types of forest may be distinguished:—

**ARID-COUNTRY FORESTS**.—These extend over Sind, a considerable part of Rajputana, part of Baluchistan and the south of the Punjab, in dry tracts where the rainfall is less than 20 inches. The number of species is few, the most important tree being the babul or kikar (*acacia arabica*), which, however, in the driest regions exists only by the aid of river inundations.

**DECIDUOUS FORESTS**.—In these forests most of the trees are leafless for a portion of the year. They extend over large areas in the sub-Himalayan tract, the Peninsula and Burma, and are important as comprising the greater part of the teak and sal forests.

**EVERGREEN FORESTS**.—These occur in regions of very heavy rainfall, such as the

west coast of the Peninsula, the eastern sub-Himalayan tract, and the moister parts of Burma. They are characterised by the great variety and luxuriance of their vegetation.

**HILL FORESTS**.—The hill forests of the Eastern Himalayas, Assam and Burma are famous for their various oaks, magnolias and laurels, while in Assam and Burma the khasia pine (*pinus khasya*) grows gregariously at elevations of 3,000 to 7,000 feet. In the North-Western Himalayas the chief timber tree is the deodar (*cedrus deodara*), which occurs most commonly at elevations of 6,000 to 8,000 feet, and in association with oaks and blue pine (*pinus excelsa*), towards its upper limit the deodar merges into very large areas of spruce and silver fir, while below it are found extensive areas of the long-needled pine (*pinus longyfolia*), which is tapped for resin.

**LITTORAL FORESTS**.—These occur on the sea coast and along tidal creeks. The most characteristic trees belong to the mangrove family. Behind the mangrove belt is an important type of forest occasionally inundated by high tides, in which the most valuable species is the sundri.

**INDUSTRIES**.—The important role which the forests of a country play in its general commercial welfare and in providing employment for its population is not always fully recognised. Quite apart from the jungle population of the country, which is directly dependent upon the forests and the large number of wood cutters, sawyers, carters, carriers, raftmen and others working in and near them, employment on an extensive scale is provided for persons engaged in working up the raw products. Among these latter may be mentioned carpenters, wheelwrights, coopers, boat-builders, tanners, rope-makers, lac-manufacturers, basket-makers, and many other classes of skilled labourers, whose total numbers probably aggregate not less than two million and a half.

**OUTPUT**.—The average volume of timber and fuel and the value of minor products removed from State forests during the last year for which figures are available are shown in the following tables.

(A) MAJOR PRODUCE		
AGENCY OF EXPLOITATION	TIMBER IN CUBIC FEET	FUEL
By Government	14,974,903	19,778,094
By Purchasers	86,531,547	140,514,225
By Free granters	2,116,348	10,524,440
By Right-holders	4,017,237	71,849,120
Totals	107,640,095	242,665,879
(B) MINOR PRODUCE (VALUE)		
	Rs	
Bamboos	17,71,140	
Grazing and fodder grass	74,21,104	
Other minor produce	53,83,397	
Total	1,45,75,701	

**PRODUCTS (FOREST)**.—Forest produce is divided into two main heads—(a) Major produce, that is, timber and firewood, and (b) Minor produce, comprising all other products, such as bamboos, leaves, fruits, grass, gums, resins, barks, animal and mineral products, etc.

**PRODUCTS (MINOR)**.—The minor forest products of India are of growing importance. Lac, tanning materials, essential oils, turpentine, and resin have established themselves firmly in the markets of the world. The following are the most important:—

**BAMBOOS**.—An avenue of great possibilities has been opened up by the discovery that bamboos can be utilised for the manufacture of paper pulp. It is confidently



hoped that the extensive forest areas of bamboo and savannah will be before long utilised for the local manufacture of a large proportion of the paper now annually imported to the value of between Rs 2 and Rs 3 crores per annum. Private concerns in India are interesting themselves more and more in forest exploitation, and are undertaking the extraction of timber, the manufacture of ply-wood and the production of pulp (See also under "Industries").

**CUTCH** - Cutch is the product of the khair tree (*acacia catechu*), which is one of the commonest and most widespread trees in India and Burma. It is a preservative and khaki-coloured dye, extensively used for fishing nets, for dyeing brown sails, mail canvas, and occasionally for textiles. The export trade is valuable (See also under "Commerce").

**DRUGS, ETC** Indian forests are rich in herbs, shrubs and fruits which have an actual or potential value for medicinal purposes. The most important are nuxvomica (see under "Agriculture"), podophyllum, artemesia martima, which yields the drug santonin, and taraktogenos urzin, which gives chulmugea oil.

**KATHA** - Katha (*catechin*) is also a product of the khair tree, but is consumed almost entirely in the country, being mixed with betel and lime to form pan, the favourite masticatory of India. The total consumption of katha is estimated to run into several thousands of tons yearly. The retail value of katha is about one rupee per pound, or nearly £150 per ton.

**LAC** - See special article "Shellac."

**MYRABOLAMS** - The myrabolam is the fruit of the forest tree *terminalia chebula*, and is the most valuable and important tan stuff of India. It is usually collected while still green on the tree, and promptly dried in the sun. The ordinary commercial product "jungle hurra," of the central parts of India, averages about 28 per cent of tannin. Myrabolams are largely used in both India and Europe in mixture tannages, and in Bombay are also used for the production of yellowish-buff shades on cotton and in the manufacture of inks. The greater part of the myrabolam crop comes from privately-owned forests, and little has been done as yet in India generally to increase the supply of hurra trees.

**RESIN AND TURPENTINE** - Crude resin and turpentine are derived from the *pinus longifolia*, which abounds in the Himalayas, and occupies more than 400,000 acres of Government-owned forests, while the acreage under Indian States can hardly be less. French methods of tapping the trees and also of distillation have been very generally adopted, and India has now the distinction of being the one and only country in the British Empire that is producing these two important materials on a large scale (See page 121, "The Jallo Turpentine & Rosin Factory").

**SANDALWOOD OIL** - The oil distilled from the sandalwood tree has valuable medicinal properties, and considerable use is also made of it in perfumery and in the manufacture of toilet soaps. The extraction of this oil by crude methods is one of the oldest indigenous industries in India, the principal centre being Kanauj in the United

Provinces, where, by primitive and wasteful processes, costly attars and perfumes are still produced. Under State management a large factory operates at Bangalore.

**TIMBERS** - It is impossible within the limits allowed to describe any but a few of the more important of the timber-producing trees of India. Of the evergreen trees it may be said that the conifers and acacias are economically the most important, while of the deciduous trees the teak stands supreme.

**BAUL (KIKAR)** - This is the *acacia arabica*, a tree whose timber is hard and excellent for a large variety of purposes, and whose bark provides one of the principal tanning materials in India. It grows extensively in the Himalayas and the Upper Gangetic plain, as also in Madras and Southern India, and its conspicuous and beautiful yellow flowers are a feature of the forests in which it thrives.

**BLUE PINE** (*Pinus excelsa*) - The blue pine belongs to the forests of the Himalayas. The timber is good and finds increasing favour in the trade, now fetching a far higher price than deodar. For furniture and other interior work it is unrivalled among Indian woods.

**CHIR** (*pinus longifolia*) - This is the pine from which the valuable resin which yields turpentine is obtained (see "Minor Products"). The largest pine belts occur along the foothills and lower slopes of the Himalayas. The timber is rough and coarse and not durable, but being available in large quantities is much used.

**DEODAR** - From the timber production point of view, the most important forests of the Punjab, Rajputana and the frontier tracts are the coniferous ones of the Himalayas, of which the most striking example is the deodar (*cedrus deodara*). The timber of the deodar, the sacred tree of the Himalayas, is better than that of any other conifer and is very durable. The heart-wood is not usually eaten by white ants, but the sap-wood is readily attacked. The principal use is for railway sleepers, which last about 12 years on the average. From the wood an oil is extracted by destructive distillation and is used for preserving the inflated skins used on the main Punjab rivers.

**KHAIR** (*acacia catechu*) - This tree, which grows everywhere in India, is notable principally for providing the cutch of commerce. It attains its full height of about 50 ft in as many years, and the timber is used for the posts and uprights of houses, ploughs, machinery, etc.

**PYINKADO** - This is an important hardwood timber tree which occurs extensively in the forests of Burma.

**SAL** - The sal ranks next to the teak as a timber tree, but can flourish with less rain. It grows chiefly in the Eastern Himalayas, on the hills of Central India and on the Eastern Ghats. Its durability, strength, freedom from white ant attack and easy seasoning cause it to be extensively exploited throughout the whole range of its habitat. On the adequate supplies of sal timber depend to an enormous extent the upkeep and expansion of railways, the construction of buildings in cities and villages, and in brief the continued economic prosperity of the immense population of the Gangetic plain.

**SANDALWOOD** - Indian sandalwood is the heartwood of *santalum album*, an evergreen tree whose occurrence is practically limited to a restricted area in Southern India, chiefly in Mysore and Coorg and the Coimbatore and Salem districts of the Madras Presidency, also to a more limited extent in Travancore and Sandur States. Long before the exploitation of the East by European traders sandalwood was a principal article of commerce. The heart-wood (equivalent to about one third of the felled tree by weight) is employed in the manufacture of small caskets and picture frames, also for carved work in general. Considerable quantities are in addition utilised for religious rites and ceremonies.

In Mysore and Coorg all the trees are State property, and in Madras, though private ownership is recognised, production is almost a monopoly of the Government forest reserves.

**SILVER FIR** (*Abies pindrow*) - The timber of the silver fir, which is a Himalaya tree, is very similar to that of the spruce, but on the whole is not quite so good, and large trees are usually hollow. A height of 200 ft and girth of 20 ft have been measured.

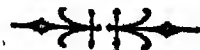
**SISSU** (*Dalbergia sissoo*) - Sissu trees, which yield an essential timber for the furniture industry, grow chiefly in the forests of the Upper and Lower Gangetic plains, that is to say, in the United Provinces, Nepal, Assam and Bengal.

**SPRUCE** - The spruce tree grows to an enormous size in the Himalayas, frequently reaching 150 ft in height and 10 ft in girth, while one of 215 ft height and 23 ft girth has been measured. The wood is white, soft and even-grained, with no heart-wood. White ants eat it. The brown timber is said not to float.

**SUNDRI** (*Heritiera fomes*) - The sundri is the most important species found in the famous Sunderbans tract of Bengal, which is one of the most valuable forest estates in India. It supplies the large surrounding district and also the city of Calcutta with something like ten million cubic feet of timber and fuel per annum, the wood being used in general for building and other purposes.

**TEAK** (*Tectonia grandis*) - This is the "king of Indian forest trees," and flourishes best where there is a heavy rainfall. It is therefore found principally in the Western Ghats, Assam and Burma, the teak forests of Pegu and Amherst in the last-named province being very extensive. The tree grows to a great size, attaining maturity in about 80 years, and is the best wood in India for ships' timber, house building and any other work where strong and durable wood is required. The sap-wood is light and small; the heart-wood when cut green has a pleasant and strong aromatic fragrance and a beautiful dark golden-yellow colour, but, on seasoning, soon darkens into brown mottled with darker streaks. It does not suffer in contact with iron, and is rarely, if ever, attacked by white ants.

In Burma, where there is a large export trade in teak, the logs are floated down the rivers to the coast, it is a peculiarity of teak wood that it will not float in water till it has been dead two years. (See also under "Commerce.")







1 Grinding Sticklac.

2 Manufacturing Shellac

3 Stretching Shellac

## SHELLAC

By P. S. SPARLING

**L**AC, of which shellac is the chief commercial product is to all intents and purposes a gum the product of an insect (*Tachardia lac a*) which in large numbers frequents particular trees. This insect manufactures the gum by inserting its proboscis in the bark of the tree and sucking out the juice, finally exuding the same, which, on contact with the air, solidifies and forms an incrustation over the female insect itself, thus acting as a protection against its natural enemies. That incrustation is the basis of lac. After fertilisation the females proceed to breed inside the incrustation, following which they die off. The young insects gradually emerge when the crop is considered to be ready for gathering and commence infecting fresh branches.

The introduction of the present lac industry dates back very many years, and its origin may be traced to the time when the lac-dyeing industry was superseded by synthetic substitutes. For many centuries the dye obtained from lac was very popular owing to its vivid crimson colour, a reminder of which is found to-day in the term "crimson lake," but eventually, like most other dyes, it had to give way to chemical substitutes.

In the early 'eighties, when the exports of lac dye had almost ceased and the product was threatened with extermination, the value of the actual substance of lac was discovered, and since then more and more uses have been found for it, there being many articles of commerce which could hardly be produced at all without its aid.

**AREA AND OCCURRENCE.**—An extraordinary feature of the lac industry is that the growing and production of lac are almost peculiar to India. A small quantity is raised in Indo-China and Siam, but the quality produced in those countries is very inferior to that grown in India. Another feature is

the fact that the big lac-growing districts are all found on the eastern side of India, in an area round Bengal, Bihar and Orissa, etc., whereas it has been ascertained that lac does not grow successfully on the Bombay side. This is probably because of unsuitable climatic and soil conditions.

**BIHAR AND ORISSA**—In the main area the principal district is Manbhum, in Bihar and Orissa, which of all districts produces the largest quantity and best quality of lac. This district contains the important markets of Jhalda, Balarampur and Manbazar, the first named market supplying a larger amount of shellac than any other and the whole of the district is admirably served by railways for transportation purposes. Next in order come the districts of Palamau, Pakur (which produces a distinctive quality of lac), Ranchi, Singhbhum, and Gaya, each with important markets and a large production.

**CENTRAL PROVINCES**—The one big district in the Central Provinces is Bhandara, whence comes a large quantity of lac, whilst in the same area is the Raipur district, with the markets of Rajm and Dhamtari, which deal with the finest qualities of the product suitable for the best grades of superfines.

**UNITED PROVINCES**—The district of Mirzapur, which has become a household word in the shellac trade, is properly speaking not a producing district at all, but is nevertheless one of the largest markets for lac in India. Mirzapur lies just outside the area of lac growing districts, but is conveniently situated on the main line of the East Indian Railway, which no doubt accounts for its popularity as a market and a manufacturing centre for shellac.

**VARIOUS.**—Other districts which may be mentioned are those of Hazaribagh, Bilaspur, Jubbulpore and the Rewah State,

but these are all inferior in productive facilities to the principal districts enumerated previously, except perhaps the Rewah State, an enterprising Native State which produces a very fine quality of lac.

**EFFECTS OF WEATHER.**—It is well known to science that numbers of insects are considerably affected by climatic conditions, and that while under certain of them they thrive under others they become unhealthy and die off. To this rule the lac insect is no exception. In some areas it thrives excellently even without the aid of cultivation, on other areas, subject to entirely different climatic conditions, no amount of cultivation will stimulate the growth of healthy lac. There are also abnormal climatic variations, occurring in the best lac growing areas, which affect the growth of lac for good or evil as the case may be, one instance of these being occasional showers of rain at other times than during the monsoon season, which, provided they are not too heavy, prove very beneficial. The greatest danger to the crops arises either from late frosts or from heavy hailstorms, which occur at the important periods of larval and male emergence. Other disturbing factors are hot winds and heavy rains at unnatural times of the year, whilst sandstorms are also detrimental because the particles of sand adhere to the lac whilst it is somewhat moist and cause difficulties during manufacture.

**HOST TREES.**—Lac will not grow successfully on all trees, and the Research Institute of the Indian Lac Association at Nankum in the Ranchi district is doing a great deal to find out which are the most suitable trees to act as "lac hosts," also the reason why they are the best suited for this purpose.

Considerable difference of opinion has been expressed at various times as to why lac is

present on trees at all, whether it is there in the form of a pest or whether the action of the lac insect on the tree is a beneficial one. In view of the facts that trees infected with lac are much less healthy and virile than uninfected trees in the same district, and that trees when heavily infected with lac die off altogether, the generally accepted opinion is that lac is present on the trees as a pest. This being so, it is obvious that in the cultivation of lac it is essential to know which trees are least affected by the action of the pest, since these trees should undoubtedly prove to be the best to act as hosts for the lac insect.

So far as present knowledge goes the trees which are most suitable for the cultivation of lac are palas, which is found all over the plains of India, kusum, found principally in the Central Provinces, Chota Nagpur, Bihar and Orissa and Burma, and producing the very fine quality of lac known as the "kusumi crop", ber, the wild Indian plum tree, which is specially cultivated as a lac host, ghont, a similar tree to ber, growing mostly in the Central Provinces and in parts

**CROP FIGURES**—It is a well-known fact that it is most difficult to estimate the size of any kind of crop, and it is even more difficult in the case of a shellac crop owing to the wide expanse over which lac is grown, the climatic conditions existing at the time of the growing of the crop and the various economic conditions prevailing. It is only possible to estimate the normal or average size of each crop from the figures of lac arriving in Calcutta, also those of exports from India generally. The following may be taken as a fairly accurate estimate of the various crops, the figures representing packages containing 2 maunds or 1½ cwt net—

Bysacki	crop	180,000
Rangeen	"	50,000
Jethwi	"	15,000
Kusmi	"	75,000
Assam, etc	"	20,000

Total 340,000 pkges per annum

From the above it will be seen that by far the largest crop is the Bysacki, the Kusmi being the next in importance. The yield

**MANUFACTURE OF SEEDLAC.**—Following the gathering of the lac, which is usually done by stripping the trees, the product is sold in the "hats" (local markets) in the different districts to the various manufacturers.

The lac, which at this stage is known as sticklac, then passes through the various stages of manufacture into shellac, etc. First, it is ground in an ordinary corn-grinding machine together with bark branches, dirt, dust, etc., just as it was picked, after which it is carefully sifted in small wicker trays, during which time it passes through the hands of several native women thoroughly experienced in this form of sifting, until practically all foreign matters have been eliminated, even down to the sand which during sandstorms adheres to the lac while still on the trees. The next process is a thorough washing, which is accomplished with the aid of several re-fills of clean water in large earthenware receptacles until the purple lac dye is eliminated. After several such washings the lac becomes yellowish in colour, and at this stage is known as "seedlac."



1. Sifting Sticklac.

2. Drying Seedlac.

of Central India, pipal, the sacred tree of India, and therefore not popular amongst Indians as a host tree, babul, like pipal, a gum-bearing tree, and arhar, a field crop which is suitable for lac bearing only in Assam.

**MAIN CROPS.**—The shellac trade generally recognises four main crops of lac per year—the Bysacki, Rangeen (or Kutki), Jethwi and Kusmi, but, strictly speaking, there are two crops only, those of summer and winter. There are two broods of lac every year, the Jethwi and the Kusmi being the summer and winter broods respectively from the kusum tree, and the Bysacki and Rangeen the summer and winter crops from all other trees except the kusum, but the trade prefers to consider the four crops separately and to deal with the output of lac from each crop on its own. Of late years a further crop has been mentioned separately by the trade, viz. the "Assam." This again is not a separate crop, but includes the output of lac from the Assam and surrounding districts, together with that obtained from outside places, such as Rangoon, Siam, etc.

from the Kusmi crop is, however, very much finer in quality than that from the Bysacki, and is used almost exclusively for the manufacture of the finest grades of shellac. The smallest of the four main crops is the Jethwi, and actually this crop may be almost ignored, since the greater part of it is used as seedling for the following Kusmi crop.

The Bysacki crop matures in March and April and is marketed from May onwards. The Jethwi crop comes next in July. The Rangeen (Kutki) matures in September—October for marketing at the beginning of winter and the Kusmi during November—December.

The total of 340,000 packages per annum represents the normal or average output of shellac from all sources, but it is very seldom indeed that the yield from all the crops in one year is normal, proof being afforded by the fact that only once during the past 15 years (1911 to 1925 inclusive) have the exports of lac exceeded 300,000 packages, that being in 1923, when there was an enormous Bysacki crop, the other crops of that year being slightly below average.

**MANUFACTURE OF SHELLAC.**—After being thoroughly dried by exposure to the sun, the seedlac is placed in long cylindrical double bags of coarse cotton, and these by a simple contrivance are twisted in front of fires till the lac melts and is squeezed out through the texture of the bags on to a concrete platform, which is kept constantly wet with water to prevent the lac sticking to it. The liquid lac is then picked up with a spoon-shaped piece of metal by the native manufacturer and spread out on hot porcelain jars until it assumes the form of thin sheets. These sheets are then taken up by skilled operators, who stretch them by holding a corner in each hand and the bottom corners with the toes of each foot, gradually extending their limbs to the full extent. These sheets, thin as paper, form the "shellac" of commerce, and after being dried become brittle, when they are easily broken up into small flakes. Instead of being made into sheets, the molten lac may be dropped in "pats" on to smooth surfaces, the result being "button lac."

**MACHINE-MADE SHELLAC.**—It should be stated here that certain grades of

the finished article are manufactured entirely by machinery, thus cutting out native labour altogether. This is rather a complicated method of manufacture, the seedlac being dissolved with the aid of alcohol and heat, the alcohol being drawn off by an evaporator and the melted shellac made up into sheets over heated rollers. Though it might be imagined that this would be a far more effective method of manufacture than the primitive native process, it has been proved that it eliminates some of the properties of the lac which are most essential to certain consumers. Thus the native method still remains the largest form of manufacture.

**PESTS.** The question and study of the parasites, etc., which affect and injure the lac insect are of the utmost importance, but up to a short time ago this biological problem had not received the attention it deserved. Now, however, under the auspices of the Indian Lac Association's Institute at Nankum, thorough enquiries are being made and experiments carried out under the expert supervision of a distinguished entomologist in order to find out which parasites are injurious to the lac insect.

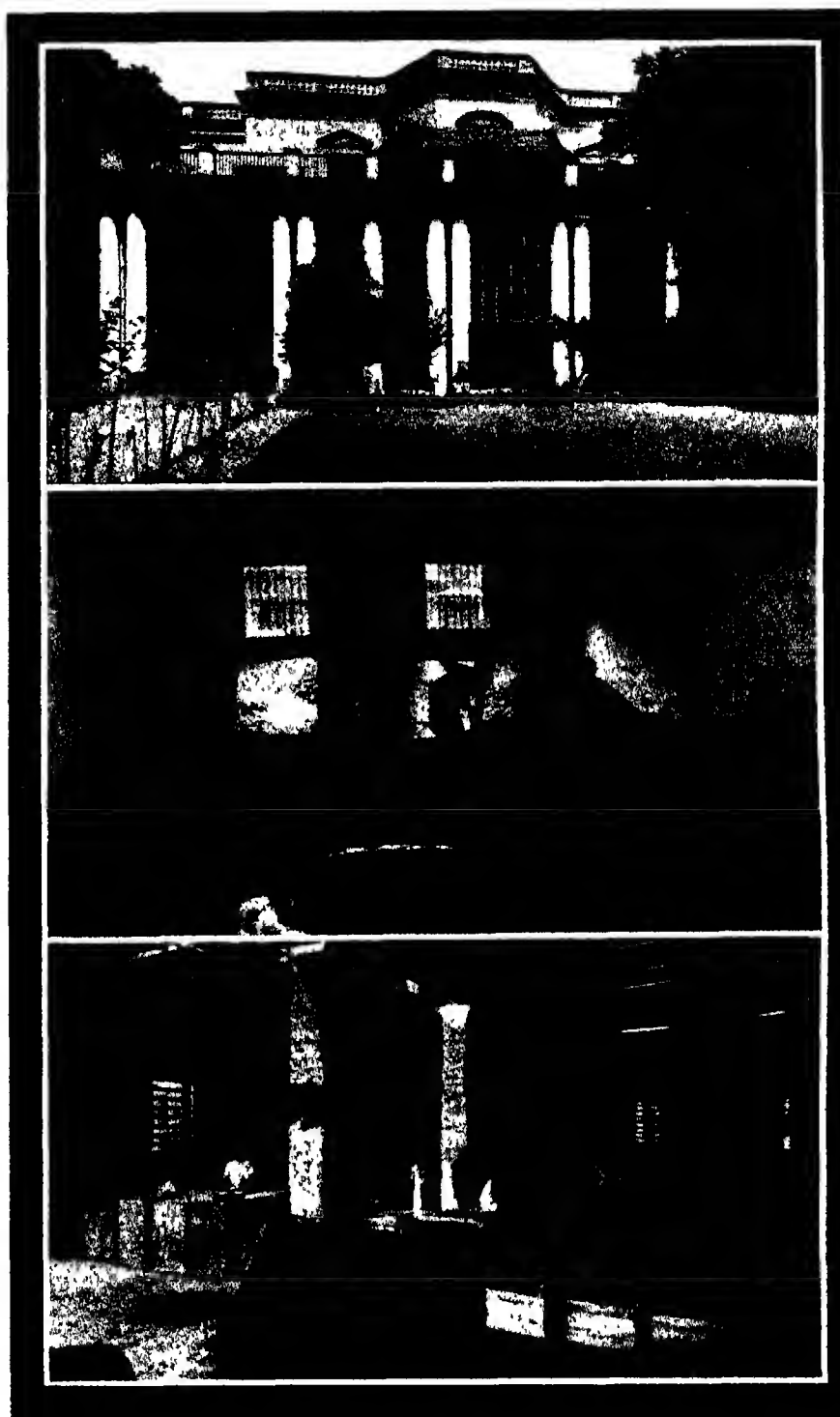
Of these, the most destructive are the caterpillars of several species of small moths of the genera *Eublemma*, *Hypatima* and *Holococera* and a few small Hymenopterous (Chalcid) parasites. It is believed that the Chalcid larvae consume the bodies of the lac insect when still alive, while the caterpillars of the moths devour both the lac and the insect. The worst of the latter are the *Eublemma* which absolutely riddle the lac. As regards the Chalcid, some of these may be "hyper parasites" of the caterpillars, and therefore in a way beneficial. Ants are another form of pest, and are believed to do a certain amount of damage to the lac crops, but this is probably exaggerated.

So far, no fungus or bacterial disease affecting lac has been found, which leads to the belief that when lac is extensively cultivated under much more complete domestic conditions exceptional risk or difficulties will not be experienced.

**RESEARCH.** A few years ago, realising that the shellac trade in general had very little knowledge of the lac insect and its habits, a few enterprising members of the trade decided that some kind of Association was necessary to carry out research work in this connection, and with that end in view the Indian Lac Association was formed. The Government of India agreed to levy a cess of 4 annas per maund on all shellac, etc., exported and 2 annas per maund on Keerie lac (refuse), the funds thus obtained being handed over to the Association, which is administered by a Committee elected annually by the trade and thoroughly representative of all branches.

An Institute has been built and equipped at Nankum in the Ranchi district, associated with an estate on which are grown and cultivated various lac producing trees. This Institute is in charge of a fully qualified resident bio-chemist, who also acts as director. A large and comprehensive staff has been gradually gathered together, fully capable of carrying out all manner of experiments and observations with regard to the cultivation of lac.

Outstanding results have not yet been obtained, but this is only natural considering that the Institute is still in its infancy, but the work is proceeding on the right lines, and great hopes are entertained that the outcome in the near future will do much to enlighten shellac cultivators and merchants regarding the problems with which they are confronted and to improve the methods of lac production.



LYALL, MARSHALL & CO.  
1. Offices and Compound, Calcutta.  
2. Filling Sacks with Shellac.  
3. Preparing a Shipment.  
(See letterpress, p. 142)

**STATE ASSISTANCE.**—With the large forests which it has at its disposal the Government of India is able to do much towards improving the production of lac by educating the overseers of the Forestry staff as to what is required in order to advance cultivation. In some areas, notably those of the Central Provinces, the forest staff is in close touch with the cultivators, and considerable assistance is being given.

In view of the low prices which are now ruling it is difficult to say how far the

Government will carry on cultivation in its forests, but it has been stated that it may start lac brood farms in the lac growing districts. These farms would give demonstrations of the latest and best methods of lac production and would sell brood lac to the cultivator in times of need. It is obvious that all aims should be directed towards getting the maximum of output from the minimum of area rather than towards merely increasing the area of production.



1. Jhalda Factory  
3. Manufacturing Shellac.

A. M. ARATHOON, Calcutta.

(See letterpress, p. 144)

2. Cleaning Seedlac,  
4. Despatching Shellac under a well-known mark (A S O.)

**STATISTICS.** The largest market for shellac at the present time is America, which country consumes at least half the annual shipments from India. Next in importance come the United Kingdom and the Continent.

Herewith are given figures showing the shipments during five years to these countries separately in packages of 1½ cwt net —

	1921	1922	1923	1924	1925
U.S.A.	159,605	157,831	189,946	128,378	136,657
U.K.	46,076	48,893	69,132	47,770	64,746
Continent	15,285	25,492	29,722	39,045	28,390

The above figures do not represent the total shipments of lac for the years mentioned, as other countries take smaller quantities, the principal amongst which are probably Australia and the Far East, which are consuming a fair quantity of lac already and are increasing their consumption considerably as time goes on. The demand for the various qualities of lac varies, but that usually in principal request is Orange shellac, next coming Garnet lac (Messrs. Angelo Bros' manufacture), and after that Button lac. Following are given figures showing shipments of the various qualities over five years, the figures, as in the previous table, representing packages weighing 1½ cwt net. —

	1921	1922	1923	1924	1925
Orange shellac	221,614	227,456	280,242	211,530	250,073
Garnet lac	6,676	11,755	14,587	15,013	13,905
Button lac	3,994	8,905	9,090	10,152	11,055

As Calcutta is practically the only port in the world from whence shellac is shipped, the principal shippers of shellac are naturally all located there, and the following table shows the total quantities despatched during the period 1921-25 by those shippers:—

	1921	1922	1923	1924	1925
Ralli Bros.	53,343	53,502	74,100	52,368	60,445
P. S. Sparling & Co.	1,880	19,516	38,254	46,992	46,522
Rogers Pyatt	81,674	52,275	62,094	29,375	25,408
Shellac Co.	1,720	5,769	10,658	16,109	27,132
A. M. Arathoon	16,106	29,871	30,402	25,857	22,029
Lyall Marshall	3,273	5,793	12,687	8,070	19,583
J. D. Sassoon	3,265	13,745	16,617	14,808	15,614
Turner Morrison (Angelo Bros.)					

**USES (INDUSTRIAL).** The first and foremost use to which lac is put is undoubtedly the manufacture of gramophone records, some authorities stating that over half the annual output is used by the gramophone companies. Between 30 and 40 per cent of a gramophone record is pure lac, so that it is easy to understand the large quantity of lac consumed in their manufacture.

The very finest superfine shellac is used as a thin coating for the best quality of chocolates to prevent any moisture getting to the contents. The manufacture of hats depends almost solely upon lac, with which all hats are stiffened, and this is where the imperviousness of lac to water is of such great value, no other gum possessing the same quality. The Great War proved the value of shellac for munition purposes, and enormous quantities were used by the various Governments in this way, as well as in the manufacture of aeroplanes, etc.

Varnishes and furniture polishes are made exclusively of shellac and boot polish manufacturers also take large quantities. The electrical trade makes great use of it, principally for insulation purposes, and in other manufactures, such as emery wheels, photographic supplies, brushes and brooms, sealing wax, musical instruments, oil cloth, paint, watches, pencils, mirrors and all forms of lacquer work lac is used extensively.

## PROMINENT SHELLAC EXPORTERS.

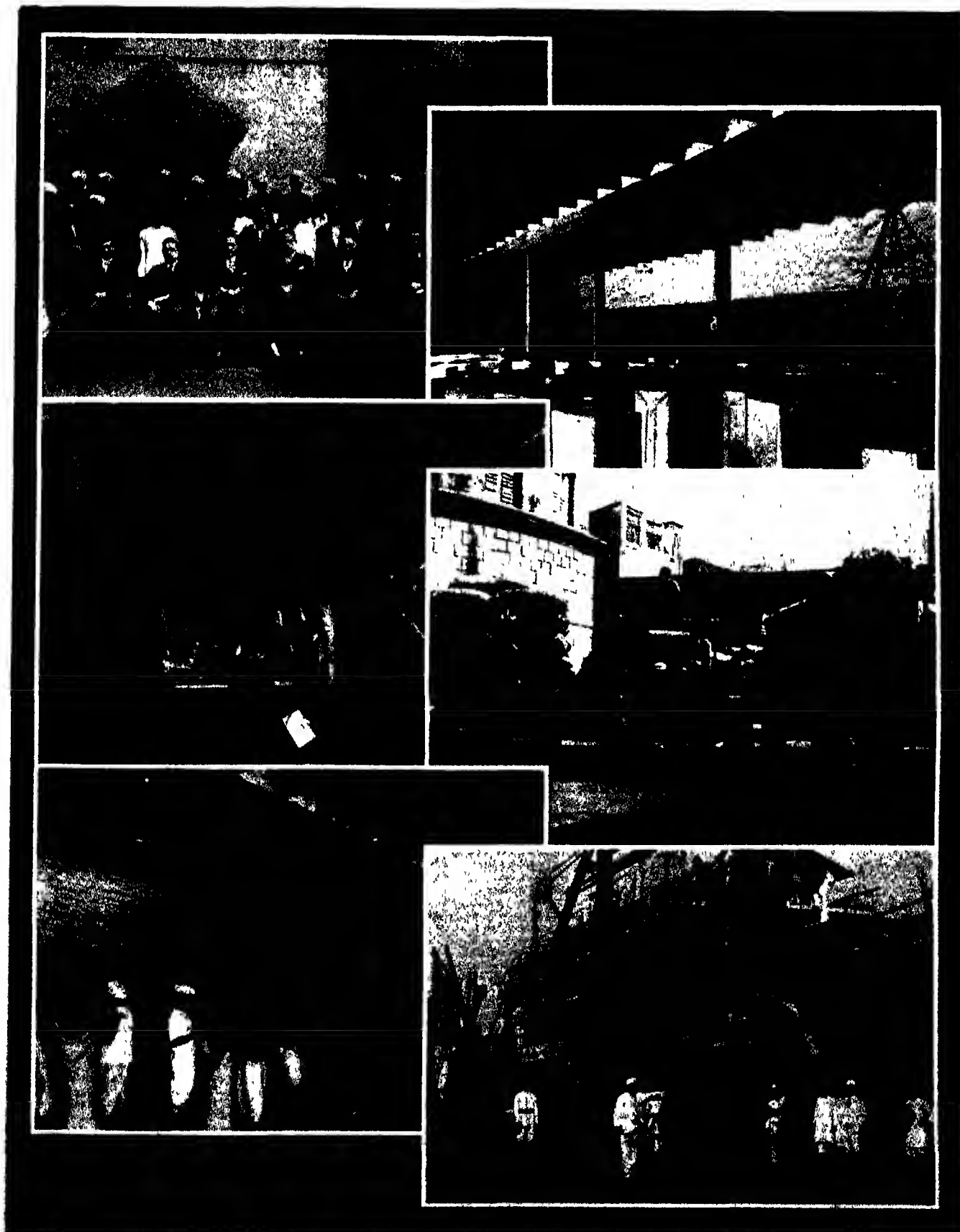
### LYALL MARSHALL & CO.

**Inception.**—Founded at Dacca, Bengal, in 1783, this well-known firm, which remains a private concern, transferred its head office to Calcutta in the early part of the nineteenth century.

**Personnel.**—At the beginning the business was known as Lyall Matheson & Co., a title subsequently changed to Lyall Rennie & Co. When Mr. Rennie's interest ceased, Mr. E. J. Marshall was admitted a partner in 1886 and the firm became Lyall Marshall & Co. Mr. R. A. Lyall, who arrived in India in 1860, retired in 1896, while Mr. E. J. Marshall followed suit in 1913, leaving the business to his nephew, Mr. J. D. Marshall, and his son, Mr. E. H. Marshall, the present partners.

**Activities.**—The firm has been intimately connected with the Indian export trade for many years, an interesting event being the taking over of the Gonatea Raw Silk Factory from its Dutch owners. Its principal interest is shellac, in which the firm has had a long and extensive experience, ranking among the four largest exporters in Calcutta. It also exports jute, tea, indigo and other East Indian produce.

**Agencies.**—Messrs. Lyall Marshall & Co. are managing agents for Carew & Co., Ltd., a firm which their predecessors, Lyall Rennie & Co., floated in 1875, and which had previously existed as a private concern, receiving large grants of land in the United Provinces from the East India Company for services rendered during the Mutiny. Messrs. Carew & Co., Ltd., manufacture sugar and spirits, potable and commercial, their XXX



P. S. SPARLING & CO., Calcutta.

- |                                      |                                   |
|--------------------------------------|-----------------------------------|
| 1. The Office Staff.                 | 2. A Corner of the Warehouse.     |
| 3. Blending Shellac.                 | 4. Transport ready for Exporting. |
| 5. Packing and Marking Shellac Bags. | 6. The Dock Staff at Work.        |

(See also letterpress and illustration, p. 144).



rum being the oldest known mark in India. They have a sugar plant and distillery at Rosa in the United Provinces and distilleries at Asansol, Bengal, and Katni in the Central Provinces.

Messrs. Lyall Marshall & Co are also managing agents for the Seeterampore Coal Co., Ltd., in the Raneeegunge district and the Mornai Tea Estate in Assam, besides being agents for a number of tea gardens in the Dehra Dun district.

**Representatives.**—Lyall, Anderson & Co., 16, Philpot Lane, London, E.C. For jute and shellac. Hodgson & Co., 21, Mincing Lane, London, E.C., and Messrs. Mac Lach Co., 11, Cliff Street, New York, U.S.A.

**Head Offices and Warehouse.**—25, Mangoe Lane, Calcutta (cables "Ghat," Calcutta).

**Bankers.**—Chartered Bank of India, Australia and China; National Bank of India (See illustration, page 141).

#### P. S. SPARLING & CO.

**Inception.**—Although this firm has only been in existence since the Great War, having been founded by the present head, Mr. P. S. Sparling, its rise has been so rapid that to-day it occupies the position of one of the largest shippers of shellac in the world, besides having interests in various other lines of exports, also in imports. Mr. Sparling, who is now a member of the committee of the Indian Shellac Association, has been connected with the shellac trade for many years, and before founding the present company, was in charge of the shellac department of a well known firm in Calcutta.

**Development.** From a modest beginning the firm has steadily progressed by sound business methods, coupled with the enterprise of its energetic chief, until to-day there scarcely remains a port in the world to which the well-known "S" mark of shellac is not shipped. Although its principal market is in the United Kingdom and the Continent, where the firm practically holds a monopoly of the shellac trade, its business is being rapidly extended in the important markets of North and South America.

**Activities.**—The main interests of Messrs. P. S. Sparling undoubtedly lie in the shipping of lac in all its forms, but they also deal

largely in cotton, and are managing agents for the Calcutta Cotton Factory, whilst recently they have commenced to export Indian tobacco. On the import side, motor cars are a principal line, the company acting as sole agents in India for the well-known Eric Campbell light cars.

**Representatives.**—Messrs. Sparling & Co. are represented in the United Kingdom and on the Continent by Mr. J. George Sigg, well-known on the London and European markets as a shellac expert, and it is largely due to his efforts that they occupy their present commanding position. Their American representatives are the old-established firm of Messrs. A. Helmuth Inc., of New York, whilst their agents are to be found in most of the principal commercial cities of the world.

**Premises.**—These are situated in Chive Row, in the heart of the business quarter of the city, and contain, in addition to the necessary offices for transacting business, over 10,000 square feet of godown accommodation, which is ample for handling any quantity of shellac at short notice.

**Cotton Factory.**—The cotton ginning factory is at Cossipore, a few miles out of Calcutta, amidst several other factories of the same type, and, being surrounded by plenty of unoccupied space, is capable of considerable enlargement when business increases.

**Directorate.**—Mr. P. S. Sparling is the proprietor and director of the business, and Mr. A. Forbes the general manager.

**Offices.**—9, Chive Row, Calcutta (cables "Sparlac," Calcutta). Codes A B C 6th Edition, Schofield's, Bentley's and private.

**Bankers.**—Chartered Bank of India, Australia and China; National Bank of India Ltd.; Mercantile Bank of India Ltd.; Eastern Bank Ltd.; Loyds Bank Ltd.

(See also illustration, page 143).

#### A. M. ARATHOON.

**Inception.**—Commencing as an assistant in a shellac factory in Mirzapore in 1894, Mr. A. M. Arathoon became a manufacturer of the commodity named four years later. He had gone to Jhalda to purchase lac and

was struck with its possibilities as a shellac centre, despite its being 30 miles from the railhead at Purulia. Accordingly in 1898 he opened a factory at Jhalda, the premises being a small hut with a thatched roof, and became the pioneer of the shellac trade in the Manbhoom district.

**Development.**—Considerable difficulties had to be overcome at the outset, everything, labour included, being imported from Mirzapore. Gradually proper buildings were erected and machinery introduced. Labour became scarce and expensive, but Mr. Arathoon's was the first factory, with the exception of the Calcutta Garnet factories, to be installed with a shellac washing machine which, increasing the output, compensated for the scarcity of workers and enabled the large yearly shipments of seedlac to America to be continued. In 1922 factories were opened at Murhu and Ranchi in the Ranchi district.

**Activities.** The manufacture and export of shellac, buttonlac, seedlac and sticklac constitute the firm's business. Its marks, ASO Superfine Shellac and Arathoon Pure Buttonlac, are both well-known in European and American markets.

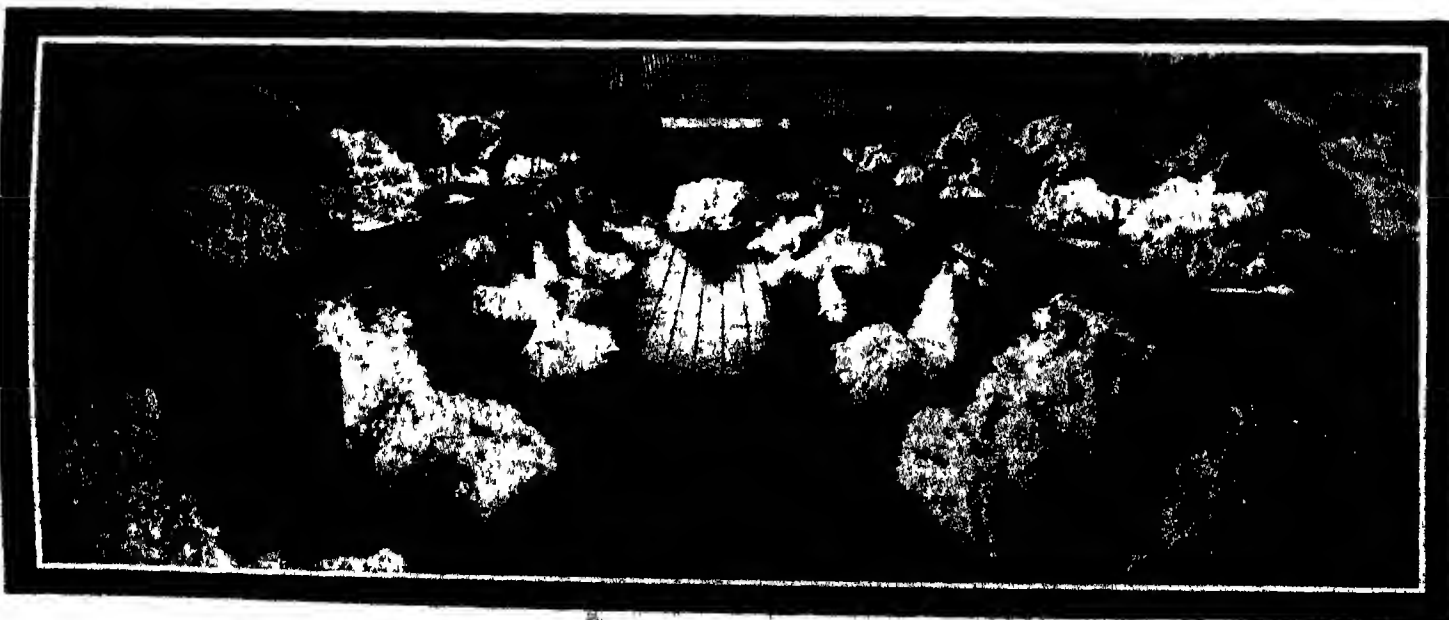
**Exports.**—The firm went into the export trade after consolidating the manufacturing side, and in 1925 stood fourth in the list of exporters with a total of 26,440 packages of shellac. Shipments are mostly to America, the United Kingdom, the Continent, Australia, New Zealand and Japan, in which countries the organisation has its own agents.

**Factories.** That at Jhalda is the largest, employing over 500 labourers daily; next comes Murhu with 250 and then Ranchi with 100 workers. All three are worked by mechanical power for crushing and washing the lac, but the manufacturing is done by hand.

**Offices.**—3, Rawdon Street, Calcutta.

**Cables.**—"Arathoon," Calcutta and "Arathoon," Jhalda. Codes A B C 5th Edition and Bentley's.

**Bankers.**—Imperial Bank of India, Mercantile Bank of India Ltd. (See illustration, page 142).



P. S. SPARLING & CO., Calcutta.  
The Firm's Ginning Factory.  
(See also illustration, page 143).



# JUTE

By J. M. P. ANNAN

**J**UTE, one of the most important crops in Bengal, is a very valuable asset to India and the British Empire. In appearance the plant resembles in some ways a large hollyhock, and usually grows to a height of from 10 to 12 feet, occasionally higher. Someone has described jute as "the Wrapper of the World", it carries the world's grain crops, and there are few articles packed for transport that are not finally wrapped in hessian or sacking cloth, it has proved itself a necessary article in war, in the shape of sand bags, horse covers, etc., it is the basis of floorcloth and linoleum, and even carpets of quite good quality, cheap canvas, rope-soled shoes, etc. These are only a few of the common necessities made from this fibre, its uses being varied and world wide.

Jute has probably been used in Bengal for centuries, but only early in the nineteenth century does it seem to have become known by its present native designation of "Pat", previously, all fibres were dealt in as hemp fibre. In Sir George Watt's "Dictionary of the Economic Products of India" he mentions that not more than 50 years ago the poorer people were largely clad in jute cloth of home manufacture. The importation of cheap cotton piece goods, however, checked this industry. With the extension of trading there sprang up a demand for grain bags, and the rough gunnies, woven on the hand looms of Bengal, became a recognised industry.

The first commercial mention of jute is found in the Calcutta Customs' Reports of 1828, when some 18 tons were sent to Europe. About 1820-30 jute was successfully woven into cloth by steam looms in Dundee, Scotland, and from about 1837 the Dundee manufactured article began to affect the hand loom product of Bengal. In 1850-51 the value of gunnies exported from India was £215,978 and that of raw jute £107,071. There had been no extension of the hand-loom trade for twenty years, and the Bengal peasant gradually turned his attention from the weaving to the growing of the fibre. In 1854 the first power-loom mill in India for the manufacture of jute, the Rishra Yarn Mills Company, was established at Rishra, near Serampore, by Mr. George Ackland, a coffee plantation owner in Ceylon. This mill is now known as the Wellington Jute Mills.

In 1857 were founded the Barnagore Jute Mills at Barnagore, about seven miles north of Calcutta, followed in 1863-64 by the Gourepore Jute Factory, and from this date onwards factories sprang up rapidly in every direction around the Bengal capital. In the trade returns of 1869-70 the exportation of manufactured jute was 6,441,863 gunny bags, manufactured by power and hand-looms and brought into competition with the Dundee manufactures. This trade in 1879-80 had increased to 35,908,000, bags, practically all the product of power looms, the hand-loom

production then almost disappearing. Today the consumption of raw jute by the Bengal Mills is nearly two-thirds of the whole production of jute fibre, the other third, which is exported, represents the world's jute manufactures outside India.

**AREAS (MAIN JUTE).—**Scientifically the jute areas are divided into two great divisions, according to the courses of the two large rivers, Brahmaputra and Ganges. The waters of the old Brahmaputra and Megna are clear, the lands are higher, the fibre is clean, and of a good colour and lustre. This tract, from Bahadurabad down to Chandpur, includes Nisralbad, Mymensingh, Juganathgunge, Dacca, Naranganj, etc. The Ganges waters are muddy, the areas are lower and subject to annual floods, the quality of the fibre is inferior in colour, shorter and less glossy, barky, and liable to lose colour if stored for any length of time. It is not equal in strength and spinning properties to the Jat jutes of the Brahmaputra areas.

**CLASSES OF JUTE.**—Jute is an annual herbaceous plant of the natural order "Liliaceæ". It grows all over Bengal except in the laterite tracts of western and northern Bengal. In Bihar and Orissa, cultivation is confined to Purnea, North Behar and Orissa. It is extending in Assam and in the plains of Nepal towards Purnea. There are two cultivated species of jute, viz., *Corchorus capsularis* and *Corchorus olitorius*. The seed of the former is a rounded capsule, while that of the latter has a long cylindrical pod. The species of *Corchorus capsularis* are more numerous than those of the *Corchorus olitorius*. The first named is also a stronger plant and more capable of withstanding climatic conditions such as drought, high temperature or excessive rain. In colour and fineness the fibre is superior, but it is usually shorter. Once the plant is five feet high it will stand submersion up to its middle. Generally speaking, in the trade the various classes of this jute are known as white jute. The *Corchorus olitorius* is silky, yellowish in colour, more brittle and inferior in strength to the *Corchorus capsularis*. In Roxburgh's tests of fibres in India, he states that a "dry line" of *Corchorus capsularis* broke with a weight of 164 lbs and a "wet line" at the same weight. The *Corchorus olitorius* gave way at 113 and 125 lbs, the wet line gaining 12 lbs. This is the plant giving the Tosa and Daisee jutes.

In Bengal a plant known as "Mesta" is grown, and this same plant, known as "Bimbi," is raised in the Madras Presidency. Really a species of sun hemp, and more useful in rope making than as a spinning fibre, it is often found mixed with the jute imports. From China a fibre known as China jute is exported to Europe; this also is closely related to the Mesta plant, and has not the spinning quality of jute.

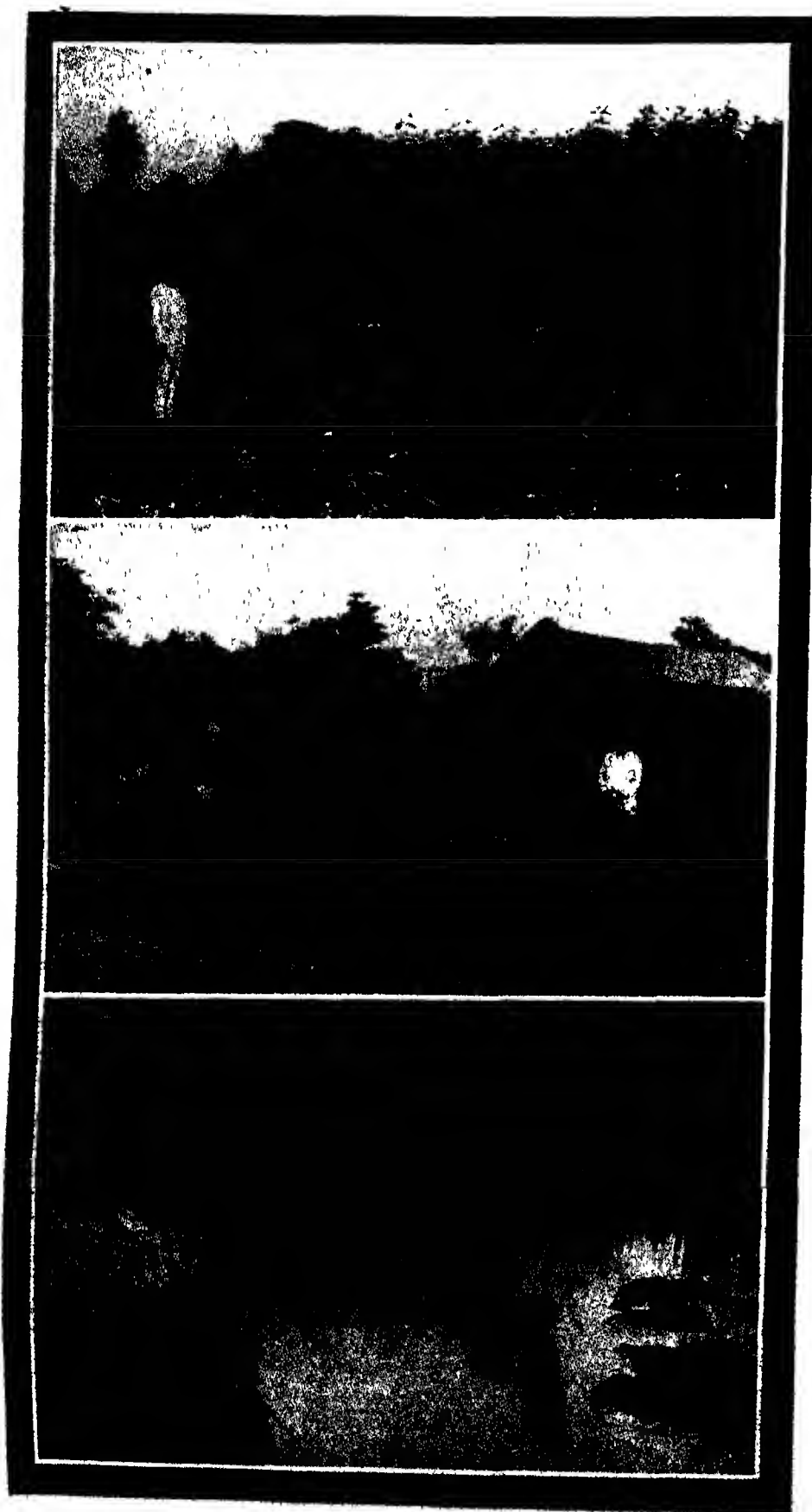
**CROPS (ROTATION OF).—**In many districts jute is grown on the same land year after year but unless the land is well manured or receives silt deposit, the fibre deteriorates. In the principal districts where jute is cultivated on high lands, paddy (rice) is transplanted immediately after the jute is cut, thus providing two crops yearly. The plant however grows best if the land is sown with paddy, rape, or mustard one year, and with jute the following year.

**CULTIVATION (METHODS OF).—**Practically the whole of Bengal is cultivated under conditions that would be described in England as small holdings, the land having come down from father to son. The whole family usually assists in the work in some way, and this accounts in the main for the cheapness of the labour expended on the jute crop. There may be a few large farms and economically these possibly pay better, under the control of the zemindar, or land-owner. The small holder however, represents practically the whole crop. He gets cash payment for his jute, and unless perhaps his tobacco field yields him a little, this is probably the only hard cash that comes his way. His rice crop is stored for the food of the whole family and his grain and straw crops serve to feed his cattle.

**HARROWING AND PLOUGHING.**—Deep ploughing being essential for the jute crop ploughing is started as early as possible. As soon as the first rain has fallen, usually about the middle of February to March, the preparation of the ground goes on. The land is ploughed from four to eight times, clods are broken either with a "kodalhi," or wooden mallet, and the soil is pulverised into a fine tilth. On heavy clay soil as many as ten ploughings may be necessary. The so-called harrowing process consists in drawing a crude form of harrow, or a heavy wooden log, over the ploughed land, this levels the ground, and the soil is now ready for sowing.

**MANURING.**—The ryot does not undertake seriously any manuring of the land, the low lands receive silt every year from floods, and he considers this is quite ample. Experiments on the Government experimental farms show that cow droppings are the best manure for jute, followed by castor oil cake. The ryot, however, uses cow droppings for fuel and for manuring his tobacco field, so the jute land has to depend on flooding and decayed vegetable matter. Jute is not an exhaustive crop, however, and appears to take very little from the land, as, even when sown yearly, quite reasonable crops are grown, though of course the better practice is to raise a gram or pulse crop one year, followed the next by jute.

**SEED.**—Very little attention is paid by the cultivators to the selection and preservation of jute seed. The Government experimental farms, however, give great con-



1 & 2. Harvesting Jute.  
3. Soaking and stripping Jute.

sideration to this matter, and the quality of the jute, as well as the conditions of the ryot, have been much improved by the valuable assistance received from this source.

**SOWING** --- The season extends from the end of February to early May. On the low lands liable to floods it is well that sowing be finished by the middle of March. The seed is broadcasted and covered by drawing a ladder, or light log, over the ground. The amount of seed necessary is 10 lbs. of *Corchorus capsularis* or 8 lbs. of *Corchorus olitorius* to the acre. To ensure even distribution, the sowing is carried out crosswise, i.e. once from north to south, and once from east to west. Under normal conditions, germination takes place within three or four days.

**WEEDING** - When the plants are about six inches high, a "bida," or rake, is drawn over the ground two or three times at short intervals till such plants are about one foot high. The crop is then twice weeded and thinned. The plants should be so thinned as to leave about six inches between those of the "*Corchorus capsularis*" and 8 inches between those of the "*Corchorus olitorius*." If given too much space the plants will branch too far, while, if crowded they will grow too thin to give a good fibre outturn. Just before the monsoon rains break, about the middle of June, the thin and weak plants are weeded out. These weedings are not wasted, but are usually retted and sold as weedings.

**HARVESTING ("CUTTING")** Cutting begins in July and goes on to October. The best quality of fibre is obtained if cut when the plant is in flower. Jute cut late for seeding will give a larger outturn of fibre, but the quality is coarse in texture and usually discoloured. Plants are cut with a sickle close to the ground, those growing in deep water are pulled up. They are then tied in bundles ready for steeping or retting.

**AVERAGE OUTTURN** --- The official estimate of the average normal outturn of jute fibre is 10 maunds per acre (about 1,315 lbs.). This could doubtless be increased on well cultivated and manured lands, but the Bengal cultivator is not very progressive. The by-product is the stalk after the fibre is removed. Some of this is used as a form of fencing by the poorer agriculturists, and also as a fuel, the bulk, however, is waste.

**RETTING** - In its natural state jute fibre is associated with a kind of gum, which is first softened by fermentation and then removed by washing. As the fibre is only 4½ per cent of the green weight, 10 maunds of fibre produced per acre would be 355 maunds green weight, or 29,000 lbs. This will give some idea of the labour alone entailed in the process. The bundles are carried to the nearest pool, immersed and covered with straw, or palmyra leaves, and weighted to keep the bundles under water. The cleaner the water, the better coloured will be the fibre. The plants take ten to sixteen days to rett. The temperature of the water should be about 80° Fahr. If under-retted, a certain amount of grain remains, and the fibres stick together. If over-retted, the fibre will be weak and will lack lustre.

When the stems are ready for stripping the cultivator stands by the heap and takes a handful of the plants, which are beaten at the bottom with a wooden hand and broken at a distance of a foot from the extremity. The broken pieces of bark are then thrown away. The "retter" takes the separated fibres in both hands and jerks the stems forward and backward on the surface of the water until the fibre is clear of the stalks. A good workman can strip about 20 seers

(41 lbs) in six hours by this means. There are slight variations of method in different districts, but all yield similar results. After separation the fibre is washed, if possible in clean water, it is then dried in the sun over bamboo poles for two or three days and finally made up in heads ready for sale.

**INSECT PESTS.**—There are several pests which cause damage to the plants when young, the worst are caterpillars, which are of three varieties, viz (1) The Ludgo Caterpillar (*Haphygma evigra*)—This insect feeds on the young leaves, in bad cases leaving only the bare stems. It appears generally in a dry season. (2) The Jute Semi-looper (*Cosmophila sabulifera*), which feeds on the apical buds and top shoots. It does great damage until the plants are in flower, i.e., from June to August, and flourishes also under dry conditions. (3) The Hairy Caterpillar (*Diacrisia Obliqua*), which feeds on the leaves of jute, sun hemp and other crops. In bad attacks the whole crop may be defoliated. It flourishes under conditions of continued rain. Plants affected by any of these insects become branchy, and the fibre turns out specky and harsh.

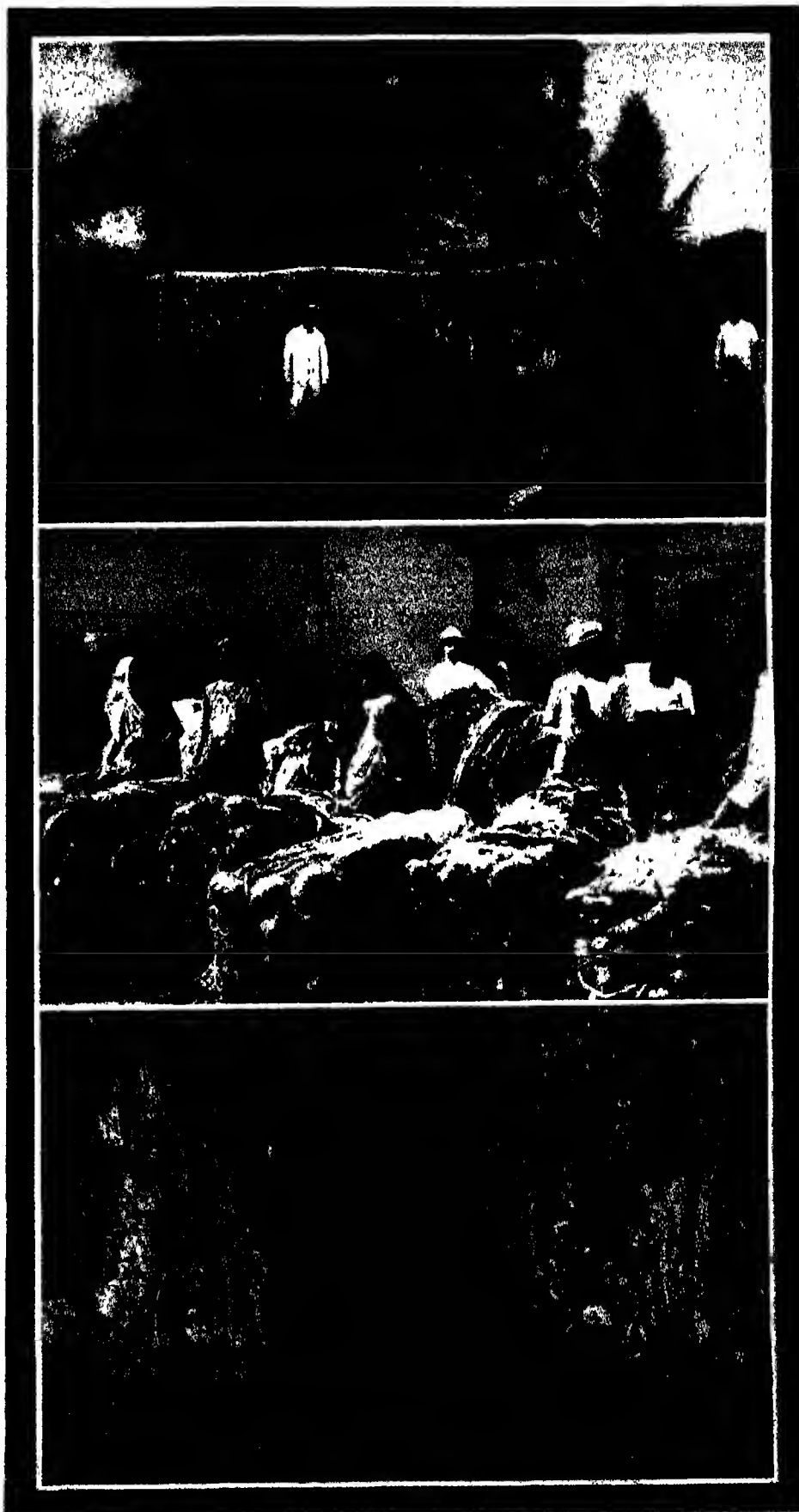
Kerosene emulsion applied with a vaporiser or fine syringe is the best remedy mixed in the proportion of two gallons of kerosene to one gallon of water and one quart of soft soap.

**OTHER DANGERS.**—Continued drought is detrimental to jute, as is also heavy rain, or rain accompanied by hail just after sowing, when the plants are still young. Stagnant water at this period is likewise a danger to the crop. Floods, which occur later, about June to July, when the *Corchorus capsularis* plants are in flower, will not do much harm, but will tend to cause heavy root. The *tosa* plants, being usually on higher land, are seldom badly flooded.

**MARKETING METHODS.**—The jute crop is made up by the cultivator into heads, or "petis," weighing about 5 seers (10 lbs), and is bought by middlemen, known as beparias, or farias. Weights are settled, and the jute is then brought to the "mahajan," the local baler or mill agent, who has previously advanced the money to the "faria" for purchase. The "mahajan" has the jute made up in drums, or half bales, and if he does not sell in the local "hat" or bazar, will send it to an "aratdar" (dealer) in Calcutta, for disposal in the Jute Bazar. If the jute is bought by balers or jute mill agents, it is taken into their godowns and there assorted.

**ASSORTING.**—The jute arriving at the local "hats" is bought by the up-country agents of mills, by independent jute balers, and by balers and shippers, and this jute, as also that bought by their own "beparias," is carefully selected and classified. It is then packed into kutchu bales, usually of  $3\frac{1}{2}$  maunds (about 288 lbs.). Up to this point the jute has not been cut in any way, and the hard bark part of the fibre at the root is still on it. The Calcutta mills attend to this on their own premises. The bales are sent either by rail, rail and river, or by flats all the way to Calcutta by water, where they are delivered either to mills, the local bazar, or balers.

**BALING FOR EXPORT.**—For the export trade, jute is usually sold without roots. The balers have large sorting sheds, and in these the article is re-selected into the required grades, the roots are cut, and all harsh fibre is extracted under expert supervision. After final inspection the jute is packed by hydraulic presses into bales of



1. Drying Jute.  
2. Selecting Raw Jute.  
3. Storing Jute.

400 lbs each, and is then ready for shipment. Each bale has the distinctive mark of its grade and the name of the baler on a cloth ticket under the rope lashings. The rejected jute, harsh fibre, runners, etc. are baled separately under the name of "rejections," and the cuttings, after the dust has been shaken out, are packed in the same way under the designation of "cuttings."

**PROCESS OF MANUFACTURE.**—The process of the manufacture of jute is a simple one compared with that of other textiles, such as linen, cotton, etc. The jute is run through a series of spiral rollers called a "softener," during which process it is sprinkled with a mixture of water and oil, left in this condition for a day or two, and then put through a carding machine, this is a series of rollers covered with sharp pins, which reduce the fibre to a fine sliver. After this the spinning process begins, first as a form of rove and then on to the finer spin for yarns, the best twists do not usually exceed more than 4 to 4½ twists to the inch. The warp yarn is put through a starching process, wound on to a beam, and placed at the back of the loom. The jute-loom is simple, closely resembling the old hand-loom, there being no intricate designs in jute weaving, such as are required for the jacquard or dhobi-loom used in linen and cotton.

**FINISHING**—The finishing process in jute is much the same as in other textiles, the standard width being 40 inches, but any width can be woven and finished. In the case of hosiery cloth, up to 150 inches wide can be woven, but this trade is practically a monopoly of the European mills, the widest Indian looms are not more than 80 inches. Calendering, or chesting is the general finish, but finer cloths are nungled to a heavier finish.

**PACKING**—Bales of 40 inch cloth (the standard) are packed by hydraulic presses into bales of 2,000 yards each, and are bound by steel hoops. Gunny bags and sacking are packed in various quantities, according to the weight of the bags or cloth. The bales are loaded at the mill jetties into cargo boats and conveyed alongside the export steamers.

**STATISTICS.**—The following tables will convey to the reader some idea of the rise and steady development of the jute industry and of its enormous value to India. The first of these shows the values of the raw jute and jute manufactures exported from India during the 21 years 1904-05 to 1924-25—

YEAR	VALUE OF JUTE (Rupees)	VALUE OF MANUFACTURES (Rupees)
1904-5	11,96,56,000	9,93,88,576
1905-6	17,12,57,000	12,44,79,544
1906-7	26,83,87,000	15,71,62,303
1907-8	17,97,28,000	18,20,76,445
1908-9	19,83,45,000	15,71,54,931
1909-10	15,08,81,000	17,09,66,496
1910-11	15,40,00,000	16,99,48,702
1911-12	22,55,66,000	16,00,82,760
1912-13	27,05,07,000	22,87,17,755
1913-14	30,82,64,000	28,27,47,042
1914-15	12,01,02,000	25,82,03,189
1915-16	15,64,20,000	37,07,85,050
1916-17	16,28,81,000	41,07,23,712
1917-18	6,15,38,000	2,84,31,000
1918-19	12,72,01,000	52,65,23,000
1919-20	21,69,05,000	50,01,55,000
1920-21	16,16,09,000	52,99,47,000
1921-22	14,94,02,000	29,99,57,000
1922-23	22,51,85,000	40,49,42,000
1923-24	20,00,06,000	42,28,16,000
1924-25	20,00,10,000	51,76,66,000

The steady increase of the manufacture of jute in India is indicated by the following table—

YEAR	MILLS	CAPITAL EMPLOYED	LOOMS SPINDLES	EMPLOYED PERSONS
1884-85	24	Rs 1,29,00,000	6,926	131,740
		£1,407,000		51,902
1889-90	26	Rs 1,26,45,000	7,704	156,806
		£1,757,000		50,541
1894-95	28	Rs 4,47,07,50	9,614	199,757
		£1,197,572		74,357
1899-1900	34	Rs 3,58,00,000	14,119	295,302
		£1,501,358		102,449
1904-5	38	Rs 4,66,80,000	19,991	409,170
		£2,253,358		133,162
1909-10	60	Rs 7,14,05,000	31,418	645,802
		£2,913,358		204,104
1914-15	70	Rs 7,93,95,000	38,379	795,528
		£1,50,700		238,274
1919-20	76	Rs 11,15,80,000	41,045	856,307
		£2,32,200		280,431
1923-24	89	Rs 17,94,87,938	49,038	1,043,417
		£2,725,000		335,408
		\$17,000,000		

The figures given under the heading of "Capital Employed" are those of the various Indian and British companies for all the periods named and of the American companies also for 1923-24.

The following table shows the consumption of raw jute in bales, as given in the annual reports of the Indian Jute Mills Association.

Year	Quantity Bought	Actual Indian Mill Consumption	Exported Consumption	Total World's consumption including 500,000 bales as estimated Indian Domestic
1900-01	—	2,415,000	3,542,000	6,457,000
1904-05	2,886,000	3,077,000	3,525,000	6,011,000
1909-10	4,260,000	4,359,000	4,009,000	8,777,000
1912-13	4,741,000	4,435,000	4,942,000	10,113,000
1913-14	4,395,000	4,374,000	4,192,000	9,087,000
1914-15	6,010,000	4,805,000	2,907,000	9,477,000
1915-16	5,128,000	5,000,000	3,106,000	8,934,000
1916-17	5,350,000	5,520,000	2,810,000	8,663,000
1917-18	6,112,000	5,296,000	1,726,000	8,368,000
1918-19	4,913,000	5,000,000	2,200,000	8,700,000
1919-20	6,089,000	5,082,000	1,358,000	9,947,000
1920-21	5,015,000	5,407,000	2,343,000	7,888,000
1921-22	4,454,000	4,236,000	2,968,000	7,922,000
1922-23	2,987,000	4,015,000	2,902,000	6,384,000
1923-24	5,110,000	5,004,000	3,771,000	9,387,000
1924-25	4,741,000	5,463,000	3,822,000	9,841,000

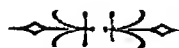
The following table shows the estimated area and yield of jute in Bengal, Assam, Bihar and Orissa, Cooch Bihar, Nepal, etc., since 1880.

Year	Area of Jute in Acres	Yield in bales of 400 lbs. each
1886-87	1,284,000	38,52,000
Average 1892-5	2,207,100	56,21,100
" 1895-1900	2,035,000	57,71,000
" 1900-1905	2,335,000	70,30,000
" 1905-1910	3,204,000	81,30,000
" 1910-1911	2,937,800	79,12,000
1911-1912	3,106,400	82,34,700
1912-1913	2,970,500	98,12,800
1913-1914	2,911,000	88,93,900
1914-1915	3,158,700	104,43,900
1915-1916	2,375,400	73,40,900
1916-1917	2,702,700	83,05,000
1917-1918	2,736,000	88,64,600
1918-1919	2,500,400	69,55,600
1919-1920	2,848,900	91,28,000
1920-1921	2,509,000	84,59,000
1921-1922	1,518,000	39,85,000
1922-1923	1,800,000	54,05,000
1923-1924	2,788,000	81,59,000
1924-1925	2,733,000	80,56,000
1925-1926	—	*1,10,00,000

\*approximately

#### REPRESENTATIVE ASSOCIATIONS.—

The following Associations protect the various interests in connection with the jute trade. The Indian Jute Mill Association, The Jute Dealers' Association, The Calcutta Baled Jute Association and The Calcutta Baled Jute Shippers' Association. Meetings are held in the rooms of the Bengal Chamber of Commerce, Clive Street, Calcutta.



# INDUSTRIES

## GENERAL DATA

**T**HOUGH India is pre-eminently an agricultural country, the advance of other industries may be inferred from the fact that for many years the returns of foreign trade have shown a steady expansion in the export of manufactured goods and in the import of raw materials. The Empire is every year working up more and more of her own raw materials, and is finding an expanding export market for manufactures. At the same time she requires a larger amount of raw products from outside sources to feed her mills, factories and workshops. If the development of Indian industries has been tardy, the demand for their further extension has, especially since the Reforms, become a national one, its principal objectives being the broadening of the sources of state wealth and the amelioration of the poverty of the people.

**AREAS (INDUSTRIAL).**—India may be divided into five great industrial areas, which are enumerated later, together with the more important commercial and artistic manufactures of each.

**BENGAL AND ASSAM.**—The commercial industries are india-rubber, oilseeds and oil, lac, indigo, jute, paper, hides and skins, silk, opium, tobacco, tea, sugar, rice, gram, coal, iron, saltpetre, mica and pottery. The artistic and minor industries comprise ivory-carving, umbrella-making, Dacca muslins, embroidery and mat-making.

**BURMA.**—India-rubber, varnish and lacquer, cutch, cigars, rice, teakwood, petroleum, tin and rubies are the leading industries. Artistic and minor industries are wrought iron, niello-ware, gold and silver plate, copper and brass moulding and ware and glass mosaic.

**NORTHERN INDIA.**—This area comprises the United and Central Provinces, Rajputana and Central India, the Punjab and North-West Frontier Province and Kashmir. The more important commercial industries are resin, lac, oilseeds, perfumery, soap and candles, cutch, myrobalams, cotton, silk, wool, leather, carpets and mats, wheat, flour, biscuits, opium, tea, sugar, beer and spirits, timber, borax, lead, copper, salt and saltpetre. Minor and artistic industries are those of tinsel-ware, lac-coloured metal ware, enamels, gold and silver plate, damascened ware, copper and brass ware, stone carving, and lapidary work, pottery, wood-carving, and inlaid wood-work, ivory carving, leather and skin work, lac-ware, dyeing and calico printing, cotton manufactures, muslins, silk manufactures, woollen goods and shawls, embroidery and carpets.

**SOUTHERN INDIA** (Madras Presidency, Hyderabad, Mysore and Coorg).—Among the chief industries are oilseeds, ghee and tallow, indigo, cotton, coir, ivory, skins, tea, coffee, cigars, cardamoms and pepper, sugar, rice, sandalwood, pearls, gold, manganese, plumbago and cement. The artistic and minor industries comprise gold and silver plate, encrusted ware, copper and brass ware, stone carving, inlaid wood, sandalwood carving, ivory carving and staining, silk manufactures and carpets and mats.

**WESTERN INDIA** (Bombay Presidency, Berar and Baluchistan).—The leading in-

dustries are cotton, gums, oilseeds, wool hides and skins, drugs, wheat and salt. Artistic and minor industries comprise gold and silver plate, wood carving, marquetry, leather and skin work, cotton goods, silk manufactures and embroidery.

The large number of commercial products and the comparative poverty of artistic manufactures in Bengal, the small number of important and characteristic materials and crafts in Western India, and the comparative abundance of these in Southern India are significant features of the above enumeration. In Burma the artistic crafts are more numerous and in some respects more important than the commercial products. In Northern India, too, where external commerce is of less consequence than in the maritime provinces, there may be said to be almost a superabundance of artistic industries.

**CLASSIFICATION OF INDUSTRIES.**—The arts and manufactures of India are more easily separable into sections, corresponding with hand-labour and steam-power, than are those of most countries, for handicrafts, in spite of the marvellous mechanical developments of the last hundred years, are still very important to the Indian people. The carpenter, the potter, the blacksmith, the stonemason, the weaver, the dyer, the tailor, the shoemaker, the drug-seller and the sweetmeat-maker are recognised members of most village communities. The higher crafts—those of artistic workers in wood, clay, stone, metals and textiles—are carried on in special localities and in direct relationship to physical and administrative conditions. When, for instance, hand labour industries are practised on a large scale they tend to become centralised in important towns. Steam-power manufactures are not in any way indigenous industries, but have been originated and are controlled by the supply of raw material and fuel, by the facilities of transport, and by the degree of association with European enterprise.

The industries of India may be roughly classified as follow:—

- (1) Rural industries, directly associated with agriculture or agricultural produce
- (2) Manufacturing and urban occupations—the textile industries proper
- (3) Sylvan occupations—the collection and utilisation of natural and wild products
- (4) Occupations connected with mines and metals

**DEPARTMENT OF INDUSTRIES AND LABOUR.**—It was not until February, 1921, that the Secretary of State sanctioned the creation of a central Department of Industries as a permanent branch of the Government of India. Its scope, as modified by the re-grouping of subjects advocated by the Incharge Retirement Committee, now includes industries and industrial intelligence, central institutions for industrial training, geology and minerals, together with the Geological Survey of India, the administration of the Indian Mines Act, the Indian Explosives Act and the Indian Petroleum Act. The Indian Factories Act and other labour legislation also fall within its sphere. Industrial development is a provincial transferred subject, and the policy to be pursued in granting assistance to industries, the development of

## PRODUCTS

industrial and technical education, and to a large extent the research work necessary to establish the value of raw materials are all controlled by Indian Ministers in charge of the Provincial Departments of Industries. The Constitution, however, permits the Central Government to exercise supervision over industrial subjects when such a course is considered expedient.

### INDUSTRIAL EXPANSION, 1925-26.

That the prospects of industrial enterprise are improving in India is indicated by the steadily growing number of companies registered and the increasing amount of capital invested therein. In 1925-26 the companies registered numbered 473, with an authorised capital of Rs 30 crores, against 411 companies with an authorised capital of Rs 21 crores in 1924-25. Another test of improvement is the decrease in the number of companies that went into liquidation. In 1924-25 such companies numbered 502 with an authorised capital of Rs 59 crores, whereas in 1925-26 the total was 473 with an authorised capital of Rs 35 crores. Even in the cotton industry, which is admittedly in a depressed condition, 13 new mills were erected during the year.

In joint stock enterprise Bengal far outstripped Bombay during the twelve months. The authorised capital of the companies registered in Bengal in 1924-25 was a little less than Rs 5 crores, while that of Bombay was Rs 8½ crores. But in 1925-26 the Bengal figures advanced to Rs 16 crores, while Bombay's remained practically the same. This is evidently due to the planting enterprise which received an extraordinary impetus during the period.

It will be remembered that Indian joint stock activities enjoyed a boom in the years 1919-21, and then came the crash. A noticeable feature in connection with the improvement now recorded is the low amount of average capital of each company. In the pre-war year the average amount of such capital of each concern registered was about Rs 19 lakhs. This rose to Rs. 29 lakhs in 1919-20, but in succeeding years began to go down until in 1924-25 it was only Rs 5 lakhs. In 1925-26 this average increased to about Rs 6½ lakhs.

## PRODUCTS

**BOOTS AND SHOES.**—The local manufacture of boots and shoes is still very important, though imports from Europe tend to increase. Every village and town has its shoemakers, in the cities whole streets are occupied by them, and one of the most striking features of the trade in some places is the large number of Chinese engaged in it. The towns most famed for artistic shoe and leather-work generally are Cuttack and Patna (Bengal), Rampur, Lucknow, Agra and Jhansi (United Provinces); Peshawar and Kohat (Frontier Province), Chandra (Central Provinces), Jaipur and Bikaner (Rajputana), Surat, Ahmedabad, Poona, Ratnagiri and Hyderabad (Bombay), and Raichur, Salem, Trichinopoly, Madras and Mysore (Southern India). These are the chief centres of the native trade. Cawnpore is the commercial centre of the modern trade in boots and shoes of European style, saddlery, military equipment, trunks, etc.



**BREWING.**—Brewing was first attempted in India in 1825, but did not become a success till about 1870. It has now developed into one of the largest of minor industries. The production of some 20 breweries is extensively purchased by the Army Commissariat Department. Many of the breweries are located on the outer ranges of the Himalayas, and produce a good light beer better suited to the Indian climate than some of the imported ales.

**CEMENT.**—This is one of the industries which applied for protection under the Tariff Act (the application, though recommended by the Tariff Board, was refused by the Central Government) on the grounds of under-selling by imported Portland cement. The prestige which British cement enjoys has handicapped many of the cement factories in India, the maximum capacity of which is 600,000 tons yearly. With an importation of some 120,000 tons yearly, their annual output does not at present exceed 250,000 tons.

**COPPER AND BRASS WARE.**—Indian craftsmen show large aptitude in the utilisation of copper and brass and their alloys. In Burma, for example, images of stupendous size are cast in brass by a small band of operators, whose appliances would seem

Ujain and Indore in Rajputana and Central India, Poona, Bombay, Nasik, Bijapur, Baroda and Kathiawar in the Bombay Presidency, and Mysore, Madras, Madurai and Vellore in Southern India. The brass-work of Jaipur, which is essentially artistic, takes the form of miniature and charmingly natural reproductions of bullocks, carts and scenes from country life generally. The gongs and images of Burma are also well known.

**COTTON.** Indian cotton mill production during the year 1924-25 showed considerable advance over the previous 12 months. The total output of cloth in the whole of India, including the Native States, amounted to 1,970 million yards, an increase of 15 per cent. Yarn production showed about the same percentage of increase, from 617 million pounds to 719 million pounds.

Of the total cloth production, coloured piece goods accounted for 118 million yards, an increase of 17 million yards over the previous year. Under the head of grey and bleached goods, the principal varieties were shirting and long-cloth (485 million yards), dhootis (128 million yards), domestics and sheetings (72 million yards), drills and jeans (65 million yards), chadars (56 million yards), and printers (23 million yards). The total value of goods woven, as far as reported, was

or net with a different colour on each surface. This art is practised in Alwar and Kotah, and to some extent at Acola and Nasik. In Madras, the *chay* root has taken the place of the *al* dye, and gives the splendid deep rich reds once so famous in the silk handkerchiefs of that Presidency, where, indeed, the calicoes and chintzes produced are always highly coloured and very distinctive.

**TIE-DYEING.**—The art of tie-dyeing, peculiar to India, is exemplified best in the famous Bandana handkerchiefs of Northern India. The process is simple in theory, but so laborious in practice that it could only have been invented or pursued in a country where human labour was valued at an abnormally low figure. Portions of a fabric are tied up by thread and soaked in some resistant material in elaboration of the design. The fabric is then dyed its lightest colour, and the threads are unwound, or further points are tied up, and the fabric once more dyed. This is repeated until the design is completed, when the threads are all unwound and points of various shades are revealed, usually on a dark brown or black ground. This art is practised throughout Rajputana, Central India and Gujarat. It is occasionally seen in Berar and Madras, also in the Meerut and Muttra districts of the United Provinces.



MARTIN & CO, Calcutta. Managing Agents for The Bengal Iron Company, Ltd.  
Panoramic view of part of works.  
(See letterpress page 162)

absolutely inadequate judged by European standards. In many parts of India again, as in Rajputana, chain bangles are moulded and sold for a few annas a pair, which in Europe and America could not be produced at several times the prices charged. Between these extremes in magnitude and intricacy lies the range of domestic and sacred utensils, for the production of which every village possesses its skilled coppersmiths. Ordinary domestic utensils are rarely ornamented, but their shapes are often exceedingly graceful. Some of the most beautiful and interesting copper and brass wares of India are those directly required for ceremonial purposes, or which have been derived from the implements used at the temples. The following are the principal centres of ornamental copper and brass-work: Kashmir, Nepal and Sikkim, Amritsar and Lahore in the Punjab, Lucknow (copper) and Benares (brass) in the United Provinces; Jaipur, Bikaner, Dholpur,

Rs 59½ crores, against Rs 53 crores in the previous year. (See also article on "Cotton.")

**DYEING.**—The art of the Indian dyer, known and appreciated since the earliest times, has been of late years seriously affected by the introduction of modern mineral dyes, especially aniline and alizarine. Indigo, lac-dye *al*, turmeric, safflower, and myrobalam are the substances most employed in the industry, which is practised all over India. Every province—indeed, very nearly every large town or centre of enterprise—has something peculiar and characteristic in its dyes or methods of dyeing, or in the designs employed by its calico printers. In the Punjab, as in Kashmir, the most striking feature is the skill attained in dyeing the floss silk used in *phulkari* embroidery into deep rich shades of old gold, magenta and purple. The Central Provinces reveal the rich dark red of the *al* dye; Rajputana and Central India show the charming art of dyeing the thinnest muslin

**EMBROIDERIES.**—The term embroidery includes all forms of needlework, but excludes ornamentation applied on the loom, such as is seen in the manufacture of kincobs, jamdanis, tapestries, carpets and the like. Embroidery attains its highest development in Northern and North-Western India, and is more frequently found among the inhabitants of the hills than with those of the plains. Much of it is exceedingly beautiful, and a peculiarity of all Indian needlework may here be noticed—viz., that the needle is pulled away from, not drawn towards, the operator. *Phulkari*, or "flowered" work, is especially characteristic of the Jat population of the Punjab. Rohtak is its home, and the art is also found in its best form in the districts of Hissar, Gurgaon and Delhi. The silk embroideries of Delhi and Agra, the *chokhas* of Kathiawar, the *kasida* work of Dacca, and the *chikan* work of Lucknow also deserve mention.



**FISHERIES.**—The fisheries of India are potentially rich, but as yet yield only a fraction of what they might were they adequately exploited. The fishing industry, particularly the marine section, has certainly expanded considerably within the last 50 years concurrently with improvements in the methods of transport and the increased demand for fish, cured as well as fresh, from the growing populations of the great cities within reach of the seaboard. The caste system, however, exerts a blighting influence on progress; fishing and the fish trade are universally relegated to low caste men, who alike from their want of education, the isolation caused by their work and caste, and their extreme conservatism are among the most ignorant, suspicious and prejudiced of the population, extremely averse from amending the methods of their forefathers and almost universally without the financial resources requisite to the adoption of new methods, even when convinced of their value. Higher class capitalists have hitherto fought shy of association with the low caste fishermen, and, except in the case of joint stock companies

fresh-water fisherman the Bengali is most ingenious, his traps and other devices being exceedingly clever and effective—in many cases too effective—so eager is he for immediate profit, however meagre this may be. The greatest inland fishery is that of the hilsa, which annually migrates from the sea in innumerable multitudes to seek spawning grounds far up the branches of the Ganges and the other great rivers. Other valued fishes are the rohu and the katla prawns, which abound everywhere. Of important fishes taken in the lower reaches of the rivers and in the great network of creeks spread throughout the Sunderbans, the Lekti and the mullets are the most esteemed, apart from these estuarine fish the more valuable sea-fishes are the mango fishes, pomfrets and soles. The sea fisheries are as yet little expanded, the fishermen of Orissa, where alone coastal fishing is of any local importance, having no sea-craft save catamarans of inferior design and construction.

**BOMBAY.**—These sea-fisheries are of great importance, pomfrets, soles, sea perches

**MADRAS.** From the long Madras coast come sardines, mackerel, catfish and jew-fish (kora or gol). The catches of sardines are so largely in excess of food requirements that every year big quantities are turned into oil and manure. Fishing outside the 5-fathom line is mostly carried on by Bombay boats (Ratnagiri), which engage in drift netting for bonito, seer and other medium-sized fishes. Fish curing is extensively practised everywhere on the Madras coasts, at the 100 vairs or bonded enclosures scattered along the coast salt is issued free of duty, and over 55,000 tons of wet fish are annually cured in them.

**GLASS.**—Glass has been manufactured in India from the very earliest times, and an established industry producing mainly bangles and small bottles has existed since the 16th century. Manufacture of glass on modern European lines dates only from the end of the last century, since when a number of concerns have been started which devote themselves mainly to the production of bangles and lampware, side by side with



WORKS OF THE SONE VALLEY PORTLAND CEMENT CO. Ltd., on the banks of the River Sone.  
Managing Agents: Martin & Co., Calcutta.  
*See letterpress p. 162*

formed to engage in large operations on new lines, these capitalists cannot be counted upon to assist in the development of Indian fisheries. As in Japan, it appears that the general conditions of the industry are such that the initiative must necessarily be taken by Government in the uplift and education of the fishing community, also in the introduction and testing of new and improved apparatus and methods.

**BENGAL.**—The fishing value of the extensive deltaic region comprised in the Presidency of Bengal and the Province of Bihar and Orissa lies primarily in the enormous area occupied by inland waters, rivers, creeks,heels and swamps, to say nothing of paddy fields and tanks. These swarm with fish, and as the Hindu population is free to a large extent from the aversion to a fish diet which is widely prevalent among the better castes in the south, the demand for fish is enormous. About 1.6 per cent. of the population of the two Provinces is engaged in fishing and its connected trades, a percentage that rises to 2.6 per cent. in the Presidency alone. As a

and jew-fishes providing the largest catches. The finest of Bombay fishing boats hail from the coast between Bassem and Surat, they are beautifully constructed, attain a considerable size, and are capable of keeping the sea for weeks together. In the season the occupants fish principally off the Kutch and Kathiawar coasts and in the mouth of the Gulf of Cambay. Their main method of fishing is by means of huge anchored stow nets, which are left down for several hours and hauled at the turn of the tide. The chief catches are bombil (Bombay ducks), pomfrets and jew-fishes. The first named are dried in the sun after being strung through the mouth upon lines stretched between upright posts. South of Bombay the fishermen of Ratnagiri and Rajpur make use of another and lighter class of fishing boat specially designed for use in drift-net fishing. Fine hauls of bonito, seer (a large form of mackerel) and allied fishes are often made during the season from September to January and later of shark and rayfish. For the latter specially large and powerful nets are employed.

bottle-making on a small scale. The industry received a great impetus during the War, and there are now prosperous factories at Bombay, Jubbulpore, Allahabad, Rijnol, Ambala, Nami, Lahore and Calcutta. The native cottage industry of cheap glass bangle making has its chief centres in the Ferozabad District of the United Provinces and the Belgaum District in the south. This industry, though facing strong competition from Japan, is in a flourishing condition and supplies nearly one-third of the Indian demand for bangles.

**GOLD AND SILVER PLATE.**—From the earliest times gold and silver have been imported into India far in excess of the quantities required for the maintenance of the currency, and mainly for use as ornament or in various crafts. Gold plate is now little manufactured, but the characteristic silver plate of Southern India is still produced in Bangalore, Mysore, Travancore, Madras City, Trichinopoly and the Godavari district. The Bombay Presidency has two well-marked styles of silver plate—the Poona and the Cutch. In the former a bold repoussé work

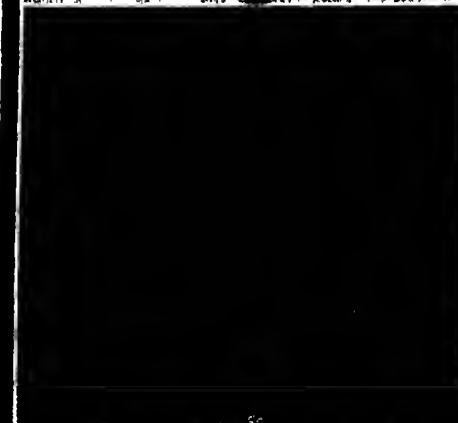
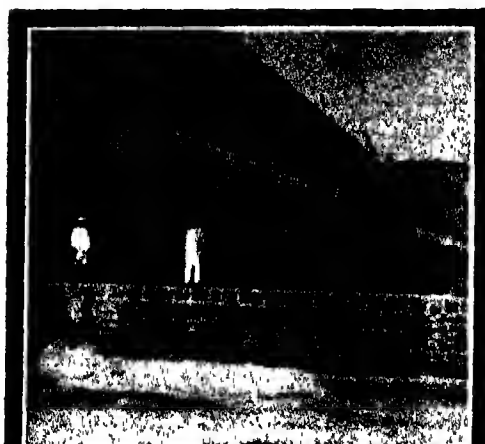
prevails, in the latter a graceful and intricate floral design in shallow repoussé is practised. Bijapur, Sholapur, Ahmedabad and Baroda also provide good examples of Bombay silver work. Bengal has four great centres of the industry—Calcutta, Cuttack, Dacca and Monghyr. Cuttack has for many years been famous for filigree work, which has also attained a footing in other places, among which Trichinopoly, Dacca, Rangoon and Jhansi may be mentioned.

**HIDES AND SKINS.** The term hides in general parlance denotes the raw, dressed or tanned skins of bullocks, cows, buffaloes, horses, camels, etc., while the term skins is restricted to those of calves, sheep, goats, deer and other wild animals. Statistically and commercially, however, all skins are treated as hides. It has been calculated that in India there are about 180 million head of cattle and 87 million sheep and goats. The internal trade in hides is greatly affected by the seasons, and, when there is any shortage of fodder or general scarcity, the market is unusually brisk.

The trade in raw hides is centred in the big markets of Calcutta, Lahore and Cawnpore, the export trade, which is considerable, being mostly from Calcutta and Karachi. Half-tanned or "crust" tanned hides, known in the trade as East India "kips," are the product for the most part of tanneries in Bombay and Madras, the existence of the bark of *cassia auriculata* (known as *avaram* in the Madras Presidency) having created a very important industry in tanned sheep and goat skins in Madras. The finest qualities of Madras tanned skins are specially suitable for the production of light weight leathers finished in light colours. Exports of tanned hides and skins from Madras have of recent years shown large increases. One of the biggest exporting firms connected with this industry, the South Indian Export Company, Ltd. (see article following in this section), exported during 1925 hides and skins to the value of roughly a million sterling. Madras has now something over 80 per cent. of the total export trade of this valuable industry. (See also under "Commerce.")

**IRON AND STEEL.**—Though more richly endowed with iron ore than almost any other country in the world, it is only lately that India has possessed in a modern commercial sense an iron industry. The ancient iron industry, it is true, was known abroad, the skill of Indian artificers in wrought iron (of which the famous Iron Pillar is an example) being renowned. The development of the import trade, however, gradually stamped out the old native iron-smelting industry, except in the more remote districts, and of the modern industry the old East India Iron Company, at Arcot and on the Malabar Coast, and the Barakar Iron Works Company (later taken over by the Bengal Iron and Steel Company, Ltd.) may be said to be the pioneers. The business and undertakings of the latter were in 1919 acquired by the newly-formed Bengal Iron Company, Ltd. (see article following in this section), which has during the last five years attained a position of security and eminence in the industry. The story of the rapid rise to world-fame of the iron and steel industry of Jamshedpur, created by the late J. N. Tata, founder of the house of Tata, Sons and Company, is one of the most romantic in modern Indian history. It is virtually the only steel-producing concern in India to-day, its present steel capacity being about 250,000 tons annually. (See article following in this section.)

**PRODUCTION.**—According to the latest statistics available, the production of iron-ore increased by 76 per cent. from 821,053 tons



TATA HYDRO-ELECTRIC POWER SUPPLY CO.

1. Portion of one of the dams.
2. Pipe line looking down on Power House.
3. Main pipe line from where water emerges from tunnel through the dam to the factory.
4. Small section of interior of one of Power Stations.

(See photograph, page 153.)

in 1923 to 1,445,313 tons in 1924. That recorded for the Mayurbhanj State represents the production by the Tata Iron and Steel Company, Ltd., whilst of that recorded against Singhbhum, 138,939 tons were produced by the Indian Iron and Steel Company and the balance by the Bengal Iron Company. The quantity and value of the iron ore produced during 1924 were as follow—

	QUANTITY TONS	RS	VALUE £
Bihar and Orissa—			
Mayurbhanj	996,920	24,92,300	179,302
Sambalpur	654	4,578	330
Singhbhum	305,238	7,39,619	53,210
Burma—			
Mandalay	328	1,312	94
Northern Shan States	58,666	2,34,744	16,888
Central Provinces	68,361	3,73,702	26,885
Mysore	14,958	39,324	2,829
Other Provinces and States	168	1,001	72
Total	1,445,313	38,86,580	279,610

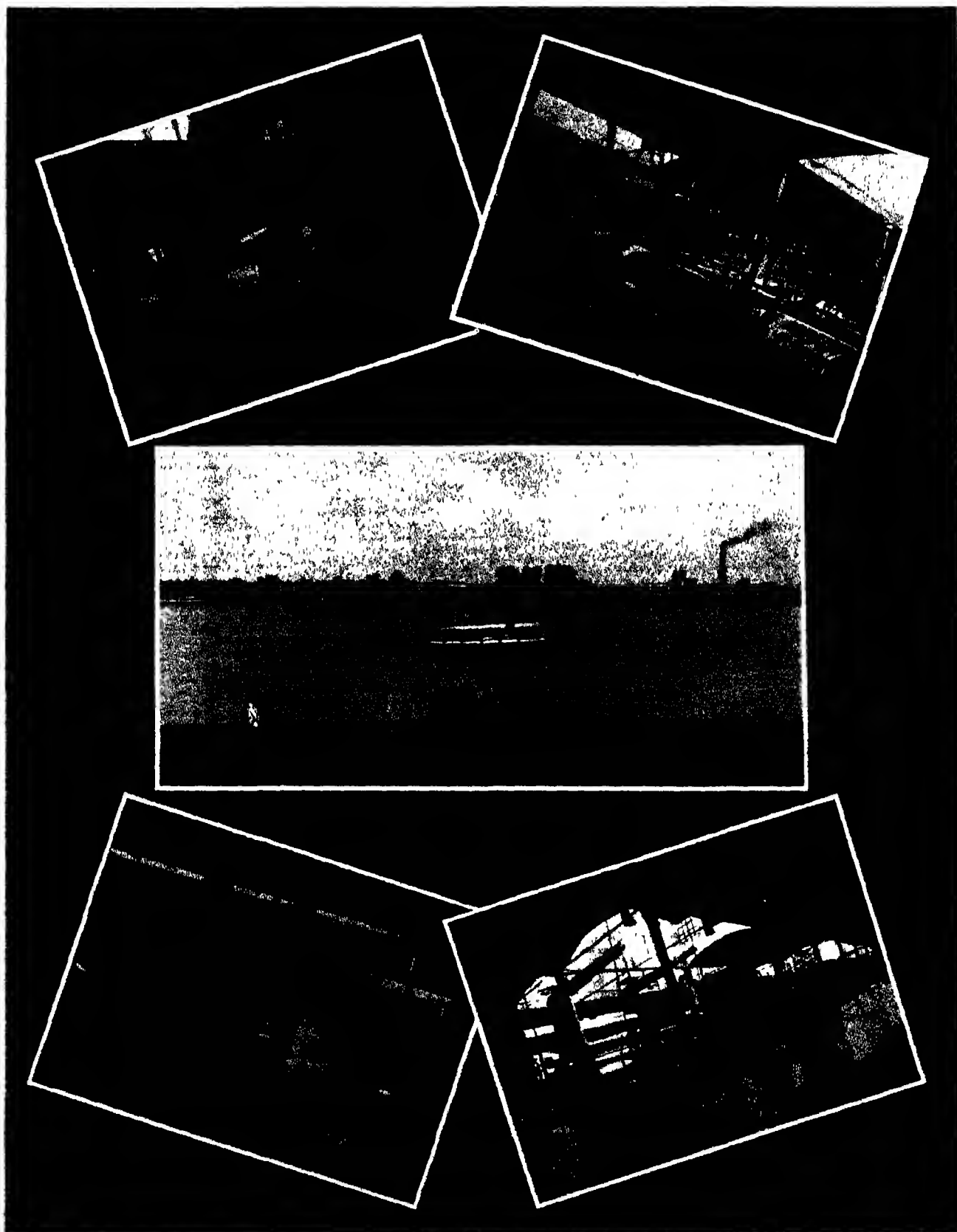
Exports of pig-iron from India in 1924-25 totalled 341,326 tons, as against 183,195 tons in 1923-24, the respective values of these amounts being Rs 2,16,81,694 and Rs 1,27,83,462. Japan and the United States are by far the largest purchasers.

**PROTECTIVE MEASURES.**—In spite of the increased production of iron and steel in India, the years 1923 and 1924 were not prosperous ones for the industry owing to a world-wide slump in the iron and steel trade. For this reason the conditions of the industry were investigated by the Indian Tariff Board and a measure of protection was introduced for steel in 1924. The pig-iron section of the industry had found an outlet for increased production in enlarged exports. In 1926 the Tata Company asked for a 10 years' extension of the protective duties as from March, 1927, and also for additional bounties on various classes of steel. The Tariff Board's decision was expected to have been given towards the end of 1926. (See also under "Commerce" and "Mining and Minerals.")

**IVORY.**—India is very largely dependent upon foreign countries for its supply of ivory, all the finer and more expensive ivory carvings are, as a rule, done on African ivory. Five localities are specially noted for their artistic ivories—Delhi, Murshidabad, Mysore, Travancore and Moulmein. The ivory carving now practised at Delhi is modern, and mainly Hindu in character, the articles produced are richly designed and carefully finished—caskets, glove-boxes, tabu ornaments, paper cutters, card-cases, chessmen and the like. The Bengal ivory workers, like those of Delhi, produce a large quantity of little ornaments for the European market. The ivory carvings of Mysore and Travancore are the finest in India, their decorative designs being drawn from very early Jain sources.

Ivory carving is as a rule hereditary, but there is no special caste identified with the craft. Ivory turning is widespread, the best specimens coming from Agra, Alwar, Jodhpur, Amritsar, Patiala and Tirupati. With the Sikh the use of the comb is almost a religious observance, and in Amritsar and other towns of the Punjab ivory combs of great beauty are made.

**JUTE.**—The value of the exports of Indian jute manufactures in 1925 exceeded Rs. 58 crores, and some 75 mills were at work, with over 41,000 looms and 863,000 spindles. The number of persons employed was nearly 300,000. (See special article on "Jute.")



**BIRKENMYRE BROTHERS, Calcutta.**

1. Power House at Hastings Mill.
  2. (Centre). General view of Mill on the banks of the Hooghly River.
  - 3, 4, & 5. Three interior views of the Mill.
- (See letterpress, page 167).

**INDIAN JUTE MILLS ASSOCIATION.**—This association, now one of the most important, if not the most important, of the bodies affiliated to the Bengal Chamber of Commerce, was started under the following circumstances. In 1886 the existing mills, finding that, in spite of the constant opening up of new markets, working results were not favourable, came to an agreement with the late S. E. J. Clarke, Secretary to the Chamber of Commerce, as trustee, to work short time. The only mills which stood out of this arrangement were the Hooghly and Serajgunge. The first agreement, for six months dating from February 15, 1886, was subsequently renewed at intervals without a break for five years up to February 15, 1891. The state of the market at the time of the renewals dictated the extent of the short time, which varied throughout the five years between four days a week, nine days a fortnight and five days a week. Besides short time, 10 per cent of the sacking looms were shut down for a short period in 1890. An important feature of this agreement was a mutual undertaking by the parties not to increase their spinning power during the currency of the agreement, only a few exceptions being made in the case of certain incomplete new mills.

**LEATHER.**—India's local manufactures of skins and leather have steadily increased in recent years. The trade in hides and skins and the craft in leather manufacture are in the hands either of Mohammedans or of low caste Hindus, and are on that account participated in by a comparatively small community. The leather produced by some Indian tanneries, especially those under European management, is in certain respects quite equal to the best imported articles. Progress has been steady since the War, and considerable quantities of special forms of chrome leather, for which Indian hides are particularly suitable, now find a ready market in London.

India possesses a large selection of excellent tanning materials such as acacia pods and bark, Indian sumach, tanner's cassia, mangroves and myrobalam. By these and similar materials, also by various methods and contrivances, hides and skins are extensively cured and tanned, the leather being worked up in response to an immense local demand.

**LINSEED OIL.**—Linseed, extensively grown in India, supplies a valuable oil, the extraction of which is generally carried out in country mills by primitive methods, though several factories are working near Calcutta on modern lines. Production and exports showed considerable increase in 1925.

**MATCHES.**—Since the imposition of a high specific duty on matches from Japan and Sweden, India's match industry has developed. There are many match woods of fairly good quality in Bengal, and there are indications that the expert advice engaged a few years ago by more than one provincial Government is resulting in improved methods in selecting sites and carrying on the industry.

**MINOR INDUSTRIES.**—Among the minor crafts and industries of India, many of which are locally important, but which from reasons of space cannot be dealt with separately, are the sword slings and belts of Peshawar, Kohat and Quetta, the artistic water-bottles manufactured in Madras, the beautiful enamel work of Jaipur, Delhi, Bahawalpur and Multan, the stone carving of Peshawar, Delhi, Agra, Muttra, Udaipur, Jaipur, Ajmer and Gwalior, the turquoise jewellery of Kashmir, the garnet trade of Jaipur, the wine industry and papier-mache work of Kashmir, the tinsel printing of Lahore, and the marquetry work of Bombay City, Baroda and Ahmedabad.

**OIL MILLING.**—More than a million and a quarter tons of oil seeds of various kinds (linseed, groundnuts, cotton, rapeseed, etc.) were exported from India in 1924-25. It has been pointed out by the Commercial Intelligence Department that it is both economically and industrially unsound for India to export her oil seeds instead of manufacturing the oils and oil cake in the country. It allows other countries to reap the manufacturer's profits, and at the same time deprives Indian agriculture of the great potential wealth, as cattle food and manure, contained in the oil cakes.

As a matter of fact, an immense quantity of oil is already manufactured in India, but by more or less crude processes. Village oil mills worked by bullocks and presses by hand exist everywhere and supply most of the local demand for oil. There has also been a great increase of recent years in the number of oil mills worked by steam or other mechanical power. These crush all the commoner oil seeds and development has been especially marked in the case of mustard oil, castor oil, and groundnut oil. In spite of all this, there has been a perceptible diminution in the exports of oil from India particularly of coconut oil and linseed oil, and an increase in the exports of oil seeds, which is particularly marked in the case of copra and groundnuts. At present high protective tariffs in European countries and the greater expense involved in transporting oil or oil cake seem to militate against any immediately great development in the oil milling industry.

**PAPER.** The total area of India is approximately 1,805,332 square miles, of which about 294,000 square miles is forest land. The conditions necessary for the manufacture of paper are fulfilled by only a few native timbers, and these are not available for pulp making as they are required for other purposes. For the industry as it at present exists elephant grass and bamboo supply most of the raw material. Suitable coniferous woods exist in considerable quantities in the Himalayan foothills, but lack of transportation facilities is a bar to their use for pulping.

Work with bamboo has been carried on since 1875, and there are at present about a dozen mills operating with that plant sabai, or bhaib grass and a few other species of giant grasses. There are five large paper mills in the country working on up-to-date Western lines—viz., at Titagarh, Kankmara and Ranigange in Bengal, the Upper India Couper Mills at Lucknow, and the Reay Paper Mills at Poona. Their output is not enough to meet Indian needs, total production being in the neighbourhood of 35,000 short tons. A local native hand industry is that of *badami*, a light coarse paper used for both writing and wrapping. A high grade *badami* is also utilised to some extent in Government offices.

**PERFUMERY.**—This is one of the most ancient and honourable of Indian crafts, it attains its greatest importance in Northern India. Jaunpur, Kanauj and Ghazipur may be described as the chief manufacturing localities, Delhi, Amritsar and Lahore as the distributing centres, and Bombay as the emporium of foreign transactions. The more important ingredients used in Indian perfumery are lemon and geranium grass oils, spikenard, rose leaves, *hul*, musk, *galangai*, Himalayan *dhup*, patchouli, *ylang-ylang* and *keora*. The use of sandalwood oil as the basis of many products is repellent to some European tastes.

**POTTERY.**—The absence from India of a good and abundant kaolin has greatly retarded the higher developments of the potter's

craft, but perhaps less severely than have the social and religious customs of the people. According to Hindu observance, pottery is easily dehled and must be broken whenever polluted. The artistic skill of the Hindu potter has in consequence been developed in the manufacture of jars in which to store grain, spices and pickles rather than in the production of eating or drinking vessels. With the Mohammedans it may be safely inferred that the glazing of pottery originated with the production of tiles used in the ornamentation of tombs and mosques. In Southern India terra-cotta assumes a greater importance than in the north, and pottery of high quality and in style quite unlike that of Northern India is produced at various centres.

Potters, whether Hindu or Mohammedan, may be placed under two classes—the kumhar, or village potter who as a rule turns out non-glazed pottery and the artistic potter (*kuzagar*) who manufactures coloured glazed ware. With the solitary exception of the pottery of Vellore, all the present-day glazed pottery of India is essentially of Mohammedan origin.

Unglazed pottery is met with all over India. In some cases it is made so thin that it has been called *kaghuz* (paper pottery), of this nature is the terra-cotta of Gujranwala, Bahawalpur and Alwar. Sometimes a design is moulded on the surface by the fingers prior to firing, the best example of this is the Aligarh pottery. The coating of pottery with coloured lac and other substances is practised in Rajputana and Southern India.

The most reputed centres for painted pottery are Peshawar, Jullundur, Gujranwala, Rawalpindi, Bahawalpur, Lahore, Lucknow, Sitapur, Kotah and Salem. The colour is given after the pottery has been fired. This art is intimately connected with the production of idols and other sacred objects, and with the frescoing of the walls of temples and houses. The largest potteries in India are situated at Aligarh, Ranganj, Jubbulpore, Ferokeh, Calcutta and Bombay.

**SANDALWOOD OIL.**—The extraction of sandalwood oil by crude methods is one of the oldest indigenous industries in India, the principal centres being Kanauj in the United Provinces and the State of Mysore, where factory distillation has been carried on successfully since the World War sent up the price of oil. Indeed, the two State-managed factories in Mysore City and Bangalore are said to be capable together of meeting the world's demand for sandalwood oil, which is extensively used for perfumery, medicine and the manufacture of soaps.

**SALTPETRE.**—Saltpetre (potassium nitrate) is in considerable demand for industrial purposes. Its production in India is practically confined to the areas covered by the three provinces of Bihar, the United Provinces and the Punjab, in all of which places the manufacture is controlled under a system of licences by the Northern India Salt Revenue Department. Farrukhabad, in the United Provinces, is the main centre of manufacture, though the refined saltpetre produced in the Punjab excels that of any other province.

**SHELL INDUSTRIES.**—Pearl and chank fisheries are important in the extreme south of India, and to some extent in Burma also. The conch shell is cut into bracelets, armlets, charms, brooches and the like. In Eastern Bengal, and especially in Dacca, the *sankhar*, or shell-carver, is by no means an insignificant member of the artistic community. Shell-bracelets, etc., after being carved, are coloured by lac melted into the sunken portions of the design. This industry is practically confined to Bengal. Mother-of-pearl is procured at

the Indian fisheries, and is used by both stone and wood mlaylers, more especially in Northern India

**SILK.**—There are three tracts in India where sericulture is still a cottage industry of some importance—the southern portion of the Mysore plateau and a part of the Coimbatore district of the Madras Presidency, the Murshidabad, Malda, Rajshahi and Birbhum districts of Bengal, and Kashmir and Jammu, with the neighbouring sub mountain districts of the Punjab and North-West Frontier Province, in all of which the mulberry-feeding silkworm is cultivated. There is also a considerable cultivation in Chota Nagpur and Orissa and parts of the Central Provinces of the *tasar* silkworm, and in Assam of the *muga* and *eri* silkworms. All these are purely indigenous. The *tasar* is a wild silkworm never successfully domesticated, the *muga* is a semi-domesticated silkworm feeding in the open, chiefly on two particular species of laurel, while the *eri* is a domesticated silkworm feeding on castor, the silk from which cannot be reeled, but has to be carded and spun. Both in Bengal and Southern India the silk is the produce of a multivoltine worm fed on the leaves of the shrub mulberry. The Mysore industry, supposed to have been started by Tipu Sultan with seed received from China, with that in the adjoining district of Coimbatore, is now responsible for two-thirds of the total output of silk in India. A good deal of experimental work has been done in Bengal and Mysore in recent years under the direction of French and Japanese experts, and the area of land under mulberry cultivation in Bengal has been found to have increased by 33 per cent since 1913. In Kashmir, where mulberry trees are abundant and the historical records of the industry go back to the sixteenth century, only univoltine worms chiefly from seed imported every year from France and Italy are now raised. The industry is a State monopoly, and the only limit to its expansion is the amount of food available for the worms. The output of silk in Kashmir is, on a conservative estimate, 200,000 lbs. of reeled silk annually, the whole of which is exported. In the Murshidabad district are several filatures under European control, but there are in India actually only two filatures working on European lines, one in Bangalore and one in Srinagar. Of the filatures in which indigenous methods are employed, there are five establishments in Murshidabad district employing a hundred or more operatives, and one in Jammu.

**SILK MANUFACTURES.**—There was in 1925 a slight increase in the exports of silk manufactures from India and in the number of persons employed in silk-mills, though the industry has visibly declined since the War. Factory production is mainly in piece goods, sewing thread, and goods made of silk mixed with other materials. It is, however, for her hand-woven silk piecegoods that India has long been known. Most elaborate patterns are worked out with the aid of dhobies and jacquard harness, and the beautiful silk brocades (known as *kincobs*) liberally interspersed with metallic threads, for which Benares and Madras are famous, command appreciation everywhere.

**TANNING.**—See "Leather."

**TOBACCO.**—Imports of manufactured tobacco into India have always exceeded exports in value, and the difference has in recent years been accentuated by the increasing demand for cigarettes on the part of all classes of the community, who are no longer content to smoke the indigenous *biri*. The demand has at the same time encouraged the opening of a number of industries for

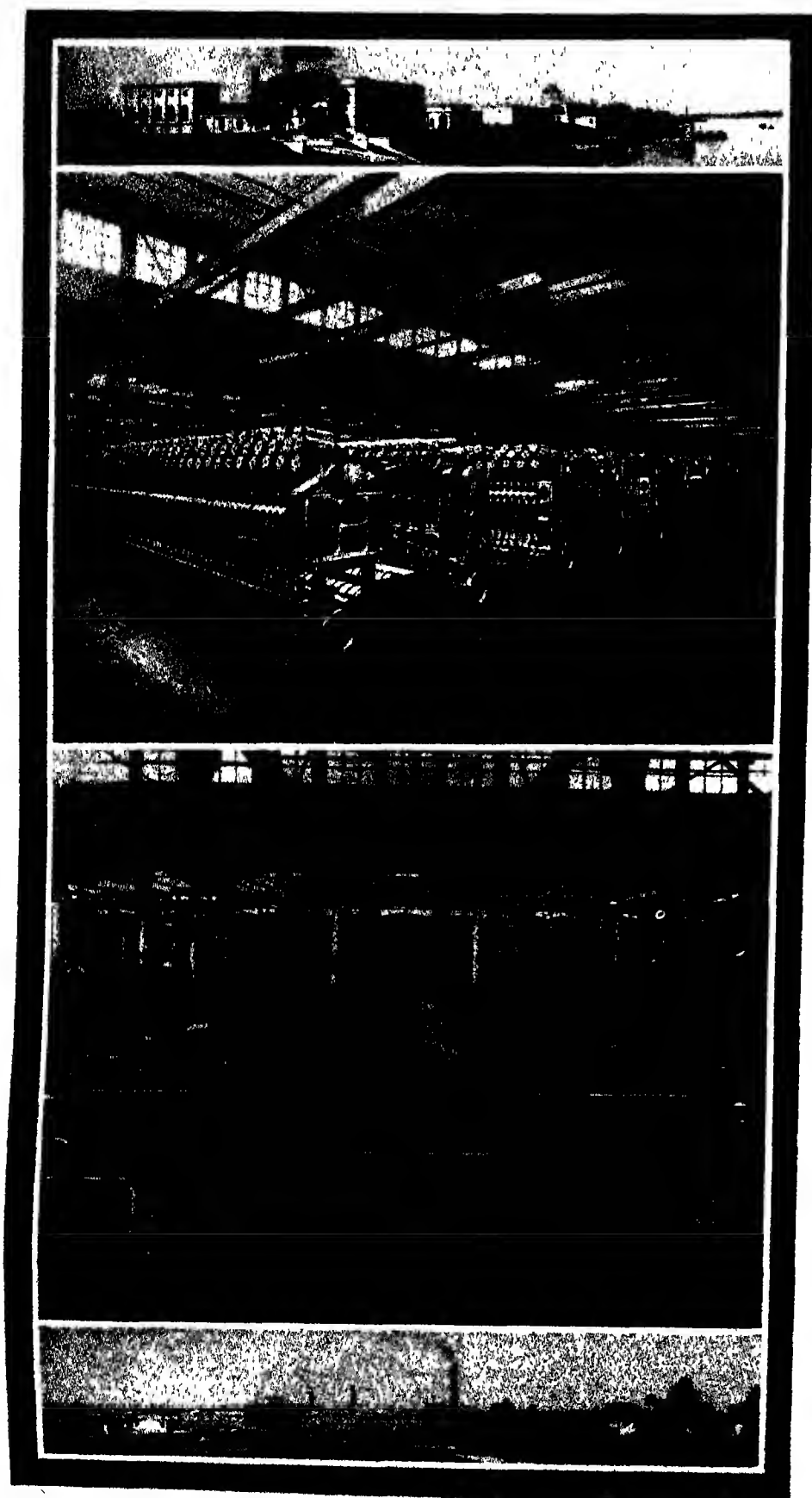


FAMOUS MARBLE ROCKS ON THE RIVER NEAR BUDA, NEAR JUBELIFORE.

the manufacture of cigarettes in India, of which the Peninsular Tobacco Company's concern at Moughyr is by far the largest. There are also considerable imports into Bombay and Calcutta of cigars from the Philippines and Havana. There was formerly a good market for "Burma" and "Trichy" cheroots in the Far East, but in recent years a marked preference has been shown in that market for Manilas. A limited quantity finds a sale in the United Kingdom. Indian leaf tobacco makes an excellent filler, but is generally unsuitable for wrappers, and to meet this deficiency there is a considerable import of leaf from Sumatra and Java. When the import duty

on foreign leaf was increased a few years ago the principal factory producing "Trichy" cigars for export was temporarily transferred to Pondicherry, but they are now manufactured at Dindigul in bond under Customs supervision. The Government of Bengal has recently opened a factory at Rangpur to pioneer the production of cigars in that province. Much of the tobacco grown in the east coast districts of Madras is shipped to Rangoon for conversion into Burma cheroots, though there is a good deal manufactured in Cochin for export as well as local consumption. Indian-made cigarettes are exported to a considerable extent to the Persian Gulf and to Zanzibar and Kenya.





JARDINE, SKINNER & CO., Calcutta.  
Four views of the Kankarrah Jute Mills, near Calcutta.

**WAX.**—Bee-culture is not an important industry in India, though it might easily and advantageously be made so. In consequence, the collection of honey and wax is usually one of the minor forest occupations farmed out to jungle and hill tribes. Wax is produced on a fairly large scale in certain districts of Southern India and the Central Provinces, also to a smaller extent in Bombay and Bengal. Wax is used locally in many industries, principally in processes of dyeing.

**WOOD CARVING.**—This is one of the oldest crafts of India. Most of the people regard the possession of a *charpoy* (bedstead) as indispensable, and in some parts of the country low settees or reed stools are in demand, but tables, chairs and sofas are of modern introduction and are found only in the houses of the well-to-do. It is in the production of richly carved doors, windows and balconies that the Indian carpenter has always excelled, deodar being the wood most used. Sandalwood carving for small objects is chiefly carried on in Mysore, Travancore, Trichinopoly, Tirupati, Madura and Coimbatore, in Madras, and in Kanara, Surat, Ahmedabad and Bombay in the West. Burma is also famous for its woodwork.

**WOOL.**—The annual production of wool in India is estimated at 60 million lbs., the average yield per sheep being a very low one only 2 lbs. All Indian wools are classed in the grade of "carpet wools," most of the breeds of sheep found on the Indian plains yielding a kind of hair rather than of wool. According to the last industrial census there were 30 establishments turning out woollen manufactures and employing about 12,000 people. Of these establishments, 13 were woollen mills (ten in British India and three in the Mysore State). Three of the mills in British India manufacture all classes of woollen and worsted goods, and the remainder blankets only. The market for their manufactures is almost entirely in India itself, and during the World War they were all employed to their fullest capacity in meeting the Government's war requirements. There are also in India not inconsiderable quantities of hand manufactures of felt and blankets, as well as of *putton* and *pashmina* in Kashmir and the North-West Frontier Province. Handloom weaving is generally done with handspun yarn, though yarn spun in Indian mills is to some extent used in the manufacture of the better classes of carpets.

**CARPET MANUFACTURES.**—The Empire Exhibition at Wembley made many people acquainted for the first time with Indian pile carpets. These carpets, which are for the most part hand knotted in the Punjab and the United Provinces, are generally composed of a woollen pile on a cotton warp, though woollen warps with a silk pile are occasionally made to special order. The chief centre of the industry is Amritsar, where there are about two hundred looms at work. The wool used, which comes chiefly from Bikaner or from Kerman in Persia via Nushki, is locally spun and dyed with vegetable colours. Other centres outside the Kashmir State are Mooltan in the Punjab, Jaipur and Bikaner in Rajputana, Agra and Mirzapur in Rajputana, in the United Provinces, and Ellore in the Madras Presidency. Carpet manufacture is also a feature of a number of jails, as for example Lahore, Agra, Yeraoda (near Poona) and Vellore. In Northern India the weavers are for the most part Kashmiri Mohammedans. Rugs and carpets from beyond the frontier have for many years found their way into Northern India, and the two most important trade centres for these imports, which come chiefly from Persia, Russia and Turkestan, are Peshawar, the capital of the North-West Frontier Province, and Quetta.



## PROMINENT INDUSTRIAL ENTERPRISES

### JARDINE, SKINNER AND COMPANY.

**Inception.**—The well-known firm of Jardine, Skinner and Company, Managing Agents, owes its inception to the enterprise of the late Mr David Jardine, who commenced trading as a general merchant and commission agent in 1842 at a small office in Strand Road, Calcutta. In 1845 Mr Charles Binny Skinner was admitted to partnership, and the concern has since been known by the title then assumed of Jardine, Skinner & Co.

**Personal.**—The firm, in the course of becoming one of the largest Managing Agencies in the Far East, has had several eminent and distinguished members who have done good public work. Probably the best remembered of them is Mr J J Keswick, who led the European community in Calcutta at the time of the bitter antagonism, during Lord Ripon's Viceroyalty in 1884, to what was known as the Ilbert Bill, as the outcome of which the European Association was formed, with Mr Keswick as first President.

**Activities.**—The industries in which the firm of Jardine, Skinner & Co is interested are as wide and varied in character as the wide spread area which they occupy. Amongst the foremost businesses controlled are Jute Mills, Tea Estates, Limber Forests and Coal Mines, whilst the firm is also interested in the importation of Manchester piece goods and the exportation of gummies and tea, as well as in the agencies of Insurance and Shipping Companies. A short description of some of the more important of the Companies of which Messrs Jardine, Skinner & Co are Managing Agents provides interesting figures.

**Jute Companies.**—Commencing with jute, which is the special product of the Bengal Presidency, it may be stated at once that the firm controls four jute mills in Calcutta having a total capital of Rs 1,60,00,000 and working 5,918 looms, this latter figure representing 11.9 per cent of the total looms of all the Calcutta jute mills.

**KAMARHATTY CO.**—The Kamarhatty Company was registered in Calcutta in 1877, after the great slump in the jute industry due to excess of factory production. It started with a capital of Rs 8,00,000, which has since been increased to Rs 40,00,000. The original mill at Kamarhatty, on the Hooghly River, had 320 looms, which 20 years later had been increased to 500. In 1904 a new mill was erected with 300 looms, the two factories now contain 1,710 looms, with 34,272 spindles.

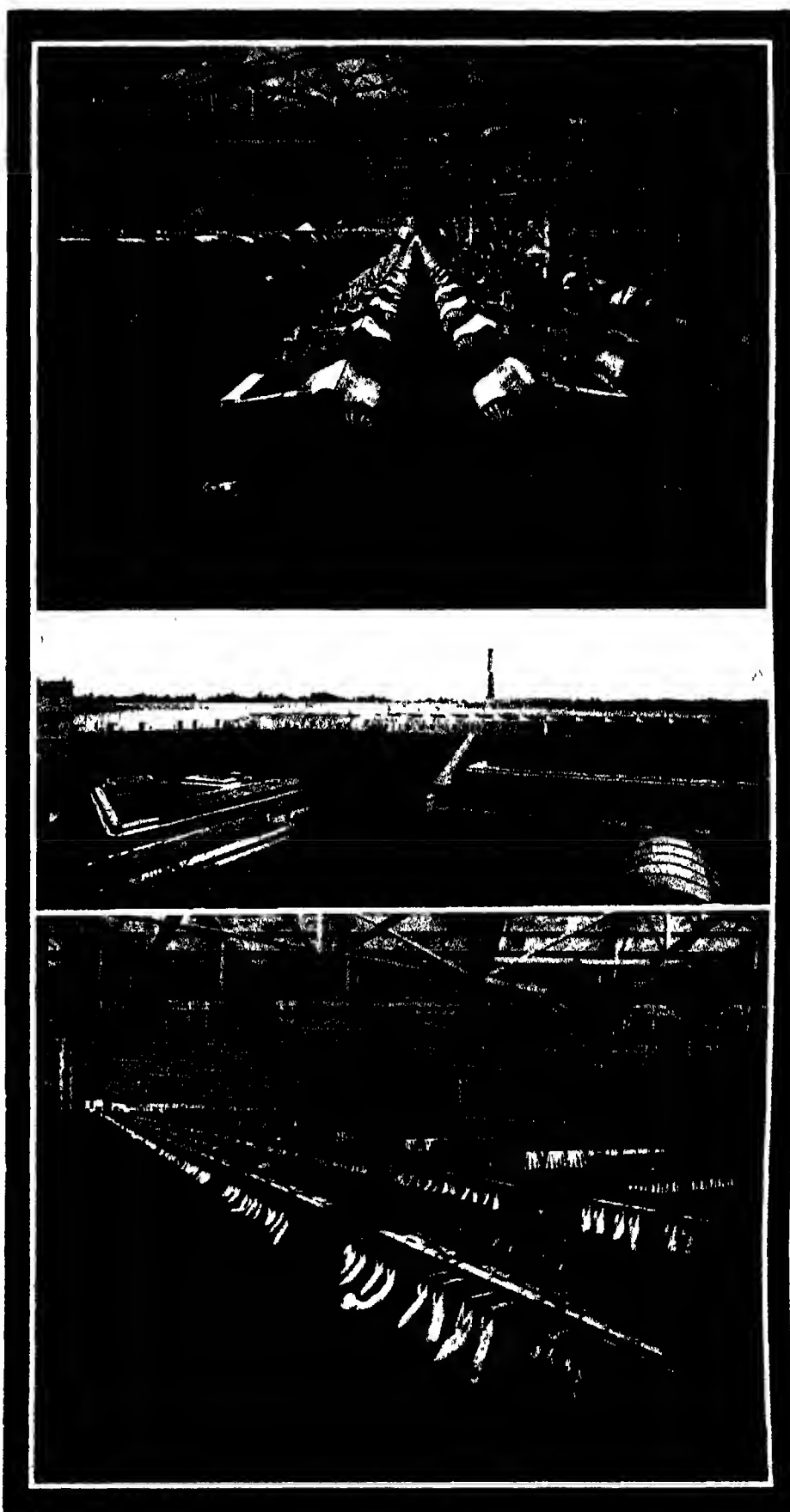
**KANKNARRAH CO.**—The Kanknarrah Company was started in 1882 with a mill at Bhatpara, in the district of the Twenty-four Pergannas near Calcutta, with 250 looms. The capital of the concern at that time was Rs 14,00,000, which has gradually been increased to Rs 40,00,000. A second mill has been erected necessitating additional looms, now increased to 1,521, with 28,366 spindles.

Both the Kamarhatty and Kanknarrah Companies have also jute-buying and baling agencies at Naraingunge and Chandpur, working in connection with the mills.

**HOWRAH MILLS CO., LTD.**—This Company, whose mills are situated at Ramkrishnapore, Howrah, the managing agency of which has recently been taken over by the firm, has a capital of Rs 52,50,000. The mills have 1,663 looms and 34,768 spindles.

**RELIANCE JUTE MILLS CO., LTD.**—This Company's mills are at Kanknarrah, Twenty-four Pergannas, and have a total of 1,000 looms running and 20,000 spindles. The capital is Rs 36,50,000.

**Tea Companies.**—Messrs. Jardine, Skinner and Company are also Managing Agents of



JARDINE, SKINNER & CO., Calcutta

Reliance Jute Mills.



JARDINE, SKINNER & CO., Calcutta. Pithead Gear, Kendwadih Colliery

nine Tea Companies, of which two are registered in England and the remainder in India

**BENGAL UNITED TEA CO., LTD.** — This Company was registered in London in 1897, and has a capital of £300,000, of which £210,000 has been paid up. It owns tea estates near Darjeeling and in Cachar, as well as in Assam, with a total area of 24,560 acres, of which 6,163 acres are under cultivation

**CACHAR AND DOOARS TEA CO. LTD.**

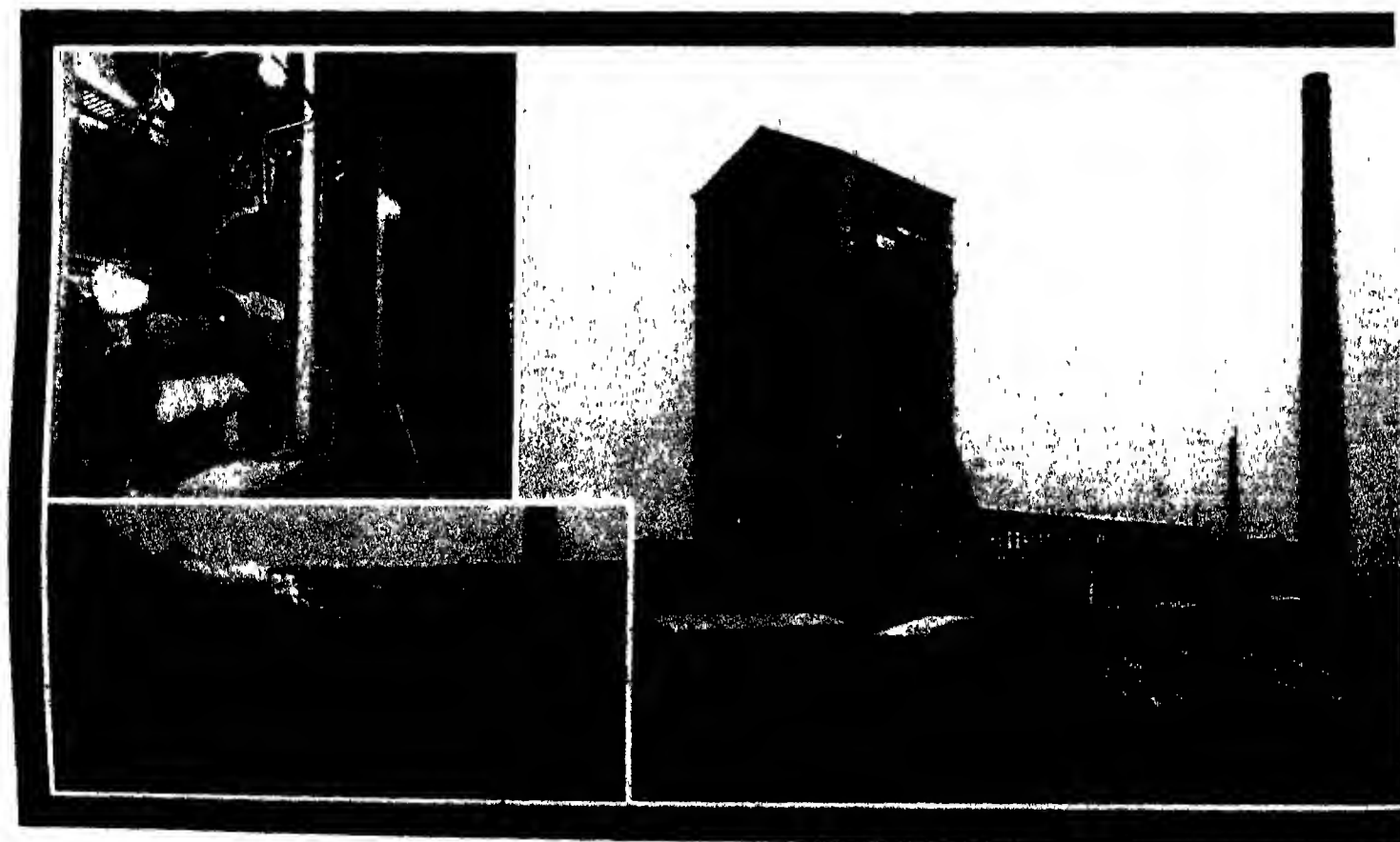
Registered in London in 1895 with a capital of £200,000, of which £153,000 has been paid up, the Company owns estates in Cachar, the Dooars and Assam aggregating 21,542 acres, of which 4,661 acres are under cultivation

**KURSUNG AND DARJEELING TEA CO., LTD.** — Formed in 1892, this Company

has a capital of Rs 1,40,200, and owns an estate of 1,510 acres, of which 405 acres are cultivated

**CENTRAL CACHAR TEA CO., LTD.**

The Central Cachar Tea Company was established in 1863, with a capital of Rs 10,00,000, for the purpose of taking over the tea estates of Burne Braes, Mohumport, Sengapore and Rattakandi, comprising now 8,241 acres, of which 1,499 acres are under cultivation



JARDINE, SKINNER  
Five views of the  
(See letterpress p. 157)



JARDINE, SKINNER & CO., Calcutta  
Pit head, Bullaree Colliery

**CHINDYPORE TEA CO., LTD.**—This Company was registered in Calcutta in 1870 with a capital of Rs 250,000, and was the result of the amalgamation of the gardens known as Chandypon, Bulkyuly, and Ferdinanly in Cutch. The Company owns 8,000 acres, 794 of these being cultivated.

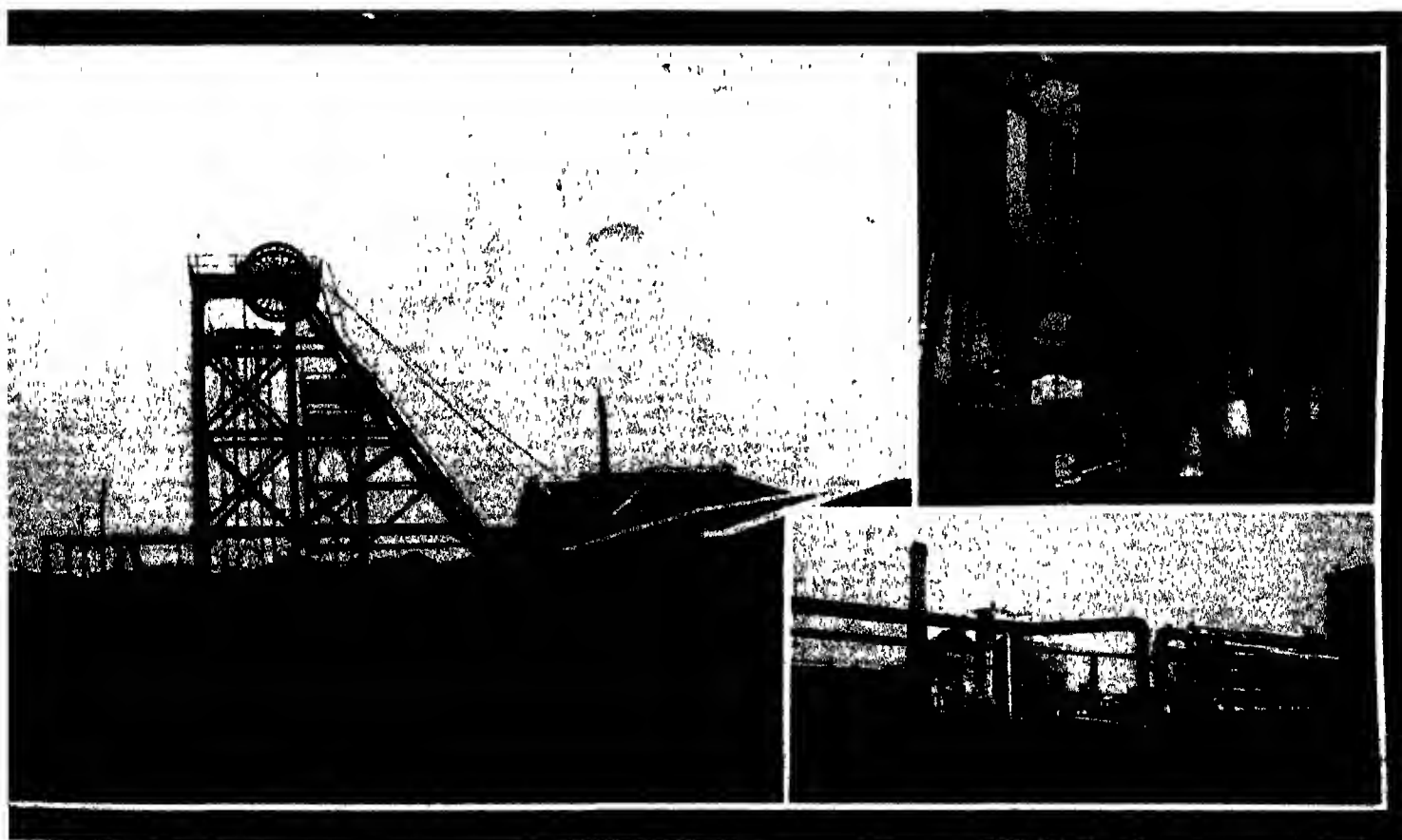
**KILLINUGGER AND KHOREELTA CO., LTD.**—Registered in 1885, this Com-

pany has a capital of Rs 3,00,000, and owns gardens at Killinugger, Khoreel, Missempon, and Kuni Tullah in Cutch, totalling 2,542 acres, of which 599 acres are under tea.

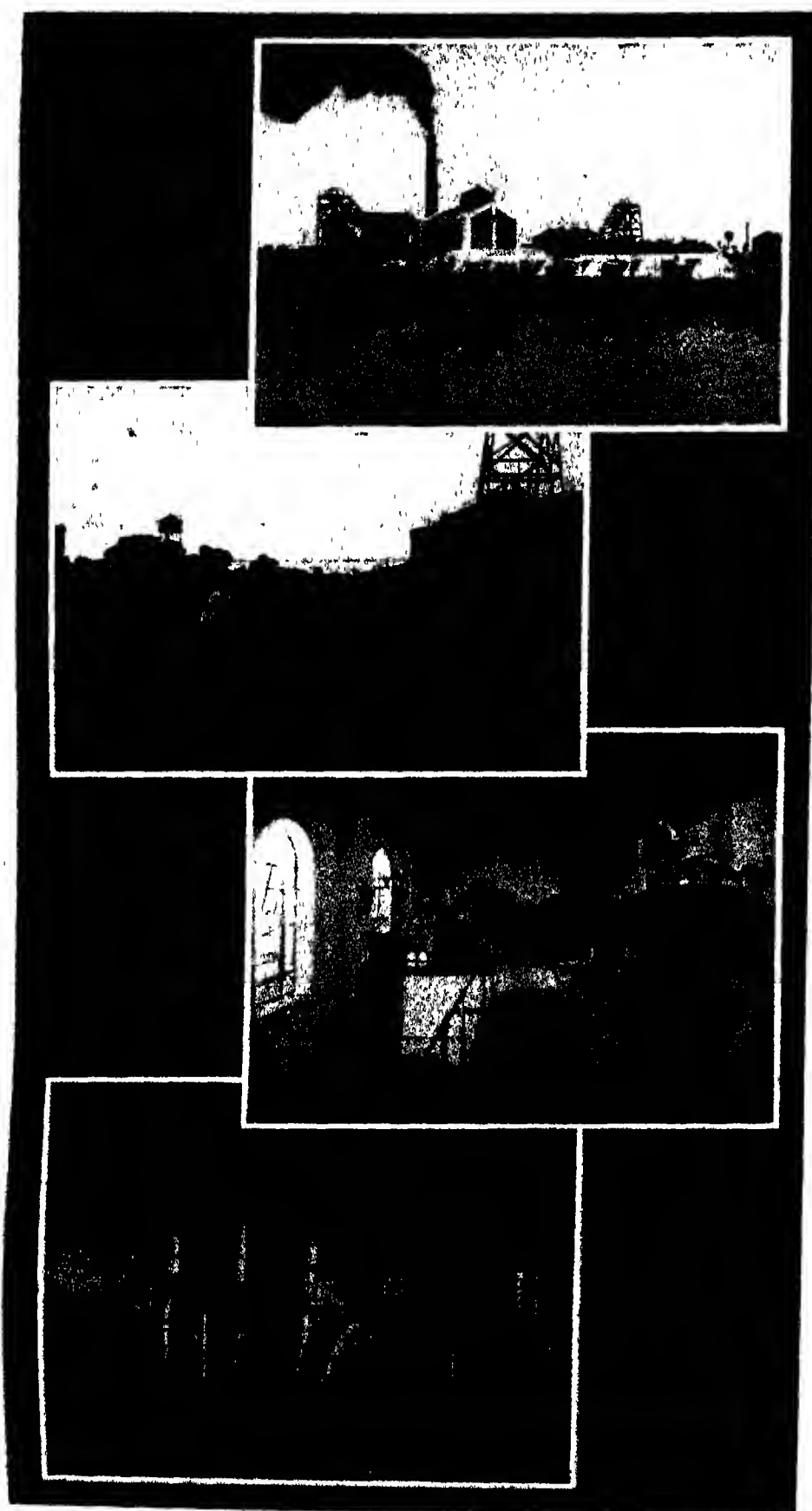
**BARADIGHI TEA CO., LTD.**—The property of this Company consists of a tea garden in the Dooars of about 1,977 acres, of which 1,075 acres are under cultivation. The capital of the Company,

which was registered in 1893 is Rs 3,00,000.

**BALLACHERRA TEA CO., LTD.**—This Company was registered in 1910, and has a capital of Rs 2,00,000, of which Rs 1,20,000 has been paid up. It owns gardens at Ballacherra, Heroncherra and Panchoira, in the Sumt Valley district of Cutch, of a total acreage of 7,522 of which 947 acres are at present under tea.



& CO., Calcutta.  
Coke plant, Bullaree.  
and illustrations pp. 156, 157, 160, 161).



JARDINE, SKINNER & CO., Calcutta.  
 1. Pit Head Gear.  
 2. Pit Head Scene.  
 3 & 4. Power Plant.  
 (See *Interpress*, p. 157).

Kendwadih Colliery.

**RYDAK TEA SYNDICATE, LTD.**—The Rydak Tea Syndicate was registered in 1898, having acquired two gardens, Rydak and Kartik, in the Dooars, in the preceding year. It has a capital of Rs 4,00,000, of which Rs 2,48,800 has been paid up. The property of the Company now comprises 6,863 acres, 1,440 of which are cultivated.

**Coal and Coke Companies.**—The coal-mining industry has for a number of years claimed the attention of Messrs. Jardine, Skinner and Company, as well as the manufacture of coke and its by-products, and the firm acts as Managing Agents for five important coal companies.

**BARRIE COKE CO., LTD.**—This Company was registered in 1918 with a capital of Rs 12,00,000, all of which has been paid up. The plant consists of a battery of 35 waste heat ovens by Simon Carves, and is capable of manufacturing from 50,000 to 60,000 tons of first-class hard coke per annum. The manufacture of coke was started in 1921, and since then the plant has been continuously at work. The Company has also erected a sulphuric acid plant, and provides its own requirements in the process of manufacturing sulphate of ammonia, of which it turns out a considerable quantity.

An up-to-date plant for the recovery of benzol has also been provided, and, in spite of the adverse climatic conditions obtaining in India, very good results have been secured. A large quantity of benzol of excellent quality is now being manufactured. This benzol plant is the only one in India, and the Company is entitled to regard with some degree of satisfaction the fact that this pioneer plant has successfully been put to work in spite of the numerous difficulties against which it has had to contend, also bearing in mind the difficult nature of the process of benzol manufacture, even in those countries where climatic and labour conditions are far more favourable.

A Tar Distillation Plant is also in operation at the Barnee Coke Company's works, and large quantities of prepared road tars of different specifications, creosote oils, carbolic oils, pitch, disinfectant fluids and varnishes, etc., are manufactured.

**EAST INDIAN COAL CO., LTD.**—The East Indian Coal Company was registered in England in 1893, and has a capital of £120,000, all of which is paid up. The concern owns collieries in the famous Jherria coalfields in the district of Manbhum in the Province of Bihar and Orissa, which include those known as Kendwadih, Khovia, Dheria-joba, Kurkend, Brahmanbararee, Bhulanbararee, Jealgorah, South Bulharee and Pandra. The output of the collieries is about 40,000 tons a month, but they are equipped to raise a maximum of about 75,000 tons per month.

**SUTIKDIH COAL CO., LTD.**—This Company owns mines of first-class coal in the Jherria fields, which have an annual output of from 50,000 to 60,000 tons. It was registered in Calcutta in 1908, and has a capital of Rs 6,00,000.

**BANSDEOPUR COAL CO., LTD.**—Registered in Calcutta in 1917 with a capital of Rs 6,00,000, this Company owns a colliery situated in Jherria, which raises about 100,000 tons of steam coal annually.

**MARINE COAL CO., LTD.**—The Marine Coal Company, Ltd., was registered in Calcutta in 1901 with a capital of Rs 2,50,000, in 25,000 shares of Rs 10 each, fully paid up. Its colliery is situated in Jherria and its raisings approximate 30,000 tons annually.

**Various Agencies.**—Messrs. Jardine, Skinner and Company have always been, as the foregoing particulars show, primarily interested in the jute, tea and coal-mining industries,

but the agencies which have been described are far from exhausting the activities of the firm, which acts also as agents for timber trading, shipping and insurance concerns.

**BENGAL TIMBER TRADING CO., LTD.**—The Bengal Timber Trading Company, for which Messrs. Jardine, Skinner and Company act as Managing Agents, was registered in 1897, and has a capital of Rs 6,00,000. The Company early acquired the undertakings of the old Bengal Timber Trading Company, Ltd., and the Nagra Timber Company, Ltd., and now owns large forest concessions over an extensive area stretching in a northerly direction from near Panposh in Gangpur, one of the Feudatory States, in Northern Orissa, to and along the terai of the Ranchi plateau, their rights including the extraction of sal for the manufacture of railway sleepers. In addition to working the forest concessions, the Company deals largely in imported timbers, such as teak, Oregon pine, padauk and others.

**SHIPPING AGENCIES.**—For a number of years Messrs. Jardine, Skinner, and Company have been agents in Calcutta for a regular service of ships to China, their records in this branch of business going back as far as the year 1869; this line is now known as the Indo-China Steam Navigation Company, Ltd. A joint mail service is worked with the Apcar Line, whose steamers were formerly owned by Messrs. Apcar and Company, but now belong to the British India Steam Navigation Company, Ltd. This service was a few years ago extended to Japanese ports.

Agencies are also held for the Pacific service of the America Australia Orient Line, the Royal S. M. Co., and the "Glen" Line, and the firm in addition acts as Secretaries in Calcutta to the Calcutta Trans-Pacific Conference.

**INSURANCE AGENCIES.**—The firm is largely interested in Fire and Marine Insurance, being Managing Agents for the Triton Insurance Company, Ltd., a company which was registered in 1887 with a capital of Rs 23,00,000, of which Rs 5,75,000 has been paid up, and which resulted from the amalgamation in 1905 of the Triton Insurance Company and the Eastern Insurance Company, Ltd. Messrs. Jardine, Skinner and Company are also agents for the Manchester Assurance Company, Ltd. (incorporated with the Atlas Insurance Company, Ltd.), the Canton Insurance Office, Ltd., the Hong-kong Fire Insurance Company, Ltd., and the South British Insurance Company, Ltd.

**Import Business.**—Messrs. Jardine, Skinner and Company are importers on an extensive scale of Manchester piece goods, in connection with which branch of business they have lately taken over the Managing Agency of the old-established firm of Ewing and Company, Ltd., who have long been prominently identified with the piece goods trade, as well as being largely interested in Oregon pine sleepers and fertilizers of all descriptions.

**Exports.**—Indian produce, chiefly gunny bags.

**Partners.**—The present partners of the firm are Messrs. F. G. Stewart, R. Jardine Paterson and Sir P. W. Newson, Bart., who reside in Great Britain, and Sir A. R. Murray, C.B.E., and Messrs. J. Mein Austin and W. T. Hunter, resident in Calcutta.

**Office.**—The early premises of the firm in Strand Road have already been mentioned. In 1869 these were given up for larger and more commodious premises at No. 4 Clive Row, Calcutta, which have been occupied continuously ever since.

**London Agents.**—Messrs. Matheson and Company, Ltd., 3 Lombard Street, E.C.

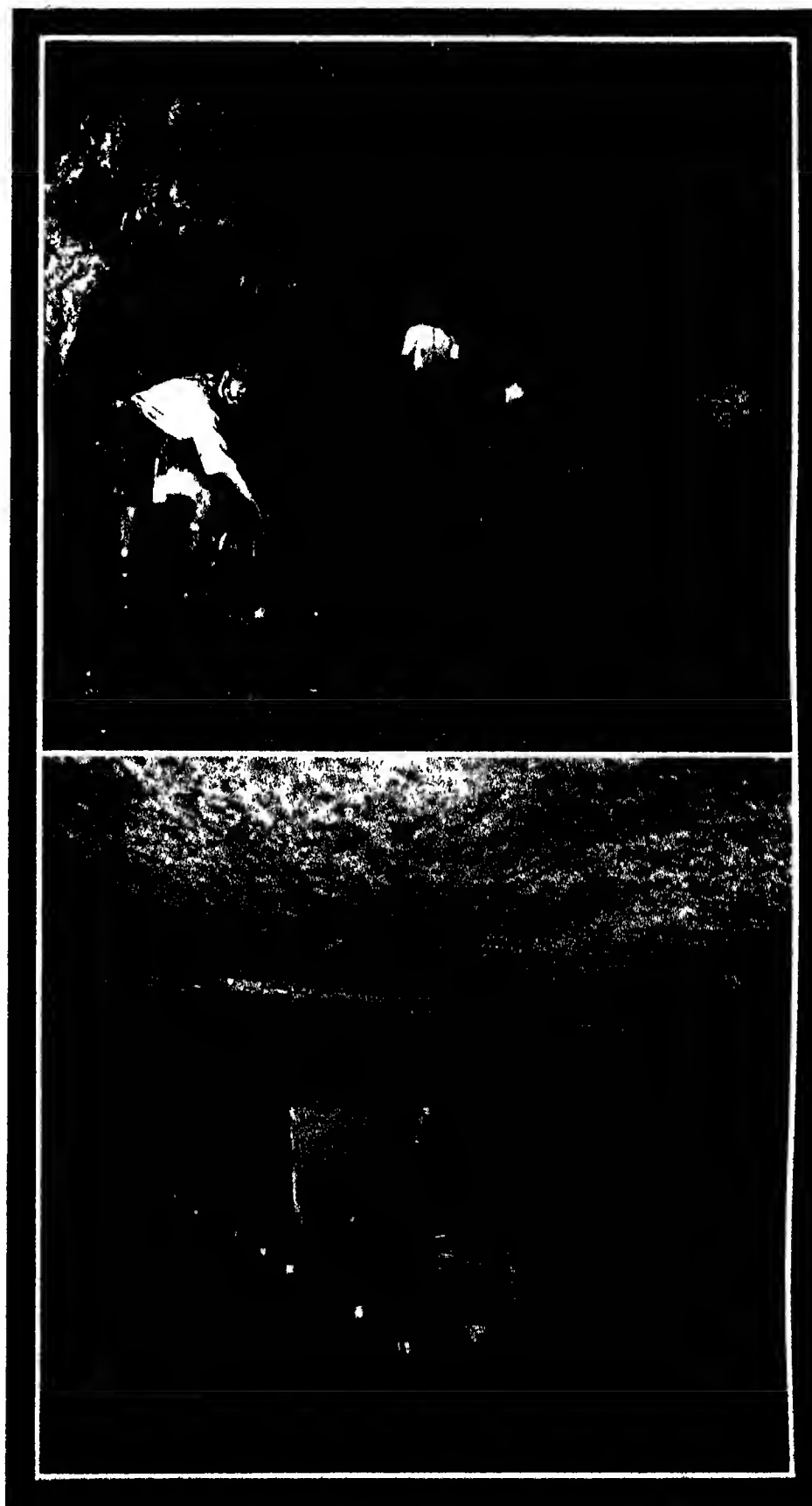
**China Agents.**—Jardine, Matheson and Co.

**Singapore Agents.**—Messrs. Boustead & Co.

**Cables.**—"Jardines," Calcutta.

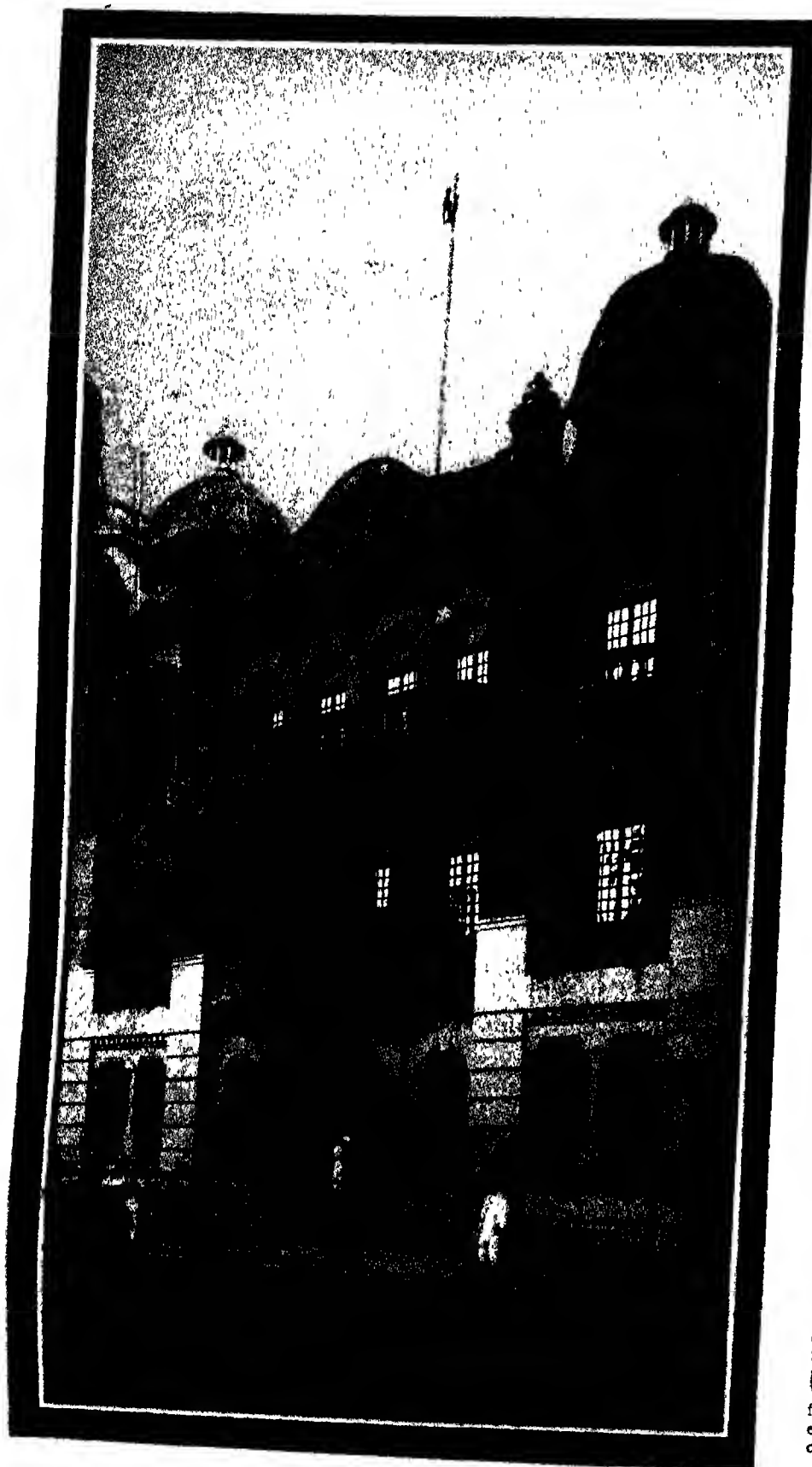
**Bankers.**—Imperial Bank of India.

(See illustrations, pp. 156-7-8-9).



JARDINE, SKINNER & CO., Calcutta.

1. Coal Cutting, Kendwadli Colliery.
2. Underground Transport.



MARTIN & CO., Calcutta.

Head Office, designed and built by the Company's own Contracting Department.

#### MARTIN AND COMPANY.

**Inception.** - The history of this well-known company begins with the arrival in India in 1874 of the late Sir Acquin Martin (then Mr T. A. Martin), who formed at Calcutta a branch of Messrs Walsh, Lovett & Co., a firm of merchants with large interests in South America and headquarters at Birmingham and London.

**Early History.** - Early in 1875 an office was opened in Chive Ghat Street, when the business of general stores and metal merchants, the home firm's chief interests, was started. In the late 'eighties a large contract for the building of an aqueduct in the Bombay district was secured, Mr W. R. Flavin, civil engineer being brought out to superintend the work, and shortly after Mr A. Kimber, son of Mr James Kimber, chief engineer to the Calcutta Corporation, joined the staff. At that time large waterwork developments in Northern India and local drainage schemes were being placed by Government, and Sir Acquin Martin became associated with Sir Rajendra Mookerjee, then Mr R. N. Mookerjee, in securing these contracts.

The development of this side of the business did not appeal to Messrs Walsh, Lovett & Co., who looked on the Indian branch as primarily an outlet for home manufactures, and they withdrew from the Indian trade.

**Formation of Present Company.** - In 1892 Sir Acquin Martin was joined by Sir Rajendra Mookerjee in partnership when the firm under its present designation was constituted, with headquarters in India and a branch in London in charge of Mr I. Freer. At the same time Mr C. W. Walsh and Mr Harold Martin were admitted as partners, the interest of Messrs Walsh, Lovett & Co. being transferred to the newly constituted firm.

**Development.** - From this date the development of the new company's business was rapid. Beginning with the Howrah-Arma and the Howrah-Sheakhala lines, the first feeder railways in India were constructed (the capital for these being found in India), to be followed quickly by the Bukhtiarpur-Bihar, Baraset-Basirhat and Shahdhar-Saharanpur Railways. Various important agencies were also secured, including that of the Bengal Iron and Steel Company (formed in 1889), and the early years of the present century were marked by the flotation and development of collieries, docks and engineering works, manganese mines, tea, timber, electric supply, cement and allied undertakings, all following a clear and well-defined policy of developing the resources of India, chiefly so far as they related to engineering in all its branches.

On the contract and building side of the business the development of the company's activities has been very marked, large contracts for waterworks and jute mills having been successfully carried out, while the name which Calcutta still bears as a City of Palaces is due in no small measure to the many handsome buildings designed and erected by the organisation. It will ever be remembered that the many difficulties associated with the planning and construction of the All India Victoria Memorial in Calcutta were successfully overcome by the firm, to whom was entrusted the whole of the work until its completion.

**Present Activities.**—Messrs. Martin & Co. are primarily architects, builders, engineers and contractors, and their activities in these branches extend all over India and are increasing each year. They are also the



managing agents for several important engineering and other companies, railways, mines and tea estates, each of which will be found enumerated below. At the same time the original side of the firm's business, which has ever remained an important section—that is, the trade in metal and engineering stores—has grown with the general progress of the company, until there is to-day hardly a town or district in the East and North-East of India in which Martin & Co's stores machinery or metals are not found.

The activities of the various departments constituting the business are summarised below.

**Building and Contracting Departments.**—With these departments are connected perhaps the best-known of Messrs Martin & Co's many activities, a large proportion of the most prominent public and private buildings in Calcutta having been constructed—and in many cases designed—by them.

**BUILDINGS**—First in importance of these buildings is the All India Queen Victoria Memorial in Calcutta, the total cost of which was Rs 76,00,000 and which occupied 19 years in construction (see also the special article on "Calcutta"). Others in Calcutta are The Royal Insurance Buildings, Central Bank of India, Chartered Bank of India, Australia and China Alliance Bank of Simla, Mercantile Buildings, Shaw Wallace & Co's offices, Diocesan College, Calcutta Club, Masonic Hall, Church of St. Mary, the Imambarah, Mysore Memorial, Elphinstone Bioscope, Madan's Theatre, Bengal Nagpur Railway offices, Grosvenor House, and numerous private residences.

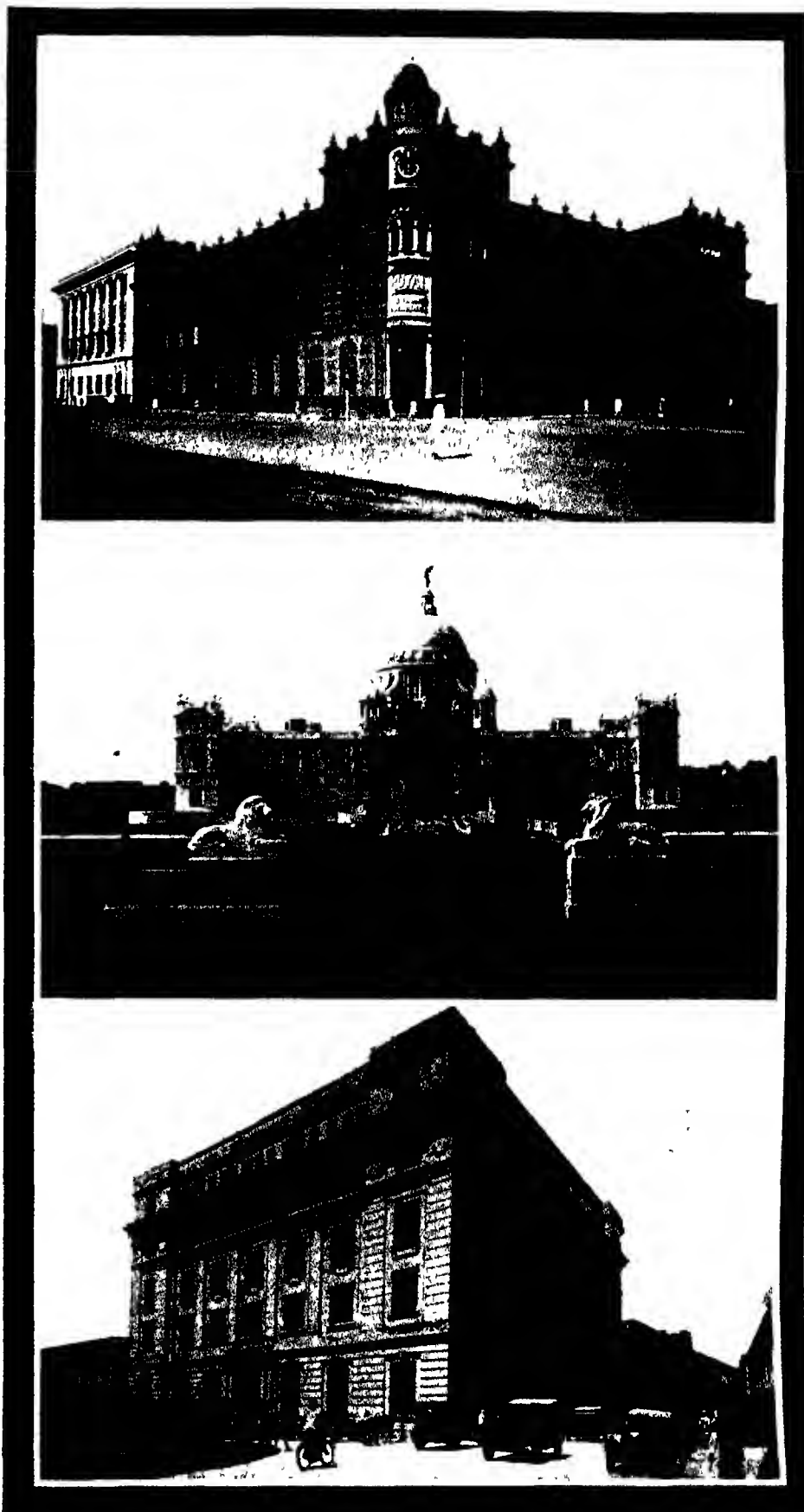
For the Bihar and Orissa Government Messrs Martin & Co. carried out the buildings for the new capital, Patna, the value of contracts for which was Rs 80,00,000. Bhagalpur College, Cuttack College and Dhanbad School of Mines. For the United Provinces Government the Council Chamber, Lucknow, was constructed at a cost of Rs 20,00,000, and for the Eastern Bengal and Assam Government the Dacca Government Buildings, which cost Rs 15,00,000.

**CONTRACTS**—These have been many and varied, the number of jute and cotton mills, tannery tobacco and other factories constructed being very large. Of these, the Auckland, Barnagore East, Dalhousie, Kamarhatti, Kilm, Northbrook and Standard jute mills, the Bowreah and Dunbar cotton mills and the Monghyr Tobacco Factory may be specially mentioned.

The firm also does a large business in contracting for water and drainage works, reinforced concrete construction, etc., among the many water works carried out by it being those of Allahabad, Agia Cantonment, Benares, Calcutta, Cawnpore, Delhi Durbar Supply, Dum-Dum, Lucknow, Meerut, Monghyr, Naini Tal, Srinagar and Serampore.

**Structural Steel Department.**—This department of Messrs Martin & Co is concerned with the erection of steel frame buildings, factories, warehouses, steel roof principals, works extensions, pithead frames, steel bridges, steel coolie huts, steel domes, godowns, etc. Designs and prices for lattice, plate and composite girders, and for steel columns to suit any span and load are supplied. Works: Berapukur Iron Works, Kidderpore.

**Metal and Stores.**—The company's store yards are at Kidderpore, where comprehensive stocks are held of all sections of British and Indian iron and steel fittings, rolled to British standard tests. These include



MARTIN & CO., Calcutta.  
Types of Buildings Constructed by the Company.  
1. Royal Insurance Offices.  
2. Victoria Memorial.  
3. Central Bank of India.



MARTIN & CO., Calcutta  
Views at Company's Saw Mills.

joists, channels, tees, angles, bars, girders, plates, galvanised and corrugated iron sheets, cast iron rain-water pipes and connections, mining and railway requisites, kodallies, sluice valves, fire hydrants, etc.

In this connection Martin & Co. are sole agents for the following British firms: The Monkbridge Iron and Steel Co., Ltd. (Yorkshire iron), R. A. Skelton & Co. (broad flange beams), Tuck & Co., Ltd. (engine packings, etc.), and W. & F. Walker, Ltd. (disinfectants).

**Timber Department.**—The development of the magnificent forests of the Andamans has recently received the attention of the Government of India. For the sale of timber so produced Messrs. Martin & Co. have been appointed agents. Many of the hardwood timbers have a deservedly high reputation both for constructional and cabinet-making purposes. The firm holds large stocks of the famous padauk, pyrimma, gurjan, badam, koko, white chuglam and other woods, purchasers being offered the most suitable material for all classes of constructional and decorative purposes at prices which compare favourably with those of the various imported timbers of a similar class. Samples of padauk, the beautiful deep-red and ornamental cabinet wood, which is well known in the markets of Europe and America, will be sent by the firm on request. Stocks of excellent packing timbers, such as dhup, papita and didu, are also held in large quantities.

**Woodworking Department.**—This is an important branch of the company's business. Here have been made the doors, windows, partitions, staircases, carved work and all interior fittings of the many public and private buildings erected by the firm, which employs a specially trained staff of carpenters and joiners, maintains an up-to-date saw-mill in Calcutta, and can quote for every class of woodwork for public and private buildings, factories, etc.

**Railway Department.** Messrs. Martin & Co. are managing agents for the following Light Railway companies, all of whose lines were surveyed, constructed and equipped by them:

**CHAPARMUKH SINGHAT RAILWAY CO., LTD.**—Part of Bengal Assam Railway

system. Opened 1920. Length, 50.81 miles. Gauge, 3 ft 3½ in. Total capital outlay (to 31/3/25), Rs 30,62,372.

**FUTWAH-ISMAMPUR LIGHT RAILWAY CO., LTD.**—Opened in 1920, and runs from Futwah to Islampur in Bihar and Orissa. Length, 27 miles. Gauge, 2 ft 6 in. Total capital cost (to 31/3/25), Rs 15,52,573.

**SHAHIDAR-I-SHAHARPUR LIGHT RAILWAY CO., LTD.**—Company registered 1905. Works 92½ miles of line in United Provinces. Gauge, 2 ft 6 in. Opened 1907 and cost Rs 47,62,496 to March 31, 1925.

**ARRAH-SASARIM LIGHT RAILWAY CO., LTD.**—Total length, 65.16 miles, of which 60.50 miles in Bengal were opened in 1911, the extension to Tarachundi Hill in Bihar and Orissa being completed in 1914. Gauge, 2 ft 6 in. Total capital outlay (to 31/3/25), Rs 23,41,015.

**HOWRAH-AMTA LIGHT RAILWAY CO., LTD.**—Owns 43.87 miles of line between Howrah and Amta, with three branch lines. Gauge, 2 ft. Total capital outlay (to 31/3/25), Rs 27,96,446.

**HOWRAH-SHEAKHILA LIGHT RAILWAY CO., LTD.**—Registered 1865. Length 7.38 miles of main line, 2.37 miles of branch line. Gauge, 2 ft. Total capital cost (to 31/3/25), Rs 7,87,327.

**BUKHTIARPUR - BIHAR LIGHT RAILWAY CO., LTD.**—Owns 33 miles of light railway in Patna district. First section opened 1903. Gauge, 2 ft 6 in. Total capital outlay (to 31/3/25), Rs 14,60,821.

**BARASET-BASIRHAT LIGHT RAILWAY CO., LTD.**—Registered 1902. Main line commenced 1904, completed 1909. Total length, 52.24 miles. Gauge, 2 ft 6 in. Total capital outlay (to 31/3/25), Rs 24,23,763.

**DELHI-AMBALLA KALKA RAILWAY CO., LTD.**—Registered 1889. Main line opened 1891, and with branches now forms part of East Indian Railway system. Total mileage, 206.51 miles. Total capital outlay (to 31/3/25), Rs 2,00,92,038. Head office of company, 237 Gresham House, Old Broad Street, London, E.C.2.

**Mining and Mineralogical Department.**—This department undertakes the examination of and reporting on coal-lands, manganese,

chromite, iron ore, limestone, galena, ochres and other mineral properties.

**Marble and Stone Department.** The well-known Kutia stone and marble works of Messrs. Martin & Co. are located at 5 Kutia Road, Kidderpore, Calcutta, where the largest stock in India of white and coloured marbles is held. The whole of the marble and stone for the Victoria Memorial was quarried and worked by the firm, which was also responsible for the stone and marble work of many other buildings and memorials, among which may be mentioned the Hongkong Bank the Cenotaph, the Ronaldshay Memorial, the ICS Memorial in Calcutta, the Council Chamber at Lucknow, the Gurkha Memorial at Lansdowne and St. Ignatius Church Altar at Kidderpore.

**Brickfield Department.** The company owns extensive brickfields at Topsy, Bally and Panchpara, where the bricks used in building operations are made. These brickfields are fitted with up-to-date plant for the manufacture of the highest quality of bricks, tiles, stonkey, etc.

**Coal Department.** Martin & Co. are managing agents for the following collieries—

**KUSUNDI AND NYIDEH, LTD.** Situated in Jherria, these collieries work 10, 11 and 12 seams (Grade II) with an output of about 15,000 tons a month.

**SAIPUKURIA AND ASANSOL, LTD.**—Near Asansol Old Station. Output, 4,000 tons a month of Ghusick Seam Coal (Grade I).

**SAMLA AND KENDRA, LTD., SAMLA-MANDARBONI LTD., SAMLA-GOVINDPUR, LTD.; SAMLA-RAMNAGAR, LTD.**—The Samla group of collieries near Pandaveswar is working Samla Seam (Grade I). Samla-Mandarmoni Siding is not yet constructed, but the output of the other three collieries amounts to about 25,000 tons a month.

**RATIBATY, LTD.**—This colliery, near Kalpahari, is working Nega Seam (Grade I). The colliery siding has only recently been completed, and an output of 5,000 tons a month is expected.

**TRANS-ADJAI, LTD., PORIAPUR, LTD.**—The Poriapur and Trans-Adjai Collieries work the Kasta Seam (Grade I). The present output is about 20,000 tons.

**MOIRA, LTD.**--This colliery is closed pending the completion of a siding.

**Tea Department.** The tea gardens under Martin & Co's managing agency are as follow

**DOOARS DISTRICT** Attabari, Chamurchi, Dhowlaphora, Debpata, Dheklapara, Gurjaman, Gazalduba, Kohmoor, Katalguri, Kolabari, Ringati, Mathura, Makrapara, Mijnai, Nuntjhora, Nedun, Pastkapara and Ranghora Estates.

**ASSAM DISTRICT** Menoka, Sonapuri, Shyamguri and Tezapore Estates.

**TERAI DISTRICT** Manjha and Kamala Estates.

**SYLHET DISTRICT** Bulvanagar Estate.

**Bengal Iron Company, Ltd.** The firm acts as managing agents for this well known company, which was incorporated in England, with a capital of £3,075,000. Its works, situated at Kulti on the East Indian Railway, were originally established in 1875 and comprise blast furnaces, foundries, engineering shops, coke ovens, a by-product plant, three collieries and iron ore mines. The foundries are the largest and most up-to-date in the East and can manufacture castings up to 50 tons in weight. The annual capacity exceeds 100,000 tons. The pipe foundries make vertical cast pipes to British standard specification, and have a capacity of 50,000 tons of all sizes a year. The sleeper foundries for the manufacture of cast iron railway sleepers are capable of an output of 1,000,000 sleepers per annum. The Indian office of the company is at 6 and 7 Chive Street, Calcutta, and the London house at 10 Princes Street, S.W. 1.

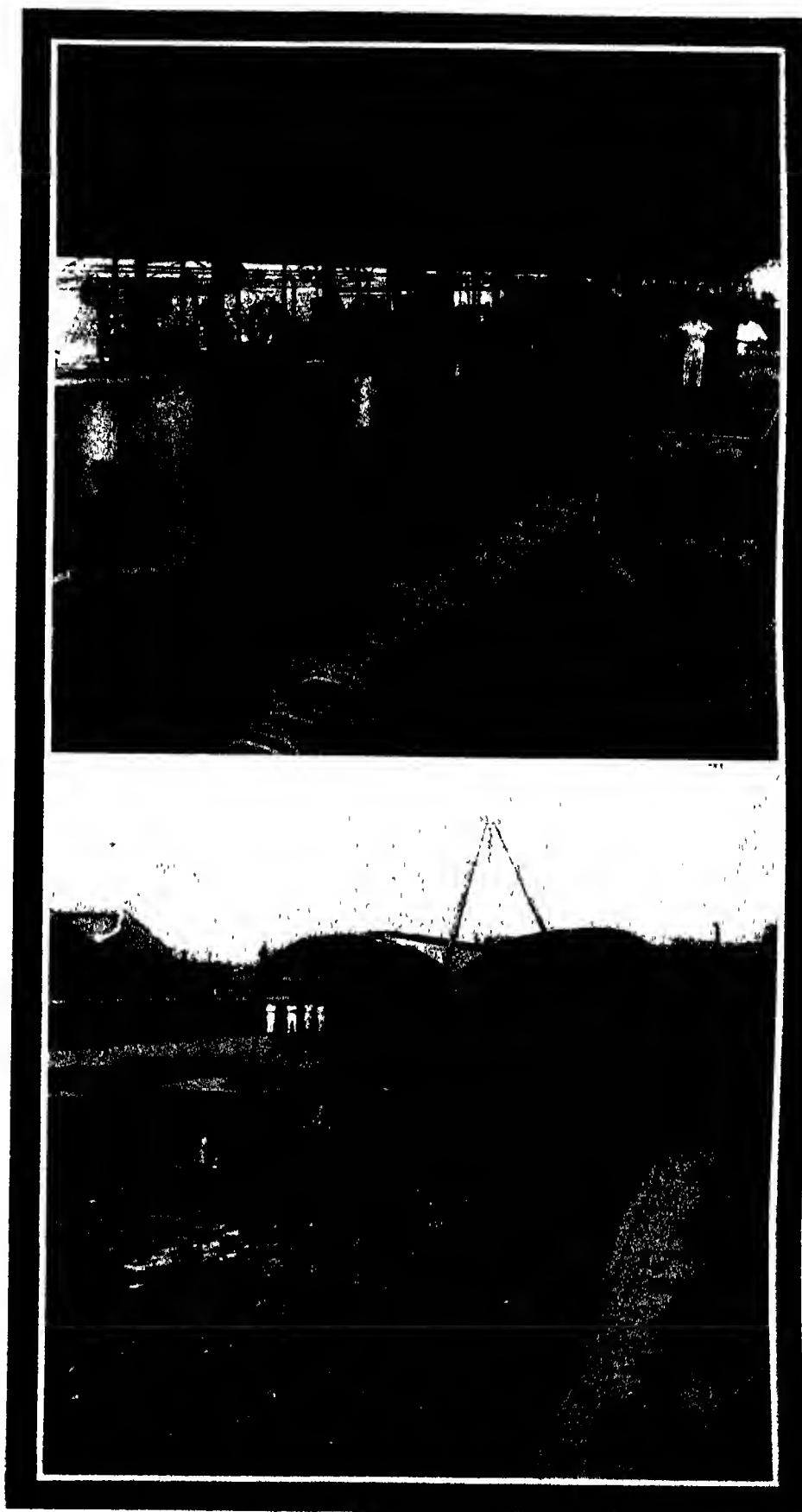
**Bengal Fire Brick Company.** Martin & Co. are the managing agents for this company, which at its works at Kulti manufactures fire bricks of all kinds, boiler linings, blue bricks for flooring, vitrified bricks, ground fireclay, earthenware pipes and roofing tiles. Branch offices at Bombay, Madras and Lahore.

**Eastern Light Castings Company, Ltd.** Incorporated in Scotland, this company, for whom Martin & Co. are managing agents, owns extensive and up-to-date works at Barakar, F.I.R., where all kinds of water-pipes, soil pipes, gutters and fittings are manufactured. Head office 142, St. Vincent Street, Glasgow. Agencies in Bombay, Madras, Karachi and Lahore.

**Robert Hudson (India), Ltd.** This firm was formed about ten years ago by the parent company of Robert Hudson, Ltd., of Leeds, to take over the activities of the branch of the latter which had been established for some ten years previously.

The firm specialises mainly in light railway material, and the works are to-day the largest in the East exclusively occupied with the manufacture of light railway plant. They have equipped, during the last 20 years, practically every large irrigation works with a portion of its light railway plant, among such being the Upper Swat Canal, Abbazi Weir project, Upper Jhelum Canal, Sutlej Valley project, Lloyd Barrage and Canals project, Lloyd Dam, Nira Right Bank Canal, Sarda Canal project, Krishnarajah Sagara project, Siddapuram project, Moosy River project, Mirzapore Canal, Bhimgoda Weir, Tendula Canal, Mahanaddi Canal, etc. A good deal of business has also been done by Robert Hudson (India), Ltd., in the coalfields area of Bengal.

In addition to the head office in Calcutta, the company has branches at Karachi and Bombay and a storeyard at the former place. In Calcutta it possesses well-equipped, up-to-date workshops served by two main line sidings, and the works have an output capa-



ROBERT HUDSON (INDIA) LIMITED. Managing Agents, Martin & Co., Calcutta.

Two aspects of Light Railway Construction Plant at that City.



**HOOGLY DOCKING & ENGINEERING CO. LTD.**  
 Managing Agents, Martin & Co., Calcutta.  
 1. Large Machine Shop.  
 2. Boat Building Loft.  
 3. Small Machine Shop.

city of 500 tipping wagons a month. Address: 6 and 7 Clive Street, Calcutta (cables: "Ralettrux," Calcutta). Managing agents: Martin & Co., Ltd.

**Improved Anchor Company, Ltd.** Martin & Co. are managing agents for this company, which manufactures the improved rail anchor for the prevention of rail creep, thousands of which are in use in various parts of the world. Address: 6 and 7 Clive Street, Calcutta (cables: "Ralettrux," Calcutta).

**Hooghly Docking and Engineering Company, Ltd.**—Shipbuilding, ship repairing and engineering in all branches are the business of this company, whose large works at Sulkea are fitted up with modern electrically driven machinery, with which all kinds of engineering work and boiler repairs can be carried out on the most modern lines. The shipyard has been laid out on up-to-date plans and is equipped to execute the building of all classes of steam and motor vessels, cargo boats and flats up to any capacity. The foundry is capable of manufacturing castings up to 15 tons and also heavy castings in brass and gun metal. Castings for jute mills are specially catered for.

In the engineering line the company has executed heavy repairs to ships belonging to nearly every shipping company, and lately supplied and fitted the biggest cast iron propeller ever made in India to *S.S. Cape Recife*. It has done practically every repair required for any Diesel-driven ship visiting this port. Head office: 6 and 7 Clive Road, Calcutta. Workshops and dock: 6 Howrah Road, Sulkea (cables: "Hooghly Dock," Sulkea). Managing agents: Martin & Co.

**Sone Valley Portland Cement Company, Ltd.**—This company was incorporated in 1922 with an authorised capital of Rs 1,00,00,000 upon the advice and with the technical assistance of the Associated Portland Cement Manufacturers, Ltd., London, whose brands of cement are so well known and highly esteemed all over the world.

The company's works are situated on the banks of the River Sone at Japla in the Province of Bihar and Orissa, about 370 miles from Calcutta. Limestone and gypsum are the raw materials used, and the plant, of the very latest design and electrically driven, is capable of producing about 60,000 tons of cement per annum.

The brand under which the company sells its cement is the well-known "Rohtas," which is used extensively by many Government departments, including the Calcutta Port Commissioners, the Calcutta Corporation, the East Indian Railway, the Assam-Bengal Railway, the Central Indian Coalfields Railway, the North Western Railway, the Public Works Department, and by all the leading engineers and contractors. Managing agents: Martin & Co.

**Kalyanpur Lime Works, Ltd.**—Martin & Co. have been managing agents for this company since 1917. It manufactures a very fine quality of lime at its works at Dehri-on-Sone, which have an output of some 150,000 maunds per month.

**Crompton & Company, Ltd.**—Manufacturers of complete electrical equipment for all industrial requirements, including alternators, arc lamps, boosters, ceiling fans, cinema generators, colliery equipment, hydro-electric equipment, laboratory apparatus, etc. The Crompton Auto-Synchronous Motor for power factor improvement, from 5 to 5,000 h.p., is a speciality of the firm, this being suitable for heavy direct coupled slow speed drives in jute and cotton mills. Managing agents: Martin & Co. Offices: 6 and 7 Clive Street, Calcutta (cables: "Cromptonco," Calcutta). Branch offices: Bombay (cables: "Firmament," Bombay);



**RUSTON & HORNSBY LTD** Managing Agents, Martin & Co., Calcutta.

Dragline at Work on new Dock Excavation, Calcutta

Madras (cables "Cromptonco," Madras) and Rangoon (cables "Clobberfeld," Rangoon)

**Hadfields (India), Ltd.**—This company, a development of Hadfields (Merton), Ltd. was formed in 1924 for the manufacture in India of high class enamel paints, varnishes, distempers, etc. The highest standard of manufacture has been aimed at throughout, and orders for 1926 included contracts from several of the railways and Government Departments. The firm also manufactures electrically welded drums, buckets and other leak-proof containers. Managing agents, Martin & Co. Offices, 6 and 7 Chive Street, Calcutta (cables "Martin," Calcutta). Agencies at Madras, Kanachi, Lahore, Cochin, Colachel, Tuticorm and Cochin.

**Howrah Engineering Company, Ltd.**—Martin & Co. are the managing agents for this firm of engineers and iron founders, whose specialities include the "Cascade" fire hand pump, castings, mill gearing, mill columns, plummer blocks, railings, gates, etc.

**Indian Manganese Company, Ltd.**—This company owns and works the Kutchee Kodagaon, Netra, Langer, Budkum and Wadhona mines in the Central Provinces, the total output of which averages 50,000 tons yearly of first grade ore and 10,000 tons yearly of second grade ore. Managing agents, Martin & Co. Head office, Dixon House, Lloyd's Avenue, London, E.C. 3.

**National Indian Life Insurance Company, Ltd.**—This company, established under the firm's managing agency in 1907, with a capital of Rs 10,00,000, carries on an extensive business all over India, Burma and Ceylon through an organisation of branch offices and agencies. Head office, 6 and 7 Chive Street, Calcutta. Resident manager's office, 2 Lyon's Range (cables "Nile," Calcutta).

**National Tannery Company, Ltd.**—This well-known tannery, which has taken a leading part in the introduction of modern tanning methods into India, was established by Dr. Sir Nilratan Sircar in 1905, and was converted into a limited liability company in 1919, with a capital of Rs 3,00,000, Martin & Co. being entrusted with its management. The company specialises in the manufacture of chrome shoe upper leathers, chrome splits, upholstery and mill leathers, chrome buffalo hides, tanned lizard skins and shikar trophies. It

also undertakes the rolling and embossing of leathers for the trade. Offices, 6 and 7 Chive Street, Calcutta (cables "Crompton," Calcutta).

**United Provinces Electric Supply Company, Ltd.**—Martin & Co. are the managing agents for this company, which has carried out important electrification works at Allahabad, Lucknow and Agra. Offices, 6 and 7 Chive Street, Calcutta (cables "Martin," Calcutta).

**Engineering Department.** This department of Martin & Co. handles various agencies, including the following: Messrs. Ruston & Hornsby's excavators, steam and oil engines, road rollers, Lancashire and vertical boilers, etc.; J. & E. Hall's refrigerating and ice making machinery; Edgar Allen's stone crushing plant; Alley & MacLellan's air compressors, etc.; John & Edwin Wright, Ltd.'s wire ropes; The Skoda Works, Ltd., Prague.

Since 1922 Ruston excavators to the number of 25 have been supplied for various schemes in India. The Lloyd Barrage and Canals Construction are using many machines, both of the steam and oil engine driven types, and the air compressors used on this project are of Alley & MacLellan's manufacture, being supplied by this department. Most Indian tea gardens use Ruston's famous cold-starting crude oil engines, and on the roads of every municipality their steam road rollers are to be seen working. The Hardy Patent Pick Co., Ltd., rock drill agency held by the firm continues to make progress, the new Argada Colliery of the Bengal-Nagpur Railway having lately been supplied with a complete drilling equipment, and the Coimbatore Waterworks with a full tunnelling plant. Among other orders, air compressors and rock drills have been supplied to the Sone Valley Portland Cement Company and the Indian Manganese Company.

The department furnishes machinery for schemes in connection with mining, quarrying and excavation of any description. Large stocks are kept in India, and expert service relating thereto is maintained by the department.

**Personnel.**—On Sir Acquin Martin's death in 1906, Sir Rajendra Nath Mookerjee became and still is the senior partner of the firm, Mr. Ernest Martin being admitted a partner.

The latter was obliged to leave India in 1912 through ill-health, and was succeeded by Mr. Oswald Martin. In 1920 Mr. Leslie Martin took the place of Mr. Harold Martin, who retired to the London office, where he had been preceded by Mr. C. W. Walsh in 1917.

**Head Office.**—6 and 7 Chive Street, Calcutta (cables "Martin," Calcutta).

**Bombay Branch.**—Sassoon Building, Ballard Estate (cables "Cotnamar," Bombay).

**London Branch.**—1 A Martin & Co. Vestry House, Laurence Pountney Hill, Cannon Street, E.C.

**Codes.**—Bentley's Complete Phrase, A B C, Lieber's Strand, A 1, Western Union, Scott's and private.

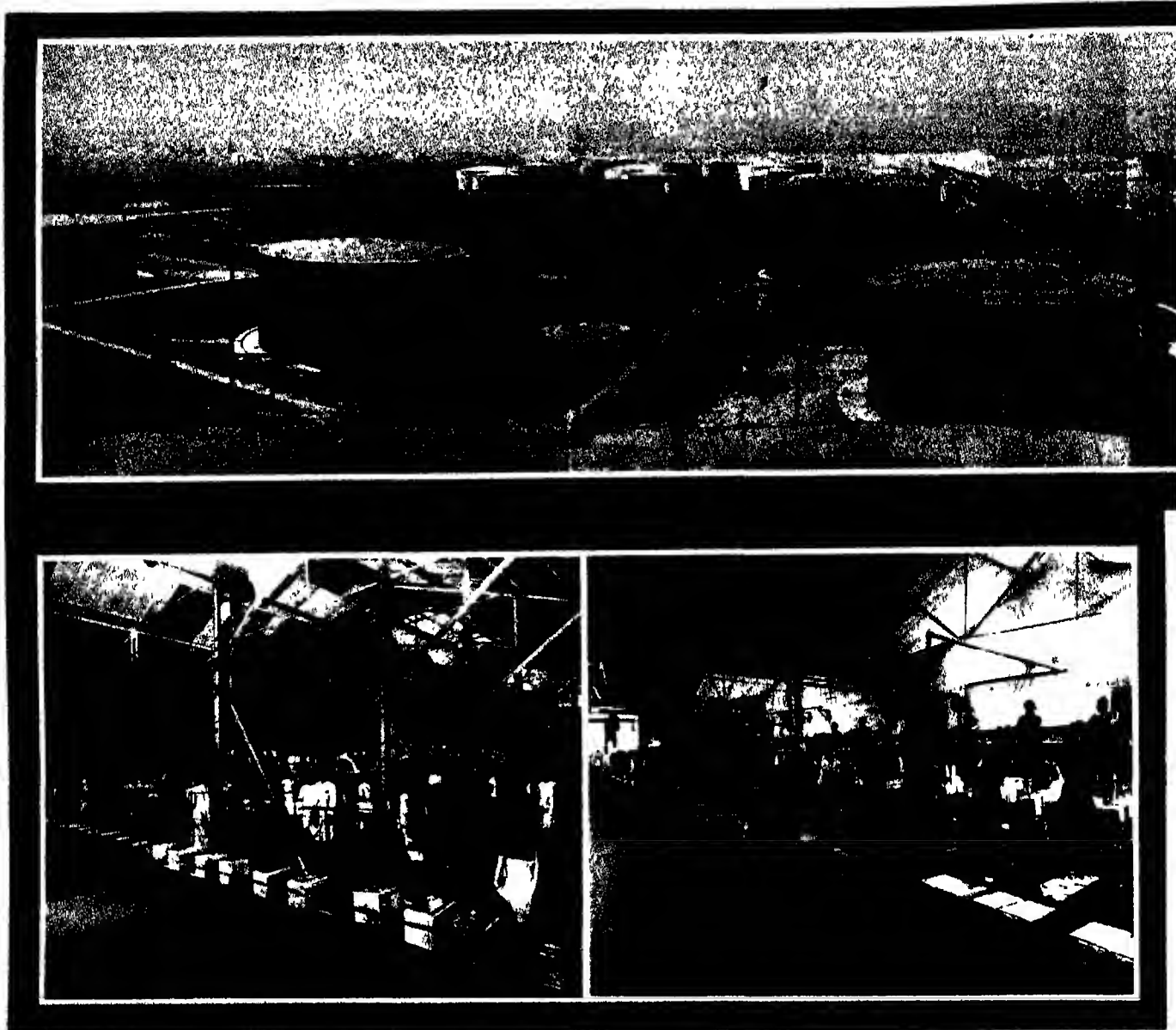
(See also illustrations, pp 150, 151.)

#### **BIRKMYRE BROTHERS.**

**Inception.** The Hastings Jute Mills, situated at Rishra, near Calcutta, of which Messrs. Birkmyre Brothers are the proprietors, were established in 1871 by William and Adam Birkmyre. The brothers had originally owned a small jute works, the Greenock Sacking Company, in Lynedoch Street, Greenock, driven by a water turbine, but, foreseeing the development and future importance of the jute manufacturing industry in Bengal, they decided to dismantle the works and transfer their entire machinery to Calcutta for re-erection on the banks of the Hooghly.

**Site.**—The site fixed upon for the mill was part of the populous district of Rishra, and situated on the western bank of the Hooghly two miles below Serampore. There was installed the machinery of the Greenock Sacking Company, the new works being named the Hastings Jute Mills from the circumstance of the lands having formerly belonged to Warren Hastings, as evidenced by two leases among the title deeds which bear his signature and seal. Those perfectly-preserved documents are now in the possession of the firm. On the south bank of the Champa khal stood Rishra House, where Warren Hastings and his wife were accustomed to stay. It was surrounded by a brick wall, the western portion of which was lined with a row of mango trees said to have been planted by Mrs. Hastings. When Hastings retired he sold the house and adjoining land (130 bighas), receiving twice as much as he paid





2 Manufacturing line and conveying them automatically to—

THE ASIATIC PETROLEUM  
1. Bird's eye view of Works at Budge Budge, Calcutta, where 1,200  
3. Filling Department

for them. The lodge now forms part of the Hastings Mill, a portion of the original building being used as the manager's office.

**Personal.**—Messrs William and Adam Birkmyre associated with them in the new undertaking their brothers Henry and John, founding in Calcutta, simultaneously with the starting of the jute mills, the now well-known firm of Birkmyre Brothers. That constitution of the concern remained unchanged until 1890, when Messrs William, John, James and Archy Birkmyre, sons of Mr Henry Birkmyre, senior, and Mr John Finlay were admitted as partners. Messrs Henry and William died in 1900, Mr. Adam in 1906, and Mr John in 1910. After the death of Mr. William, junior, in 1921, the partnership was reconstituted in the following year, the new (and present) partners being Sir Archy Birkmyre, Bt., CBE (senior and managing partner), Mr. John Birkmyre, Mr. J. Finlay, Mr Henry Birkmyre (son of Sir Archy) and Mr Henry Birkmyre (son of John Birkmyre).

**Development.**—The Hastings Jute Mills prospered from the start. In 1893 the plant had been increased to over 300 looms, with

other machinery in proportion. Electric lighting, the first to be installed in an Indian jute mill, was introduced in that year. From 1894 to 1904 the works were run at night by artificial light, a practice eventually discontinued through labour difficulties. The proprietors proceeded further to enlarge the mill and factory, discarding the old steam-power engines in favour of electric generators driven by steam turbines, producing about 4,000 h.p. To-day a perfectly equipped factory of 1,077 looms has been arrived at, with the relative preparing, spinning and finishing machinery all electrically operated.

**Buying Agencies.**—Messrs Birkmyre Bros have established jute-buying agencies in Naraingunge, Northern Bengal, and Jessore for the purchase of raw material for consumption by their mills.

**"Hastings Belting."**—The manufacture of the firm's celebrated "Hastings" belting dates back to the year 1882, when the first belting looms were erected at the Rushra Mills. The result of over 40 years' manufacturing experience, this product in both hair and cotton forms now enjoys widespread

popularity, used as it is by all the leading railways of India, the Calcutta jute mills, the Bombay cotton mills, tea gardens, and most of the largest industrial concerns in the Peninsula. New looms, embodying all the latest improvements in belting machinery, have been imported from time to time as the demand for "Hastings" belting increased.

**MANUFACTURE.**—The belting is made and tested under the actual conditions for which it is required, purely Indian labour being employed under expert European supervision. The yarns used are the finest available from home, guaranteeing a product equal in all respects, if not superior, to any imported belt of similar class. Special attention should be drawn to "Hastings" cushion surface belting, which has excellent gripping qualities recommending its use for difficult problems in belt transmission.

**EXPORT.**—"Hastings" belting is exported to Singapore, Buenos Aires, South Africa and elsewhere, its world-wide acceptability and rapid increase in sales proving its favourable comparison in quality and price with rival manufactures.





#### COMPANY (INDIA) LIMITED.

people are employed and 20,000 tins are made and filled daily

4 A Machine shop and

5 Commodious Storage Facilities at Budge Budge

**Paulin Department.** About 35 years ago The Gourock Ropework Company, Port Glasgow, Scotland, for whom Messrs. Birkmyre Bros are sole agents in India, Burma, and Ceylon, introduced a patent waterproof canvas now well known as Birkmyre's Waterproof Cloth. This innovation was designed to show that the existing crude oil tarpaulin is unwieldy in use compared with an impregnated canvas covering, which when folded does not crack or leak, and, retaining all the elasticity of the canvas, is easily handled. The cloth has an extensive sale in all tropical countries, as the heat of the sun does not affect it, whereas the surface-dressed cloth becomes useless after short exposure. The process is applied to both flax and cotton canvas. Large stocks of both dressed and undressed cloth are kept at Messrs. Birkmyre's Hastings Mill.

**ADAPTABILITY.** — The Birkmyre Motor Hood Canvas is but one example of the fabric's adaptability to every kind of waterproof covering. It is employed in the manufacture of tarpaulins, ground sheets, bulking sheets, kit-bags, golf-bags, holdalls, bearers'

valises, canvas bags of all descriptions, tea-chest covers, awnings, water-troughs, diggies and other articles.

**Orders.**—Contracts of considerable size have been executed by the firm for the Indian Stores Department, the leading railways, Government Departments, jute mills and prominent industrial concerns.

**Offices.**—6 Clive Row, Calcutta (cables "Birkmyres," Calcutta) Codes: Western Union, Bentley's, A.B.C., 5th Edition and Private.

**Bankers.** The National Bank of India, Ltd.

(See illustration, page 153.)

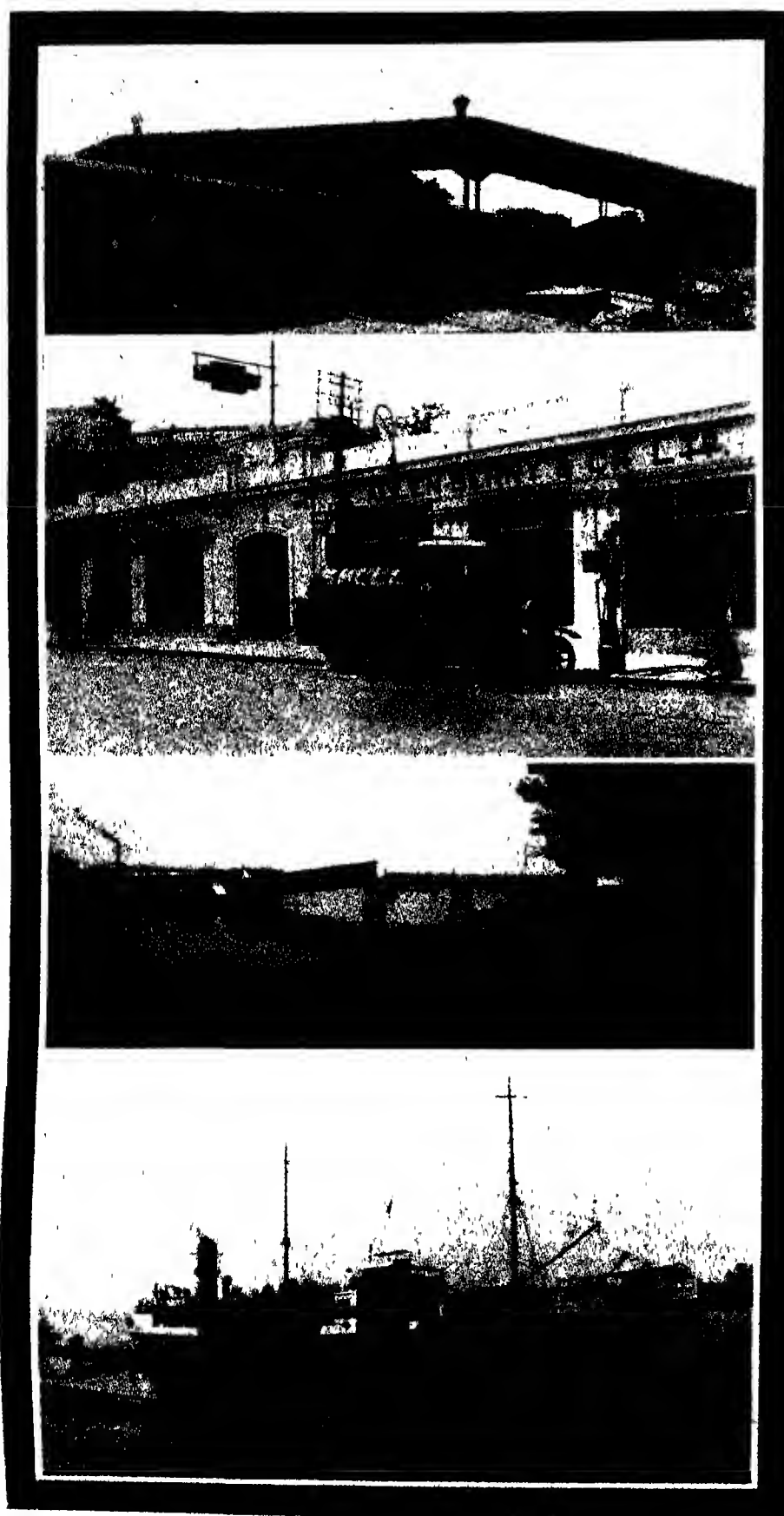
#### THE ASIATIC PETROLEUM COMPANY (INDIA), LIMITED.

**Oil Industry.** Nothing in the trade of the East is more remarkable than the rapid growth of the petroleum industry in India during the last 25 years. The Empire was essentially a consumer of vegetable oils, and accordingly the task of converting the people to the use of kerosene as an illuminant was not an easy one in its early stages. The present-day results have, however, amply

justified the foresight of Lord Bearsted (formerly Sir Marcus Samuel, chairman of the Shell Transport and Trading Company, Ltd.) who was the pioneer of the carriage of petroleum in bulk in tank steamers.

**Inception of Company.** The Asiatic Petroleum Company (India) Ltd. was formed in the year 1911, having been incorporated in England to operate as importers and distributors of petroleum products.

**Activities.** The marketing company in India of the Shell-Royal Dutch Combine, as such it controls one of the largest organisations of the kind in the East, and has provided the country with a network of agencies, mainly in the hands of Indian traders, which distribute kerosene to the consumer in the most distant hamlets. The four-gallon kerosene tin is one of the most common articles in use throughout the land, for though its primary use is for the carriage of oil, it is subsequently put to such varied duties as the carrying of water, the boiling of rice, the roofing of houses and the transport from the interior to the main ports of ghee, vegetable oils, tobacco and molasses.



THE ASIATIC PETROLEUM CO. (INDIA) LTD.

1. Automatic Conveyor loading Kerosene at Calcutta.
2. Type of City Motor Transport in use.
3. Company's Private Jetty at Budge Budge.
4. S.S. "Sclaria" discharging Oil.

**Products.**—The products distributed by the company include kerosene, "Shell" petrol and motor oils, lubricating oils, liquid fuel and solar oil, batching oil, "Shell" mineral turpentine, and asphalt for road construction, waterproofing and other purposes.

**PETROL AND MOTOR OILS.**—The Asiatic Petroleum Company (India), Ltd., includes among its foremost activities the marketing of the famous "Shell" petrol and motor oils. "Shell" has become almost a household word, and the rapid headway made in motoring and the use of petrol in India is evidenced by the fact that, whereas 12 years ago little more than 1,000,000 gallons of petrol of the brand named were sold in India, its sales are now over 10,000,000 gallons per year.

**LUBRICATING OILS.**—These are used for lubricating machinery of all kinds, and are distributed in tank wagons, barrels or tins.

**FUEL OIL.**—Liquid fuel and solar oil for steam raising and use in internal combustion engines are in great demand. The ports of Calcutta, Bombay, Madras and Karachi are important links in the chain of bunkering stations round the world provided by the company under review. At each of these ports large stocks of fuel oil are kept, so that an oil-burning ship can proceed to any port secure in the knowledge that supplies of fuel oil bunkers will be obtainable.

**ROAD MATERIALS.**—The company is also doing much to assist in the provision of modern bituminous roads for India, and with its famous brands of "Mexphalte" and "Spranex" it is already one of the most important factors in Indian road making.

**Organisation.**—The organisation of the company's activities in India has been brought to a high pitch of perfection, so that practically no quarter of the vast sub-continent remains outside its sphere. The country is divided roughly into four parts, viz.,

1. **CALCUTTA**—Area 425,000 square miles, carrying 264 kerosene agents and 71 "Shell" petrol agents.

2. **BOMBAY**—Area 275,000 square miles, with 162 kerosene agents and 60 "Shell" petrol agents.

3. **KARACHI**—Area 350,000 square miles, carrying 90 kerosene agents and 38 "Shell" petrol agents.

4. **MADRAS**—Area 200,000 square miles, with 133 kerosene agents and 117 "Shell" petrol agents.

**Ocean Installations.**—These have been established at Calcutta, Bombay, Karachi, Madras, Mormugao, Cocanada and Ernakulam.

**Tin Factories.**—The company's tin-making factories are located at Calcutta, Bombay, Karachi, Madras, Cocanada and Ernakulam, and are capable of an output of 65,000 tins a day. The annual production of kerosene tins, if put in a line, would stretch for a distance of 1,800 miles—say, from Peshawar to Tuticorin. The annual consumption of tinplate is 12,000 tons.

**Head Office.**—St. Helen's Court, Great St. Helen's, London, E.C. 3.

**Office of General Manager in India.**—6 Lyon's Range, Calcutta (telegrams: "Keropet," Calcutta).

**Branches.**—The following are the branch offices and agencies in India.—

**CALCUTTA**—6 Lyon's Range (telegrams: "Petroatic," Calcutta).

**BOMBAY**—St. Helen's Court, Ballard Estate (telegrams: "Oilwells," Bombay).

**KARACHI**—Forbes Building, Dunolly Road (telegrams: "Kersale," Karachi).

**DELHI**—Imperial Bank Buildings, Chandni Chauk (telegrams: "Shellco," Delhi).



#### THE IMPERIAL TOBACCO COMPANY OF INDIA, LIMITED

- |  |                     |                      |
|--|---------------------|----------------------|
| 1 Maturing Shed                                    | Centre              | 2 Blending Tobacco   |
| 3 Inspection and Weighing at Leaf Purchasing Depot | Inspecting the Leaf | 5 Ready for Blending |

**MADRAS** Agents Messrs Best & Co. Ltd., 1st Line Beach (telegrams "Camel" Madras)

**CALICUT** Agents Messrs Best & Co., Ltd.

**COCANADA** Agents Messrs Best & Co., Ltd.

**LAHORE** Civil and Military Gazette Building, The Mall (telegrams "Shellco," Lahore)

**Bankers.** Calcutta The National Bank of India, Ltd., Bombay The Chartered Bank of India, Australia and China, Madras; The Mercantile Bank of India, Ltd., Karachi The Chartered Bank of India, Australia and China

#### THE IMPERIAL TOBACCO COMPANY OF INDIA, LIMITED.

**Organisation.**—Although due recognition is forthcoming of the efficiency and scope of this great organisation for placing on the entire Indian market esteemed brands of cigarettes and tobaccos, the part it plays in the encouragement and fostering of the increasingly important native tobacco-growing industry may not always be fully realised. This valuable service is rendered by the Company (registered under the Indian Companies Acts) in its capacity of sole selling agent in India and Burma for the varieties of tobacco and cigarettes manufactured by the Peninsular Tobacco Company, Ltd., which in turn purchases the bulk of the leaf it consumes from the Indian Leaf Tobacco Development Company, Ltd.

**Indian Leaf Tobacco Development Company, Ltd.**—This very important corporation, also registered in India under the Indian Companies Acts, is actively engaged in developing the tobacco industry of the country

by educating the cultivators to improve the quality and yield of their leaf

**Centres.**—Establishments are maintained at Dalsing Serai, Shahpur Patory and Khajauli, in Bihar, and at Chirala, Chilakalurpet, Guntur, Nambur, Parchoor and Kantaru in Southern India, on the East Coast

At all these centres there are one or more experts in the cultivation of tobacco leaf, whose knowledge is placed without reserve at the disposal of the ryots, and there is no doubt that, as a result of the company's operations, the quality of the leaf produced in the centres in which its representatives work has much improved

**Government Co-operation.**—Besides teaching the ryots the best methods of improving their crops, the company's experts are in close touch with the Government Agricultural College at Pusa, and mutual help towards increasing the value of the crop passes between the organisation and the Government agricultural experts

**Maturing Facilities.**—At some of the company's buying centres re-drying machines have been installed, through which the tobacco is put immediately it is purchased, and it is then in a fit state to keep for several years, it being recognised that nearly all tobaccos have better smoking qualities after maturing for three years or so than they have when used straight from the field

**Protected Drying Racks.**—One important change in the method of production of tobacco leaf for the market has been introduced by the Indian Leaf Tobacco Development Company, Ltd.—the drying of the leaf on racks which are protected from rain. Up to now the tobacco has been cured in the open, and if the weather proves unpropitious great loss is incurred. The company has

demonstrated to the ryots that the use of protected racks is not only a safeguard against rain ruining the cut tobacco, but the finished article is of much better value. Slowly but surely the ryots are beginning to recognise this, and year by year their own protected racks are increasing in number

**National Benefit.**—The company pays the highest prices for good tobaccos, and as it employs throughout the year thousands of hands in various capacities, it will be appreciated that the work of such an organisation must be beneficial to the country

**Peninsular Tobacco Company, Ltd.**—Most of the productions of the Indian Leaf Tobacco Development Co. Ltd. as has been mentioned before, are used in the manufacture of tobacco and cigarettes by the Peninsular Tobacco Company, Ltd., another local concern, having factories in Bihar, Bangalore and the United Provinces. It employs continually labour by the thousand, and is responsible for the prosperity of many homes

**Selling Agents.**—Finally, there is the Imperial Tobacco Company of India, Ltd., engaged in placing on the market the brands manufactured by the Peninsular Tobacco Company, Ltd., in addition to marketing many well-known imported varieties of cigarettes and tobaccos

**Offices.** **THE IMPERIAL TOBACCO COMPANY OF INDIA, LTD.** National Bank Buildings, Calcutta (cables "Powhattan," Calcutta). Codes Pantelegraphy-Tylo, Bentley's and A B C, 6th edition

**INDIAN LEAF TOBACCO DEVELOPMENT COMPANY, LTD.** 5 Fairlie Place, Calcutta (cables "Indleaf," Calcutta). Codes A B C 5th Edition and Bentley's

**Bankers.**—The National Bank of India, Ltd. (See also illustrations pp. 120, 121, 172, 173, 174)



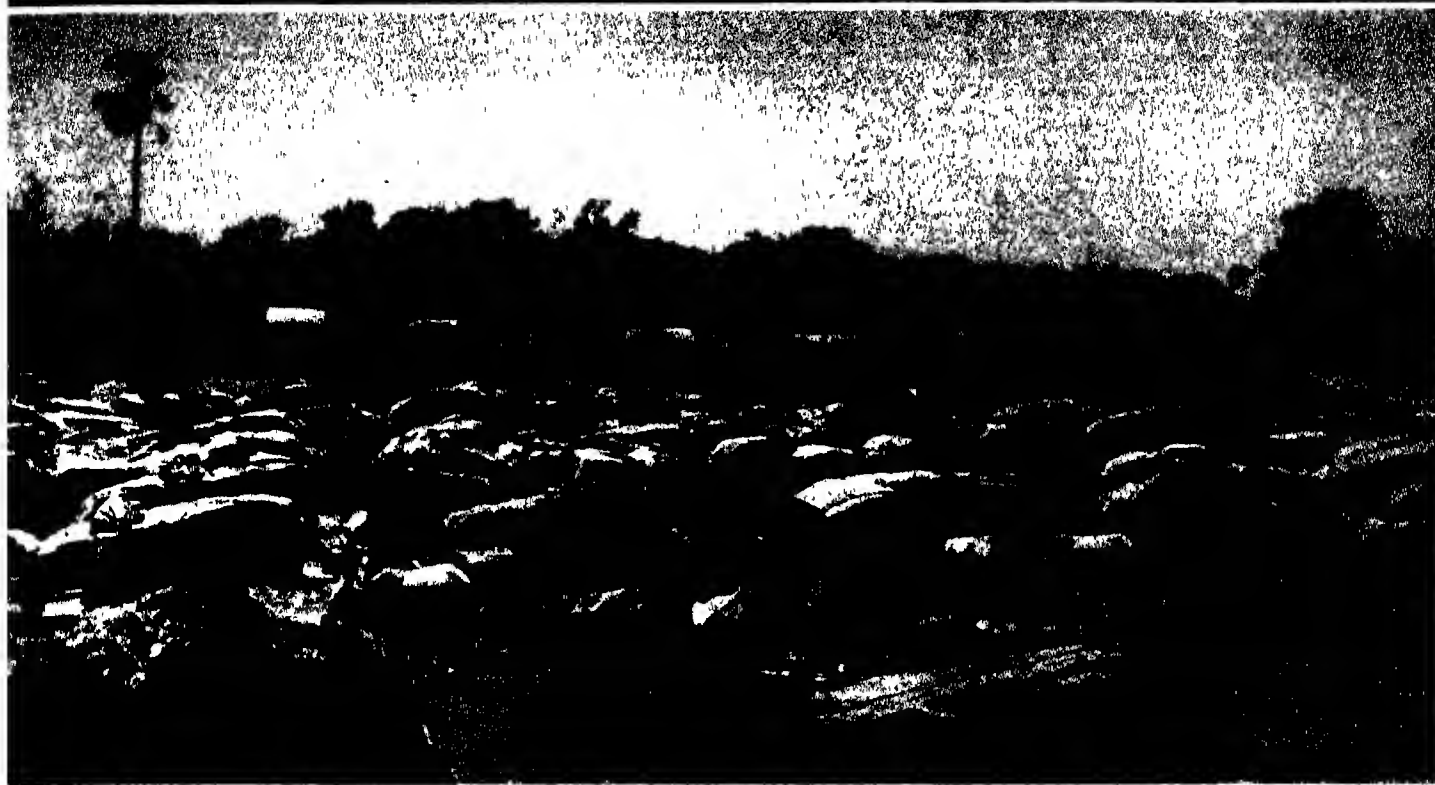
2. Drying Machines.

3 & 4. Cutting Machines.

5. Mechanical Packing Room.

THE IMPERIAL TOBACCO  
Bullock carts loaded

(See *Illustrations*,



COMPANY OF INDIA, LIMITED,  
with Raw Tobacco Leaf.

6, 7 & 8. Factory Private Transport.

9. Same tobacco, after sorting and steaming, baled  
up for export to Cigarette Factory.





1. Women employees  
2. Workers leaving factory.  
3 (Centre) & 5. Views of factory at Chirala, where tobacco is made ready for despatch to Cigarette Factories  
4. Paying Employees their Wages.  
(See *Interpress*, page 171)

#### THE IMPERIAL TOBACCO COMPANY OF INDIA, LIMITED.

#### KILBURN AND COMPANY.

**Inception.**—This prominent firm of general merchants and agents was founded in the year 1842 by Mr C E Schoene, who opened offices at 4 Garstin Place, Calcutta, business premises at 4 Fairlie Place, and godowns at the latter address and in Clive Street. Mr Edward Dunbar Kilburn, who had commenced his business career in London with his uncle, trading in silk and silk piece goods, arrived in India in 1847 and at once entered into commercial relations with Mr Schoene. The founder admitted him as a partner on May 1, 1849, the style of the new-formed company being Schoene, Kilburn & Co., and its initial business comprised commission agencies, orders for produce and sales of imported goods.

**Early History.**—The following account, culled from an old record, makes interesting allusion to the firm's original premises and to the first partner of the Kilburn name.

"The premises at 4 Fairlie Place, Calcutta, occupied by Messrs Kilburn & Co., general merchants and agents, were in existence when Calcutta was in the making, when the mud-stained waters of the Hooghly were free from intrusions by ocean-going cargo or passenger steamers, and when the pioneers of industrial enterprise in Bengal were few in number. The very walls must be saturated with history, and if it were possible to glean secrets from them there would be revealed many stories of mercantile enterprise and of vicissitudes in commercial life, but as far as Messrs Kilburn & Co.'s property is concerned there can be no more soul-stirring episode than that which occurred during the Mutiny, when a meeting of merchants was held in the old drawing-room to consider the question of defence, with the result that Mr. Edward Dunbar Kilburn was instrumental in en-

rolling the Calcutta Volunteer Cavalry for service in case of necessity."

Mr Kilburn lavishly spent both time and money in assisting the Government to suppress disloyalty, and those services were so highly appreciated by the Viceroy that the latter decided to recommend that gentleman for the honour of a Companionship of the Bath. Lord Canning, however, died before effect could be given to the desire, and thus a patriotic servant of the Crown was denied that richly-deserved official recognition of services.

**Original Operations.**—Among the initial activities of the organisation were the following:—Silk and silk piece goods were purchased respectively in France and England, cotton was shipped against orders from Liverpool, and rice was sent to Melbourne and to Colombo. Orders for jute were obtained by an agent in Dundee under cover of credit with London bankers, shellac, lac-dye, safflower, and other produce were shipped in small quantities, hides were consigned to London and the continent of Europe, and opium was sent upon instructions from firms of merchants in Shanghai.

The goods imported and sold on commission about this time included cotton and yarns, French wines and brandies in large quantities, occasional copper consignments from Melbourne, and silk filatures from Messrs. Springfield Son & Nephew, London.

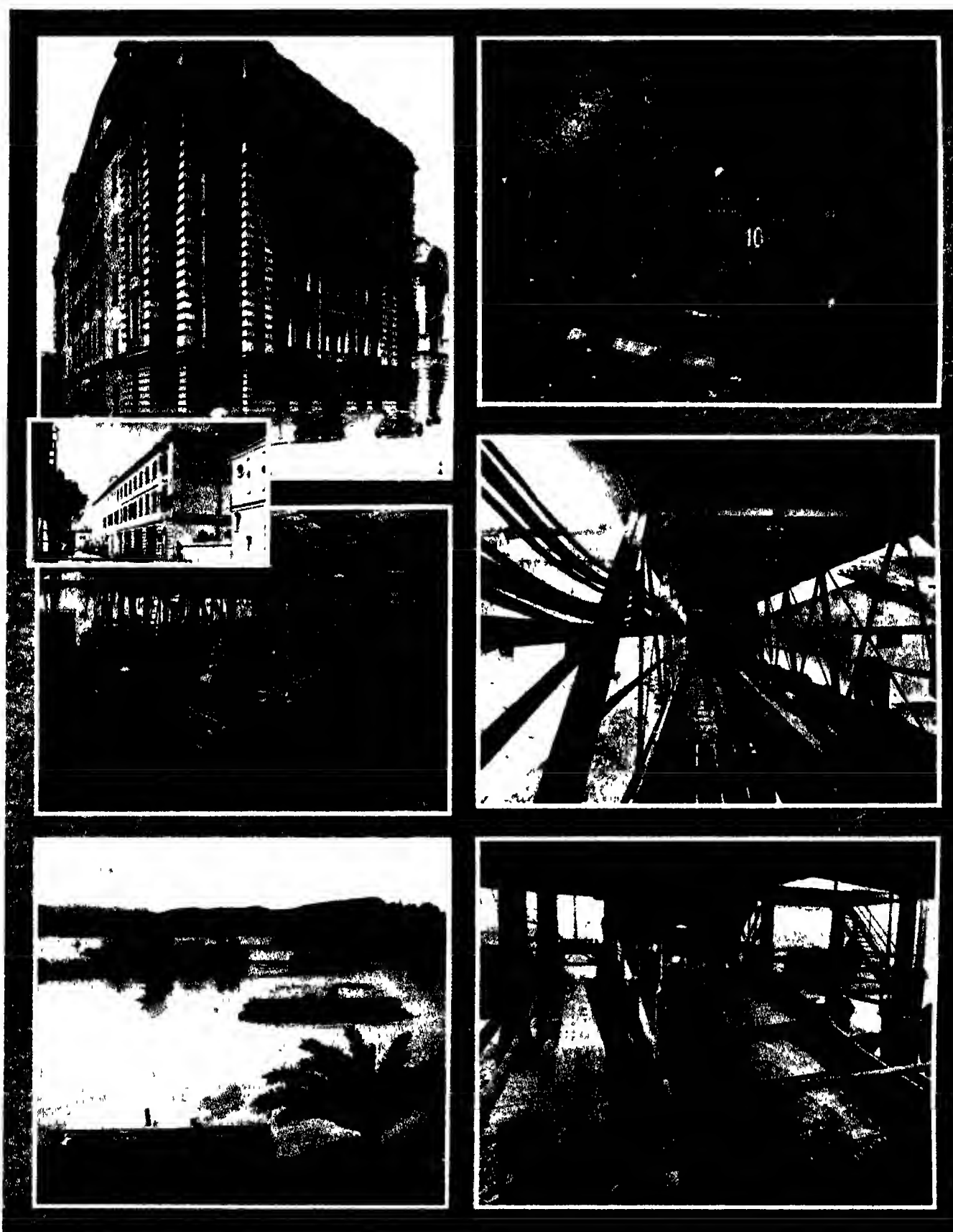
**Indigo.**—In the year 1865 Messrs. Schoene, Kilburn & Co shipped from Calcutta a greater quantity of indigo than any other firm. They employed an expert who, during the summer months, visited Continental merchants dealing in this commodity in order to ascertain their probable requirements, which were met in due course by the firm purchasing the necessary quantity at the Calcutta autumn sales.

Indigo planters were at this time making huge annual profits, and many of them, confident in the security of their invested capital, resided in England, leaving the supervision of their concerns to managers whose names are still held in the highest esteem, especially in Bihar and Orissa. Parenthetically, it should be mentioned that this prosperity continued with few interruptions until the year 1899, when the discovery of synthetic dye checked the cultivation of indigo and caused planters to resort gradually to the manufacture of sugar. The export of this dye continued to be one of the most important branches of the firm's business, although consignments of general produce, including Bengal silk, cotton, hides and tobacco, were sent more frequently and in larger quantities to Europe.

**Development.**—The business of the firm expanded very rapidly during the first 20 years of the partnership. It was also in or about the year 1865 that a branch establishment was opened at Manchester under the management of Mr Tolpitt, who had been connected with the Calcutta House for a number of years, and this step had a very far-reaching effect upon the turn-over of the firm. Advance in one direction led to a corresponding movement in another, as the firm opened up a trade in the Mofussil which has in its growth exceeded all expectations.

**Shipping Agencies.**—In the earlier years of the company's existence shipping matters as a rule played an important part in general commercial enterprise, and Messrs Schoene, Kilburn & Co. became representatives of the then famous East Indianmen frigate-built ships, among which were the *Hoispur* and *St Lawrence* (commanded respectively by those well-known mariners, Captain Henry and Joseph Toynbee), the *Lord Warden* (Captain Smith), the *Superb* (Captain Jones),





**KILBURN & CO., Calcutta.**

1. Fairlie House. The imposing Head Office.
2. Stores Building of the Russa Engineering Works, Ltd.
3. Machine Shop of the same Company.
4. The Company's River Steamers on the Brahmaputra.
5. Loading large Mine Car.
6. Inclined portion of Conveying Belt, Jamadoba.
7. Screens : Showing coal going over them, also (at the top end) the Discharge Chute.

the *Winchester, Essex*, and many others. Further, the firm had the honour of receiving in Calcutta waters in the year 1870, the first steamers of the Blue Cross Line, which made the voyage to India by way of the Suez Canal.

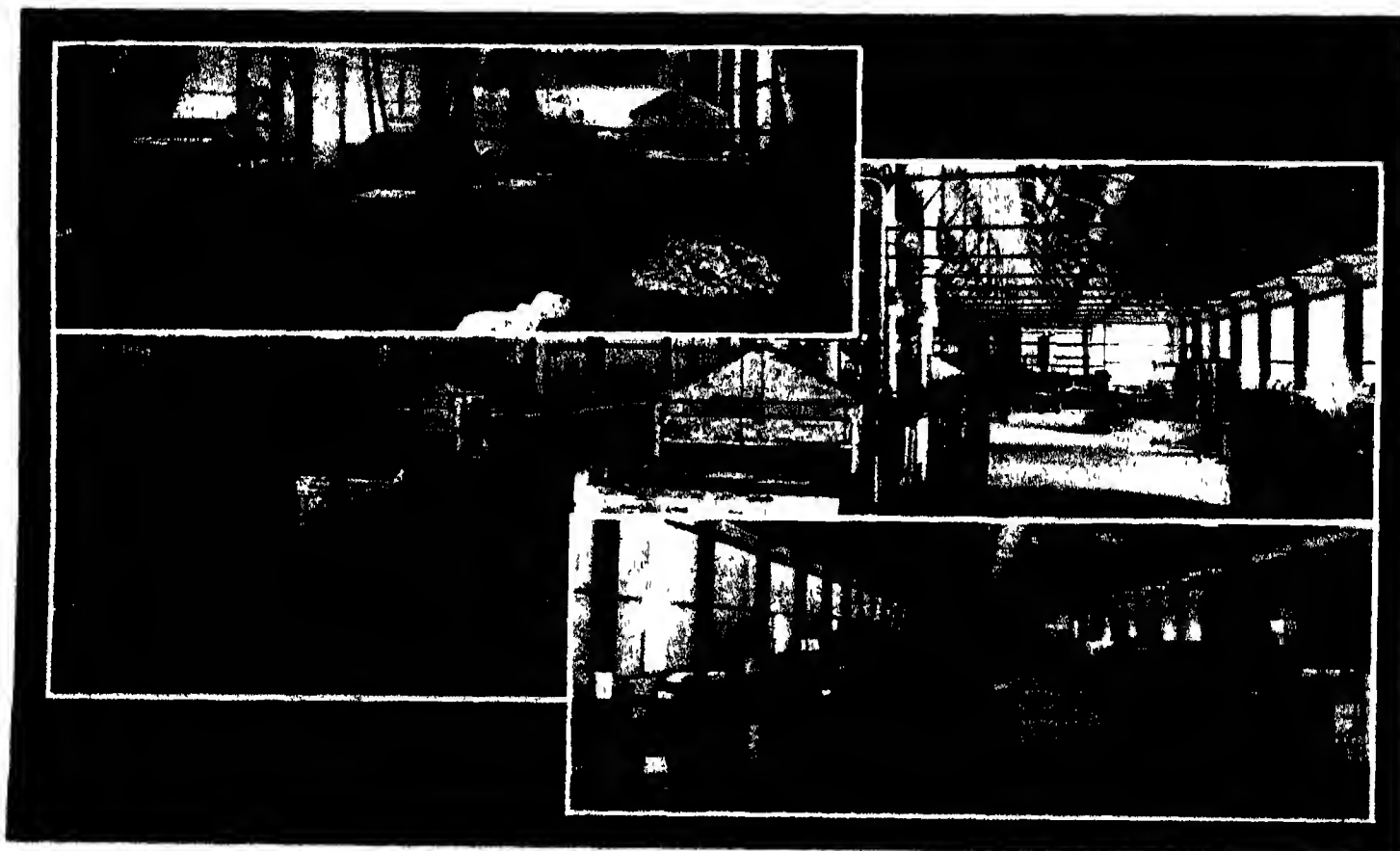
**Managing Agencies, etc.** The earliest direct agencies undertaken by the firm were those of the Durring Tea Co., Ltd. (of which they are now secretaries), in the year 1865 and the Assam Company in 1867, while now they are managing agents for the India General Navigation and Railway Co., Ltd., which issues bookings on steamships and railways between Calcutta and Eastern Bengal, Assam, Cachar, and the Ganges, Raneegunge Coal Association, Ltd., Bansia Coal Co., Ltd., Parasea Collieries, Ltd., Tata Iron and Steel Co., Ltd., Collieries, Darjeeling Tea & Cinchona Association, Ltd., Kornafuh Association, Ltd., Kodala, Ltd., New Terai

the above-mentioned Assam Company, Ltd., a sterling corporation, and the managing agency of ten rupee companies. The Assam Company, Ltd., was formed under a deed of settlement in 1840 obtaining from the local authorities the Government experimental plantations in Assam, thus being the first company to be formed for the production of tea in India. In 1855 an Act of Incorporation was obtained for 20 years from the Indian Government, but owing to a desire for securing English domicile this privilege was surrendered and a special Bill incorporating the company was passed through Parliament in 1865. It was not until 1923 that the Assam Company, Ltd., became a limited liability company under the Companies Acts, when its capital was increased from £200,000 to £1,000,000. The company holding has grown during this period from the small Government

The company started operations with one steamer and one flat. In conjunction with the River Steam Navigation Co., Ltd., it now maintains mails, passenger and goods services on all the important rivers of Bengal, Assam, Bihar and Orissa, the fleet consisting of over 600 steamers and cargo flats, tugs, launches and barges. The steamers run a daily service of over 1,100 miles to and from Calcutta.

**Collieries.** Messrs. Kilburn & Co. act as managing agents for the Raneegunge Coal Association, Ltd., whose principal mine is the Kustore Colliery. Another important mine in operation in the Jherria coalfield is the Jamadoba colliery belonging to the Tata Iron and Steel Co., Ltd., and for this a similar agency is retained. The two mines named have equipment of the most modern pattern.

**Russa Engineering Works Ltd.** This enterprise (managing agents, Kilburn & Co.)



THE BRITANNIA BISCUIT CO. LTD., Calcutta  
Three aspects of the Factory at Bombay.

Association, Ltd., Pashok Tea Co., Ltd., Oodaleah, Ltd., Pahargoomiah Tea Association, Ltd., Maulvie Tea Co., Ltd., Dantmara Tea Co., Ltd., Sylhet Lime Co., Ltd., Barrackpore Electric Supply Co., Ltd., Russa Engineering Works, Ltd. (branches at Dibrugarh, Tezpur, Lahore), Ford Motors (Calcutta), Ltd., H. Bull & Co., Ltd., Fraser & Co., Ltd., and agents for Assam Co., Ltd., Goodman Manufacturing Co., Bruntons (Musselburgh), Richardson, Westgarth & Co., Ltd., Norwich Union Fire Insurance Society, Ltd. (Fire and Marine), Commercial Union Assurance Co., Ltd. (Marine), Diamond Drill Syndicate, J. Davidson & Co., and Crushed Limestone Syndicate, while they are general agents and supervising engineers of the Cawnpore Electric Supply Corporation, Ltd.

**Tea Companies.** The activities of Messrs. Kilburn & Co. in tea include the agency of

experimental plantations transferred to its care in 1840 to its present acreage of 12,506 acres under tea, divided into 14 estates.

The rupee companies under the control of Messrs. Kilburn & Co. have a total acreage of 6,848 under tea, and are situated in Darjeeling, Assam, Terai, Sylhet and Chittagong. The combined capitals of these companies total Rs 26,26,000, and dividends paid on the workings of season 1924 amounted to Rs 6,43,097, a return of over 24 per cent.

**India General Navigation and Railway Co., Ltd.**—This prominent organisation, of which the firm under notice also holds the managing agency, was established in 1844 for the purpose of plying between Calcutta and Allahabad on the River Ganges, which was then the highway from Bengal to the interior of Northern India.

was registered and incorporated in 1906 to meet the great need for an engineering workshop specially equipped for the maintenance of motor vehicles and the manufacture of accurate machined parts, jute mill spares, high-class engineering and electrical work. Rapid expansion soon followed the establishment of the company, which almost immediately on the outbreak of war was entrusted by the Government with the out-turn of the finest class of gun mechanism, etc.

The fully-equipped stores contain stocks of spare parts for all the agencies controlled by the company. The electrical department at Hesham Road is one of the oldest in India, having been started in 1896 by Kilburn & Co., since when it has developed into a large constructional centre. Sole sales concessions are held for Verity's, Phillip's lamps, A & P. Steven's lifts, Deka cables, and Foster Engineering Co.'s electrical switchgear. For

dealing with electrical construction work in the Punjab branches have been established in Lahore and Delhi.

**Ford Motors (Calcutta), Ltd.**—The Russa Engineering Works Ltd. were originally appointed sole distributors for Ford products for Bengal, Assam, Bihar and Orissa, and the United Provinces. By 1920 this business had grown to such dimensions that it was found necessary to create a separate company dealing solely with those products, called Ford Motors (Calcutta), Ltd. For this concern, of which the Russa Engineering Works own all the shares, Messrs. Kilburn & Co. act as managing agents. It continues to import and distribute through its dealer organisation over 100 cars per month.

**Partnership Succession.** The following record of changes in the partnership personnel of Kilburn & Co. has been obtained from private documents. Mr. Edward Dunbar Kilburn retired in 1900, Messrs. George Adie and R. L. Eghinton joined the firm after the retirement of Mr. F. A. Jung in 1863, Mr. Robert Brown Mackay and Henry Tolpitt were given shares in the business in 1865, Mr. Henry Francis Brown held interests from May, 1866, until his retirement in 1911, Messrs. W. R. Brown and Charles Kilburn were admitted in 1873, Messrs. John Macfarlaiden and Alfred Simson followed in 1883, Mr. William Henry Chettham in 1889, Messrs. W. D. Kilburn and Charles Comming Kilburn in May, 1893, Sir Ralph P. Ashton in 1900, Messrs. Charles John Elton and Seton George Legge Eustace in 1911, Mr. F. P. J. de B. Oakley in 1916, Mr. H. B. Whitby in 1918, while the partners at the present time are Messrs. C. C. Kilburn, C. J. Elton, F. P. J. de B. Oakley, S. G. L. Eustace, and H. B. Whitby (Calcutta).

**New Premises.**—The new premises at 4 Park Place, Calcutta, three floors of which are occupied by the company, were recently erected on the site of the old building, and constitute an office worthy of the name. The foundation stone was laid on February 1, 1924, by Mrs. E. J. Oakley, wife of the then senior partner in India, the firm occupying the building on May 1, 1925.

**Cables.** "Telecomum," Calcutta. Codes A B C 5th edition, Bentley's and Private.

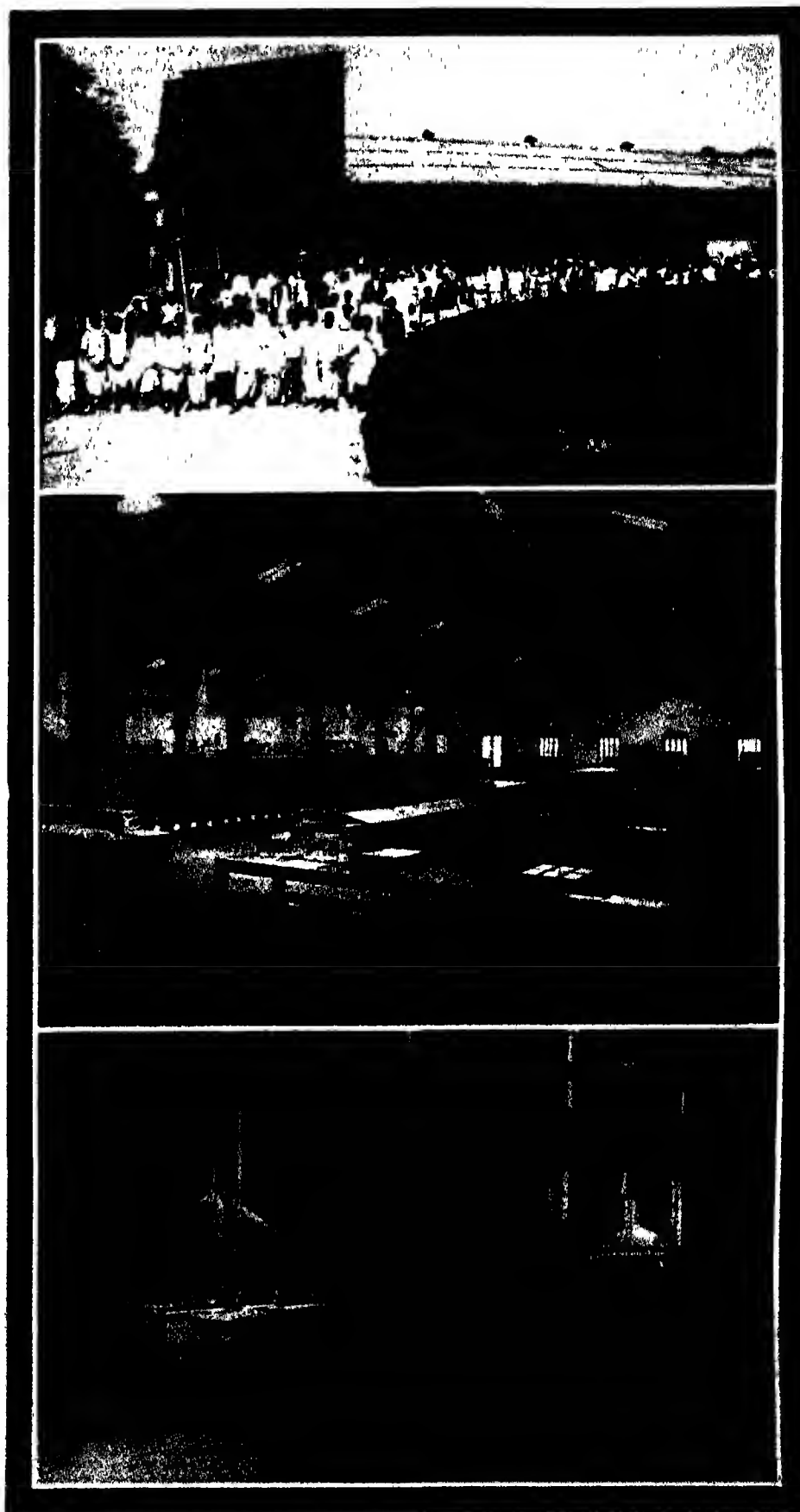
**Bankers.**—The National Bank of India.

#### BRITANNIA BISCUIT COMPANY, LTD.

**Inception.**—The business of this company was originally founded in the year 1807 by two Bengali gentlemen interested in the development of Indian industries. A small factory was started on the site of the present works at Dum Dum, and there for some time biscuit-making by hand was carried on.

**Early History.**—From these small beginnings, which met with considerable success, the original founders of the firm were encouraged a few years later to proceed to the purchase of modern biscuit-making machinery and considerably to enlarge their factory. The business continued to prosper until the outbreak of the Great War, when the proprietors placed the whole of the resources of the factory at the disposal of Government for the manufacture of standard Army ration biscuits for British and Indian troops in Mesopotamia, India and elsewhere, the production of sweet and fancy biscuits being virtually discontinued during the war period.

**Formation of Company.**—In order to meet Government demand, the proprietors were obliged to increase their machinery and oven capacity, and to obtain the necessary capital the private concern was converted into a limited company, with a capital of Rs. 6,00,000. On the conclusion of the war, the manufacture of sweet and fancy biscuits



BRITANNIA BISCUIT CO. LTD., Calcutta

1. Group of Work People outside the Factory at Dum Dum.
2. Packing Department.
3. Gas-fired ovens (delivery end)

was again taken up, and considerable headway was quickly made by means of the new machinery and up-to-date ovens installed.

**Development.**—In 1924 the company had again to increase its capital from 6 to 20 lakhs in order to cope with the new business which was coming in. Its products were by that time selling throughout India, though naturally the bulk of its trade was confined to Bengal and the surrounding districts. An entirely new factory was built at Bombay for the purpose of supplying that Presidency, Southern India, and the Karachi and Sind markets.

**Increase in Output.**—Some idea of the growth of the company's business may be gathered from the fact that its output of sweet and fancy biscuits increased in value from about Rs 1,25,000 in 1918 to over Rs 11,00,000 in 1926. An interesting feature of this development has been the large increase in trade in the cheaper varieties of biscuits sold in 30-lb to 40-lb tins. The company having arranged to credit wholesale dealers with the value of such tins on their return, consumers are thus enabled to buy biscuits by the pound without having to bear the cost of an expensive and useless tin. The effect of this policy has been to put on the market first-class nutritious biscuits at an extremely low price, well within the purchasing power of thousands who had previously been unable to afford the higher cost.

**Indian Policy.**—Although working with imported machinery and ovens, the Britannia Biscuit Company, Ltd., is virtually an entirely Indian concern, nearly all the ingredients used in manufacture are purchased in the country, the labour employed is Indian, and more than half the shareholders registered in the company's books are Indian. The policy of the management is to pay special attention to Indian requirements, especially as regards the materials used, and great care is taken that nothing is employed in its factories which can in any way offend caste or religious susceptibilities.

**Factories.** These are situated at Dum Dum, Calcutta and Kasara Pier Road, Mazagon, Bombay. That at Calcutta is a complete three-unit factory, equipped with modern machinery and gas-fired ovens. The Bombay factory is a two-unit factory, laid out on similar lines to that in Calcutta.

**Staff.**—Each factory has a European manager and European foremen, as well as the usual complement of Indian office staff and workpeople. Calcutta employs throughout the year an average of 350 workmen, and Bombay about 200.

**Directorate.**—The board of directors is composed of the following: T. Law (chairman), R. Bazley and C. H. Holmes. Managing director, J. Ware, secretary, N. C. Gupta.

**Head Office.**—The registered office of the company is at Norton Buildings, Old Court House Corner, Calcutta.

**Cables.**—"Benellott," Calcutta. Code Bentley's.

**Bankers.**—Mercantile Bank of India, Ltd. (See illustration, page 176.)

#### JESSOP AND COMPANY, LIMITED.

**Inception.**—Incorporated in the United Kingdom and a member of the Indian Engineering Association, this prominent firm of engineers was established in 1799, and, throughout a long career, has been actively interested in the industrial development of India.

**Development.**—The history of the firm shows a steady expansion, accelerated during the years of the Great War and more recently when the increased pressure of work necessi-

tated the enlargement of the workshops at Howrah and Garden Reach, and the opening of new structural works at Jamshedpur.

**Activities.**—Messrs Jessop & Co., Ltd., undertake all classes of structural, mechanical, electrical, rolling stock and filter plant work and handle an extensive merchant business, carrying large and varied stocks of the manufactures of the best British and American makers whom they represent in India. They publish price lists, section catalogues and descriptive bulletins, besides being distributors of makers' handbooks and descriptive leaflets, in this way keeping in close contact with their clients throughout the East.

**Structural Section.**—The structural workshops are at Howrah and Jamshedpur, and their capacity extends from the smallest roofs, tanks, sheds, bridges, etc., to some of the heaviest steel structures ever fabricated in India. Main line or road bridges up to 250 feet span are designed, manufactured and erected, but in all other classes of structural work the capacity is unlimited. Among contracts carried out by this section the following may be mentioned: The main line bridge over Tolly's Nullah for the Eastern Bengal Railway, with spans measuring over 118 ft. 4 inches; the Barakar Road Bridge, with 105 ft. spans; the Gamat Suspension Bridge, steelwork for the Calcutta office of the Imperial Bank of India; carriage and wagon shop, Lilloah, East Indian Railway; and a steel tank (approximate capacity 4,000,000 gallons) for the Cawnpore Water Works, etc.

**Mechanical Section.** Situated at Howrah, the mechanical workshops have the most up-to-date facilities for the economical handling of mechanical engineering work, and can undertake the manufacture of all classes of machinery, including hydraulic pumps and presses, cranes, colliery winding engines, haulage gear, textile machinery, mill gearing, and castings up to 20 tons. A speciality is made of engineering repairs. These workshops supplied the electric conveyor for the Kamarhatti Jute Works, with a daily capacity of 28,000 maunds of baled jute; four 8-ton Beckett's Hydraulic Cranes for the Kidderpore Docks; six 30-cwt hydraulic cranes for the Calcutta Port Commissioners; a heavy lift electric pump, capable of pumping 12,000 gallons per hour at a head of 1,600 ft., for a firm of Calcutta coalowners; textile machinery of all kinds for cotton and jute mills; grinding mills; heavy castings for the Tata Iron and Steel Co., etc.

**Rolling Stock Section.**—Established more than 20 years, the railway rolling stock works at Garden Reach turn out 20 to 30 wagons per week, and new works have been erected at Dum Dum, a suburb of Calcutta. A most capable labour force is maintained, supervised by expert European constructors. Practically every railway in India has some of Messrs Jessop & Co.'s stock in commission.

**Water Purification Section.**—For the past 15 years this company has specialised in the design, manufacture and erection of a large number of filter plants throughout India, varying in capacity from 20,000 to 10,000,000 gallons per 24 hours. The company has at its command a staff of experts for this highly technical branch of engineering, and possesses an efficient laboratory at the Calcutta offices for the routine chemical and bacteriological analyses of water and for any special tests that may be necessary. At first the firm manufactured under licence from patentees, but it now has its own designs and patents. The Hyderabad water purification plant, with a capacity of 12,000,000 gallons per 24 hours, was erected in 1921-22, has given the authorities every satisfaction and fulfilled all guarantees, so also have the Victoria Jute Mill filter house and coagulation

tanks which were supplied and erected by Messrs Jessop & Co.

**Departments and Agencies.**—The merchant side of the business is subdivided into the following departments, which stock the products of the manufacturers named:—

**METALS.**—All structural steel sections, etc., of British and Tata Iron & Steel Co. Ltd., manufacture, galvanised corrugated sheets, ridgings, guttering, etc., expanded metal sheets, "Invicta" brand Portland cement by the West Kent Portland Cement Co., Ltd.; Gnest Lenox pressed steel tanks by Brown Lenox & Co. (London), Ltd.; stantomite by the Stanton Ironworks Co., Ltd.

**MACHINERY.** Crude oil engines, gas engines, and suction gas producers and pumps by Tangyos, Ltd., Birmingham; mechanical coolers by Heenan & Froude; boilers by Cochran & Co. (Aman), Ltd.; and other makers, steam wagons by Fodens, Ltd.; agricultural machinery by Ransomes, Sims & Jefferies, Ltd.; machine tools by Smith, Barker & Willson, Ltd., F. Town & Sons, Midgley & Sutcliffe, Ltd., Linton Tool Co., and other makers, compressors and coal cutters, rock drills, etc., by the Sullivan Machinery Co.; pneumatic tools by the Independent Pneumatic Tool Co.; disintegrators by Christy & Norris; ice and refrigerating machinery by L. Sterne & Co. Ltd.

**HARDWARE.**—The products of the under-named well-known manufacturers: Edgar Allen & Co. Ltd., Glacier Antifiction Metal Co. Ltd., Joseph Robson & Sons, Nicholson File Co., Mulcott Belting Co. Ltd., Alexander Fergusson & Co. Ltd., Diamond Lubricating Co. Ltd., The Chas. A. Schieren Co., D. Anderson & Son, Ltd., Hangar Watson & Harris, Ltd., Hoffmann Manufacturing Co. Ltd., Canada Carbide Co. Ltd., Steel Peel & Lozer, Ltd., British Abrasive Wheel Co. Ltd., Morgan Crucible Co. Ltd., Glabholm & Robson, Ltd., Scottish Tube Co. Ltd., as well as large stocks of engineers' tools and appliances and general hardware such as screws, pins, nails, lifting tackle, wire, trucks, barrows, etc.

**ELECTRICAL.**—Turbo alternators and generators, A.C. & D.C. motors, rotary converters, balancers and planer equipments by The Lancashire Dynamo & Motor Co. Ltd.; rotary transformers, and rectifiers for battery charging, by The Crypto Electrical Co. Ltd.; electric passenger and goods lifts by Smith, Major & Stevens, Ltd.; transformers by The Hackbridge Transformer Co. Ltd.; A.C. switchgear starting equipment and switchboards by Erskine Heap & Co. Ltd.; D.C. switchgear and starting equipment, also A.C. and D.C. measuring meters by The Electrical Apparatus Co. Ltd.; Simplex steel conduits, Duxex wiring system, electric signs, industrial, colliery, and railway fittings by The Simplex Conduits, Ltd.; carbon brushes and blocks by Le Carbone, Ltd.; tumbler switches and electrical accessories by J. H. Tucker & Co. Ltd.; "India" fans by The India Electric Works; electric vehicles, trucks and trolley buses by Ransomes, Sims & Jefferies, Ltd.

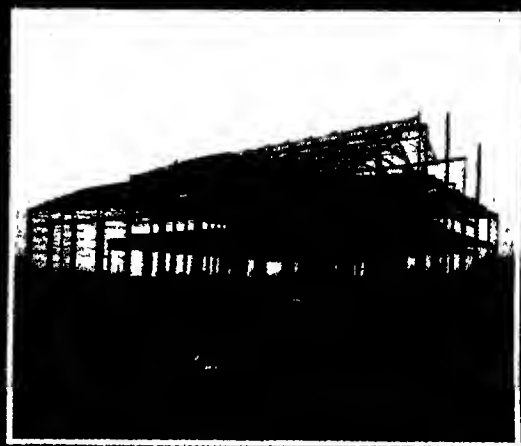
**Registered Office.**—42, Gresham House, Old Broad Street, London, E.C. 2.

**Head Offices.**—93 Clive Street, Calcutta.

**Branch Offices.**—Rangoon, Delhi, Madras, Bombay, Lucknow and Jamshedpur.

**Cables.**—"Relapse," Calcutta; and "Phoenix," Bombay, Delhi, Madras, Lucknow, and Jamshedpur, and "Gressop," Rangoon. Codes: A.B.C. 5th edition, Bentley's and Private.

**Bankers.**—National Bank of India, Ltd.



1. Blast Furnace and Stoves for Tata Iron & Steel Co. Jamshedpur, during erection.
2. Type of Broad Gauge Covered Wagon built by the firm.
3. Dock Warehouses in course of erection at Calcutta, showing 3 months' progress.

JESSOP & CO. LTD., Calcutta.

Centre (4)  
Portion of Pump down well, showing part of the guide for the rods, supplied to Rawalpindi Water Works.

4. Steel Dome of Imperial Library, Delhi, fabricated by Jessop & Co.
5. Underframes and Bogies manufactured for North Western Railway.
6. Dock Warehouse No. 3 under erection.

**TATA SONS, LIMITED.**

**Personal.**—The rise of the house of Tata, the founder of which was the late Mr. J. N. Tata, reads like a romance in the world of industry. His was the fertile brain that conceived such gigantic industrial projects as the establishment of the iron and steel industry in India and the harnessing of the potential hydro-electric power of the huge rainfall in the Western Ghats. Mr. Tata also played an important part in the development of trade and commerce between India and Japan, and rendered great assistance to the Nippon Yusen Kaisha in their efforts to build up business with India. He was a great protagonist of Swadeshim long before the word Swadeshi became familiar to Western ears, and it is

is but still in the initial stages of industrial development. The combined capital of these undertakings is nearly £50,000,000, and they provide maintenance for an industrial community of nearly a quarter of a million people.

**Tata Iron and Steel Co., Ltd.**—See separate article following.

**Tata Hydro-Electric Power Co., Ltd.**—See separate article following.

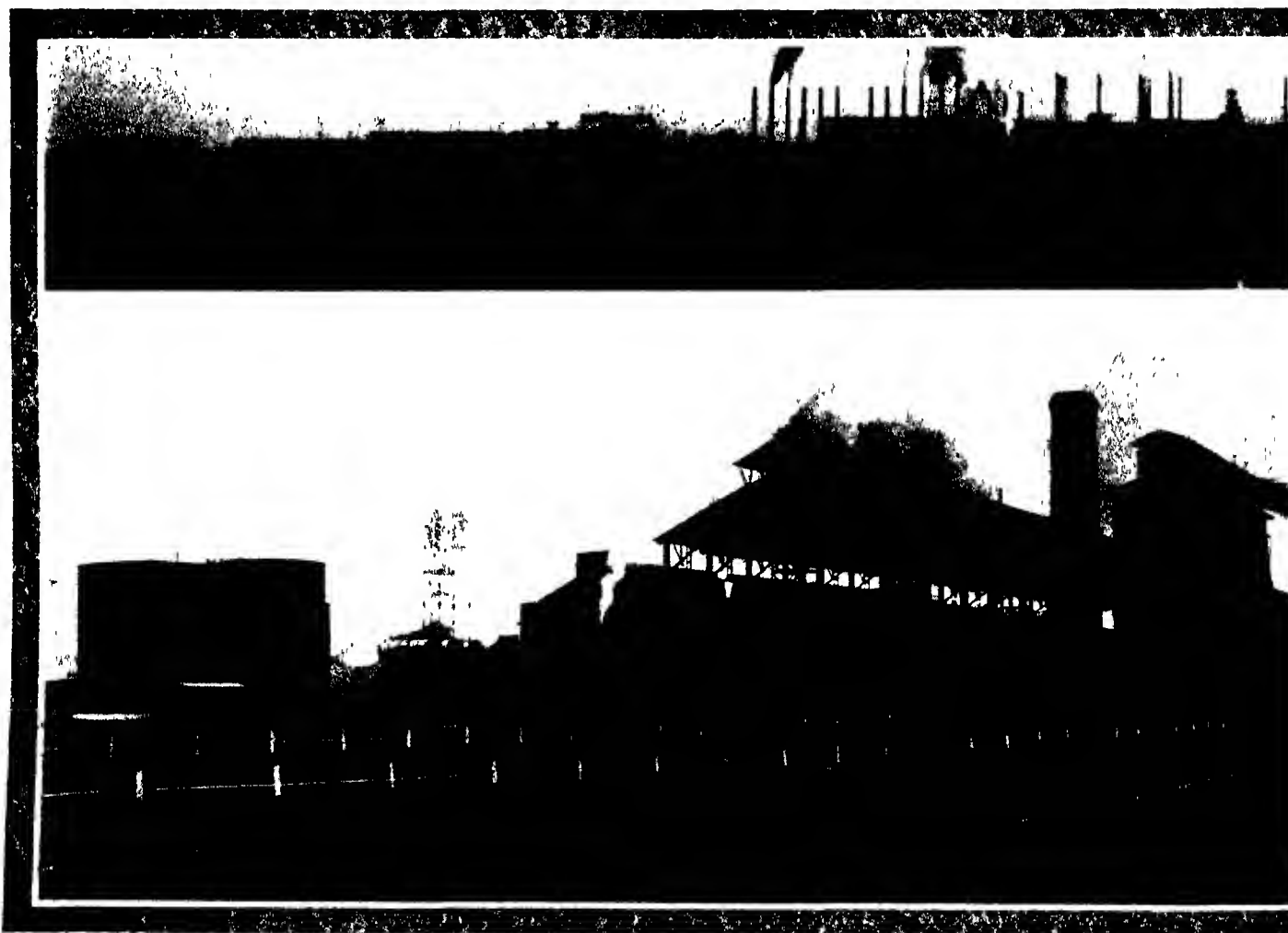
**Cotton Mills.**—Messrs. Tata Sons, Ltd., are agents for the following important cotton mills:—

**CENTRAL INDIA SPINNING, WEAVING AND MANUFACTURING CO., LTD.**—This concern, the first industrial venture of the late Mr. J. N. Tata, was started in 1874, and the Mill at Nagpur began working from January 1, 1877. It rapidly became

**TATA MILLS, LTD.**—The Company was started in 1913 with an issued and subscribed capital of Rs. 64,85,000. The Mills commenced working in 1917. Looms, 1,800; spindles, 62,348. Annual output, 5,430,300 lbs. of yarn and 5,622,000 lbs. of cloth. The Bombay United Mill, which was purchased in 1920, was sold off in 1925.

**STANDARD MILLS, LTD.**—Started in 1892, with a capital of Rs. 12,00,000. Annual output, 3,927,132 lbs. of yarn and 3,964,720 lbs. of cloth from 1,179 looms and 44,536 spindles.

**Cement Companies.** The works of the Indian Cement Co. Ltd. (capital, Rs. 36,77,150) at Porebunder have a capacity of 30,000 tons of Portland cement per annum.



THE TATA IRON & STEEL CO. LTD., Bombay.

Lower: Wilputte Coke Ovens from the North-East.

Upper: Panorama of West

due to his great personality, untiring energy, keen powers of observation, shrewd business acumen and truly patriotic spirit that the house of Tata has played a leading part in the industrial development of India.

**Activities.**—The companies founded by or associated with the firm of Tata Sons, Ltd., are many and diverse. In magnitude and variety of interests there is perhaps no other concern, at least in the British Empire, that embraces activities so widespread as this Indian House. Iron and steel and their associated manufactures, hydro-electric power, cotton mills, cement factories, construction and building companies, banking and insurance, an engineering company and an oil mill, hotels, and trading companies are amongst its undertakings in a country which

one of the most successful cotton mills in India. Capital, Rs. 96,87,500. Looms, 2,220; spindles, 100,352. Annual output, 17,164,300 lbs. of yarn and 7,531,000 lbs. of cloth.

**SWADESHI MILLS CO., LTD.**—This mill was started in 1887 with a capital of Rs. 10,00,000. The present capital is Rs. 20,00,000. Looms, 1,542; spindles, 60,208. The Company purchased another mill in 1925 with 43,920 spindles and 1,187 looms. Combined output, 7,923,906 lbs. of cloth and 9,611,264 lbs. of yarn.

**AHMEDABAD ADVANCE MILLS, LTD.**—Operations were commenced in 1903. Present output: 2,813,042 lbs. of yarn and 2,397,746 lbs. of cloth, from 600 looms and 30,612 spindles. Capital: Rs. 10,00,000.

The Shahabad Cement Company's works in H.F.H. the Nizam's Dominions have a capacity of 40,000 tons per annum.

**Indian Hotels, Ltd.**—This company, which has a capital of Rs. 30,00,000, owns one of the finest hotels in India—the Taj Mahal in Bombay, with 350 rooms. It also owns Green's Restaurant and Wellington Mews. (See also notice following "City of Bombay".)

**Tata Oil Mills Co., Ltd.**—Capital, Rs. 97,62,000. The works are situated at Tata-puram (Cochin State), produce coconut oil and cake, groundnut oil and cake and cocogem, and have a maximum crushing capacity of 225 tons daily.

**Associated Building Co., Ltd.**—The boom of 1919-20 and the great rise in value of office



space in the business quarter of Bombay indicated the necessity of the various concerns under the agencies of Messrs. Tata Sons, Ltd., providing themselves with their own premises. A scheme was accordingly prepared for capital to be furnished by each company according to its means and requirements, and a very central plot of land was acquired on which a palatial building known now as Bombay House has been erected. A limited company was formed for this purpose by capital provided by the various concerns, and is known as the Associated Building Company, Ltd. It has a capital of Rs. 55 lakhs.

**R. D. Tata & Co., Ltd.**—Until June, 1919, the firm of Tata Sons, Ltd., was also doing a very large export and import business with branches in China, Japan and elsewhere.

**Cables.**—"Tatasons" Codes: A 1, A B C, McNeill's Mining, Western Union, Bentley's.

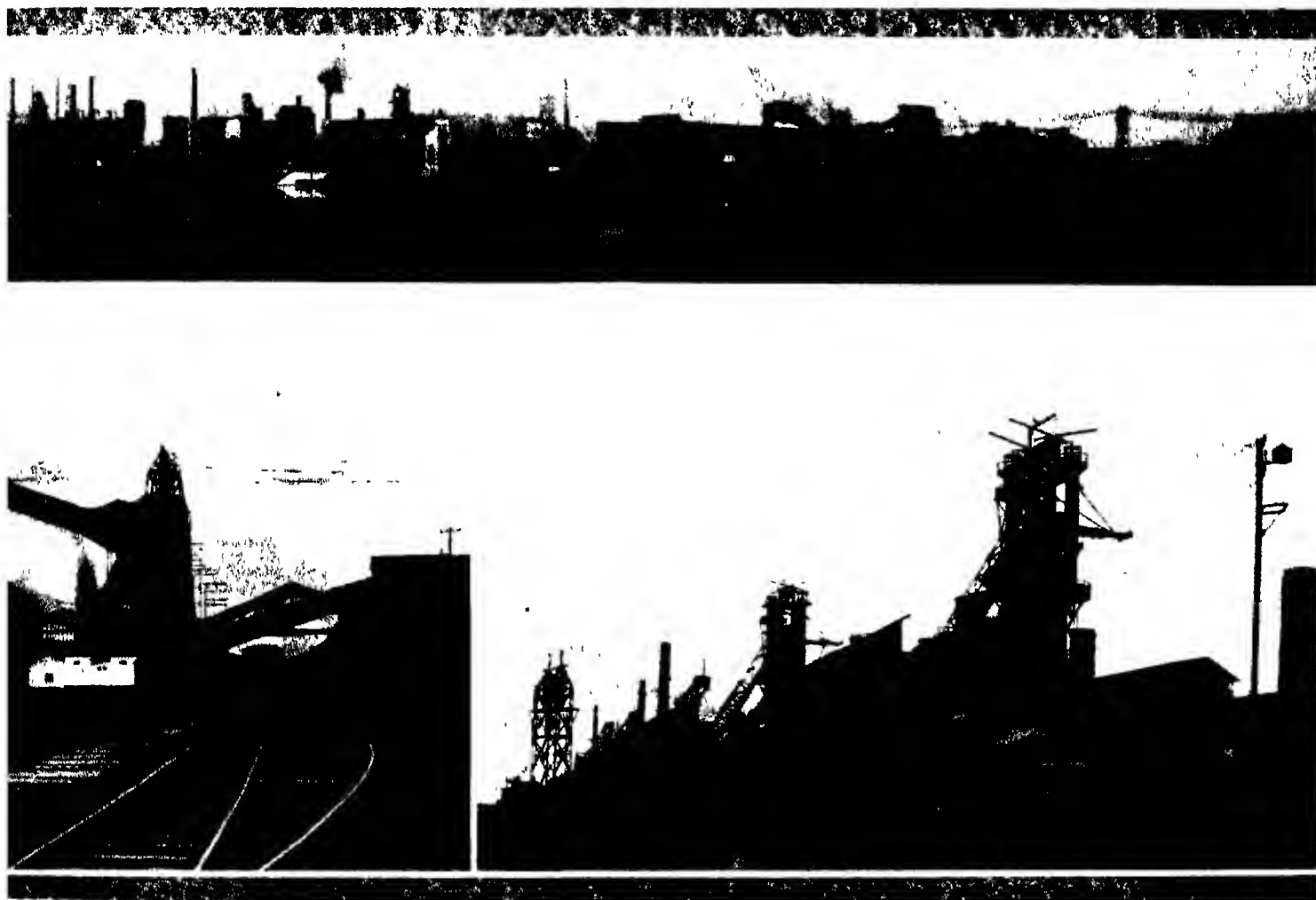
### TATA IRON AND STEEL COMPANY, LIMITED

**Inception.**—This company was formed in 1907, being registered in Bombay on August 26 of that year. The actual construction of the plant at Sakchi (now Jamshedpur) was begun in the autumn of 1908.

**History.** The idea of utilising upon the largest possible scale the iron deposits of India had for over 20 years been active in the brain of the late Jamsetjee Tata (see preceding article), and, in spite of many obstacles, he never abandoned the hope of developing the mineral resources of his country. In 1902 he obtained advice and assistance from the

50,000 to 60,000 tons per month. The steel making plant originally consisted of one 300-ton mixer and four 40-ton basic open hearth furnaces. The capacity of these four furnaces has been increased to 50 tons, and three more furnaces of 60 tons capacity have been added. This output is being further increased by the addition of two 200-ton open hearth tilting furnaces, while one 1,300-ton mixer and two 25-ton Bessemer converters have been installed to work in conjunction with these two furnaces. The estimated total steel output production is 570,000 tons a year.

The original capacity of the coke plant was 180,000 tons per annum, this has been developed to no less than 820,000 tons. Large additions have been made to the rolling mill



and East Plants.

This part of the business was handed over to a new limited concern known as R. D. Tata & Co., and this company is now carrying on the trading activities of Tata Sons, Ltd., having branches to-day in Osaka, Shanghai, Rangoon, Liverpool and New York. It has a capital of 15 million rupees, and is mainly interested in cotton yarns, rice, metals, sugar, etc.

**Directors of Tata Sons, Ltd.**—Sir D. J. Tata, Kt. (chairman), Lady Ratan Tata, N. B. Saklatvala, C.I.E., J. D. Ghandy, F. M. Kanga, B. J. Padshah, H. P. Gibbs, J. C. K. Paterson, C.I.E., J. R. D. Tata.

**Address.**—Bombay House, 24 Bruce Road, Fort, Bombay.

**Corresponding Firms.**—Tata Ltd., London; Tata Sons, Ltd., Calcutta.

Lower: Blast Furnace from the South-East.

United States, and in 1905 his prospector, Mr. C. M. Weld, succeeded in locating one of the richest iron-ore deposits in the world, with a metal content of 66 per cent., in the Rajara hills in the Central Provinces and in the Dhulera hill near by. The discovery, however, of the Gurumaishumi deposits in the State of Mourbhanj provided more favourable opportunities for immediate operations on account of the proximity of the Jherria coal fields. These were leased on favourable terms from the Maharajah, and two years later the Tata Iron and Steel Company was in existence.

**Development.**—The first blast furnace was blown in 1911. Since that time four more furnaces have been put into blast, the output from the five furnaces being estimated at

Upper: Panorama of West and East Plants.

plant, the total output of which is now 1,150 tons per day, and in every direction the main works of the company, the various subsidiary interests, and last, but not least, the remarkable activities in connection with the health and well-being of the town of Jamshedpur and its population have been extended to a point of efficiency which is the admiration of every visitor.

**Capital.**—The original capital of the company was Rs. 2,31,75,000 (£1,545,000), which has been increased to Rs. 10,52,12,500, made up of 350,000 ordinary shares of Rs. 75 each; 50,000 preference 6 per cent. cumulative shares of Rs. 150 each; 48,750 deferred shares of Rs. 30 each; and 700,000 second preference 7½ per cent. cumulative shares of Rs. 100 each.

**Net Profits.**—The net profits of the company for the year ending March 31, 1926, amounted to Rs 95,72,685, while Rs 3,06,947 was brought forward. A sum of Rs 60,00,000 was appropriated for depreciation, leaving Rs 35,72,685 to represent net earnings, as against only Rs 3,71,013 in 1924-25.

**Works.**—The Tata Iron and Steel Company's works are situated at Jamshedpur in the Singhbhum District, Bihar and Orissa, and are connected by a three-mile branch line owned by the company with the Bengal Nagpur Railway main line running from Bombay to Calcutta at Tatanagar Station.

When the project of erecting these works was taken in hand in 1907 the site was a typical Indian jungle. After the arduous labour of clearing the ground was ended

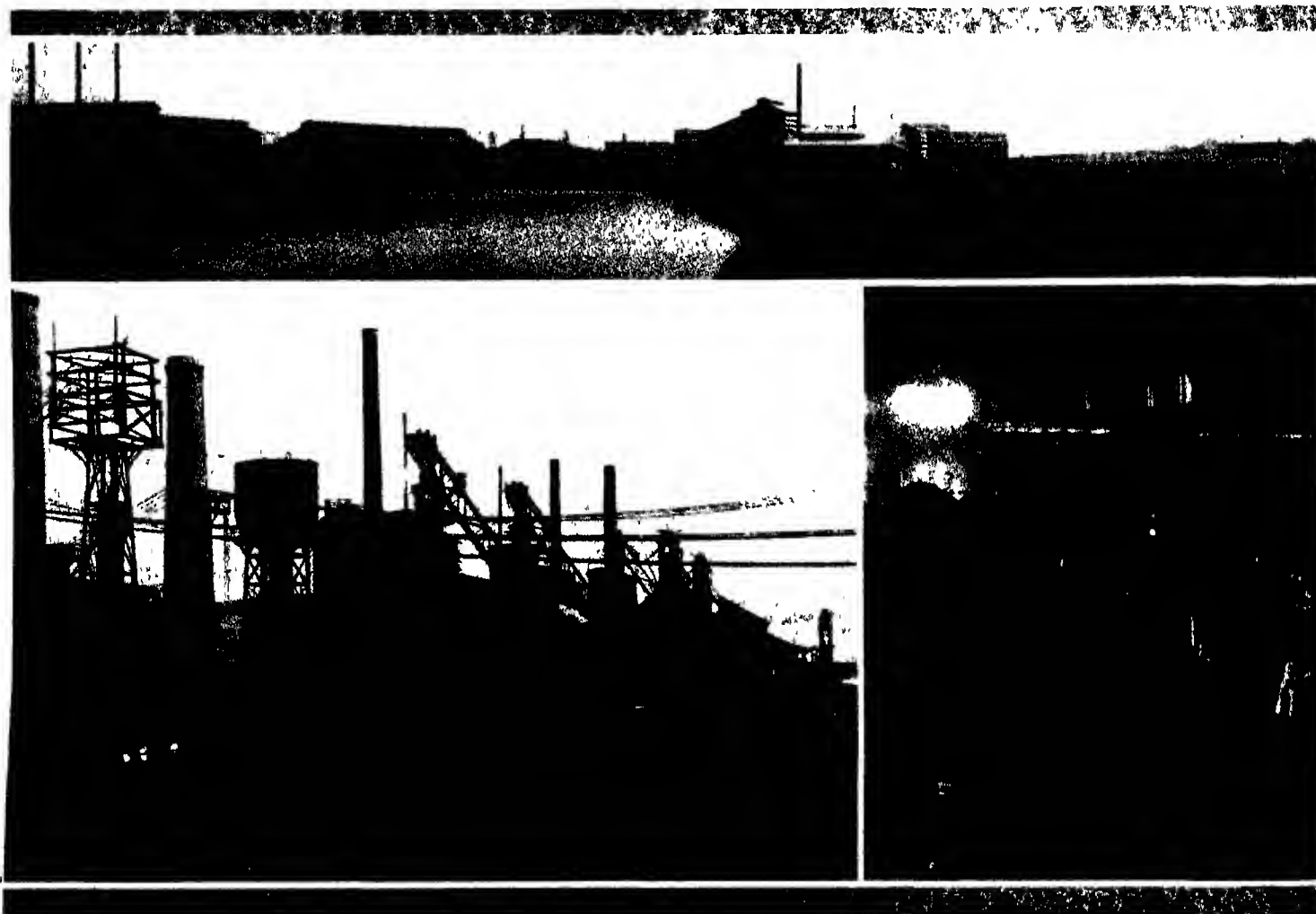
ances, the whole output is used at the blast furnaces. Sulphate of ammonia and sulphuric acid are by-products of the coke ovens.

**PIG IRON.**—This is manufactured from five blast furnaces, three of these being of 300 tons capacity and two of 500 tons each. These latter are equipped with electrically driven skip hoists, gas washers and modern improvements. Part of the iron produced is transferred to the steel furnaces direct in a molten state for the making of steel, part is cast in sand on the furnace beds into pig iron, and a portion is cast into pigs in a pig-casting machine. The company's output of pig iron in 1925-26 was 573,000 tons, an increase of 20,000 tons on the preceding year.

**STEEL.**—Steel is manufactured from

activities also exceeds that amount. The drainage schemes have been much extended and developed. The municipal upkeep of the town of Jamshedpur costs about £50,000 per annum, exclusive of interest and sinking fund charges, the chief item being medical relief. The company's hospital has a staff of 20 doctors, with accommodation for 72 in-patients, and free treatment is given to all. Educational facilities of the best kind are provided for the employees, and there are a high school for boys, a middle school for girls, 14 primary schools, a primary English school, and various technical and other evening classes.

No taxes have hitherto been raised to cover the cost of the upkeep of the town, the company having been responsible. A Municipal Committee, consisting of representatives of



Lower : Blast Furnace from the South-West.

construction commenced, and by 1911 a complete iron and steel making plant was in being. The company's own and other important coalfields lie to the north, while its iron mines are situated from 40 to 50 miles to the south. Dolomite is obtained from the company's properties at Panposh and "K" Lease in Gangpur State, while limestone is drawn from the Sakti State and the adjoining Bilaspur District. Manganese is supplied from the Central Provinces, chromite from Chaibasa in the Singhbhum District, and magnesite from Koda Kola in Mysore State.

**Products.**—The products of the company's works are as follow :—

**COKE.**—Produced from 380 different ovens equipped with up-to-date labour-saving appli-

Upper : Panorama of West and East Plants.

seven open hearth furnaces of from 50 to 65 tons capacity, the molten iron being stored in a mixer of 300 tons capacity. Rails, structural material, merchant steel, low carbon steel for rivets, bars and bolts, plates and sheets are all turned out in various grades. In 1925-26 the output of steel ingots was 470,000 tons and of finished steel 320,000 tons, as against 370,000 tons and 248,000 tons respectively in 1924-25.

**Housing and Welfare Work.**—Only a few aspects of the many-sided activities of the company with regard to the health and comfort of its employees can be touched upon here. It is sufficient to state that up to the present its expenditure on housing alone exceeds £500,000, while that on roads, sanitation, waterworks, lighting and other municipal

Lower : Power House No.

the Steel Company and its associated companies, administers the area. Finally, the company has not been neglectful of the organisation of recreation, having provided a band, playgrounds and a racecourse, as well as two institutes which are now financially prosperous.

**Directors.**—Sir D. J. Tata, Kt. (Messrs Tata Sons, Ltd.), special director and chairman, Sir Cowasji Jehangir, Bart., Sir Fazulbhai Currimbhoy, Kt., C.B.E.; Narottam Morarji, Sir Lalubhai Samaldas, Kt., C.I.E.; F. E. Dinshaw, special director, the Hon. Sir Phiroze C. Sethna, Kt., O.B.E.; Sir Purshotamdas Thakurdas, Kt., C.I.E., M.B.E.; Sir Prabhasanker D. Pattani, K.C.I.E.; N. B. Saklatvala, C.I.E.; Sir Ibrahim Rahimutullah, K.C.S.I., C.I.E.

**Agents.**—Messrs. Tata Sons, Ltd.

**Head Office.** Bombay House, 24 Bruce Road, Fort, Bombay

**Codes Used.**—A B C 5th and 6th Editions and Bentley's

**Bankers.**—Imperial Bank of India, National Bank of India, Ltd.

# **TATA HYDRO-ELECTRIC POWER SUPPLY.**

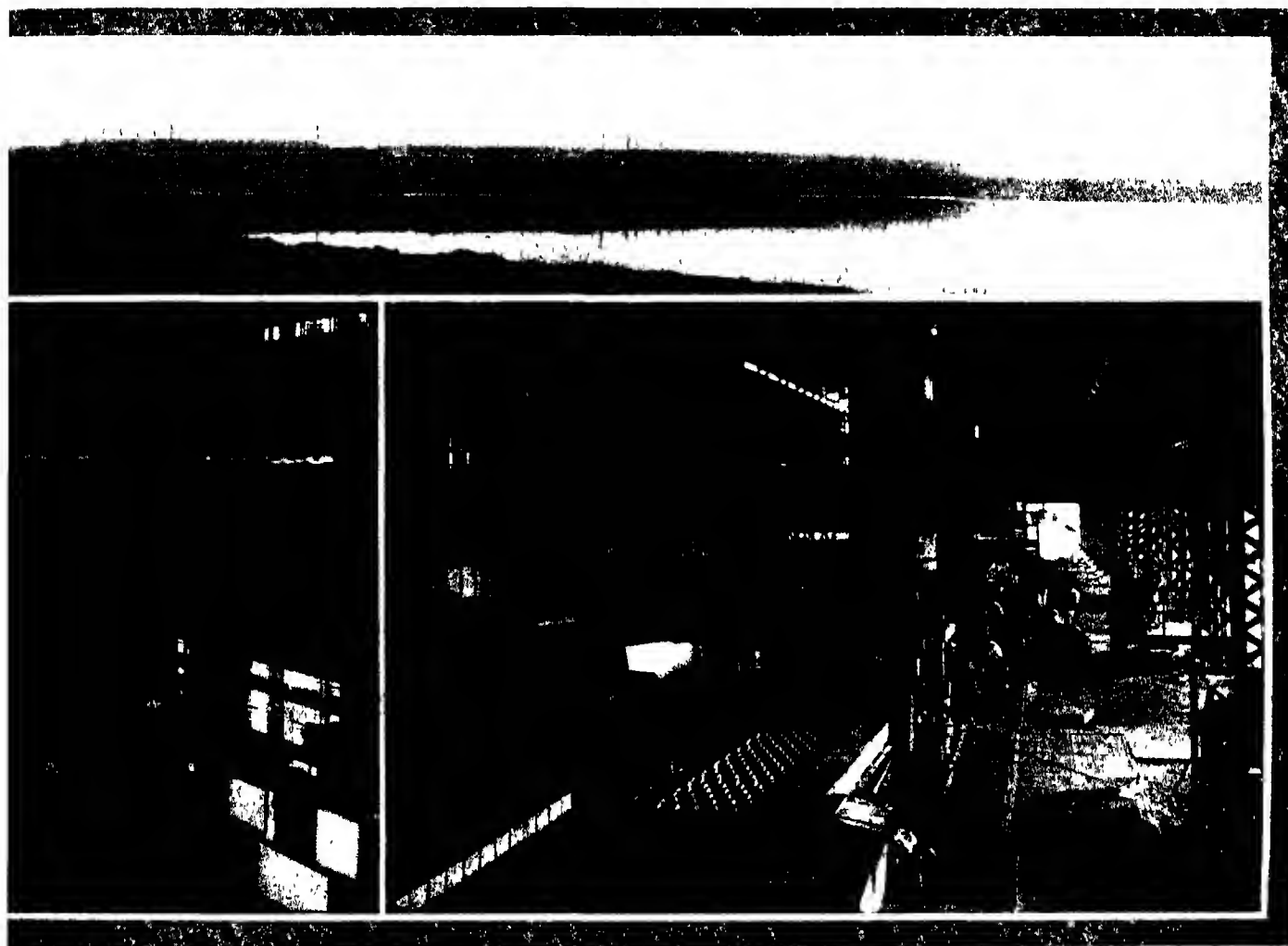
**Inception.**—This, one of the most important of the many Tata companies, was the outcome of years of work and propaganda by the late Mr. David Gostling of Bombay, who devised a scheme to conserve the heavy rainfall of the Western Ghats and to utilise it for the supply of power to the City of Bombay. The scheme was taken up by the late Mr. J. N.

**Power House.**—At full load the power house is capable of generating 50,000 h.p. The water, after it has exhausted its energy in turning the water-wheels, is released into what is called a tail-race, which flows into a neighbouring stream. The amount of water going into this stream when all five generators are working would equal two-thirds of the volume of the River Thames.

**Transmission to Bombay.**—The power house being 43 miles from Bombay, this current, which is produced at 5,000 volts, is transformed to 100,000 volts to economise the cost of its transmission to Bombay. It is conveyed along two transmission lines of three copper cables, each supported on specially designed steel towers. In Bombay

Andhra Valley and Nila Mula, each larger than the preceding one, have been undertaken. Of these the former is completed and supplying power since 1922, and the latter will be completed by the end of 1927.

**Andhra Valley Scheme.**—The holding up of the waters in the Andhra Valley by a dam 105 ft. high will make another 60,000 h.p. available for the electrification of about 35 more factories in Bombay. The power house, electrical equipment and receiving station are furnished with the most up-to-date plant, an interesting feature of the latter being the two 12,500 KVA 22,000 volt rotary condensers which are used only for improving the power factor of the system.



2 Interior

Tata, afterwards by his sons, and the company was formed about 1910, the present hydro-electric works being opened in 1915.

**Hydraulic Works.**—Three lakes are formed by constructing dams across valleys at Lonavla, Walwhan and Shirwata. Lonavla lake is intended for use during monsoon, the other two lakes, together holding about 9,500,000,000 cubic feet, for use during the rest of the year. Shirwata and Walwhan are connected by a tunnel, 5,000 feet long, through the intervening hills. From Walwhan and Lonavla water is conveyed by nearly 5 miles of open ducts to the forebay and thence through large steel pipes laid along the slopes of the Ghats to the power house at Khopoli, 1,725 feet in the plains below.

Lower : Plate Mill—96"

it is again reduced to a lower voltage at the Parel Receiving Station for distribution to the various consumers of the company, and the energy thus available helps to run 44 of the largest cotton mills and factories of the city and also contributes towards its lighting and tram traction.

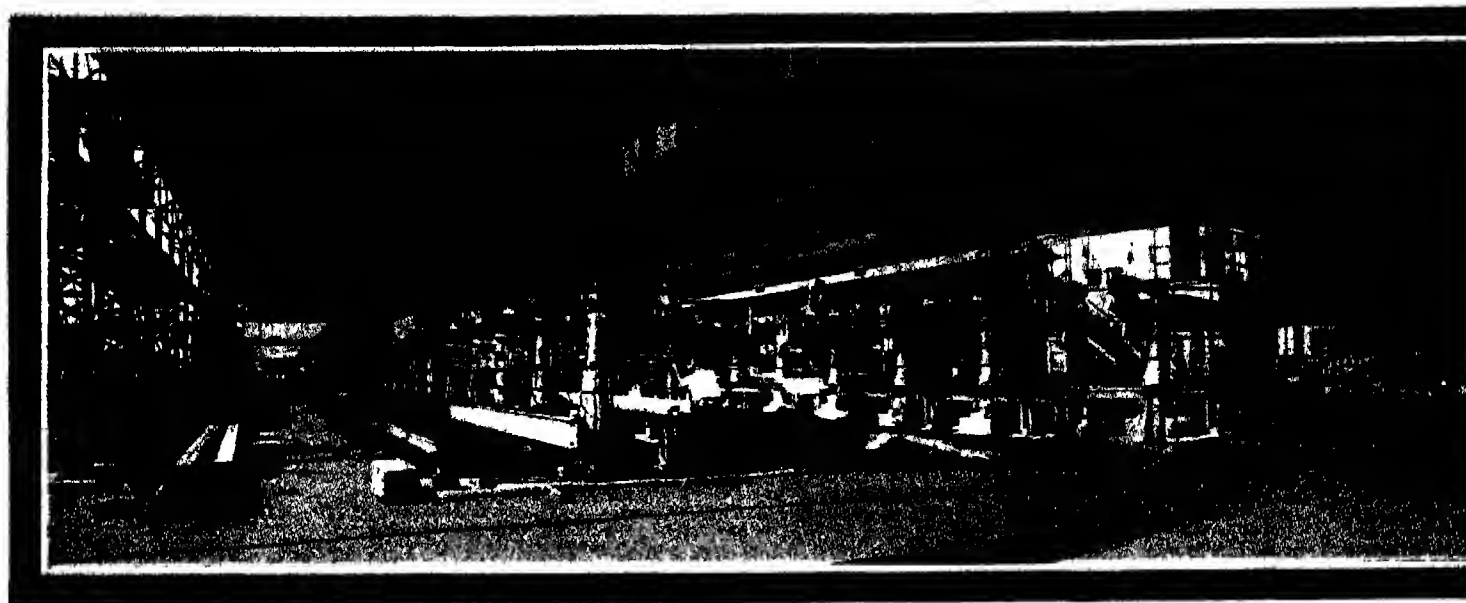
**Distribution.**—The whole of the distribution in the city is done by underground cables at 6,600 volts. Each consumer has a small station, where the current is again reduced to 2,200 volts for working the motors that drive the machinery in the factory. The power thus delivered costs the consumers very much less than that available for coal, and the success of the scheme has been demonstrated so completely that two other schemes, the

THE TATA IRON & STEEL CO. LTD., Bombay.

**Nila Mula Scheme.**—The other scheme in the neighbouring valley of the Nila Mula River will produce another 150,000 h.p. The dam required for this will probably be the largest in the world as regards the quantity of masonry needed for its construction, and the power available will be sufficient to electrify all the remaining factories in the city of Bombay, to take over the whole of the tramways and lighting load of that city, and to run railways along each of the two main trunk lines, both ways, for about 100 miles out of Bombay.

**Registered Office.**—Bombay House, Bruce Road, Bombay

**Managing Agents.**—Tata Sons, Ltd.



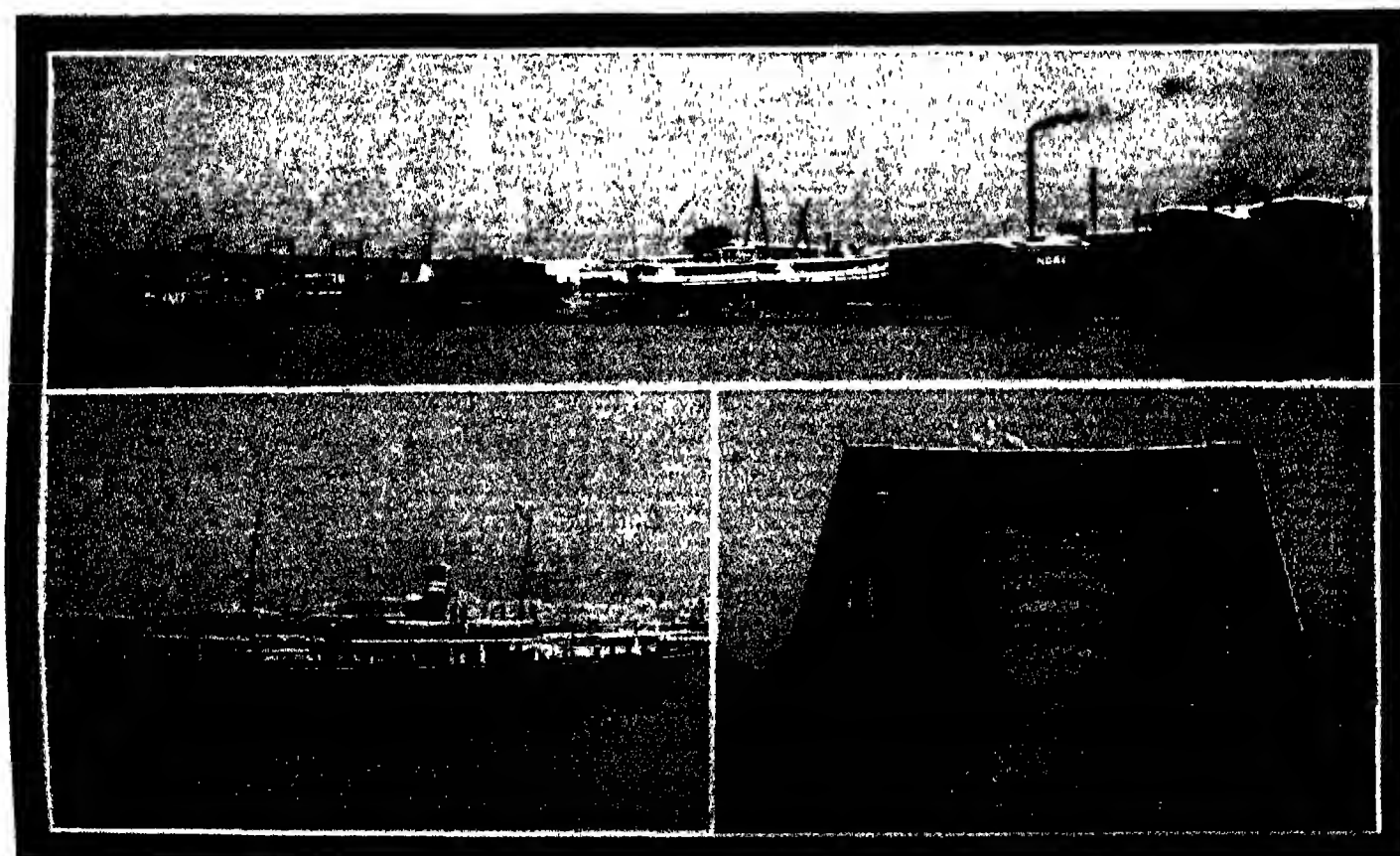
BURN & CO  
Panorama of Principal

#### BURN AND COMPANY, LIMITED.

**Inception.**—This company owes its origin in 1781 to one Colonel Swinton, who then started a small building and contracting enterprise. Subsequently he made over his business to his assistant, James Rolt, who was succeeded by Alexander Burn as head of the firm. From early in the nineteenth century to 1895 the concern was known as Burn & Co.

**Railway Contracts.**—The success of the new firm was later connected with the laying of the East India Railway, Messrs. Burn & Co. securing several contracts for the construction of sections of that line. In spite of interruption caused by the Mutiny, these were all carried to a successful conclusion, the company being the only one, out of many, which was able to satisfactorily fulfil its contracts.

**Development.**—This period of the company's greatest development was marked by the establishment in 1852 of the Howrah Iron Works, now the largest engineering works in India, and in 1870 of the Raneegeunge Pottery Works, which, with its subsidiary works and those at Jubbulpore (C.P.), now forms the largest group of clay working factories under one control in India.



BURN & CO. LTD., Calcutta.

1. Howrah Works from the Hooghly River.
2. Steamer built at the Howrah Shipyard by the Firm.
3. Kidderpore Bridge, representing 945 tons of Iron and Steel, designed and constructed by the Company.



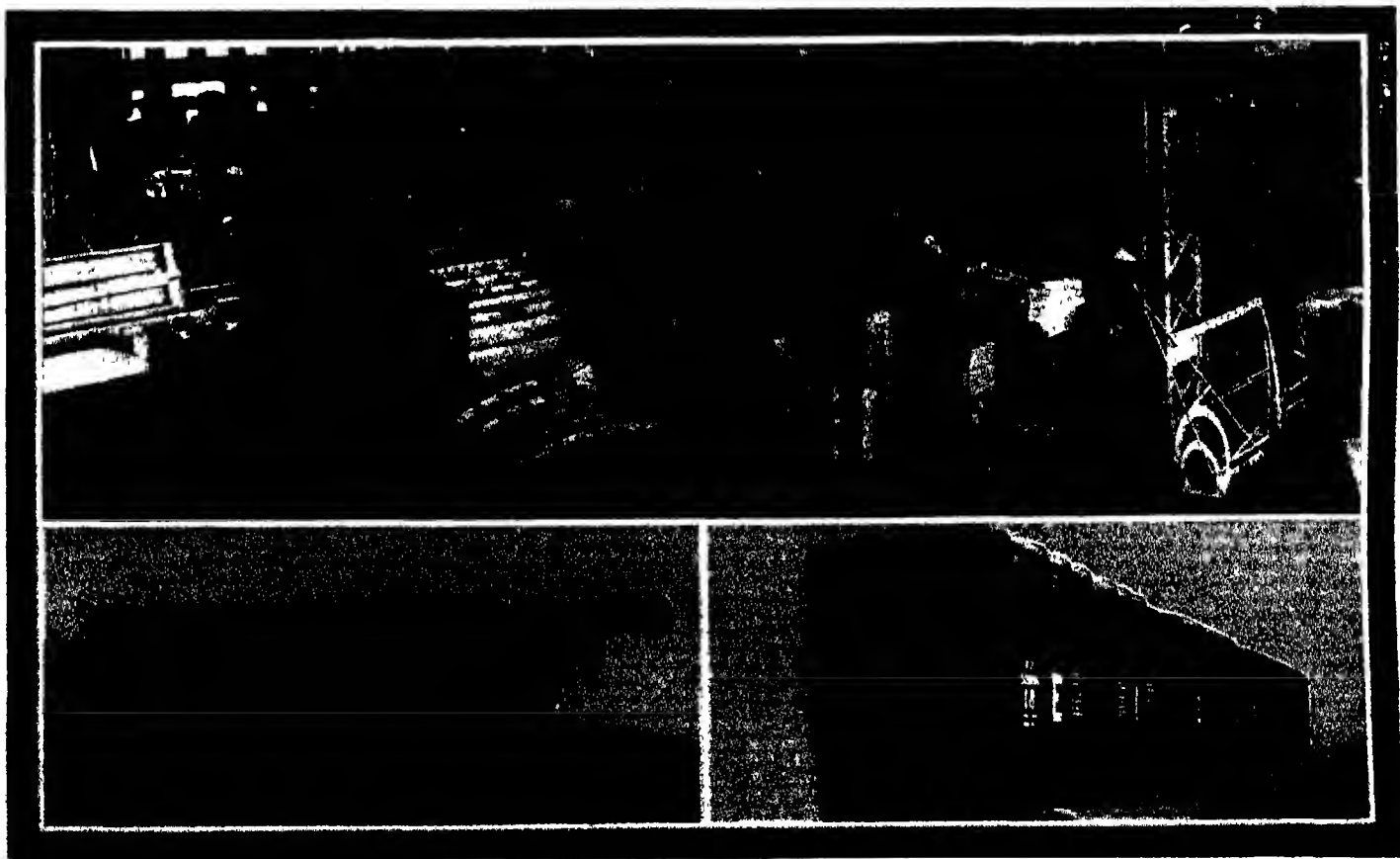
LTD., Calcutta  
Machine Bays.

**Building Operations.**—Before dealing with later developments, reference must be made to the indelible mark left on Calcutta by the building and civil engineering departments of the company, most of the older public buildings and other constructions of the city having been erected by it. Among these are the Ochterlony Monument, St. Andrew's Church, St. Thomas's Church, Bishops' Col-

lege at Sibpur, Metcalfe Hall, the Great Eastern Hotel, and the Municipal Market in Lindsay Street. A large portion of the drainage system of Calcutta, the first tramway system, the Howrah waterworks and several of the jetties and mills were constructed by the company. In addition, the firm designed and erected such well known buildings as the Medical College Hospital, the

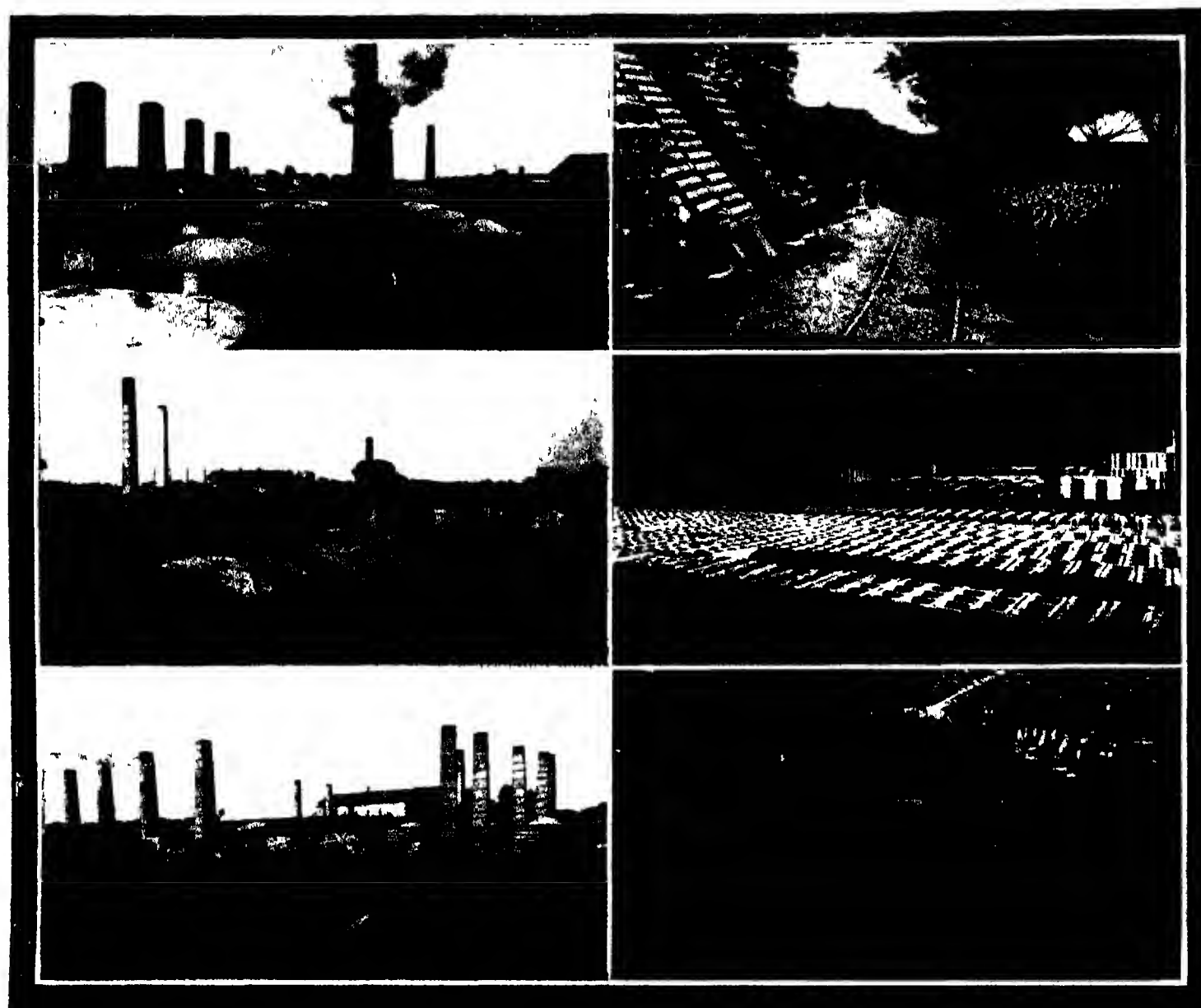
Madrasah and the Bethune Institution.

**Present Company Formed.**—In 1895, owing to the rapid development of its business, the firm of Messrs. Burn & Co. was formed into a limited company under the name of Burn & Co., Ltd., additional capital being obtained. The partners in the original firm retained a large stake in the new company,



BURN & CO. LTD., Calcutta.

1. Machine Shop adjoining Foundry.
2. The Howrah Works have a capacity of one of these Bogie underframes per day.
3. This type of wagon can be built at the rate of 24 per week.



BURN &amp; CO. LTD., Calcutta

1. Works at Raneegeunge.
3. " " Doorgapore.
5. " " Lalkoti.

- 2, 4 & 6. Some of the products manufactured by the Company.

and continued to guide its fortunes, as they do still, in their capacity as managing agents.

**Activities.**—Messrs Burn & Co., Ltd., are engineers and shipbuilders, and the proprietors of the Howrah Iron Works, the Raneegeunge and Jubbulpore Potteries, the Gulfarbari Firebrick Works, the Lalkoti Silica Brick Works, the Doorgapore Tile Works, the Nangi Brickfield, and the Sunkerpore Colliery.

**Iron Works.**—The Howrah Iron Works of Messrs Burn & Co., Ltd., are the largest of their kind in India, covering 50 acres of ground. They comprise a shipbuilding yard, railway carriage and wagon department, bridge and structural shops; mechanical engineering department and metal and stores department. These departments jointly employ a staff of over 5,000 workers.

The illustrations accompanying this article show (a) T.S.S. *Bhadra*, (b) railway wagon and underframe, and (c) the Kidderpore

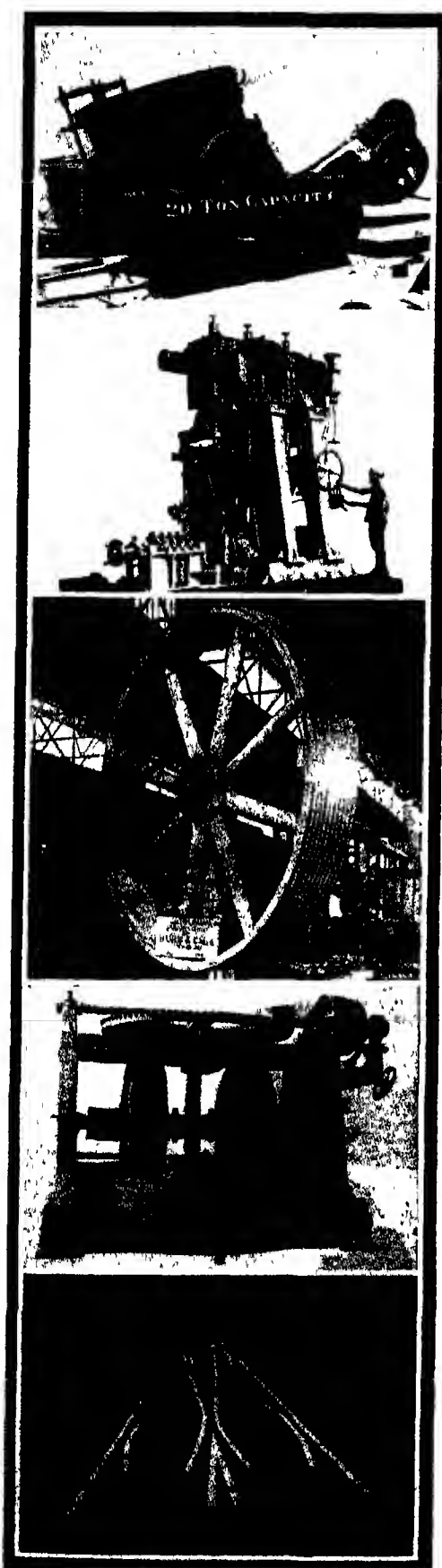
bridge, which are excellent examples of the work carried out in the shipyard, carriage and wagon and structural departments respectively. Irrigation and milling machinery and colliery equipment are specialties of the engineering department, which also turns out castings up to 25 tons in weight.

**Potteries.**—The principal potteries owned by the company are situated in the coalfields of Bengal, Bihar and Orissa. The Raneegeunge Works were opened in 1870 and formed the nucleus of the enterprise, but in the course of some 50 years the original one factory has grown into eight, and these, with their attendant collieries and clay-fields, now extend over 50 miles of country. The two large works at Raneegeunge are devoted entirely to the production of stoneware pipes and specials, with sanitary fittings suitable for use in India. These works turn out hundreds of miles of pipes per annum, all of which are used in India and adjacent countries. The

pipes are made by the most up-to-date plant to British standard specification, and are tested and accepted as such by the largest engineering undertakings in India, comparing favourably in every respect with imported products.

**Fireclay and Other Products.**—Two of the company's works are devoted entirely to the manufacture of fireclay, silica and high refractory bricks and blocks, which are in constant demand all over India, and two more to the production of roofing and other tiles and similar articles. Two smaller factories are engaged in the manufacture of glowing lime, a natural hydraulic cement which holds its own for certain classes of work with the best Portland cement. The Jubbulpore works turn out pipes, firebricks and tiles. All these works are fitted with the very latest plant and are staffed by experts in the trade. Every factory has its own power plant, and in most cases the machines are operated by electric drive.





BURN & CO. LTD., Calcutta.  
Some idea of the range of machinery constructed  
by the Company.



THE INDIAN IRON & STEEL CO. LTD., Calcutta.

Managing Agents, Messrs. Burn & Co. Ltd.

1. View of Blast Furnace Plant, looking east from far side of Reservoir.
2. Furnace running off Slag, showing Slag Ladle in position.
3. Power House, Boiler House, Coal Bunker and No. 1 Furnace.

(See letterpress, page 188).

**Head Office.**—Hongkong House, Council House Street, Calcutta (cables "Burn," Calcutta) Codes A B C 5th Edition, A 1, Bentley's and Kendall's

**Branch Offices.**—Bombay Mazagon Road (cables "Drainage," Bombay), Rangoon 4 Burr Street, Pythe Square (cables "Bianco," Rangoon)

**Managing Agents.**—Messrs Burn & Co., Hongkong House, Council House Street, Calcutta

**London Agents.**—Messrs Burn, Craddock & Co., Ltd., 19 New Bridge Street, E.C. 4

**Bankers.** The National Bank of India, Ltd., Calcutta

### THE INDIAN IRON AND STEEL COMPANY, LIMITED.

**Activities.**—Messrs Burn & Co., Ltd., of Calcutta, are managing agents for this prominent organisation, which manufactures pig-iron by-product coke, coal-tar products, sulphate of ammonia, sulphuric acid, castings, etc

**Capital.**—The capital of the company is Rs 1,50,00,000

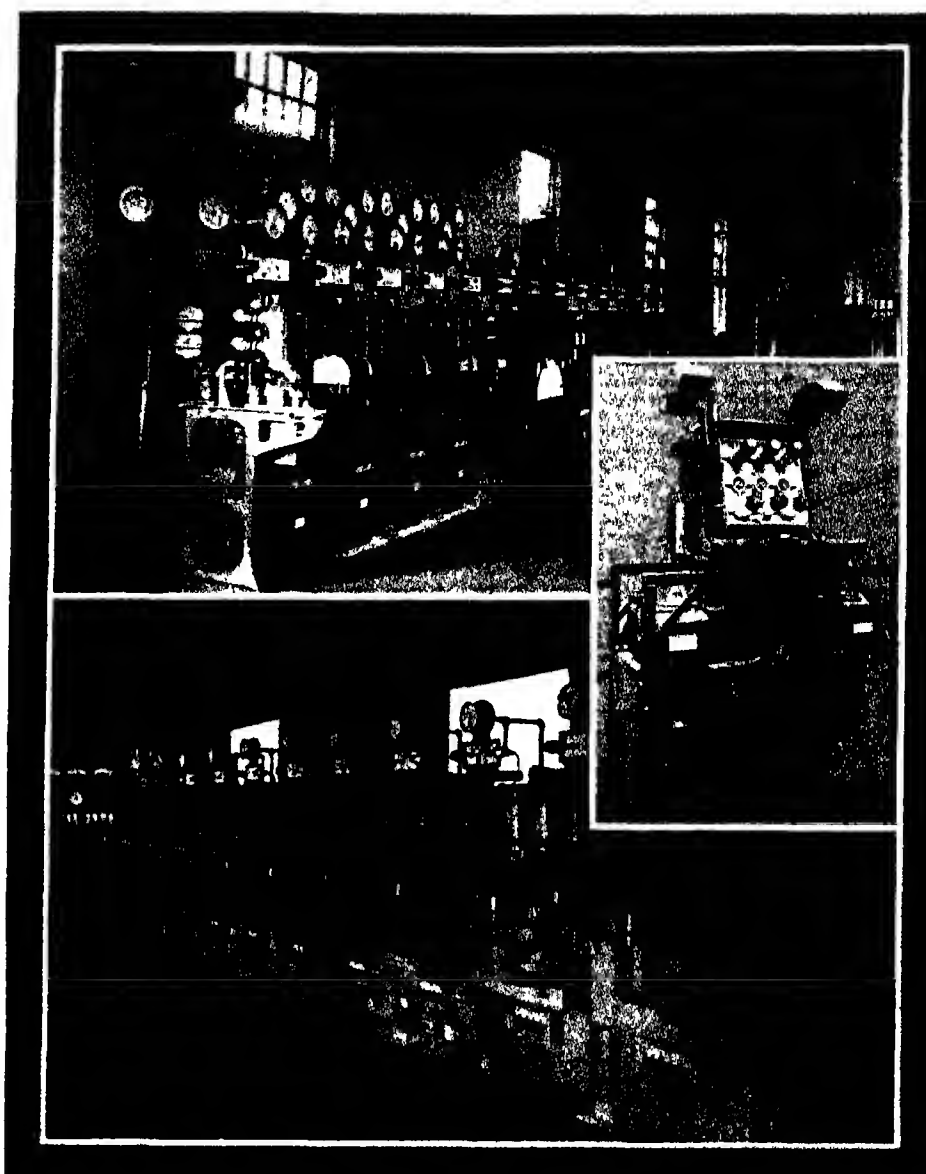
**Mines.**—The Indian Iron and Steel Co., Ltd., possesses its own iron ore, coal and limestone mines within easy reach of the works. The iron ore deposits leased from the Government occupy nearly 10 square miles in the new iron ore field in the Singhbhum district of the Chota Nagpur Division, Bihar and Orissa, and are connected by a broad gauge railway with the main line of the Bengal-Nagpur Railway. The company's limestone property covers an area of 581 acres at Guttitangar in the Gangpur State adjoining the Singhbhum district. The coal properties are situated in the Jherria coalfield, Bihar and Orissa, and contain large reserves of coal in an area of 900 acres

**Works.**—These are situated at Burnpur on the Bengal-Nagpur Railway, and near Asansol (Bengal) on the East India Railway. They are connected with both these main lines by broad gauge sidings and extensive traffic exchange yards—thus, an unique position, provides special facilities for handling large quantities of material to and from the works

**Plant.**—The whole plant of the Burnpur works has been arranged and designed to deal expeditiously with very large quantities of material, and this is accomplished by having all raw material and finished products handled solely by mechanical means. The two blast furnaces already built are of the most modern design, each having a capacity of 450 tons daily, with provision to increase to 600 tons if required. The lay-out of the completed plant provides for the ultimate installation of these furnaces, with sufficient by-product coke plant capacity to furnish fuel for them. At present, two batteries, each of 80 Simon Carves horizontal flue waste heat ovens, capable of producing 1,000 tons of coke per day, provide all the coke necessary for the first two blast furnaces. The electric power plant has two 3,000 k.w. Turbo Alternator Sets in operation, with an auxiliary D.C. lighting set of 150 k.w. Other plant includes a large up-to-date machine shop, foundry and blacksmith's shop

**Managing Agents.**—Messrs. Burn & Co., Hongkong House, Calcutta.

**Agents in United Kingdom.**—Messrs Burn, Craddock & Co., Ltd., Blackfriars House, New Bridge Street, London, E.C. 4.



A. REYROLLE & CO LTD. Managing Agents, Messrs. Burn & Co. Ltd., Calcutta.

1. "CI" duplicate Busbar Drawout Metal-clad Switchboard for 6,600 V. 400 amperes, 3 phase 50 cycles (supplied for Delhi Power Station on order 6831).
2. 11,000 volt, 3 phase, Switch Fuse Equipment, combined with two Interlocked Oil-Immersed Isolating Switches for outdoor service
3. Front view of 6,600 volt, 3 phase, 50 cycle, Class "BI" direct operated, duplicate Busbar, Metal-clad Drawout Switchboard.

**Cables.**—"Burn," Burnpur, "Inisco," Calcutta Codes A B C, 5th and 6th Editions, Bentley's and Western Union (5 letter)

**Bankers.**—National Bank of India  
(See illustration, page 187)

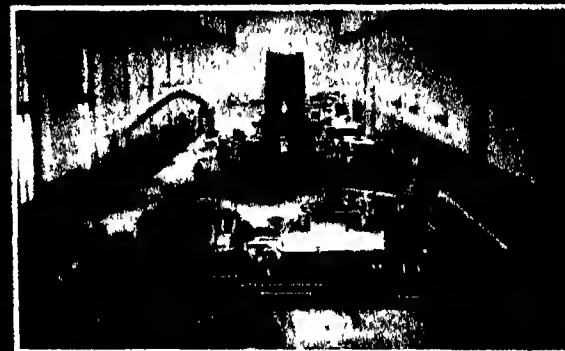
### A. REYROLLE AND COMPANY, LIMITED.

**Inception.**—The firm of A Reyrolle & Co., Ltd., electrical engineers and manufacturers (for whom Messrs Burn & Co., Ltd., act as sole agents in India), was established in 1886

**Activities.**—The company is well known in the electrical world as the pioneer builders of metal-clad switchgear, and their productions have proved that the metal-clad feature in which all live conductors are enclosed in earthed metal casing with compound as an

insulating medium is the only method of obtaining safety and reliability in switchgear operation. The gear is very robust, all framework is at earth potential and complete interlocks are incorporated. These advantages, combined with the compound filled feature preventing operators from coming in contact with live conductors, make the gear well adapted for the particularly difficult operating and severe climatic conditions in India.

**Installations.**—Reyrolle gear has long been established in India, but it is only recently that the company have had active representation. Their gear is rapidly gaining popularity with engineers in India, who are gradually turning their attention to it as being ideal for their purpose and as a solution of their operating difficulties.



#### C. A. PARSONS & COMPANY, LTD

Managing Agents, Messrs Burn & Co Ltd., Calcutta

1. Works at Newcastle-on-Tyne, England
2. A typical Electric Power Station in India for lighting and power purposes in a Jute Mill.
3. 550 K W Parsons' 3 phase Turbo Alternator, installed in the Budge Budge Jute Mills, 1910

The chief Power Stations Installations are at Madras, Delhi, Hyderabad and the Bengal Coal Fields, while orders are in hand for a large Power Station and high tension gear in Bombay

**Industrial Uses.**—The application of metal-clad switchgear to industrial work has had unqualified success, and in India Reyrolle productions have, during the last few years, been installed in Jute Mills, Woollen Mills, Steel Works, Cotton Mills, Cement Works, Railways and Pumping Stations.

Messrs Reyrolle & Co. Ltd. have devoted particular attention to developing a special type of gear for the Indian industrial market, so that small firms may be able to obtain the best modern practice in a form which eliminates all unnecessary features but still retains the main principles. It is anticipated that at no distant date the Reyrolle metal-clad switchgear will be as popular in India as it is in Great Britain and other parts of the world

**Head Office and Works.**—Hebburn-on-Tyne, England.

**Sole Agents in India.**—Messrs Burn & Co., Ltd., Hongkong House, Calcutta.

**Cables.**—"Burn," Calcutta. Codes Marconi International, New Business, Bentley's and Western Union (5 letter).

**Bankers.**—National Bank of India.

#### C. A. PARSONS AND COMPANY, LIMITED.

**Inception.**—Well known as manufacturers of Reaction Turbines, the firm under notice was originally represented in India in 1910, the first turbo dynamo of its manufacture having been installed in that country five years previously

**Development.**—Pioneer work in India was both slow and trying, as factory owners who had become used to the huge slow-moving engine did not take kindly to the newer type of prime mover, although it showed great promise in the direction of economy. However, before the War there were ten Parsons' turbines at work in various parts of India and Burma. After the War the reliability of the high-speed turbine with reduction gearing having been well proved, the Parsons' Geared Turbine became universally popular in textile and other industrial factories

**Installations.**—At the present time the total horse-power installed in India amounts to over 160,000, of which 75,000 is running in textile mills.

**Water Works Plant.**—Among the more recent of the larger contracts carried out by Messrs C A Parsons & Co Ltd, through Messrs Burn & Co Ltd, acting as sole agents in India, is the complete installation, including boilers, turbines, pumps and lighting equipment, of the two new pumping stations for the Calcutta Corporation Water Works. The plant, which is built on the unit system,

comprises seven Parsons Pure Reaction Turbines driving through Parsons' gearing centrifugal pumps, capable of delivering 1,500,000 to 1,750,000 gallons of water per hour to 130 ft head. Seven Parsons' Turbo Dynamos provide the necessary power for lighting and driving the various auxiliary machinery. The boiler house is equipped on the most modern lines and is complete with mechanical coal and ash-handling plant

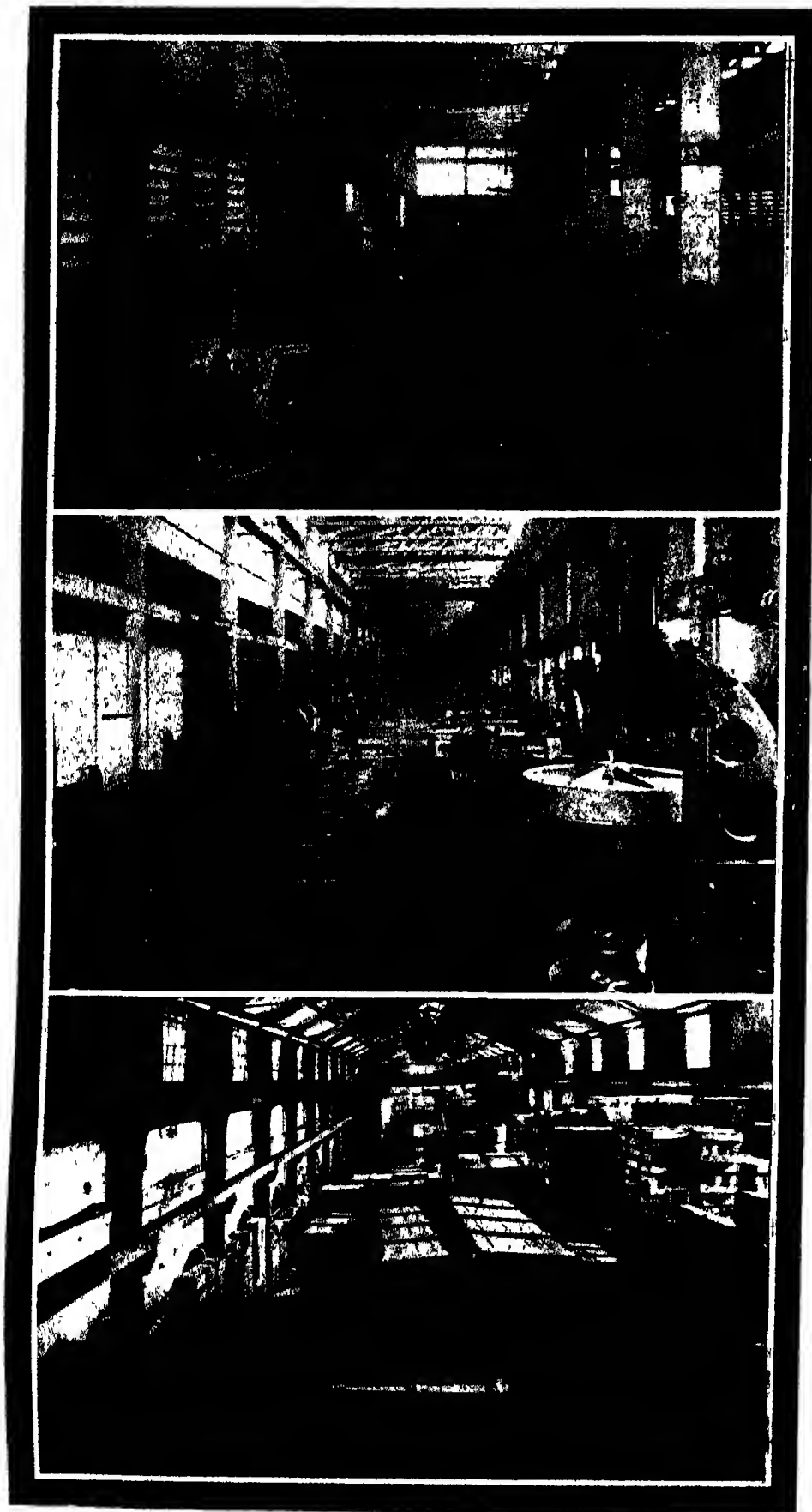
**Electrical Equipment.**—Regarding Messrs Parsons' activities in connection with electrical work in India, an important feature is the engine room equipment of a large electrical power station supplying energy to a group of jute mills. This station has a total capacity of 12,000 kw, which is generated by two 5,000 kw and one 2,000 kw Parsons' Reaction Turbines, coupled to Parsons' Turbo-type Alternators running at a speed of 3,000 r.p.m. A large order recently secured is for four 10,000 kw Turbo-Alternators and Condensing Plant and two 350 kw House Turbo-Alternators for the Kalyan Power Station, G I P Railway Electrification Scheme

**Head Office and Works.**—Newcastle-on-Tyne

**Sole Agents in India.**—Messrs Burn & Co., Ltd., Hongkong House, Calcutta

**Cables.**—"Burn," Calcutta. Codes Bentley's, A B C 5th Edition, Western Union and New Business.

**Bankers.**—National Bank of India, Ltd.



MARSHALL, SONS &amp; CO. (INDIA) LTD.

- 1 & 2. Aspects of the Engineering Works at Agarpara, near Calcutta.  
3. The Clive Street Godowns.

#### MARSHALL, SONS & COMPANY (INDIA), LIMITED.

**Inception.**—The firm of Messrs Marshall, Sons & Co., Ltd., of Gainsborough, Lincolnshire, is so well known that a detailed description of its activities should not be necessary. It may, however, be permissible to indicate the reasons for the flotation in 1919 of a separate company to carry on the affairs of the home organisation in India. The parent firm was established in Gainsborough in 1848 and very quickly grew to its present magnitude; it now occupies an area of some 45 acres and employs 5,000 workmen.

From the very earliest days of the company's existence it established business connections with India, and through the excellence of its manufactures and service to clients its operations in that country had attained great importance by 1914. The difficulty of obtaining spare parts and replacements during the war for the vast volume of machinery manufactured by the company and in use in India made it imperative that a works should be established in that country to manufacture certain lines of machinery of fundamental importance to indigenous industries, notably the tea industry. A separate company was therefore formed, called Marshall, Sons & Co. (India) Ltd., and this commenced operations on March 27, 1919.

**Services to Industry.** It is probable that in the whole history of the world no individual firm of engineers has done more to foster indigenous industries in any country than has the enterprise now under notice in India. While most carefully studying the needs of the country and keeping abreast of the times in scientific design so that its steam engines, boilers and machines of every description are thoroughly up-to-date and of the highest efficiency, it has kept in mind that simplicity of operation and continuity of service are of paramount importance.

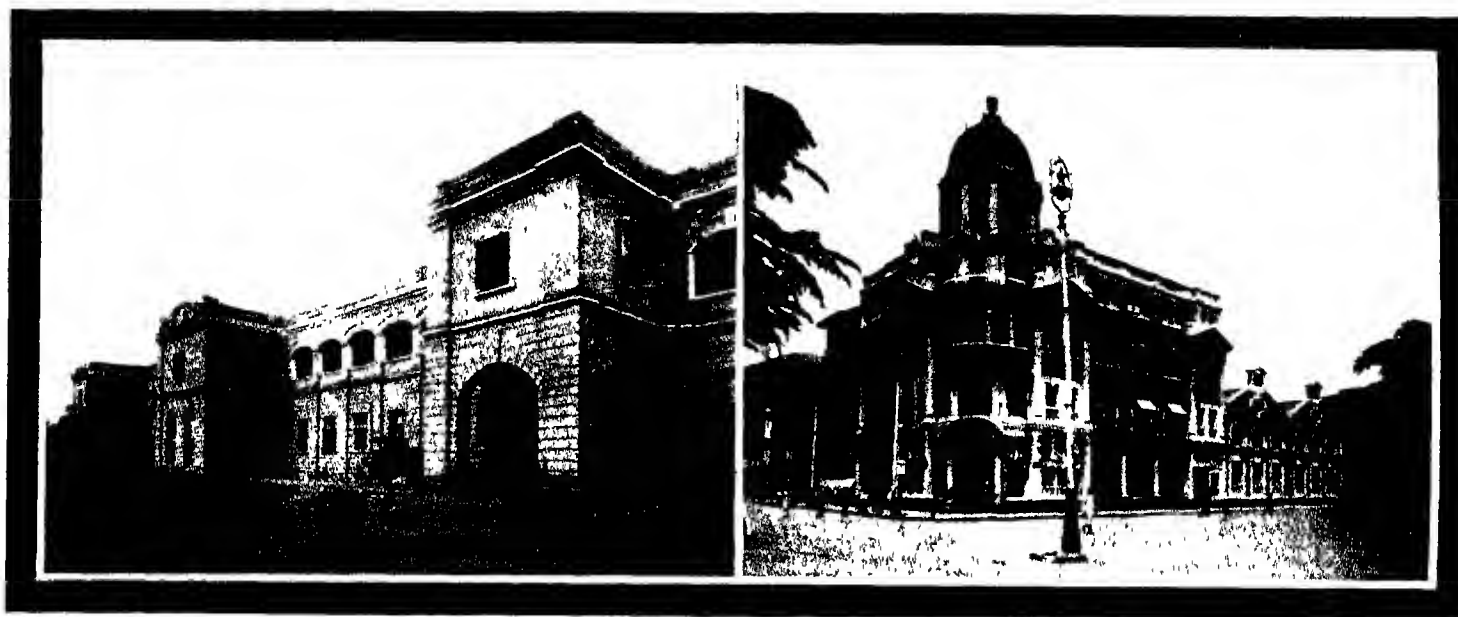
**Installations.**—Every tea garden in India is equipped with machinery designed and manufactured by Marshall, Sons & Co. Ltd., and in practically every town and village will be found Marshall's steam engines and boilers driving flour-mills, rice-mills, oil-mills, cotton gins, spinning and weaving sheds and the like.

Irrigation and waterworks engineers have all used Marshall's machinery in the construction of their notable projects. The great forests of India, if explored to the heart, will reveal Marshall's engines and boilers and saw-milling machinery.

**Railway and Road Building.**—Not a railway in India has been built except with the aid of Marshall's Portable Engines driving pumps, mortar mills, concrete mixers, disintegrators, etc. There is scarcely a mile of first-class road in India which has not been consolidated with a Marshall's Road Roller.

**Works.**—The works at Agarpara (E.B. Railway), situated close to Calcutta, are thoroughly equipped with the most modern appliances, and have been specially laid out and designed not only to manufacture machinery, but also to repair and re-condition plant of all descriptions.

**Manufactures.**—The firm manufactures fixed and portable steam engines and oil engines, boilers of all descriptions, road plants, thrashing machines, flax machinery, tea machinery of all kinds, oil mills and mortar mills, and specialises in the supply and erection of complete plants for cotton ginning, spinning and weaving, rice, flour and oil milling, pumping, stone-breaking, mortar-mixing and disintegrating.



MARSHALL, SONS &amp; CO (INDIA) LTD.

1. Engineering Works at Agarpara, near Calcutta.

2. Office at Bombay.

**Agencies.**—W. H. Baxter, Ltd., Leeds; Blackman Export Co., London; Blackstone & Co., Ltd., Stamford; Boilerinc, Ltd., London; Chubb & Sons' Lock and Safe Co., Ltd., London; J. Harrison Carter, Dunstable; Engelberg Huller Co., Syracuse, New York, U.S.A.; Gwynnes, Ltd., Hammersmith; Hayward Tyler & Co., Ltd., London; A. Ransome & Co., Ltd., Newark-on-Trent; and Rose Downs & Thompson, Ltd., Hull.

**Staff and Branches.**—The firm maintains in India a large and fully-qualified staff of engineers and has branches at Calcutta, Bombay, Lahore, Madras, Bezwada, Combatores, Tanjore, Karachi and Rangoon. Large stocks of machinery are kept in specially constructed warehouses at all the branches, a very wide range of spare parts being also available.

**Head Office.**—P.O. Box 22, Calcutta (cables "Engine," Calcutta) Codes A B C 5th edition, A 1, Lieber's, Engineering, Bentley's and Private.

**Bankers.**—The National Bank of India, Ltd.; The Chartered Bank of India, Australia and China.

**Managing Agents.**—Messrs Marshall's (Direction), Ltd., 99, Clive Street, Calcutta.

#### STEEL PRODUCTS, LIMITED.

**Managing Agents.**—Messrs John King & Co. Ltd., the managing agents for the company to be here dealt with, are the well-known Calcutta firm of engineers and ship-builders. Their Victoria Engine Works at Howrah and the workshops at Garden Reach are noted throughout industrial India for the excellence of their productions. Messrs King & Co. represent a great number of the best British and American machinery manufacturers and carry a large stock of specialties at the stores in Strand Road. The following are a few of the firms represented: Alexander Anderson & Sons, Cardiff Boiler Works, Motherwell and Glasgow; Morgan Crucible Co., London; British Steel Piling Co. Ltd., Penberthy Injector Co., Detroit, U.S.A.; Excelsior Wire Rope Co., Cardiff; Century Electric Co., St. Louis, U.S.A., etc. The registered offices are in Calcutta, and the cable address is "Victoria," Calcutta.

**Inception of Steel Products, Ltd.** This company was formed for the purpose of manufacturing patent steel adjustable shelving and office equipment in India, and was registered under the Indian Companies Act of 1913 on October 9, 1917.

**Development.** The organisation has made steady progress during the period of under a decade since its inception. The balance sheet for the six months ending April 30, 1926, showed the half-yearly profit to be Rs 45,274-2-7. After certain deductions and the addition of Rs 342,235-7 carried forward from last account, there was available a total of Rs 60,837-14-5, which was allocated thus: Rs 25,000 to payment of dividend at a rate equivalent to 16½ per cent per annum; Rs 25,000 to equalisation of dividend account; and Rs 10,837-14-5 carried forward to next account. When it is considered that during two of the six months under review there was a general dislocation of trade, these figures are highly significant.

**Capital.**—This at present is Rs 3,00,000 (divided into 50,000 ordinary shares of Rs 6 each), subscribed and fully paid up.

**Activities.**—The company manufactures a wide range of standardised steel office equipment which has come into universal use in India. The sectional steel fixtures in which it specialises occupy less space than wooden ones and never wear out as the latter do; they need no repairs, are unbreakable, non-inflammable, and easily adjustable. They are built on the unit system, which permits a size and style of unit for every office, no matter what the space limitations may be. This system ensures minimum freight in transit and, in case of fire or sudden emergency, the office equipment can be quickly removed with the contents intact, a section at a time. The range of manufactures includes shelving of all kinds, doors for stacks, lockers, steel bins, steel almshouses and wardrobes, S.P. steel roll-top desks, S.P. steel flat top desks, S.P. safes, steel filing cabinets, card index cabinets, stack-up-tier units, office equipment, steel unclimbable railings, etc.

**Service.**—The company prepares drawings and estimates free of charge for clients contemplating a new installation, and is always prepared to make appointments for them to

inspect installations in actual use. It undertakes contracts in any part of India, and among the prominent users of the steel unit system may be mentioned the Imperial Secretariat, Delhi; Bengal Secretariat, Calcutta; Bihar and Orissa Secretariat, Patna; Punjab Government Press, Lahore; Survey of India, Calcutta; the Port Commissioners at Bombay, Rangoon, Karachi and Madras; Calcutta and Madras Corporations; P.W.D. Central Stores, Bombay; Post and Telegraph Department, Rangoon; Military Works Department, Karachi; Forest Department, Lahore; the main Indian railway companies; all the leading banks; jute mills, cotton mills, mercantile and insurance offices, etc.

**Directorate.**—Messrs Geo. A. King, Millar M. King and F. L. Watts.

**Registered Office.**—10 Strand Road, Calcutta (cables "Adequate," Calcutta) Code Bentley's.

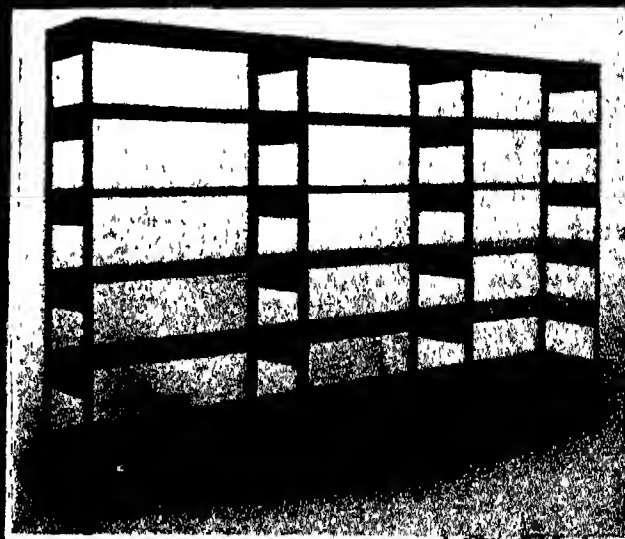
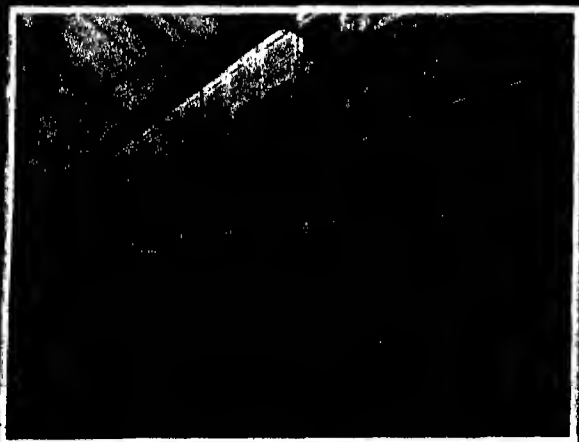
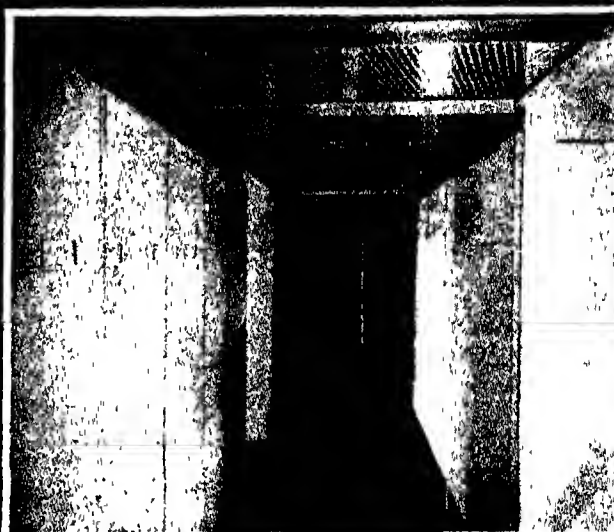
**Factory.**—95-98 Garden Reach Road, Calcutta.

**Bankers.**—National Bank of India, Ltd. (See illustration p. 192.)

**THE BRITISH INDIA CORPORATION, LTD.**—Cawnpore. Incorporated in 1920 to amalgamate the Cawnpore Woollen Mills Co., the Cawnpore Cotton Mills Co., the Empire Engineering Co., Cooper Allen & Co., the New Egerton Woollen Mills Co., and the North West Fannery Co. In 1921 the North West Motor Transport Co. was purchased. Capital, issued and subscribed, Rs 4,32,75,000. Property valuation, Rs 168½ lakhs; stocks and stores valuation, approximately Rs 2 crores; investments in public and private companies, Rs 117 lakhs.

**MUIR MILLS CO., LTD.**—Cawnpore. Established in 1874, present equipment includes 77,340 spindles, 1,538 looms. Firm has own dyeing and bleaching plant, manufactures cotton goods and has departments for tents and durries; employs 3,000 workmen. For nine years (1915-1924) dividend paid on capital of Rs 15 lakhs, after paying 6 per cent. on 15 lakhs of preference shares, averaged 70 per cent per annum; in same period the reserves increased from Rs 1,90,000 to Rs 50,00,000. The profits for 1924 were Rs 16,31,077-2-0. Chairman, Sir Thomas Smith.





STEEL PRODUCTS LIMITED. Managing Agents, John King & Co., Ltd.  
Some of the Company's products.

1 & 2. Manufactures as supplied  
to the Public Works  
Department.

3. Steel Almirahs.  
4. Adjustable Steel Shelving with  
doors, as supplied to Survey of  
India.  
5. Steel Shelving.

(See letterpress, p. 191).



# COTTON

**C**otton is the most important textile crop in India. That country stands second only to America in the total production of it, but her cotton is shorter in staple, poorer in spinning value and smaller in yield per acre. Much is being done towards effecting an improvement in the quality of Indian cotton, the efforts of the various Governments and of the Indian Cotton Committee having met with well-deserved success.

Of the progress of cotton manufacture in India the statistics which follow provide illuminating information. The cotton mills, indeed, constitute the oldest and one of the most important of the Empire's industries, they have been erected largely by means of Indian capital, and still remain for the most part under Indian management. During both 1924 and 1925 a succession of strikes adversely affected the industry. Though the abolition of the excise duty has raised a heavy burden from the shoulders of the mill owners, certain industrial problems remain to be solved before the great enterprise which has made Bombay, Ahmedabad and other important cities can overcome the growing menace of competition from Japan.

**AREA AND PRODUCTION.**—The total area reported under cotton for the year 1925-26 was 27,835,000 acres, compared with 26,801,000 acres in 1924-25. The total estimated yield was 6,051,000 bales of 400 lbs each, a figure slightly below that of 6,091,000 bales for 1924-25. The yield per acre worked out at 87 lbs in 1925-26, against 91 lbs in 1924-25. The detailed figures of acreage and output for each Province and State are as follow—

PROVINCES AND STATES	ACRES (THOUSANDS)		BALES OF 400 LBS (THOUSANDS)	
	1925-26	1924-25	1925-26	1924-25
Bombay (a)	8,011	7,713	1,542	1,580
Central Provinces and Berar	5,363	5,247	901	1,000
Madras (b)	2,005	2,003	571	597
Punjab (b)	2,900	2,589	852	910
United Provinces (b)	1,003	1,040	277	270
Burma	436	352	83	70
Bihar and Orissa	82	70	15	14
Bengal (b)	78	77	20	24
Ajmer-Merwara	54	45	17	15
Assam	47	45	13	15
North-West Frontier Province	32	39	7	8
Delhi	6	4	1	1
Hyderabad	3,781	3,412	1,060	899
Central India	1,340	1,354	263	262
Baroda	866	658	189	171
Gwalior	651	699	110	145
Rajputana	407	418	93	80
Mysore	83	118	25	36

Total . 27,835 26,801 6,051 6,091

(a) Including Sind and Indian States

(b) Including Indian States

**DESCRIPTIONS (TRADE).**—The principal varieties of Indian cotton are known by the trade names of Dholeras, Broach, Oomras (from the Berars), Dharwar and Coomptas. Broach is the best cotton grown in Western India. Hinganghat cotton, from the Central Provinces, has a good reputation. Bengals is the name given to the cotton of the Gangetic Valley, and generally to the cottons of Northern India. The Madras cottons are known as Westerns, Cocanadas, Coimbatore

and Tinnevelles, the best being Tinnevelly. Cambodia cotton has been grown with success in Southern India, but it shows a tendency to revert. The high prices for cotton realised in recent years have given a great impetus to cultivation. The Government has also been active in improving the class of cotton produced by seed selection, hybridisation, and the importation of exotic seeds. Although these measures have met with considerable success they have not proceeded far enough to leave the whole output, which still consists for the most part of a short staple early maturing variety, suitable to soils where the rainy season is brief.

The following table shows the area and yield according to the recognised trade descriptions of cotton in 1925-26, as compared with 1924-25. Of the total yield it will be seen that Oomras represent 41 per cent, Bengal-Sind 17 per cent, Dholeras 10 per cent, Westerns and Northern 7 per cent, Americans, Broach and Coompta-Dharwar 5 per cent, Cambodias 2 per cent and Tinnevelles 2 per cent—

DESCRIPTIONS OF COTTON	ACRES (THOUSANDS)		BALES OF 400 LBS (THOUSANDS)	
	1925-26	1924-25	1925-26	1924-25
Oomras—				
Khandesh	1,518	1,468	259	270
Central India	1,001	2,053	379	407
Bairi and Nagar (a)	3,038	3,213	930	778
Hyderabad				
Gauram				
Berar	3,476		1,551	
Central Provinces	1,887	5,247	350	1,000
Total	12,510	11,981	2,400	2,455
Dholeras (b)	3,150	2,578	(b) 626	628
Bengal-Sind—				
United Provinces	1,003	1,049	277	270
Rajputana	(c) 401	474	(c) 110	105
Sind-Punjab	2,220	2,062	646	673
Others	90	86	17	16
Total	(c) 3,783	3,671	(c) 1,050	1,070
American—				
Punjab	1,066	964	328	363
Sind	7	16	2	4
Broach	1,387	1,355	324	345
Coompta-Dharwar	1,726	1,951	314	333
Westerns and Northern	2,190	2,109	402	345
Cocanadas	297	291	60	57
Tinnevelles	532	621	151	164
Salems	219	235	34	32
Cambodias	373	442	167	183
Comillas, Burmas and other sorts	580	497	124	112
Grand total	27,835	26,801	6,051	6,091

(a) Includes the whole of cotton grown in the Non-Government areas of Hyderabad

(b) Includes Bengal-Sind (Rajputana) variety grown in Bombay

(c) Excludes Bengal-Sind (Rajputana) variety grown in Bombay

**EXCISE DUTY.**—See under "Customs"

**EXPORTS AND IMPORTS.**—See under "Commerce."

**GINNING.**—The differences with regard to ginning, baling and pressing are almost as many as the varieties of cotton grown. In the Punjab and Burma, for instance, the

ginners buy the seed cotton, elsewhere they mostly gin on commission. In the south of India, however, where the ginners are also exporters, they buy only the lint after ginning. The greater part of the crop is machine-ginned, but, except in Dharwar, where the American saw gin is used, chiefly with roller-gins. In many of the more important cotton growing centres the big European cotton exporters have their own gins.

**BALING AND PRESSING.**—Though the loose bundles of ginned cotton, if intended for Indian mills, are sometimes only half-pressed in old-fashioned screw presses, the bulk is pressed in steel hooped bales up country and so railed down to the port. The density of the pressing varies from 45 to 65 lbs per cubic foot.

**INDIAN CENTRAL COTTON COMMITTEE.**—In order that Indian cotton may obtain an adequate price in the world's market it is essential not merely that the spread of the long stapled variety should be encouraged, but also that its adulteration in bulk with the short-stapled local strains should be sedulously avoided. There is thus ample opportunity for close co-operation between the Departments of Agriculture and those who trade in this important crop. In 1921 the Indian Central Cotton Committee was established to act as a connecting link between the traders and the agricultural experts, and also to serve as an advisory body to Government on all questions affecting cotton. It affords a joint meeting ground for all sections of the trade with those who are engaged in the improvement of the crop. Under the recently passed Cotton Cess Act the Indian Central Cotton Committee has been constituted as a corporate body with funds of its own, independent of the finances of the Government of India. It derives its revenues from the levy of a small cess upon the whole of the commercial cotton crop, and devotes the proceeds to the promotion of agricultural technological research in the interests of the industry at large. Amongst other activities, it finances the Central Cotton Research Institute at Indore, and has established a Technological Laboratory at Matunga, near Bombay. It has also been instrumental in getting passed the Cotton Transport Act of 1923 and the Cotton Ginning and Pressing Factories Act of 1925.

**MANUFACTURES.**—Of the cotton produced in India, it may be said in general terms that about two-thirds are exported raw, while the balance is manufactured into yarn and cloth in the country. The spinning of yarn is in great degree centred in Bombay, the mills of that province producing in 1924-1925 nearly 74 per cent of the quantity raised in British India. The United Provinces of Agra and Oudh and Madras produced about 7 per cent and 8 per cent respectively, while Bengal and the Central Provinces furnished 4.7 and 5.2 per cent respectively. Elsewhere the production is as yet very limited.

In the early days of the textile industry the energies of the larger millowners were to a great extent concentrated on the production of yarn, both for the China market and for the handlooms of India. The increasing competition of Japan in the China market, the growth of an indigenous industry in China, and the uncertainties introduced by fluctuations in the China exchanges consequent on variations in the price of silver compelled the millowners to cultivate the home market. The general tendency of



GOCULDAS MADHOWJI SONS & CO., Bombay  
One of the Spinning Rooms at the Madhowji Dharamsi Manufacturing Co's Mill

recent years has been to spin higher counts of yarn, importing American cotton for this purpose to supplement the Indian supply, to erect more looms, and to produce more dyed and bleached goods. This practice has reached a higher development in Bombay than in other parts of India and the Bombay Presidency in 1925 produced nearly 78.8 per cent of the cloth woven in India. The United Provinces produced 3.2 per cent and Madras 4 per cent. Grey and bleached goods represented nearly 74 per cent of the whole production.

**DARIS**—The *daris*, or pileless cotton carpets, are a great feature of the Indian textile trade, being produced in three principal forms—*daris* proper (or bed carpets), *shatranjis* (floor carpets), and *jainamaz* (prayer mats). The looms on which *daris* are woven are generally horizontal, and the dyes formerly in use were indigenous vegetable dyes, principally indigo, but the cheapness of aniline dyes has led to the increasing adoption of the latter. The weavers in most of the provinces are poor Mohammedans or low caste Hindus, and the organisation of the trade largely depends on a system of advances by *mahajans* or middlemen, who sell the outturn at the big trade centres. *Daris* properly so called are generally purchased in the piece, while floor carpets are sold by the yard or by weight.

The chief centres of manufacture are Bareilly, Aligarh, Agra, Cawnpore, Farukhabad, Moradabad and Etawah in the United Provinces. The *daris* of Agra are noted for their finish, those of Bareilly for their cheapness and durability, and those of Aligarh for the closeness of the stitch. The industry is expanding in Cawnpore, where large mills under European and Indian management are manufacturing with machinery greater sizes suitable for tents and bungalows, and turn-

ing out considerable quantities for export to England and America. Other provinces where cotton carpets are made are the Punjab, chiefly in the districts of Mooltan, Amballa and Hoshiarpur, the Delhi Province, the Bahawalpur State, Patna city and the Champaran and Shahabad districts of Bihar, and Ayyampet, Bhavani, Adoni and Kurnool in the Madras Presidency, where the local name for these carpets is *jankalam*. In the Bombay Presidency a not inconsiderable industry is carried on in some of the Deccan districts. It is also a popular jail industry in nearly every province.

**WOVEN GOODS**—The following brief extract is taken from the statement of the quantity (in pounds) and description of woven goods produced in all India, including Native States, in 1923-24 and 1924-25—

MANUFACTURES	1923-24	1924-25
Grey and bleached piece goods	287,049,978	325,265,253
Coloured piece goods	108,330,343	125,580,102
Grey and coloured goods other than piece goods	2,575,352	2,953,886
Hosiery	547,831	672,850
Miscellaneous	2,237,111	3,949,303
Cotton goods mixed with silk or wool	207,229	272,006
<b>Total</b>	<b>400,947,844</b>	<b>458,693,400</b>

(NB The equivalents of the totals of 395,380,321 lbs and 450,845,355 lbs of piece goods manufactured in 1923-24 and 1924-25 were 1,701,574,355 yards and 1,070,446,852 yards respectively.)

**YARN**—The following table shows the quantity (in pounds) of yarn of all counts spun in India during 1923-24 and 1924-25—

(See letterpress p. 202)

BRITISH INDIA	1923-24	1924-25
Bombay	398,552,023	474,202,050
Madras	50,038,054	54,221,000
Bengal	26,104,021	25,072,310
United Provinces	51,002,984	56,323,400
Ajmer-Merwara	2,081,474	3,200,241
Punjab	1,264,236	1,760,787
Delhi	5,188,985	6,448,438
Central Provinces and Berar	32,258,371	38,116,287
Burma	843,275	1,067,012
<b>Total</b>	<b>570,124,023</b>	<b>661,161,693</b>

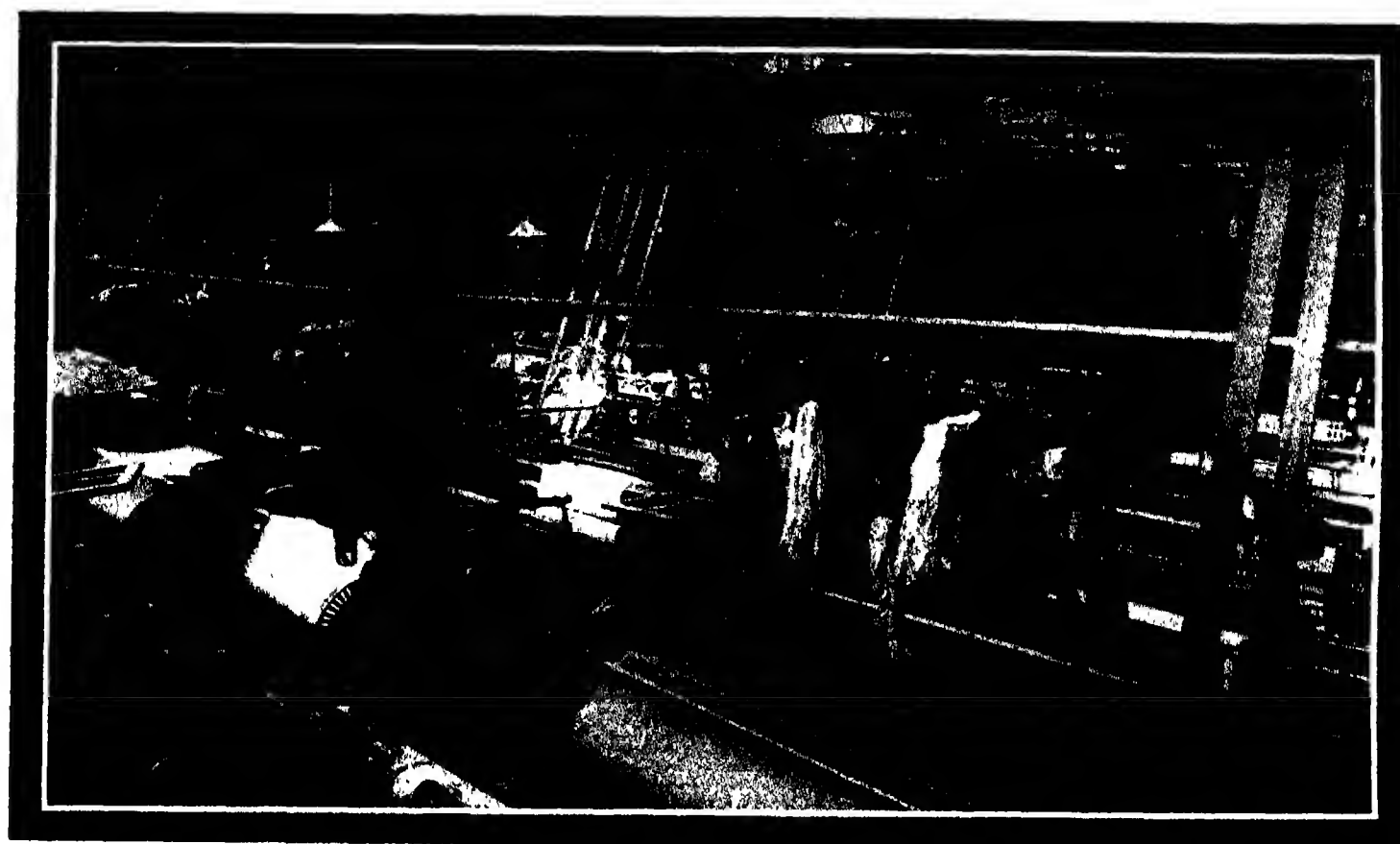
FOREIGN TERRITORY	1923-24	1924-25
Indian States of Indore, Mysore, Baroda, Nandgaon, Bhavnagar, Hyderabad, Wadhwan, Gwahor (Ujjain) and Pondicherry (a)	47,203,709	58,228,301

Grand total 617,328,632 719,389,994

(a) Including the production of one mill only

In 1921-25 the mills on Bombay Island produced 327,542,750 lbs of yarn and those in Ahmedabad 92,006,041 lbs

**MARKETS.**—The chief markets for cotton cloth woven in India are those colonies and countries to which there is considerable Indian emigration. Bombay is the principal port of shipment for *chadars* and *dhootis*, *T cloths* and *domestics*, the chief destinations being Aden, East Africa, Persia, Zanzibar, the Straits Settlements and Baluchistan (via Karachi), while coloured *lungis* and *saris*, which go in the main from Madras, are shipped to the Straits Settlements, Ceylon and



MATHRADAS GOGULDAS & CO., Bombay.  
The Weaving Room in one of the Sir Shapurji Broacha Mills.  
(See letterpress p. 197)

Sumatra As an example of handloom weaving for export, the trade in Madras "handkerchiefs" may be cited, these being shipped to the United Kingdom, though their ultimate destination is chiefly Africa.

**MILL INDUSTRY (PROGRESS OF).**—The first cotton mill in India was started in 1838 at Ghosery, near Calcutta, while the first to be opened in Bombay dates from 1853 with 5,000 throstle spindles. Between 1898 and 1918 the number of spindles increased by nearly 50 per cent, and the total of looms by 211 per cent, but the tendency during the last sixteen years has been to enlarge existing mills rather than to open new ones. At the outbreak of the World War in 1914 India ranked fourth among the countries of the world manufacturing cotton textiles, being exceeded only by Great Britain, the United States and Germany. In that year the number of mills was 271, with 6,778,895 spindles and 104,179 looms. By the end of August 1925 the total of mills working and in course of erection had risen to 337, spindles to 8,570,632 and looms to 154,203, while the number of hands employed daily was 367,877, as compared with 356,887 in 1924, 260,276 in 1914 and 184,779 in 1904. In 1898 the approximate amount of cotton consumed was 1,481,328 bales of 392 lbs each; by 1908 this had risen to 1,991,500 bales, by 1918 to 2,085,678 bales, and by 1925 to 2,226,310 bales. The grand total of gross excise duty realised from goods woven in all Indian cotton mills had increased from Rs.19,31,754 in 1902-03 to Rs.2,34,63,580 in 1924-25.

The following table shows the distribution of cotton spinning and weaving mills in India on August 31, 1925.—

WHERE SITUATED	NUMBER OF MILLS	NUMBER OF SPINDLES	AVERAGE NO OF HANDS EMPLOYED DAILY	COTTON CONSUMED BALES OF 3½ CWT
Bombay Island	82	3,456,233	153,009	904,732
Bombay Presidency	124	2,368,718	95,565	514,018
Total	206	5,824,951	248,574	1,500,650
Rajputana	4	59,048	2,307	14,068
Barar	4	53,284	2,702	14,022
Central Provinces	8	289,032	18,426	102,008
Hyderabad	5	95,368	2,373	11,072
Central India	10	240,371	12,804	81,200
Bengal Presidency	25	365,004	12,489	89,024
Punjab	9	119,106	5,099	27,300
United Provinces	26	632,697	21,373	179,878
Madras Presidency	29	658,264	28,431	149,176
Travancore	2	25,560	672	8,276
Mysore	6	78,882	6,971	17,796
Pondicherry	3	69,066	5,186	21,850
Totals	337	8,570,632	367,877	2,226,310

**SALE AND SHIPMENT.**—The units of sale and shipment of cotton vary at the different ports. In Bombay the unit of sale is the candy of 784 lbs, in Karachi the maund of 84 lbs, in Calcutta the bazar maund of 82½ lbs., and in the south the candy of 500 lbs generally. Quotations for export to the United Kingdom are as a rule per lb c i f. Shipment is made from Bombay in bales of 392 to 500 lbs and from Karachi in bales of 400 lbs. Calcutta adopts the bale of 392 lbs, while at the Madras ports the weight varies from 400 to 500 lbs.

**FREIGHT.**—For freight purposes all cotton is taken on measurement, one ton being equal to 40 cubic feet. Ordinarily, one hundred bales of 400 lbs each will represent between 25 and 26 tons. In Tuticorin, however, where Cambodia and Tinnevelles are usually shipped in bales weighing 500 lbs, the compression is so great that one hundred

bales measure only 10 tons approximately, that is, five bales to the ton.

**TRADE CONTROL.**—Until almost the end of 1917 the regulation of the cotton trade of Bombay was in the hands of several commercial associations, each of which claimed to have some controlling voice. A single agency for this purpose was first introduced under the Defence of India Act as a temporary war measure, but upon the repeal of this Act in 1922 the Bombay Act XIV of 1922 was passed, giving the East India Cotton Association statutory powers similar to those possessed by the Cotton Contracts Board. Since then the East India Cotton Association, Limited, has, subject to its bye-laws being approved by the Governor-in-Council, controlled the cotton trade of Bombay.

**CLEARING HOUSE.**—Of the many innovations which have been introduced since the Bombay Government assumed in the control of the cotton trade, the one which has met with universal approval is the institution of a Clearing House for the cash payment on a fixed date twice every month of differences outstanding on forward contracts. This system of clearing differences by periodical payments came into being in Liverpool in 1882, that is to say, about one hundred and twenty years after the first import of cotton into that city in 1763 and 41 years after the first Association to regulate cotton trading was started in Liverpool. In Bombay it was introduced in 1918, that is, 43 years after the starting in 1875 of the first Association to regulate the cotton trade of the Province.



**HORMUSJEE & CO., Bombay**  
The Ruby Mills Ltd., Managed by this Company

The total amounts handled by the Clearing House have been as follow —

YEAR	Rs
1921-22	12 08 94,506
1922-23	7 09 37 399
1923-24	9 10 95 270
1924-25	3 18 50,196

During the year 1923-24 the amount cleared at one settlement represented a crore and four lakhs of rupees. Two months later another clearing totalled a crore and eighty-eight lakhs of rupees the highest settlement on record in Bombay.

**MARKET (CLINICAL)** — In the early days of trading the cotton market or "Green" was situated in front of the Town Hall, from that site, owing to the steadily increasing volume of trade and consequent congestion of traffic, it was moved to Colaba in 1844. There the trade was domiciled for over three-quarters of a century, and during that period its steady growth continued, until in 1885-86 the cotton brought into Bombay amounted to 1,534,974 bales, and in 1905-06 to 2,551,761 bales. The market was then moved to Mazagon which is in close proximity to the mills and docks and in December 1925 the handsome new Exchange Building was opened by H.E. the Governor of Bombay.

### REPRESENTATIVE COTTON ENTERPRISES

#### **HORMUSJEE & CO.**

**Operations.** — As managing agents for the Bombay Cotton Manufacturing Co., Ltd., and The Ruby Mills, Ltd., this company is well known in commercial circles in Bombay.

**The Bombay Cotton Manufacturing Co., Ltd.** — Registered in 1883, this company went into liquidation in 1909 and was reconstructed in the same year, the agency being taken up by Messrs Hormusjee & Co. Under the reconstruction scheme the creditors received 61 14 per cent in cash and 38 86 per cent in 5 per cent. cumulative preference shares of Rs 10 each.

**CAPITAL** — The authorised capital is Rs 25,00,000, divided into 2,400 ordinary shares of Rs 500 each and 130,000 5 per cent cumulative preference shares of Rs 10 each, of which 2,377 ordinary and 105,227 preference shares have been issued, subscribed and paid up, totalling Rs 22,40,770.

**FUNDS** — Reserve fund, Rs 6,97,297-11-4, depreciation fund Rs 13,23,000, and equalisation of dividend fund, Rs 50,000.

**ACTIVITIES** — The firm manufactures yarn and cloth, and its piecegoods are well known in Basra, Baghdad and Syrian ports, in addition to Indian markets.

**FACTORY** — Comprising spinning and weaving blocks and a bleaching shed, the mills employ 1,800 day operatives and are equipped with 33,648 spindles, 705 looms, preparatory machinery and a bleaching plant.

**PROPERTY** — The firm owns 100 acres freehold land at Kalachoki Road, Chichpogly,



**HORMUSJEE & CO., Bombay.**

Portion of the Bombay Cotton Manufacturing Co. Ltd.'s Mill managed by this Company.



P. A. HORMARJEE & CO., Bombay.  
General view of a portion of Sewri, one of the principal industrial suburbs of Bombay, showing the Moon Mills in the foreground.

Bombay, the present value of which is ten times its original cost, Rs 79,128,138.

**DIRECTORS**—Mr Kharshedjee Dhunjeebhoy Shroff (chairman), the Hon Sir Phiroze C. Sethna, Kt, O B E, Messrs Rustam K. R. Cama, Purshotam Jeewandas, F. E. Dinshaw, Ardeshir Hormusjee Dubash, and Hormusjee Framjee Commissariat (managing director).

**BANKERS**—The Imperial Bank of India, The Bank of India, The Central Bank of India, Ltd., and The Eastern Bank, Ltd.

**The Ruby Mills, Ltd.** Probably the smallest spinning and weaving mills in Bombay, this concern started spinning in 1916 and weaving in 1917, when about 365 looms were installed. Although it is a public limited company, it may safely be styled a private business, as the managing agents, Messrs Hormusjee & Co., were themselves the promoters and hold all the shares.

**CAPITAL**—The authorised issued and called up capital is Rs 12,00,000, divided into 12,000 shares of Rs 100 each. The reserve fund is Rs 3,05,000, and the depreciation fund Rs 2,10,000.

**ACTIVITIES**—Cloth and yarn are manufactured for the Indian, Egyptian and Far Eastern markets, in which they command a large sale.

**FACTORY**—This is equipped with 12,868 spindles, 365 looms, and the necessary preparatory machines, and employs a mixed staff of 1,140 operatives on day and night shifts.

**PROPERTY**—Foras freehold land at Lady Jamsetji Road, Dadar, Bombay, of the original value of Rs 27,000.

**DIRECTORATE**—Messrs Ardeshir Hormusjee Dubash (chairman), Chagan Gopalji (joint managing director), Gustadji D. Billimoria, Goculdas Doongersey, Dharamsey Ratansey, Kaikhshroo A. Dubash, and Hormusjee Framjee Commissariat (joint managing director).

**MANAGEMENT**—The management of the business by the agent-promoters is a model of economy and efficiency.

**OFFICES**—Messrs Hormusjee & Co., Commissariat Buildings, Hornby Road, Bombay.

**BANKERS**—The Central Bank of India, Ltd., and the Bank of India, Ltd.

#### THE MOON MILLS, LTD. (MANAGING AGENTS, P. A. HORMARJEE & CO.).

**Inception**—This flourishing company was founded on September 2, 1806, by the late Mr P. A. Hormarjee, who acted as its managing agent from the commencement.

**Development**—The mills started as a spinning concern in July 1806 with 16,000 spindles, a number which was increased by 3,916 in 1906 and by 10,000 in 1912. In July 1925 the mills were converted to include weaving, and to-day the entire plant consists of 38,494 spindles and 756 looms. Electric drive was inaugurated on November 11, 1923.

**Capital**—The authorised capital is Rs 5,00,000 in 2,000 shares of Rs 250 each, the subscribed capital Rs 2,50,000 and the issued capital Rs 2,50,000, both in 1,000 shares of Rs 250 each.

**Production**—All yarns and cloths produced for market are sold in Bombay to be distributed throughout India and Burma. Annual production of yarn for market (4's, 6½'s, 2/10's and 12½'s) is 2,500 bales, weighing 1,000,000 lbs., of cloth (long cloth, leopard cloth, dhotees, shirtings, etc.), 7,200 bales, weighing approximately 2,700,000 lbs.

**Premises**—The Moon Mills are situated at New Sewri Road, Bombay, and have a floor space of 238,330 sq. ft. The equipment is of the latest type by standard makers, and the factory employs 1,200 operatives.

**Directorate**—Messrs A. J. Raymond (chairman), F. R. Wadia, F. E. Dinshaw, C. P. Wadia and N. P. Whaddia.

**Agents**—Messrs P. A. Hormarjee & Co. (present partners, Messrs N. P. Whaddia and C. P. Wadia).

**Bankers**—The Hongkong and Shanghai Banking Corporation, The Bank of India, Ltd.

#### THE SIR SHAPURJI BROACHA MILLS, LTD. (Mathradas Goculdas & Co., Managing Agents).

**Inception**—This company was formed in 1916 to take over the Empress No. 1 Mills, the Empress No. 2 Mills, the Connaught Mills, the Imperial Mills and the James Greaves Mills.

**Development**—The book value of the company's fixed assets in 1917 was Rs 51,94,539, as against the present valuation, excluding the Woollen Mills, of Rs 84,91,868, while in

ten years the company has distributed Rs 96,05,242 to its shareholders in dividends.

**Capital**—The original authorised capital was Rs 50,00,000, divided into 50,000 ordinary shares of Rs 100 each. The present paid up capital is Rs 74,93,600, divided into 49,995 ordinary shares of Rs 100 each and 24,941 7 per cent cumulative preference shares of Rs 100 each.

**Activities**—The annual production amounts to 1,54,20,000 lbs. of yarn and 24,60,000 lbs. of cloth. The cotton yarns range from 2's to 50's counts, and find a very favourable market in China, Syria, Egypt and the Levant. The mill caters for the very considerable local demand and also manufactures grey, dyed, bleached and coloured piecegoods, which are in demand in all the chief markets of India.

**Factory**—The spinning mills (manager, W. Taylor) are among the largest in Bombay; the three modern, electrically driven, spinning mills and one weaving mill at Delisle Road, Parel, consisting of nearly 100,000 spindles and 653 looms with the necessary preparatory machinery, and employing daily 5,000 men and women.

**Woollen Mills**—The company has lately taken over the concern known as The Indian Woollen Mills at Mahalaxmi. This is one of the most modern mills in India, equipped with 7,020 spindles and 150 looms, producing 1,600,000 lbs. of yarn and 1,000,000 lbs. of cloth yearly. Its products are well known and in great demand all over India.

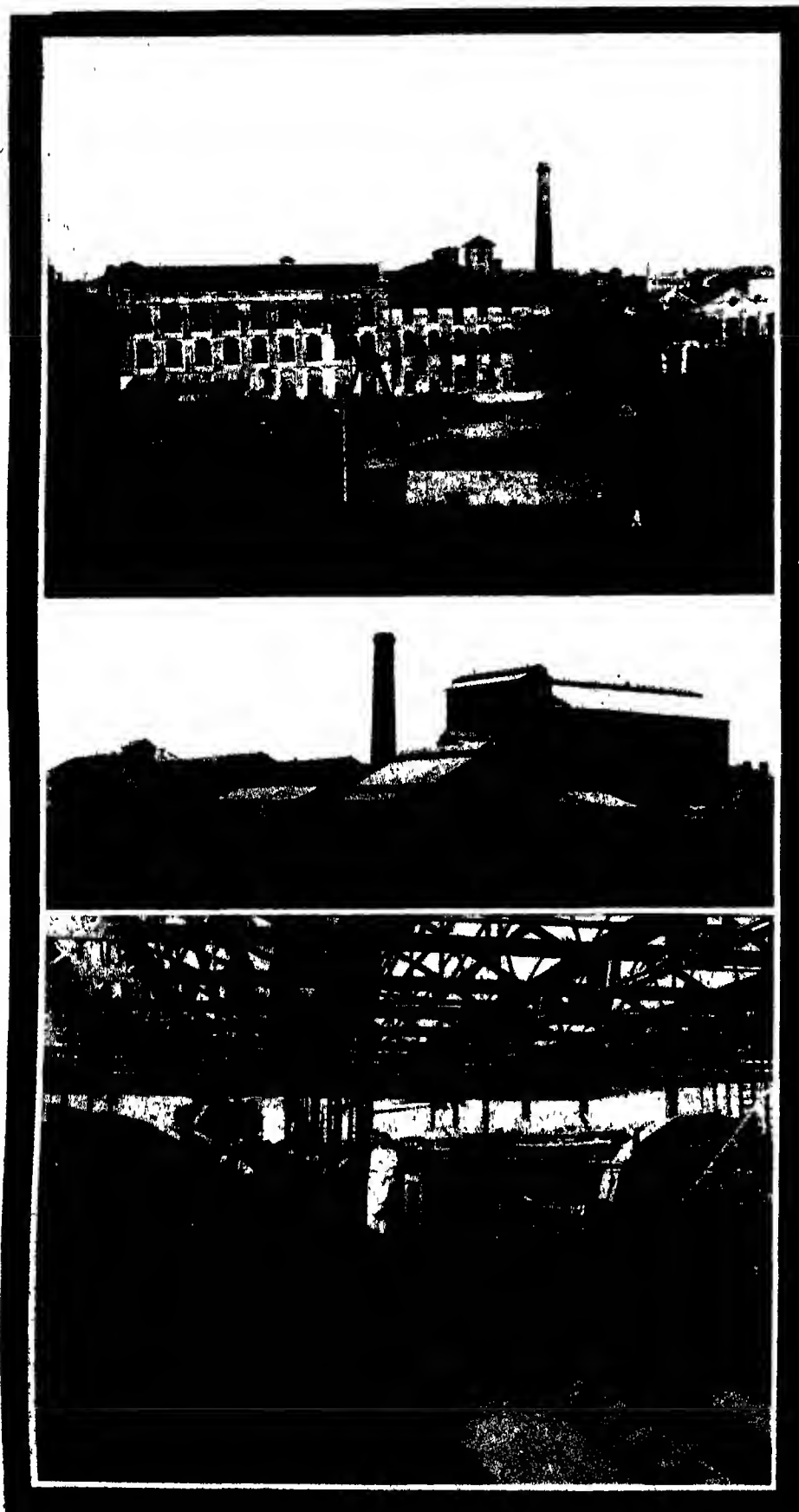
**Directorate**—Mr F. E. Dinshaw (chairman), the Hon. Sir Phiroze C. Sethna, and Messrs A. J. Raymond and Ambalal Sarabhai, the same directors as those of the company described in the preceding notice, with the addition of Messrs F. G. Travers, Haji Goolam Mahomed Ajam and Albert Raymond.

**Management**—The managing agents are Messrs Mathradas Goculdas & Co., who are associated in the same offices with Messrs Goculdas Madhowji & Co., managing agents for The Madhowji Dharamsi Manufacturing Co., Ltd.

**Offices**—Commissariat Building, Hornby Road, Fort, Bombay.

**Bankers**—The Imperial Bank of India, the National Bank of India, Ltd., the Central Bank of India, Ltd., and others.

(See illustration p. 195.)



MORARJEE GOCULDAS & CO., Bombay.

1. The Morarjee Goculdass Spinning and Weaving Co. Ltd.'s mill at Parel, managed by the first-named Company.
2. General view of the Dharamsi Morarji Chemical Co. Ltd.'s Factory.
3. Dharamsi Morarji Woollen Mills Ltd., showing some of the modern machinery and safety devices installed.

**MORARJEE GOCULDAS SPINNING AND WEAVING CO., LTD. (Morarjee Goculdass & Co., Secretaries and Agents).**

**Inception.**—This business was founded on August 10, 1871, to manufacture yarn and cloth for the Indian markets.

**Capital.**—The authorised capital is Rs 12,00,000, while the issued and paid-up capital is Rs 11,50,000.

**Factory.**—The factory, situated at Supari-bag Road, Parel, Bombay, employs 4,500 operatives. The total power generated is 4,300 E S P.

**Directorate.**—Mr Narottam Morarji, the Hon Mr Ratansi D Morarji, Messrs F E Dinshaw, Trikandass D Morarji, T R N Cama, Madhavji D Morarji, Ambalal Sarabhai, and A J Raymond.

**Management.**—Messrs Morarjee Goculdass & Co.

**Offices.**—Sudama House, 31, Sprott Road, Ballard Estate (cables "Banyantree," Bombay) Codes A B C 5th Edition, Bentley's, Western Union, Liebert's.

**Bankers.**—The Imperial Bank of India, The Central Bank of India, Ltd, The National Bank of India, Ltd, The Eastern Bank Ltd, The Allahabad Bank, Ltd, and the P & O Banking Corporation.

**THE DHARAMSI MORARJI WOOLLEN MILLS, LTD. (Dharamsi Morarji & Co., Agents).**

**Inception.**—Messrs Dharamsi Morarji & Co promoted this soft goods manufacturing company, which was incorporated and registered on September 29, 1919, under the Indian Companies Act.

**Capital.**—The authorised capital is Rs 100,00,000, of which Rs 79,39,700 is issued and subscribed.

**Activities.** The manufactures include worsted hosiery and serge, woollen goods, hosiery cloth, leather cloths, oil cloths and bookbinding cloths, the goods being sold on the markets of India and Burma. The firm is on the list of contractors for the Government and the Indian Railways.

**Mill.**—Situated at Ambarnath, near Kalvan, G I P Railway, the mill is run by electrical power and employs 200 operatives.

**Directors.**—The Hon Mr Ratansi D Morarji (chairman), Sir Hormusji Cawasji Dinshaw, Bt, Messrs F E Dinshaw, Trikandass D Morarji and Ambalal Sarabhai.

**Management.**—Messrs Dharamsi Morarji & Co.

**Offices.**—Sudama House, 31, Sprott Road, Ballard Estate, Bombay (cables "Dharmajaya," Bombay).

**Bankers.**—The Central Bank of India, Ltd, The Bank of India, Ltd, The P & O Banking Corporation, Ltd.

**THE DHARAMSI MORARJI CHEMICAL CO., LTD. (Dharamsi Morarji & Co., Agents).**

**Inception.**—This firm, for which Messrs Dharamsi Morarji & Co, as in the case of the preceding company, act as managing agents, was established on September 25, 1919.

**Capital.**—The authorised capital is Rs 50,00,000, the issued and subscribed capital being Rs 40,00,000.

**Activities.**—The firm manufactures pure acids, heavy chemicals, bonemeal, bone superphosphate and other manures for the Indian and Ceylon markets, and is on the Government and Railway lists.

**Factory.**—This is at Ambarnath and employs 270 workers; the power used is electrical.

**Directorate.**—The Hon. Mr Ratansi D. Morarji (chairman), the Hon. Sir Phiroze C.





1. Corner of Bruce Road and Tamarind Lane, Bombay, showing Bombay House, the palatial Head Offices of Messrs. Tata Sons, Ltd., and allied Companies

2. Hornby Road, Bombay, showing Commissariat Buildings, in which are situated the Offices of Messrs. Hormusjee & Co., Mathradas Goculdas & Co., and Goculdas Madhowji Sons & Co.

Sethna, Kt, O B E, Messrs. F. E. Dinshaw, Trikamlas D. Motari and Ambalal Sarabhai

**Offices.**—Sudama House, 31, Spott Road, Ballard Estate, Bombay (cables "Dharmajaya," Bombay)

**Bankers.**—The Central Bank of India, Ltd., The Bank of India, Ltd., The P & O Banking Corporation, Ltd.

#### **BIRLA BROTHERS, LIMITED.**

**Inception.**—This firm was incorporated as a private limited company in 1918 to take over the businesses of Shivanarayan Baldeo-dass in Bombay and Baldeo-dass Joogalki-shore in Calcutta, two firms of over 50 years' standing in the export and import trade.

**Development.**—The company has made considerable progress in export and import business, particularly in industries.

**Capital.**—The paid-up capital is Rs 50,00,000. The shares can be held by only Raja Baldeo-dass Birla and his descendants.

**Activities.**—In addition to large import and export operations, Messrs. Birla Bros are managing agents for a number of jute, cotton and rice mills, and control a number of subsidiary companies for brokerage and agency business.

**Exports and Imports.**—The chief lines of export are jute, jute goods, oil seeds, food grains and cotton, the principal import interests being bullion, piece goods and sugar.

**Managing Agents.**—The firm are managing agents for the Birla Jute Manufacturing Co. Ltd., whose paid-up capital is Rs 50,00,000, Kesoram Cotton Mills, Ltd., Calcutta, paid-up capital Rs 80,00,000, Jiyajeerao Cotton Mills, Ltd., Gwalior, paid-up capital Rs

30,00,000, Birla Cotton Spinning and Weaving Mills, Ltd., Delhi, paid up capital Rs 15,00,000. They also control two rice mills in Bengal.

**Subsidiary Companies.**—These include Jute & Gunny Brokers, Ltd., Calcutta, Birla Cotton Factory, Ltd., Chitpore Hydraulic Pressing Co. Ltd., and the East Indian Produce Co. Ltd., London.

**Directors.**—Messrs. J. K. Birla, R. D. Birla, G. D. Birla and B. M. Birla, sons of the Raja.

**Head Office.**—137, Canning Street, Calcutta (cables "Lucky," Calcutta). Codes Bentley's and Private.

**Branch.**—11-13 Church Gate Street, Bombay.

**Bankers.**—The Imperial Bank of India, the Central Bank of India, etc.



**BIRLA BROS. LTD., Calcutta.**

1. Preparing Room in the Birla Jute Manufacturing Co. Ltd.'s Mill.

2. Spinning Room in the same Mill.

**THE MILL STORES TRADING CO OF INDIA, LTD. (H. M. Mehta & Co., Managing Agents).**

**Inception.**—The firm of H. M. Mehta was established in Bombay in 1896, the partners being Mr. H. M. Mehta, Mr. Mangaldas G. Parekh and Mr. Essa Soomar. Within a year the newly-formed company had floated The Mill Stores Trading Co. of India, Ltd., with a capital of Rs. 1,00,000, to operate as mill stores merchants. Of that organisation H. M. Mehta & Co. still act as managing agents.

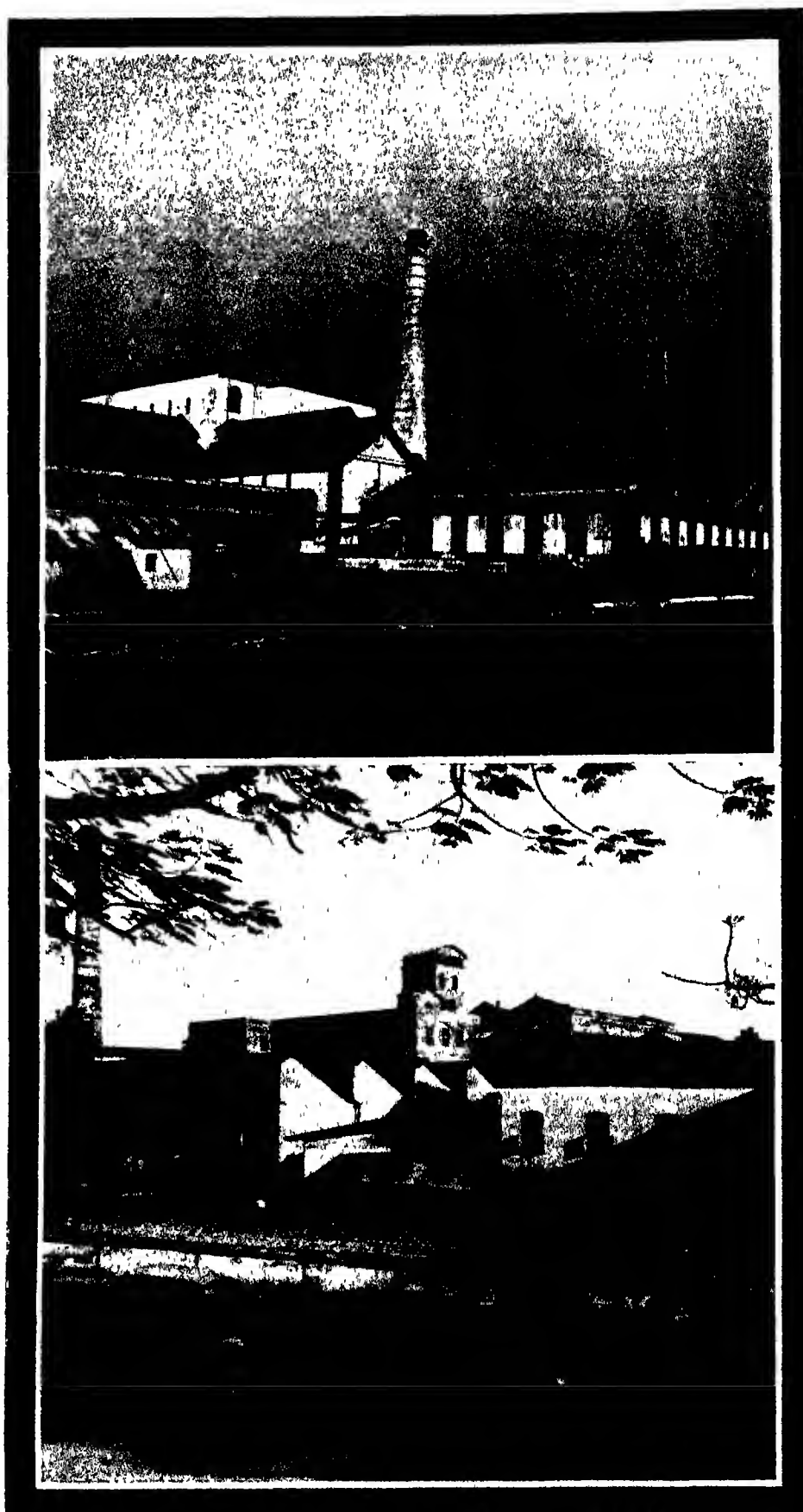
**Personal.**—The founder, Mr. Mehta, was educated at Elphinstone High School, matriculating in 1890. His first post was with the Bombay Mint at a salary of Rs. 25 per mensem, but after a year he joined the China Mills as an assistant accountant, and there acquired a thorough knowledge of the cotton mill industry. He next became a salesman for Messrs. D. R. Umrigar & Co., mill stores merchants in Bombay, leaving them in 1896, when he was 25 years old, to start his own business with the partners already mentioned. Mr. Mangaldas G. Parekh of Ahmedabad had also risen from the ranks, having been a store-keeper in one of the mills managed by Mr. Mansukhbhai Bhagoobhai, and between them they conducted the new business very efficiently.

**Development.**—The Mill Stores Trading Co. of India, Ltd., expanded rapidly, the first event of note being the successful visit paid to England in 1901 by Mr. Mehta, when he secured a number of first-class agencies for certain Lancashire manufacturers. After his return to India business continued to increase, and in 1905 the firm was able to buy the Victoria Cotton Mills, which had about 14,000 spindles, for the small sum of Rs. 2,40,000. In the first year the profits were equal to the purchase cost of the mills and were utilised to add 15,000 more spindles to the equipment. The company derived great profits from this mill, which was soon after registered as the Victoria Mills, Ltd., a private company, with a capital of Rs. 8,00,000, derived solely from profits. The mills were equipped with 31,000 spindles and 500 looms.

Mr. Mehta continued to visit England periodically, and by the end of 1907 had secured agencies for about 12 large firms in Lancashire manufacturing machinery and mill stores. The company purchased the Jubilee Mills and the Raja Goculdass Mills prior to the cotton mill boom, and made enormous profits out of these two concerns in the years 1918, 1919 and 1920. The mills were later turned into limited concerns, the present company holding almost all the capital, only a few shares being distributed among the public.

**Activities.**—The operations of The Mill Stores Trading Co. of India, Ltd., cover a wider range than the title suggests, including, under separate departments, machinery, mill stores, sundries, cotton, hessian, paints, insurance, motor cars, and electrical engineering.

**Machinery and Mills Stores.**—The company acts as sole agents for the whole of India for the following important Lancashire manufacturers: Dobson & Barlow, Ltd., spinning machinery; Hacking & Co., Ltd., looms and weaving machinery; J. H. Riley & Co., Ltd., calendars, bleaching and finishing machinery; George Saxon, Ltd., engines and gearing; S. Baldwin & Heap, Ltd., beam-dyeing plants; J. Hodgkinson & Sons, shuttles; Kay & Wilkinson, Ltd., beltings and leather goods; Wilson & Co. (Barnsley) Ltd., bobbins, shuttles, etc.; Porritts & Spencer, Ltd., roller cloth and flannels; Goodbrand & Co., Ltd., economisers and wrapping machines; Clarke



H. M. MEHTA & CO., Bombay.

1. Jubilee Mills Ltd., managed by the Company.
2. Victoria Mills Ltd., also managed by the same firm.

Sprinkler & Co., Ltd, humidifiers, Robert Barker, Ltd, hald and reeds, and James Taylor & Sons (Cleckheaton), Ltd, card clothing. The firm also represents Messrs Turner Bros, asbestos goods and packing, hair belting, etc., and Sacre & Co., sizing ingredients.

**Insurance.**—From 1905 onwards Mr Mehta began giving earnest attention to this business, and in that year the firm became chief agents for the London & Lancashire Fire Insurance Co in the Bombay Presidency. So successfully did it manage this agency that the Gresham Fire Insurance Co offered the firm its chief agency in the Presidency, an offer which was accepted. In 1916 Mr Mehta formed The Zenith Life Assurance Co., Ltd, with a small capital of Rs 1,00,000, the shares being subscribed within a few hours. This company is now progressing steadily, and everything points to its becoming one of the largest of the kind. In 1919 Mr Mehta conceived the idea of floating a fire insurance company in Bombay itself, and accordingly founded the British India General Insurance Co., Ltd, with a capital of Rs 1 crore. Within four days this amount was over-subscribed to the extent of more than six crores. The company has made large strides, and is now one of the premier insurance concerns in India.

**Cotton.** In 1911 the firm extended its operations to include cotton, and to-day ranks among the big Bombay cotton stockholders and shippers, exporting cotton to Liverpool, the Continent and America. In 1919 Mr Mehta commenced trading with East Africa, and in 1921 established a business at Kampala. In less than five years this trade has expanded so much that the company now owns five ginning factories and one press factory, besides doing a large business in long-stapled East African cotton.

**Motor Cars.**—Mr Mehta next turned his attention to the motor car business, and in 1918 established the enterprise of L. R. Pratt (Bombay), Ltd, followed a year later by M. T. Limited, the latter in partnership with Sir Victor Sassoon. Both these firms do a large business and control the sale of the well-known Buick cars all over Bombay and Calcutta, in addition to representing such other famous cars as Lancia, Standard, Cadillac, etc.

**Electrical Engineering.**—This side of the business was formed when the firm bought the business of Crompton's, Bombay, dealers in all electrical goods and machinery. Mr Mehta obtained licenses from the Bombay Government for the electrification of Poona, Ahmedabad and Karachi. He undertook the huge Poona scheme himself, but sold the other two licenses. For the Poona scheme the Poona Electric Supply Co. was formed with a capital of Rs 10,00,000 in 1919, but to such an extent has the company's business increased that a fresh issue of Rs 8,00,000 debentures was made to secure further capital. The company is progressing steadily, increasing its business and bringing in good returns. In 1920 Mr Mehta, in conjunction with others, electrified the town of Navsari, forming the Navsari Electric Supply Co., Ltd., for the purpose.

**Branches.**—Ahmedabad, Calcutta, Kampala (East Africa) and Bolton, Lancashire.

**Managing Agents.**—H. M. Mehta & Co.

**Offices.**—123 Esplanade Road, Fort, Bombay.

**Cables.**—"Mulberry," Bombay, Ahmedabad and Bolton; "Exemplary," Kampala.



AMRSEY DAMODER, Bombay

1. Buying Room at Sewri

2. Firm's Cotton Ginning and Pressing Factory at Akola 3. View of the Cotton Godown at Sewri

**AMERSEY DAMODER; MADHAVDAS AMERSEY & CO.; AMERSEY & SONS.**

**Inception.**—The original firm was founded nearly 70 years ago by Amersey Damoder, who commenced operations as a cotton commission agent and banker, up-country cotton growers consigning their crops to him for sale on their behalf.

**Development.** About the year 1880 Mr Madhavdas Amersey, son of the founder, joined the firm, and further extended the business by establishing ginning and pressing factories in the cotton districts, also by obtaining agencies from the principal Bombay millers and other buyers to purchase on their behalf up-country. Finally, about 1907 the firm started exporting cotton to China, Japan and Europe, and since then has continued to expand this side of the business.

**Activities.**—The company deals exclusively in cotton, acting as commission agents, brokers and exporters.

**Partners.**—These are Messrs Haridas Madhavdas Amersey, Manmohandas Madhavdas Amersey, and Nandlal Madhavdas Amersey, three brothers, who carry on the business under the names and styles of Amersey

Damoder, Madhavdas Amersey & Co. and Amersey & Sons. Mr Haridas Madhavdas Amersey is at present the acting chairman and vice-chairman of the East Indian Cotton Association, Ltd., which is the governing institution for the cotton industry in India and operates under a charter from the Government of Bombay. Mr Manmohandas Madhavdas Amersey has often visited China, Japan, America and Europe in the interests of the firm.

**Offices.** Messrs Amersey Damoder, 106, Bhuleshwar Road, Bombay (cables "Mayoralty"), Madhavdas Amersey & Co. Oriental Buildings, Hornby Road, Bombay (cables "Warbler"), Amersey & Sons, Sudama House, 31, Sprott Road, Ballard Estate, Bombay (cables "Amersons"). The firms have the usual purchase rooms and godown accommodation at the Cotton Depot at Sewri, besides buying offices in most of the cotton-growing districts in India, and ginning and pressing factories in the prominent cotton centres.

**Codes.**—A B C 5th Ed and Parker's **Bankers.**—Bank of India, Ltd, Yokohama Specie Bank, National Bank of India, Imperial Bank of India, and others.

**CURUMSEY DAMJEE & SONS.**

**Inception.**—Established about 1870, this firm acted as *muccadums* (representatives) to Messrs. Greaves Cotton & Co. and their Cotton Mills, the Imperial Bank of India, the French Bank, the Chartered Bank, the Imperial Bank of Persia, the Bombay Port Trust, the Customs Department, the P & O and the British India Steam Navigation Companies, and Messrs Yokohama Kito Ltd. Within recent years the firm has given up the last five of these agencies.

**Development.**—In 1919 a sister company, Messrs. L. K. Vusonjee & Co., was formed to operate as insurance agents and cotton merchants, and in 1923 the firm opened up a cotton export department. Messrs Curumsey Damjee & Sons are now members of the East India Cotton Association, as well as associate members of the Liverpool Cotton Association, Ltd.

**Activities.**—About 50,000 to 60,000 bales of cotton are handled yearly, mostly for export to Japan, China and the Continent of Europe. The company has its own purchasing offices and godowns at Sewri, Bombay, and at Karachi, whilst agents established in Madras complete its facilities for direct shipments from these three great ports.

**Overseas Representatives.**—The company's agents abroad are: Osaka Hibiya Trading Co., Ltd., and A. Cameron & Co., Ltd., Shanghai; Shroff Sons & Co. and A. Cameron & Co., Ltd., Genoa; R. & F. Cevesco, Lille; Francois Faguet, and Liverpool Gruning & Co.

**Partners.**—Messrs Vusonjee Curumsey, Kallianjee Curumsey, Lowjee Meghjee, Deo-jee Jeewandas (representing Seth Jeewandas Vallabhdas & Co.), Nilkanth Ishwardas Mashruwala (representing Ishwardas & Co.), and Mooljee Vusonjee.

**Branches.**—Karachi, Jalna, Broach, Hinganghat, Guntur, and all important cotton centres.

**Offices.**—Sohrab House, Hornby Road, Fort, Bombay. Cables "Noventa," Bombay, also "Dharmataj," "Nyalkaran," "Daring" and other special addresses. Codes: Bentley's and A.B.C. 5th and 6th Editions.

**Bankers.**—The French Bank, The Imperial Bank of India, The P & O. Banking Corporation, Ltd., The Chartered Bank, and the Yokohama Specie Bank, Ltd.

**THE MADHOWJI DHARAMSI MANUFACTURING CO., LTD. (Goculdas Madhowji Sons & Co., Managing Agents).**

**Inception.**—Established in 1893 by Mr. Goculdas Madhowji, this company has made consistent progress ever since its foundation.

**Development.**—In 1894 the book value of the company's fixed assets was Rs.9,41,498. The present valuation is Rs.73,71,540, while a reserve fund of over Rs 38,00,000 has been built up and a crore of rupees distributed to shareholders in dividends.

**Capital.**—The original capital of the concern was Rs.12,00,000, in 2,400 shares of Rs 500 each. The present authorised capital is Rs 21,75,000, divided into 15,000 ordinary shares of Rs.100 each and 2,700 6 per cent. cumulative preference shares of Rs.250 each. The paid up capital is Rs.20,23,750, divided into 13,500 ordinary shares and 2,700 preference shares.

**Activities.**—The firm produces 402,060 lbs. of yarn and 242,884 lbs. of cloth per month, besides manufacturing artificial silk shirtings, malmals, saris, etc., for which there is a great demand.

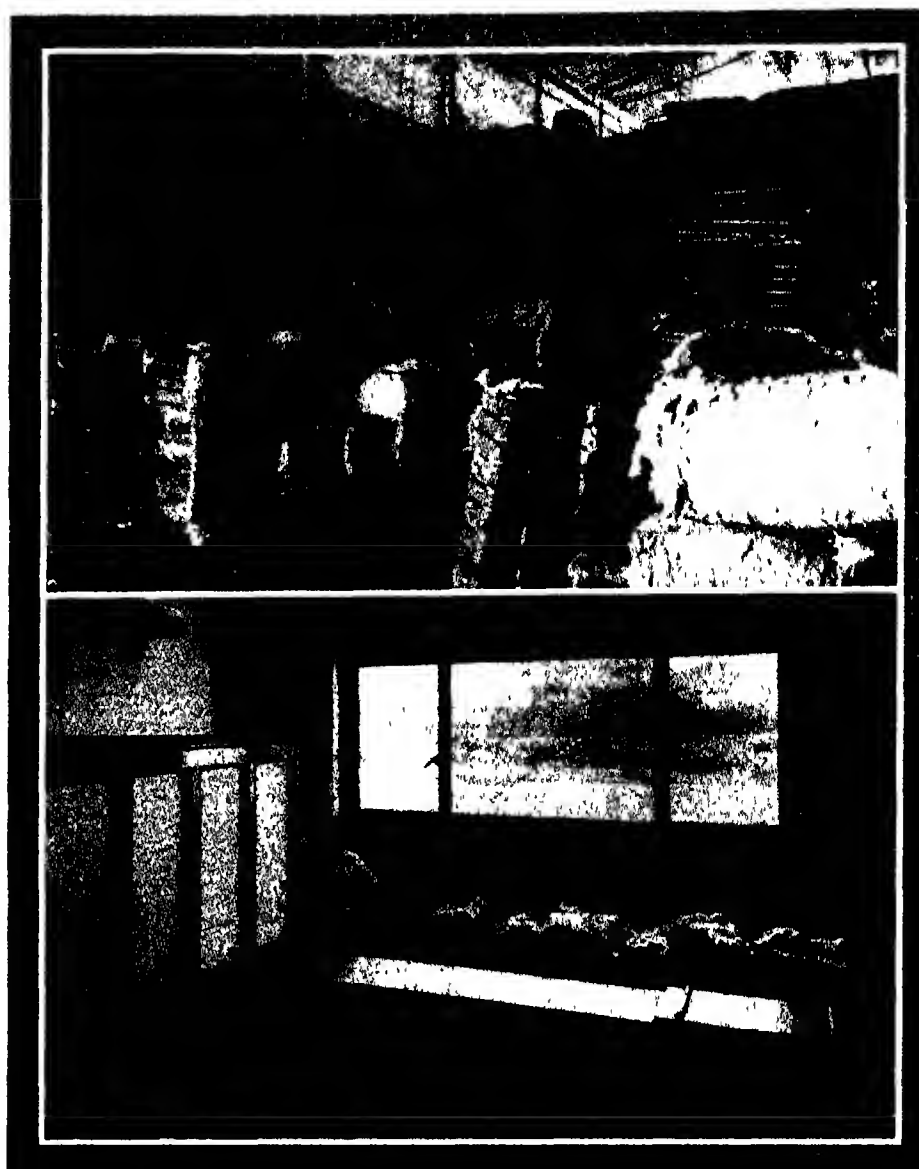
**Factory.**—The spinning and weaving mill at Tardeo, Bombay (manager, D. A. Tata), is thoroughly modern. Equipped with 903

looms, 37,812 spindles and the necessary preparatory machinery, it is driven by electrical force of 2,614 h.p. There is a waste manufacturing plant, also a fully equipped bleaching, dyeing, and finishing plant capable of doing 5,00,000 lbs per month. The mills employ 1,861 men and 507 women daily, and produce cotton yarns up to 50's counts, grey, dyed and bleached piecegoods of all kinds. The company also has a cotton ginning and pressing factory of 38 gins and one press at Tiruppur in the Madras Presidency.

**Property.**—The firm owns several workmen's chawls, stables and other buildings in Bombay.

**Directorate.**—Mr. F. E. Dinshaw (chairman), the Hon. Sir Phiroze C. Sethna, and Messrs. A. J. Raymond and Ambalal Sarabhai.

**Managing Agents.**—The company's affairs are managed by Messrs. Goculdas Madhowji Sons & Co., in which firm Messrs. F. E. Dinshaw and Haji Goolam Mahomed Ajam are partners.



CURUMSEY DAMJEE SONS. & L. K. VUSONJEE & CO., Bombay.

1. View of the Company's Cotton Godown.
2. Portion of the Firm's Purchase Room at the new Cotton Depôt, Sewri.

**Offices.**—Commissariat Building, Hornby Road, Fort, Bombay.

**Bankers.**—The Imperial Bank of India, the National Bank of India, Ltd., the Central Bank of India, Ltd., and others.  
(See illustration p 194.)

**FINLAY, JAMES, & CO. LTD.**—Post Fort, Bombay No. 1. Incorporated in Great Britain. Merchants and agents for Finlay Mills, Ltd., Bombay, Swan Mills, Ltd., Bombay, Gold Mohur Mills, Ltd., Clan Line Steamers, Ltd.; Ellerman's Wilson Line, Ltd., Central Provinces Manganese Ore Co. Ltd., London & Provincial Marine & General Insurance Co. Ltd.; National Insurance Co. of Great Britain, Ltd., Kobe Marine Transport & Fire Insurance Co. Ltd., Insurance Company of North America, Mitsubishi Marine & Fire Insurance Co. Ltd., Tokyo, Sun Insurance Office; Tokio Marine & Fire Insurance Co. Ltd.; Automobile Insurance Co. of Hartford; Actona Insurance Co. Hartford, Conn.; Osaka Marine & Fire Insurance Co. Ltd.; Providence Washington Insurance Co.; Platt, Fuller & Co.; Talbot, Bird & Co. Cables: "Mercator," Bombay.

# COMMERCE

## EXPORTS AND IMPORTS

### GENERAL DATA

**I**N general, India enjoys a considerable surplus of exports over imports. Whereas the average credit balance of merchandise in pre War years was 78 crores of rupees, this rose at the time of the post-Armistice trading boom to Rs 129 crores. During the trade slump there was a debit balance of 20 crores of rupees, but India's recovery from that slump was shown when in 1922-23 the debit was converted into a credit balance of Rs 90 crores. The total visible balance of trade as measured by statistics of merchandise, treasure, encased rupee paper and the like during 1924 was in India's favour to the extent of Rs 80 crores, a figure which rose to Rs 101 crores in 1925, as compared with a debit balance of Rs 33 crores in 1922. The total visible balance of trade in the fiscal year 1925-26 showed a credit of Rs 109 crores.

This evidence of expanding trade is the more significant because it was not until the 20th century was ushered in that the economic situation in India was stabilised sufficiently to make recent progress possible. Previously, famine and plague had been frequent, but when British organisation mastered these evils the times were ripe for a big effort in the direction of trade expansion and industrialisation. The World War did much for the latter movement by forcing India to improvise substitutes for the stores and manufacturing materials which could not reach her from overseas owing to the shortage of shipping. As for trade, the heavy sales of Indian produce resulted in the remarkable boom which followed the Armistice. The immediate consequences of this were far from satisfactory. After the boom came a slump, during which Indian dealers repudiated many contracts, throwing great quantities of stock back upon shippers. From that slump India may be said definitely to have recovered, and the way is open for the steady development of her export and import trade, a progress which, apparently, only political differences can disturb.

During the fiscal year 1925-26 a good monsoon enabled India to have another exportable surplus of raw materials and to sustain the favourable trade balance. The wholesale price levels of that country's three best customers, the United Kingdom, Japan and the United States, were relatively stable. Of the utmost importance to India's foreign trade has been the stabilisation of most European currencies in relation to gold. In 1925-26 that general movement continued; Great Britain again adopted the gold standard practically in April 1925, and towards the end of that year the Royal Commission on Indian Currency and Finance began to function. The Commission recommends for application to India (1) the adoption of a gold bullion standard; (2) the institution of a central bank of issue; (3) the stabilisation of the rupee at one shilling and sixpence, a rate

which has been operative for some considerable time.

The chief features of India's trade during the three years 1923, 1924 and 1925 were good harvests, with a consequent increase of the exportable surplus, satisfactory prices for staple commodities, such as jute, cotton and tea, a restricted demand for imported manufactured goods, due to falling prices, which prevents the Indian dealer from laying in large stocks, and fluctuations in the course of the rupee-sterling exchange which tended irregularly upwards. Thus, while on the whole Indian goods were sold in increasing quantities and at favourable rates in the world's markets during the three years, foreign goods declined in value. But the effect of a rising exchange was to discount (to the extent of the rise) the rupee profits on Indian exports, and to emphasise in rupees the fall in the values of imports.

**BALANCE OF TRADE.**—Only once since 1883 (taking the pre War averages of five years) has the trade of India shown an adverse balance—in 1921-22, when the post-War slump was at its worst and the total visible balance of trade was 36.06 lakhs of rupees. The following table shows the visible balance of trade in merchandise and treasure during the calendar year 1925, as compared with the preceding year. The sign plus (+) signifies net export and minus (—) net import.

	1924 R (LAKHS)	1925 R (LAKHS)
Exports of Indian merchandise (private)	+369.05	+395.95
Re-exports of foreign merchandise (private)	+13.65	+10.99
Imports of foreign merchandise (private)	—238.13	—224.42
Balance of trade in merchandise (private)	+144.57	+182.52
Gold (private)	—45.21	—60.83
Silver (private)	—18.75	20.23
Currency notes (private)	—58	—9
Balance of transactions in treasure (private)	64.54	—81.15
Total visible balance of trade	+80.03	+101.37

Statistics for the fiscal year 1925-26 with regard to the balance of trade of India yielded the following particulars (the figures signifying lakhs of rupees). Exports of Indian merchandise (private), +374.84, re-exports of foreign merchandise (private), +10.49, imports of foreign merchandise (private), —224.20; balance of trade in merchandise (private), +161.13, gold (private), —34.85, silver (private), —17.15, currency notes (private), +12, balance of transactions in treasure (private), —51.88, and the total visible balance of trade, +109.25.

**COMMERCIAL ORGANISATIONS.**—The principal non-official organisations connected with trade in India are the Chambers of Commerce at Calcutta, Bombay, Madras, Rangoon, Karachi and other important

### COMMODITIES

centres with a membership, except in Bombay preponderatingly European, though open to Indians also. Closely connected with these and not infrequently employing the same secretarial staff, are the associations representing particular branches of trade, such as jute mills, cotton mills, etc. The Trades Associations representing the retail traders in the principal cities are scarcely less important bodies, and there are other associations representing general interests of more recent growth, such as the Marwari Association in Calcutta, the South Indian Chamber of Commerce in Madras and the Indian Merchants' Chamber and Bureau in Bombay, which are exclusively Indian in membership. These bodies, though they differ from time to time on questions of policy, are in no sense antagonistic to the older associations.

The membership of most of these bodies is confined to the province or city where their headquarters are situated, but they maintain close touch with similar organisations at other trade centres. In the case of jute, which is grown only in Bengal, the associations connected with it are representative of the entire industry.

**ASSOCIATED CHAMBERS OF COMMERCE OF INDIA AND CEYLON.**—This organisation was constituted in 1920 and consists of the following fifteen Chambers: Bengal, Bombay, Burma, Calicut, Ceylon, Chittagong, Cocanada, Cochin, Karachi, Madras, Narayanganj, Punjab, Upper India, Tellicherry and Tuticorin. The principal work of the Association is the organising of an annual meeting of its members, at which commercial and industrial questions are discussed and suitable resolutions adopted. The articles of association provide for the election of a Chamber by whom a President for the year is nominated, and also of two Chambers, each of whom nominates a Vice-President for the year. A Secretary is also appointed yearly by the annual meeting.

#### BENGAL CHAMBER OF COMMERCE

—This is the oldest association of its kind in India, having been founded in 1834 and reconstituted in 1851. The business of the Chamber is transacted in the handsome Royal Exchange Hall in Calcutta. The institution at present consists of over 250 members, and may fairly claim to be representative of the European trade, commerce and manufactures of the Presidency. In addition to the work of the body proper, as represented by a President, Vice-President and Committee of seven, there are no fewer than 22 commercial associations recognised by and affiliated to the Chamber.

The Bengal Chamber of Commerce enjoys the privilege of electing a representative to the Council of State and six representatives to the Bengal Legislative Council, as well as



representatives to the Improvement Trust of Calcutta. A very important branch of its work is the weighing and measuring of most of the principal commodities exported from the city just named. For this work the Chamber has a special department—the Licensed Measurers' Department—which has been in existence for more than 40 years. It maintains a staff of about 110 measuring officers who measure and weigh goods chiefly in course of shipment. The measurements so recorded are used by the steamship companies as the basis upon which to calculate freights charged to exporters, and the weights are required chiefly by exporters for contract purposes.

**BOMBAY CHAMBER OF COMMERCE**—This organisation was founded in 1836. Its affairs are controlled by a Chairman, a Vice-Chairman and a Committee of seven. The Chamber has given particular attention to the publication of statistical returns, and enjoys special facilities from the Customs House for their preparation. The daily issues include an arrival return and trade return, details of all import and export manifests are published twice a week and current quotations weekly, while the figures of exports and imports by sea, and of movements of piece goods and yarn by rail are issued monthly. A Measurement Department is responsible for the measurement of exports in the docks prior to loading, and, as elsewhere, one of the most important duties performed by the Chamber is that of arbitration in commercial disputes. The institution elects a representative to the Council of State and two to the Bombay Legislative Council. It has one seat on the Bombay Corporation, and five and one on the Port Trust and Improvement Trust respectively.

**EAST INDIA COTTON ASSOCIATION, LIMITED**—See special article on "Cotton."

**INDIAN CENTRAL COTTON COMMITTEE**—See special article on "Cotton."

**INDIAN JUTE MILLS ASSOCIATION**—See special article on "Jute."

**INDIAN LAC ASSOCIATION**—See special article on "Shellac."

**INDIAN MERCHANTS' CHAMBER AND BUREAU**—This Chamber and Bureau, Bombay, was established in the year 1907 to promote and protect the trade, manufactures and commerce of India, and to secure organised action on all subjects relating to the interests of the Indian business community directly and indirectly. Eleven leading Commercial Associations of Bombay are affiliated to the Chamber, which is thus thoroughly representative of Indian commercial interests. The Chamber elects a representative each to the Indian Legislative Assembly, the Bombay Legislative Assembly and the Bombay Legislative Council, besides electing five representatives to the Bombay Port Trust and one to the Bombay Municipal Corporation. It has recently taken up the work of arbitration, and publishes quarterly an Anglo-Gujarati journal giving commercial and statistical information.

**INDIAN MINING ASSOCIATION**—See section on "Mines and Minerals."

**INDIAN MINING FEDERATION**—See section on "Mines and Minerals."

**INDIAN TEA ASSOCIATION**—See special article on "Tea."

**KARACHI CHAMBER OF COMMERCE**—Founded in 1860 on lines similar

to those of the Bombay Chamber, the Karachi Chamber of Commerce has for its objects the promotion and protection of the general mercantile interests of the province of Sind, to communicate with the public authorities, with similar associations in other places and with individuals on all subjects of general mercantile interest, to collect and classify commercial information, and to receive and decide references on matters of usage and custom in dispute. Its affairs are managed by a Chairman, Vice-Chairman and Committee of eight, elected annually. The Chamber elects a representative to the Bombay Legislative Council and three representatives to the Karachi Port Trust. There are more than 80 members on the roll.

**MADRAS CHAMBER OF COMMERCE**—This Chamber was founded in 1836 with a view to watch and protect the interests of trade in the Presidency, and it has carried out a great deal of most useful work. The number of members at present exceeds sixty, including the leading firms in Madras, the principal banks and the two railways serving the Presidency. The South Coromandel, Cochin, Calicut and Cocanada Chambers of Commerce are affiliated to the Madras Chamber of Commerce, which is itself affiliated to the British Imperial Council of Commerce, London, and is also an original member of the Associated Chambers of Commerce of India and Ceylon. The Madras Trades Association and the United Planters' Association of Southern India are represented on the Chamber by honorary members, and Government officials interested in trade and commerce are also invited to join the institution from time to time in a similar capacity.

The Chamber has two seats on the Madras Legislative Council, and in addition three seats on the Corporation of Madras, as also four seats on the Madras Port Trust Board. It is also represented on the Advisory Committees of the South Indian and Madras and Southern Mahratta Railways, the Madras Provincial Cotton Committee, the Provincial State Aid to Industries Board and the Indian Tea Cess Committee.

**PUNJAB CHAMBER OF COMMERCE**—This Chamber of Commerce, Delhi (founded in 1905), with local committees at Amritsar and Lahore, is concerned with the trade and manufactures of the North-West Frontier Province and Kashmir, as well as of the Punjab. The Chamber shares with the Punjab Trades Association the seat allotted to the representation of Commerce in the Punjab Legislative Council.

**SOUTH INDIAN CHAMBER OF COMMERCE**—This Chamber (founded in 1909), with a membership exclusively Indian, claims to represent Indian trade, commerce, industries and banking in the city of Madras and the adjoining districts of the Presidency. Its objects are identical with those of similar bodies, and its affairs are managed by an Executive Committee of twenty-four members, a President and two Vice-Presidents. There are two classes of members—resident and non resident. The right of electing two members to the Madras Port Trust was accorded to the Chamber in 1915, and it also enjoys the privilege of electing two councillors to the Madras Corporation. It likewise elects a representative to the Madras Legislative Council, and one to the Provincial State Aid to Industries Board. The Chamber registers trade marks, surveys goods and undertakes arbitration of disputes. There are about 200 members.

**UPPER INDIA CHAMBER OF COMMERCE**—This important Chamber, having its headquarters in Cawnpore, was

inaugurated in 1888 and began with a membership of 22, now increased to over 80. Among the members are included all the railways serving these provinces, the principal banks, and, save for a few small ginning, flour and similar mills, all the power driven industries of the United Provinces and some in the adjoining provinces. The major portion of the joint stock capital invested in Agra and Oudh is represented on the Chamber, and in addition there is a considerable individual membership. It is affiliated to the British Imperial Council of Commerce, to the International Federation of Master Cotton Spinners and Manufacturers' Associations, and returns two members to the United Provinces Legislative Council. It is also represented on the Provincial Board of Industries, the Provincial Board of Agriculture, the Cawnpore Municipal Board, the Central and Provincial Cotton Committees, the Provincial Board of Loan Commissioners and the Advisory Committees of the various railways of the Province. The Chamber maintains a tribunal of arbitration and a commercial survey which are freely availed of.

**UNITED PROVINCES CHAMBER OF COMMERCE**—This Chamber (founded in 1914) is purely Indian in membership, and is intended to protect the interests of Indians engaged in trade or industry in Agra and Oudh.

#### COMMERCIAL PRACTICE AND LAW.—

The development of trade in India has been largely assisted by the removal of many hindrances which existed prior to the stabilisation of British rule. Among these may be mentioned the practical non-existence of roads, the high cost of transit to and from Europe, the incidence of heavy inland Customs duties, and the repeated difficulties with the exchange. In those days the customs of the people were adjusted to such conditions as prevailed, the great mass being agriculturists, with wants of a primitive nature, easily met in most cases by the produce of their own land or the crude manufactures of village artisans. The construction of roads, and later of railways, has rendered possible an enormous development, but a long period must still pass before the habits of the people will change sufficiently to allow them to take full advantage of the facilities thus afforded.

Broadly speaking, the greater part of the internal trade remains in the hands of Indians, but the European firms which export agricultural produce have extended their agencies. Almost every village has at least one resident trader, who combines the functions of money-lender, grain-merchant and cloth-seller. Markets are held at convenient centres on fixed days each week, and at many of the great religious fairs trade is by no means the least important object of the crowds of pilgrims attending. A large proportion of the surplus produce is handed over to the village dealer, while some is sold in the markets and the rest to itinerant buyers. Small quantities are thus brought to the larger towns and railways, and despatched to the ports and other centres of commerce. This process of collection is complicated and hampered by an unnecessary number of middle-men. Imported merchandise is distributed by the same cumbrous machinery, working in the reverse direction. The growth or decay of towns has been largely affected by changes in trade, the chief factors being the presence or absence of railway communication. In the tracts where agricultural produce is available for export, bazars spring up at every railway station and rapidly develop into thriving



towns, while historic cities, left a few miles on either side, dwindle and lose their importance.

**BUSINESS NAMES (REGISTRATION OF)**—The Calcutta Trade Association has recently been active in moving for the compulsory registration of business names in India, for which there is at present no provision in law. The object of the proposed legislation will be two-fold, viz. to identify alien interest and by compelling disclosure of assumed names to facilitate, by rendering more precise, commercial transactions. Action would not be aimed at Indians trading under assumed European names, though disclosure of real names would be desirable in the case of Europeans trading under assumed names. Difficulties are likely to arise in the enactment of any measure relating to business names owing to the joint family system prevalent in India. The Indian Industrial Commission in the course of its sittings examined the question, but the evidence placed before it did not justify it in making definite recommendations, and the Government of India, as in the case of registration of partnerships, has not yet been disposed to legislate.

**MERCHANDISE MARKS**—Importers into India should make themselves acquainted with the law and regulations relating to merchandise marks, complete information as to which is contained in the "Merchandise Marks Annual," published under the authority of the Government of India. Though there is no compulsory registration of marks, there are many infringements or offences under the Act of 1880, which may be conveniently classified under four heads, viz. (1) counterfeit trade marks, (2) trade descriptions that are false in respect of the country of origin, (3) trade descriptions that are false in other respects, and (4) lengths not properly stamped on piece goods. The last quoted infringement is an exception to the general rule, for the Act does not require that other descriptions of goods should be stamped or marked, though it requires that when goods are so marked the marks must be a correct description. (See also later, "Trade Marks.")

**PARTNERSHIPS (REGISTRATION OF)**—The question whether the registration of business partnerships should be made compulsory has been frequently considered during the last half century. The absence of any such measure hampers materially the development of business between Indian firms and foreign constituents, and also restricts the grant of financial accommodation by European banks. In 1908 the Bengal and Bombay Chambers of Commerce prepared draft bills on the subject, but their proposals being irreconcilable the Government of India was not disposed to accept either as the basis for legislation. The Indian Industrial Commission recommended that the Government of India should take an early opportunity of re-examining the whole question, and the conference of Associated Chambers of Commerce of India and Ceylon, held in January 1920, unanimously adopted a resolution favouring legislation to provide for registration of partnerships and registration of business names, but no bill has yet been introduced. The main stumbling block to a practical solution of the problem is the joint family system.

**PATENT LAW**—The law and procedure in India for the protection of inventions and registration of designs closely follows that of the United Kingdom, the only difference of importance being that, in the absence of any legal provision for the registration of trade marks, India cannot become a party

to the International Convention for the protection of industrial property, under which certain rights of priority are obtainable in other countries. The reciprocal arrangement with the United Kingdom and other parts of His Majesty's Dominions affords, however, a partial substitute.

The Indian Patents and Designs Act, 1922, is in force in British India only (that is, not in Indian States), and patents granted under it are not valid in the United Kingdom or any British Possessions, nor does this Act permit the registration of trade and property marks or names.

**TRADE MARKS**—There is no recognised registration of trade marks in India. Most of the Chambers of Commerce consider that the introduction under legislative enactment of such a system would seriously affect existing rights of user between firms in India and also between firms in India and abroad. Registration of new trade marks on payment of a fee is made by the Madras and South Indian Chambers of Commerce, and as evidence of the date on which the mark or ticket was registered, may be useful in subsequent litigation, though it conveys no legal rights. The Bombay Millowners' Association keeps a register of all trade marks in use by members, and has a special set of rules governing their registration, to which all members upon election agree to conform in view of the protection afforded by the Association to the trade marks and tickets used by them.

**TRADING SAMPLES**—On the production by a commercial traveller of a list or declaration containing a full description of every sample brought by him, officially attested by the Customs authorities of his country, examination of the samples may be limited to ascertaining that they are fully enumerated on the list produced.

The list is to be utilised in assessing the duty chargeable on the samples. A deposit of the duty is required before delivery of the samples, or alternatively a bond (with sufficient security) for the amount thereof may be accepted instead of a cash deposit.

All samples of no commercial value are entitled to free entry.

**MANAGING AGENCY SYSTEM**—When the trade monopoly of the East India Company was abolished commercial interests in Calcutta were financed by various banking firms. The distinction between banking and other commercial activities not yet having been worked out, banks took part in the buying and selling of the market. During the first quarter of the nineteenth century many companies were forced into liquidation as a consequence of the serious slump in trade which marked these years. The banks had to meet the situation. Instead of advancing the requisite money they floated public companies, relying on their own credit for finance, and before long they called themselves Managing Agents. As banking practice developed it became specialised, banks and mercantile houses in the general sense of the word became distinct, and the Managing Agencies became identified with the latter.

**ACTIVITIES AND DUTIES**—The duties of Managing Agents may be briefly summarised as follows—

- (a) The control of management.
- (b) The appointment and dismissal of staff.
- (c) The calling of directors' and shareholders' meetings.
- (d) The keeping of the company's books and the issuing of yearly and half-yearly reports, showing the company's progress and financial position.
- (e) The purchase of raw materials and the sale of the finished product.

It is difficult to draw an analogy between the activities of a firm of merchants in England and of a firm in India. In India Messrs X Y Z & Co. may control jute mills, tea gardens, flour mills, coal mines, cotton mills, oil mills, shipping lines, presses, gas factories, light railways, sugar factories, and rubber plantations, while also acting as agents for various manufacturing houses in England or elsewhere. All these separate companies and interests are housed in one office, under one name. Such conditions do not obtain in England, where specialisation and separation have been carried much further. The famous commercial houses of the middle ages offer an analogy, except that they were largely identified with banking transactions and were often called on to accept wide responsibilities for national and international finance.

**ADVANTAGES OF SYSTEM**—It is generally agreed that the Managing Agency system is the most economical way of meeting existing conditions. The interests involved must have their representatives on the spot, but if they worked independently they could not afford this. Ten or twelve selling concerns in England and twenty or thirty development concerns in India can have their interests attended to by a comparatively small staff. This method of combining a number of activities saves expense and man power, it also increases credit and efficiency. In short, the Managing Agency system is a bottle-neck through which English capital and goods come to India for wide distribution, and through which Indian goods pass for distribution to the rest of the world. [For these particulars explanatory of the managing agency system we are indebted to Mr A. H. Clark, a partner in the firm of Messrs Holmes, Wilson and Co., of Calcutta.]

**TRADING CASTES**—Before the commencement of British rule the great Banjara tribe with numerous branches bearing different names, supplied most of the carriers, but the extension of the railways has largely replaced pack animals. Almost every province has its peculiar trade castes. The Marwaris of Rajputana are, however, found almost everywhere, and in Assam they are of more importance than the natives of the province. In Bombay, the Parsis, by the boldness and extent of their operations, tread closely upon the heels of the great English houses, while Lohanas, Vanis, Bohras, Memons, Khojas and Langayats occupy different areas in the Presidency. Langayats are found also in Northern Madras and Mysore, but farther south Chettis and Komatis prevail. The traders of the Punjab are largely Khattis and members of the numerous castes included in the generic name of Bania. In Bihar and the United Provinces Baniyas take the lead, while in Bengal Brahmans and a number of lower castes share different classes of trade.

**WEIGHTS AND MEASURES**—The various systems of weights used in India combine uniformity of scale with immense variations in the weights of units. The scale used generally throughout Northern India, and less commonly in Madras and Bombay, may be thus expressed: one maund = 40 seers, one seer = 16 chittaks or 80 tolas. The actual weight of a seer varies greatly from district to district, and even from village to village, but in the standard system the tola is 180 grains Troy (the exact weight of the rupee), the seer thus weighs 2.057 lbs., and the maund 82.28 lbs. The standard is used in official reports. The name of the unit for square measurement in India generally is the *bigha*, which varies greatly in different parts of the country.

**PRICES (RETAIL).**—When calculating retail prices, the universal custom in India is to express them in terms of seers to the rupee. Thus, when prices change, what varies is not the amount of money to be paid for the same quantity, but the quantity to be obtained for the same amount of money, in other words, prices in India are quantity prices, not money prices. When the figure of quantity goes up, this of course means that the price has gone down, which is at first sight perplexing to an English reader. If it be desired to convert quantity prices from Indian into English denominations without having recourse to money prices (which would often be misleading), the following scale may be adopted—based upon the assumption that a seer is exactly 2 lbs. and that the value of the rupee remains constant at 15 4d 1 seer per rupee = (about) 3 lbs. for 2s., 2 seers per rupee = (about) 6 lbs. for 2s., and so on.

**REFORMS (PROPOSED).**—Various attempts have been made to introduce a uniform system of weights. In 1915 a Committee of Inquiry reported in favour of a uniform system based upon the 180 grain tola. The Government of India at first approved the principles of the Report, but left it to the Provincial Governments to take such action as they thought advisable to standardise dry and liquid measures of capacity within their provinces. At present any Imperial standardisation of weights is considered to be premature.

**SCALE OF WEIGHTS AND MEASURES.**—The following are the principal weights and measures at present in use, with their English equivalents—

Angul	..	= 0.75 inch
Guz, usually, 33 inches	;	also the yard
Koss	..	= 2,000 yards
Bigha (Bengal), usually	..	= 0.625 acre
Cawny (Madras)	..	= 1.33 "
Tola (rupee weight)	..	= 180 grains
Chittak	..	= 2.0571 oz
Seer, 16 chittak, or 80 tolas	..	= 2.0571 lbs
Maund, 40 seers	..	= 82.284 lbs
" (Bombay)	..	= 27.864 lbs
" (Madras)	..	= 24.68 lbs
Seer (Liquid)	..	= 1.760 pints
Candy	..	= 500 lbs
Visham—3 lb., Dangan	..	= 3 pints
Parah	..	= 15 gallons
Catty (Singapore)	..	= 1½ lbs
Pikul	..	= 100 catties = 133 lbs

### EXPORTS AND IMPORTS

The grand total of exports, re-exports and imports of merchandise during the calendar year 1925 was Rs 633 crores, as compared with Rs 626 crores in 1924, Rs 508 crores in 1923 and Rs 426 crores in the pre-War year 1913. Exports and imports of treasure (private and Government) totalled 86 crores in 1925, as against Rs 74 crores in 1924. The total trade figure for 1925 was, therefore, Rs 719 crores, compared with Rs 700 crores in 1924, Rs 636 crores in 1923 and Rs 474 crores in 1913.

The grand total of exports, re-exports and imports of merchandise during the fiscal year 1925-26 was Rs 633½ crores.

**EXPORTS.**—The total value of the Indian export trade of 1925 was Rs 396 crores, as against Rs 369 crores in 1924 and Rs 327 crores in 1923, the increase in 1925 amounting to Rs 27 lakhs or 7.3 per cent. This is by far the most satisfactory feature of Indian trade, and it shows clearly that the wonderful possibilities before India as an exporter of food and raw materials are at last being adequately realised.

The total figures of exports of merchandise during the fiscal year 1925-26 fell by Rs 13 crores from the record reached during 1924-25 to Rs 387 crores, the decrease being due

chiefly to reduced shipments of food grains and tea.

**RE-EXPORTS.**—Re-exports in 1925 reached a value of Rs 10,98,77,131, compared with Rs 13,65,63,824 in 1924 and Rs 14,07,77,451 in 1923.

The total value of re-exports in the fiscal year 1925-26 declined to Rs 10½ crores, there being important decreases in raw cotton, cotton piecegoods, raw wool, raw skins and sugar.

**EXPORTS BY CLASSES.**—The following table summarises the value of the exports of Indian merchandise during 1925 as compared with the two preceding years, according to the different categories of merchandise (Exports of food, drink and tobacco decreased, as compared with 1924, by Rs 12 crores to Rs 89 crores, due chiefly to smaller shipments of barley, wheat and tea. Raw materials and articles mainly unmanufactured increased by Rs 28 crores to Rs 215 crores, owing principally to increased exports of oilseeds, raw cotton, raw jute and rubber. Articles wholly or mainly manufactured increased by over Rs 10 crores to Rs 89 crores, due chiefly to larger shipments of gunny bags and cloth, and postal articles decreased by Rs 10 lakhs to Rs 261 lakhs) —

	1924 Rs	1925 Rs
Food, drink and tobacco	100,12,23,309	85,13,18,553
Raw materials, produce and articles mainly unmanufactured	186,78,04,729	215,19,14,413
Articles wholly or mainly manufactured	78,91,79,299	89,29,82,375
Living animals	29,52,695	32,36,316
Postal articles	2,71,05,856	2,60,60,961
Grand total	369,04,65,948	395,95,37,175

The following figures indicate the value of the exports of private merchandise during the fiscal year 1925-26, according to the five main classes (sums in thousands of rupees). Food, drink and tobacco, 82,23,23, raw materials and produce and articles mainly unmanufactured, 199,98,22, articles wholly or mainly manufactured, 89,56,96, living animals, 34,62, postal articles, 2,71,18. Grand total, 374,94,21.

**EXPORTS BY COMMODITIES.**—The following table shows the leading commodities in export values in the years named—

	1924 Rs	1925 Rs
Cotton (raw)	94,98,85,607	104,40,46,974
Jute manufactures	47,61,16,616	58,58,55,693
Rice	36,92,07,217	38,42,54,949
Jute (raw)	25,95,97,435	37,08,33,519
Tea	33,28,29,624	28,36,87,258
Ground nuts	6,90,32,707	12,99,59,371
Cotton manufactures	10,49,74,027	9,90,65,714
Linseed	8,43,50,180	9,55,77,876
Wheat	11,56,68,018	9,08,29,945
Hides and skins (raw)	6,34,34,239	7,58,50,958
Leather and leather goods	7,02,39,390	7,20,87,087
Lac	7,75,28,548	7,05,01,657
Wool (raw)	4,86,09,018	4,48,77,271
Rapeseed	6,19,52,493	4,12,81,007
Castor seed	2,62,01,399	2,88,87,155
Rubber	1,28,36,205	2,54,66,807
Coffee	1,64,74,857	2,38,63,561
Opium	1,88,00,598	1,56,72,965
Barley	5,82,84,401	1,30,79,166

The following were the corresponding export values for the commodities named during the fiscal year 1925-26 (totals in thousands of rupees). Cotton (raw), 94,99,28, jute manufactures, 58,83,99, rice, 39,97,21, jute (raw), 37,94,57, tea, 27,12,17, ground nuts, 12,02,33, cotton manufactures, 9,64,85, linseed, 8,08,53, wheat, 3,60,25, hides and skins (raw), 7,23,38, leather, 7,10,21, lac, 6,90,10, wool (raw), 3,79,88, rapeseed, 2,68,09, castor seed, 2,67,69, rubber (raw), 2,94,10, coffee, 1,85,26, opium, 1,93,37, barley, 56,23.

**FRONTIER TRADE.**—Despite primitive transportation methods, India's trade with frontier countries assumes considerable proportions. During the fiscal year 1924-25 imports from the various frontier countries into India reached Rs 230,900,000

and exports to these areas Rs 187,400,000, as compared with Rs 199,600,000 and Rs 162,800,000 respectively during the preceding fiscal year. Among imports, increases were noted in cattle, hides, lead, grain and pulse, fruits, nuts, tea, silk, jute and wool, while receipts of cattle, teak, oil seeds and sheep and goats declined. Larger quantities of cotton, twist and yarn, piece goods, coal and coke, sugar and salt were taken from India, but railway material, spices, metals and manufactures declined.

From the beginning of the fiscal year 1925-26 the old system of registering trade across the land frontiers through the agency of clerks posted upon the chief trade routes was abandoned in favour of the registration of traffic in certain commodities at railway stations near the most important of the frontier routes.

**IMPORTS.**—The value of the imports of merchandise into British India during 1925 amounted to Rs 226,18,05,000, compared with Rs 243,76,02,000 in 1924, a decrease of Rs 17,57,97,000 or 7.2 per cent. Imports of treasure (private and Government) increased during the same period by over Rs 14 crores to nearly Rs 84 crores. The distribution of imports by classes was as follows—

	1924 Rs	1925 Rs
Food, drink and tobacco	34,58,72,133	31,27,32,395
Raw materials, produce and articles mainly unmanufactured	20,88,46,697	20,15,21,011
Articles wholly or mainly manufactured	184,64,99,724	169,44,81,858
Living animals	30,91,483	15,14,729
Postal articles not specified	3,33,11,792	3,25,56,510
Total	243,76,02,829	226,18,05,501

As compared with 1924, imports of food, drink and tobacco decreased in 1925 by Rs 1.41 lakhs, chiefly owing to smaller imports of sugar and salt. Raw materials and articles mainly unmanufactured also fell by Rs 73 lakhs, due chiefly to decreases under raw cotton, while articles wholly or mainly manufactured decreased by Rs 15.40 lakhs, due in the main to smaller imports of metals, railway plant and cotton and silk manufactures, notwithstanding a considerable increase in the imports of machinery, motor cars and woollen manufactures. Noteworthy decreases were those of cotton piece goods by 64 million yards and by nearly Rs 8 crores, or 12 per cent, to Rs 59 crores, cotton twist and yarn from 54 million lbs., valued at Rs 9.63 lakhs, to 49 million lbs., valued at Rs 7.75 lakhs, raw cotton, from 20,800 tons to 16,500 tons, iron and steel from 933,000 tons (Rs 20 crores) to 787,000 tons (Rs 16½ crores), and imports of railway plant and rolling stock on private account from Rs 7.38 lakhs to Rs 4.68 lakhs. The principal increases were in machinery (prime movers), Rs 41 lakhs, electrical machinery, Rs 10 lakhs, mineral oils (excluding kerosene), Rs 47 lakhs, motor cars, Rs 24 lakhs, cotton hosiery, Rs 32 lakhs, and electrical instruments, Rs 33 lakhs.

During the fiscal year 1925-26 the value of imports of private merchandise into India was Rs 226,17,57,000, compared with Rs 246,62,54,000 in 1924-25, the decrease being mainly due to smaller imports of cotton piece goods and to the lower prices of sugar imported. The value of imports according to the five main classes was as follows (in thousands of rupees). Food, drink and tobacco, 32,95,16, raw materials and produce and articles mainly unmanufactured, 20,99,39, articles wholly or mainly manufactured, 168,39,67, living animals, 34,56, postal articles not specified, 3,48,79.

Imports of treasure (private and Government) totalled Rs 55,48,77,000 during the fiscal year 1925-26.

**TRADE BY COUNTRIES.**—The following table gives the values of India's trade with the twelve leading foreign countries during the calendar years named —

	1924 Rs	1925 Rs
<b>EXPORTS</b>		
United Kingdom	94,23,59,287	87,78,23,770
Japan	51,14,46,442	62,44,58,248
United States	32,29,18,980	38,93,07,032
Germany	27,02,70,279	31,07,82,927
Italy	24,12,61,384	22,03,29,787
France	19,74,45,972	21,93,02,371
Belgium	14,17,18,475	15,32,21,144
Ceylon	13,23,11,234	14,04,76,905
China	8,99,69,309	11,40,28,688
Straits Settlements	8,30,95,800	9,12,03,716
Netherlands	7,34,28,603	8,32,54,699
Spain	5,08,00,810	5,23,06,557
<b>IMPORTS</b>		
United Kingdom	132,50,15,002	118,32,90,881
Japan	16,74,43,251	17,78,32,581
Java	14,69,70,060	14,01,26,819
United States	14,15,18,284	13,85,92,423
Germany	15,06,70,264	13,38,21,859
Belgium	6,92,39,368	5,98,09,022
Straits Settlements	5,03,75,162	5,37,46,311
Italy	3,65,18,855	4,08,06,917
Netherlands	2,85,49,343	3,28,77,127
Kenya Colony	3,74,74,322	3,22,95,013
France	2,58,62,650	2,91,24,689
China	2,94,85,734	2,44,66,934

Out of India's grand total of trade of Rs 622,13,42,576 in 1925, the British Empire's share was Rs 276,35,30,008, of which imports accounted for Rs 137,01,29,927 and exports for Rs 139,34,00,141, compared with Rs 151,32,95,401 and Rs 140,69,93,852 respectively in 1924. The total trade in 1925 with countries outside the British Empire was thus Rs 345,78,12,608, of which Rs 89,16,75,574 were imports and Rs 256,61,37,034 exports, as against Rs 320,77,78,524 in 1924 (imports, Rs 92,43,06,428, exports, Rs 228,34,72,096). Seven of the leading countries reduced their exports to India in 1925, on the other hand exports from India increased to all countries except the United Kingdom, Italy and Spain.

The values of India's trade with the twelve leading foreign countries during the fiscal years named were as follow —

	1924-25 Rs 1,000	1925-26 Rs 1,000
<b>EXPORTS</b>		
United Kingdom	97,54,33	77,72,27
Japan	55,14,54	56,65,80
United States	34,23,11	39,49,34
Germany	27,98,72	26,77,39
France	20,75,34	21,10,98
Italy	23,19,01	18,88,51
China	9,56,47	15,43,97
Ceylon	13,00,29	14,68,58
Belgium	15,35,25	12,34,47
Straits Settlements	8,03,19	9,81,41
Netherlands	8,06,18	7,65,28
Spain	5,94,15	4,84,95
<b>IMPORTS</b>		
United Kingdom	1,33,45,16	1,15,32,02
Japan	17,12,07	18,19,00
United States	14,07,03	15,07,35
Java	15,46,30	14,03,79
Germany	15,46,86	13,30,79
Belgium	6,76,06	6,13,06
Straits Settlements	4,85,59	5,65,98
Italy	3,83,95	4,25,67
Kenya Colony	4,32,38	4,06,94
Netherlands	2,97,82	3,69,25
France	2,58,55	3,23,88
China	2,76,71	2,60,67

The grand total of India's trade in merchandise during the fiscal year 1925-26 was Rs 6,11,57 lakhs, of which the British Empire's share was Rs 2,69,30 lakhs (imports Rs 133,72 lakhs and exports Rs 135,58 lakhs,

compared with imports Rs 153,49 lakhs and exports Rs 154,01 lakhs during the fiscal year 1924-25).

The total value of trade in merchandise with foreign countries during 1925-26 was therefore Rs 342,21 lakhs, imports representing Rs 92,46 lakhs and exports Rs 249,75 lakhs. The corresponding figures for the financial year 1924-25 were Total of trade, Rs 337,30 lakhs, imports, Rs 93,14 lakhs, exports, Rs 244,16 lakhs.

**BELGIUM**—The share of Belgium in India's import trade before the War was 2.3 per cent, in 1924 it was 2.4 per cent, but in 1925 it had fallen slightly to 2.2 per cent. Over 60 per cent of Belgium's shipments to India consists of iron and steel manufactures, the balance being made up of miscellaneous items such as window-glass, hardware, etc. In 1925 imports from Belgium were valued at Rs 5,98 lakhs, compared with Rs 6,92 lakhs in 1924. Exports to Belgium, on the other hand, increased from Rs 14,17 lakhs to Rs 15,32 lakhs, raw jute accounting for Rs 2,11 lakhs, linseed for Rs 1,06 lakhs, wheat for Rs 1,01 lakhs, and raw cotton for Rs 6,62 lakhs, the latter item showing an increase of Rs 65 lakhs.

For the fiscal year 1925-26 Belgium's percentage of India's import trade was 2.7, the same as in 1924-25. Among imports from Belgium, machinery and millwork rose in value, as also woollen manufactures, while steel imports decreased. Belgium's percentage of the export trade of India dropped from 3.9 to 3.2 in 1925-26, the chief decreases being in wheat and barley.

**CEYLON**—The value of the total trade with Ceylon increased from Rs 14,61 lakhs in 1924 to Rs 15,05 lakhs in 1925. Imports from Ceylon are only small, and amounted in value in 1925 to Rs 1,60 lakhs, as against Rs 1,38 lakhs in the preceding year. Betel nuts, tea, lead sheet for tea chests and cobra are the chief imports. Exports to Ceylon were valued at Rs 14,04 lakhs in 1925, as against Rs 13,23 lakhs in 1924, shipments of rice increasing in quantity from 382,000 to 430,000 tons and in value from Rs 6,52 to Rs 7,03 lakhs. Exports of coal fell slightly, while those of cotton piece goods remained stationary. Rubber exports rose in value from Rs 34 lakhs to Rs 52 lakhs.

Ceylon was the largest purchaser of Indian rice during the fiscal year 1925-26, with 432,000 tons, compared with 403,000 tons in 1924-25. Oils imported from Ceylon into India showed a rise in value from Rs 13,44,000 in 1924-25 to Rs 30,00,000 in 1925-26.

**CHINA**—The total value of India's trade with China rose from Rs 11,94,55,053 in 1924 to Rs 13,84,95,622 in 1925. Imports, mainly of silk (raw and manufactured) and tea, decreased from Rs 2,94 lakhs to Rs 2,44 lakhs, while exports, principally of raw cotton, rice and jute goods, increased from Rs 9,00 lakhs to Rs 11,40 lakhs.

China's percentage of the Indian import trade rose from 1.1 in the fiscal year 1924-25 to 1.2 in 1925-26 and that of the export trade from 2.4 to 4.0. Among exports, the most remarkable increase was in grain, pulse and flour.

**EGYPT**—Exports to Egypt declined from Rs 6 crores in 1924 to Rs 5 crores in 1925. Rice, tea, wheat, gunny bags and cloth, cotton twist and yarn are the chief exports. Small amounts of raw cotton and cigarettes are the principal imports.

Exports of Indian produce to Egypt during the fiscal year 1925-26 in every case showed a decrease in comparison with 1924-25, as did imports therefrom, except in the cigarettes category.

**FRANCE**—The balance of trade with France is largely in India's favour, exports to that country being valued at Rs 21,93,02,371 in 1925, as against Rs 19,74,45,972 in 1924, and imports from France at Rs 2,91,24,689, compared with Rs 2,58,62,650, the total trade between the two countries thus increasing from Rs 22 crores in 1924 to Rs 24 crores in 1925. France increased her supplies of brandy, iron and steel and motor cars. Shipments of groundnuts to that country rose from 165,000 to 221,000 tons (Rs 4.34 to Rs 6.17 lakhs), of raw jute from 77,000 to 83,000 tons (Rs 2.90 to Rs 4.49 lakhs), and of raw cotton from 28,000 to 33,000 tons, though in the last case there was a slight fall in value from Rs 4.69 to Rs 4.39 lakhs. France in 1925 took less wheat, gram and coffee, but more rice than in 1924.

During the fiscal year 1925-26 France contributed 1.4 per cent of India's import trade (1 per cent in 1924-25) and 5.5 per cent (5.3 per cent in 1924-25) of her export trade. Considerable increases for 1925-26 over the previous year were recorded in the import into India of iron and steel and the export of raw jute.

**GERMANY**—In 1925 Germany stood fourth in order of importance in India's foreign trade, as in the two preceding years, the total value of Indo-German trade increasing by Rs 2½ crores. Both imports and exports showed a large improvement on the pre-war average, which was Rs 9.35 lakhs for imports and Rs 22.36 lakhs for exports. The figures for 1925 were Rs 13.38 lakhs for imports and Rs 31.07 lakhs for exports. The balance of trade remains therefore steadily in India's favour. Germany has increased her exports to India mainly in machinery, hardware (this substantially at the United Kingdom's expense), railway plant and rolling stock, "instruments," liquors, and paper. The principal exports to Germany are rice, raw jute and raw cotton, which in 1925 had values respectively of Rs 6.63 lakhs, Rs 9.27 lakhs and Rs 6.05 lakhs.

Germany was responsible during the fiscal year 1925-26 for 5.9 per cent of India's import trade (as against 6.3 per cent in 1924-25) and 7 per cent of her export trade (as against 7.1 per cent). Imports of dyeing substances from Germany showed a remarkable decrease, and exports of ground nuts a considerable increase, in the later financial year.

**GREAT BRITAIN**—The following table summarises India's trade with Great Britain in the three calendar years named (treasure excluded).

	1923 Rs LAKHS	1924 Rs LAKHS	1925 Rs LAKHS
Exports	82,91	94,23	87,78
Imports	130,84	132,50	118,33

**Exports.** The principal articles exported to the United Kingdom in 1925 were Tea (Rs 24½ crores), food-grains (Rs 14½ crores), raw and manufactured jute (Rs 12,80 crores), seeds (Rs 8 crores), raw and tanned hides and skins (Rs 6½ crores), raw cotton (Rs 6 crores), raw wool (Rs 4 crores), and lac (Rs 1½ crores). These articles combined represent about 80 per cent of the exports to that destination, as in the preceding year. The most noticeable feature was the decline in tea exports, which dropped from 304 million to 287 million lbs. and in value from Rs 26½ crores to Rs 24½ crores. Shipments of grains also declined, but those of raw jute increased from 170,000 to 177,000 tons, and of gunny cloth from 58,000,000 yards to 67,000,000 yards. Gunny bags remained stationary. Shipments of coffee, mica, paraffin wax, raw rubber, and raw hemp

increased, while there were marked decreases in molasses, spices, myrobalans and rapeseed

Returns for the fiscal year 1925-26 showed the following commodities at the head of the list of exports to the United Kingdom (values in thousands of rupees). Tea (23,74,77), raw jute (10,56,96), raw, dressed and tanned skins (9,42,78), raw cotton (5,42,14), raw wool (3,36,59), linseed (2,89,68), cottonseed (2,13,04). Compared with the totals for 1924-25, considerable increases were registered in the exports of raw jute and raw rubber, and decreases in connection with raw wool, oils and wheat

**Imports.**—While the share of the British Empire as a whole in the total overseas trade of India declined from 46.6 per cent in 1923 and 1924 to 43.6 per cent in 1925, that of the United Kingdom was reduced from 37.5 per cent in 1923 to 36.2 per cent in 1924 and 32.5 per cent in 1925. In the import trade the share of the United Kingdom fell from 64.3 per cent in 1923 to 61.4 per cent in 1924 and 60.1 per cent in 1925, which is four per cent below the pre-War proportion. This decline in Great Britain's position in the Indian market is not so much due to foreign competition in manufactured goods of the type usually exported by the United Kingdom (although German, Japanese and American competition is distinctly keener) as to reduced shipments in British specialties, such as cotton piece goods, textile machinery, railway plant, boilers, etc., which normally form such a large proportion of the total British shipments that any material decrease in the out-throw affects the British proportion of the total trade. The percentage figure of 60.1 quoted above represents the British share of the total imports of all kinds of merchandise, including raw materials and comestibles, such as mineral oils, ores, raw wool, sugar, etc., in which the United Kingdom has no direct interest. Taking the imports of articles wholly or mainly manufactured, it is found that the British share in 1913-14 was 75.7 per cent, while in 1925 it had fallen to 69.3 per cent, a decline of 6.4 per cent. It should be noted, however, that even the imports of manufactured goods include items such as Chinese and Japanese silk pongees, matches, certain kinds of Oriental medicines and provisions, very low grade earthenware, glassware, toys, etc., in which British manufacturers do not compete. After eliminating these articles, it is found that Great Britain still supplies 75 per cent of the imports into India of competitive manufactured goods.

The following table shows the leading imports from Great Britain in the fiscal years named:—

	1923-24 Rs LAKHS	1924-25 Rs LAKHS
Building materials	87	79
Chemicals	1.35	1.30
Cotton piece goods—		
Grey	19.14	24.06
White	14.61	19.24
Coloured	15.12	16.45
Cotton twist and yarn	4.61	4.55
Cotton goods (other)	1.78	1.94
Hardware	2.07	2.00
Instruments, etc.	2.24	1.98
Iron and steel	11.26	11.25
Machinery and millwork	16.24	12.39
Motor cars and cycles	73	74
Paper and pasteboard	1.33	1.30
Railway plant, etc.	11.03	5.41
Spirits	1.37	1.30
Stationery	1.11	1.24
Woollen manufactures	1.44	2.08

It will be seen that cotton manufactures, including twist and yarn, accounted for over 49 per cent of the total value of imports

from the United Kingdom and increased to Rs 66 crores, as compared with Rs 55 crores in 1924. The other important groups, namely metal and manufactures, machinery, and railway plant and rolling stock, fell off by no less than Rs 10 crores in 1925, compared with the preceding year. Woollen manufactures showed a gratifying increase, and other notable increases were in piece goods of mixed cotton and artificial silk (Rs 25 lakhs), tea-chests (Rs 26 lakhs), motor cars (Rs 15½ lakhs), cycles (Rs 19 lakhs), and raw wool (Rs 14 lakhs), while there were important decreases in synthetic dyes (Rs 19 lakhs), copper (Rs 47 lakhs), spirits (Rs 7 lakhs), and paper and pasteboard (Rs 3 lakhs).

The following table represents the chief imports into India from the United Kingdom during the fiscal year indicated:—

	1925-26 (Rs 1,000)
Brass	1,27,96
Chemicals	1,24,01
Cotton piece goods—	
Grey	17,08,36
White	15,08,86
Coloured	11,00,00
Cotton twist and yarn	3,13,80
Cotton goods (other)	1,76,53
Hardware	1,97,76
Instruments, etc.	2,22,18
Iron and steel	11,60,99
Machinery and millwork	11,87,23
Motor cars and motor cycles	1,23,58
Paper and pasteboard	1,16,63
Provisions	1,71,50
Railway plant, etc.	4,24,53
Soap	1,35,67
Spirits	1,31,62
Tobacco	1,76,23
Woollen manufactures	2,11,14

**ITALY.**—The value of India's total trade with Italy declined from Rs 27,77,80,230 in 1924 to Rs 26,11,36,704 in 1925, exports falling from Rs 24 to Rs 22 crores, while imports rose slightly from Rs 3,65 lakhs to Rs 4,08 lakhs. Imports of motor cars increased from Rs 7 to Rs 24 lakhs, and those of woollen piece goods from Rs 22 to Rs 32 lakhs. Imports of cotton piece goods, silk yarn and glassware declined. Exports of raw cotton fell in quantity from 92,241 tons to 90,795 tons and in value from Rs 15 crores to Rs 12 crores. Wheat exported rose from 18,000 to 32,000 tons and its value from Rs 27 lakhs to Rs 56 lakhs. Exports of rice increased from Rs 7 lakhs to Rs 57 lakhs, those of oil-seeds and pepper declined.

The increased imports of motor cars, etc., from Italy were also indicated by the returns for the fiscal years 1924-25 and 1925-26, rising in value from Rs 10,16,000 to Rs 29,94,000. Rubber manufactures likewise showed a remarkable rise, import values for 1924-25 and 1925-26 being Rs 3,77,000 and Rs 18,11,000 respectively. Wheat exports suffered a notable reversal of the conditions just stated, falling in value from Rs 56,78,000 in 1924-25 to Rs 16,49,000 in 1925-26.

**JAPAN.**—In 1924 and 1925 Japan held second place in India's foreign trade, the total value rising from Rs 67,88,89,693 to Rs 80,22,90,829. Exports to Japan increased by Rs 11 crores from Rs 51 to Rs 62 crores, while imports from Japan rose from Rs 16 to Rs 17 crores. Japan's export trade to India increased from 2.6 per cent of the total Indian import trade in 1913-14 to 7.9 per cent in 1925, and she is now a serious competitor with Great Britain in cotton and silk piece goods.

The leading items of India's import trade with Japan in 1924 and 1925 were: Cotton piece goods, grey (unbleached), Rs 4,08 lakhs to Rs 4,47 lakhs, white (bleached),

Rs 16,20,80 to Rs 16,80,467, coloured, etc., Rs 1,25 lakhs to Rs 2,00 lakhs, silk piece goods, Rs 1,38 lakhs and Rs 1,17 lakhs, glass and glassware, Rs 72 lakhs and Rs 68 lakhs, matches, Rs 38 lakhs and Rs 30 lakhs, earthenware and porcelain, Rs 28 lakhs and Rs 32 lakhs. Under exports, raw cotton increased from Rs 42 crores to Rs 53 crores, and rice from Rs 3,83 lakhs to Rs 3,97 lakhs. Pig iron rose in quantity from 149,697 tons to 158,713 tons, but declined in value from Rs 1,04 lakhs to Rs 80 lakhs. Jute rose in value from Rs 46 lakhs to Rs 61 lakhs. Gunny bags also increased from Rs 90 lakhs to Rs 1,10 lakhs.

Indian imports from and exports to Japan both showed increases in value in 1925-26 as compared with the previous fiscal year. Among imports notable augmentations were in cotton hosiery, brass, bronze, etc., and woollen manufactures, exports of rice (not in the husk) rose considerably, but iron and steel exports dropped from Rs 1,15,30,000 in 1924-25 to Rs 76,57,000 in 1925-26.

**JAVA.**—Trade with this country is practically confined to the importation of sugar, imports of which were valued at Rs 13,43,81,578 in 1925, as against Rs 14,06,24,798 in 1924.

Figures compiled for the fiscal years 1924-25 and 1925-26 showed that imports of sugar declined in value from Rs 15,23,48,000 to Rs 13,79,47,000.

**KENYA COLONY.**—The decline in imports from Kenya and Zanzibar from Rs 3,75 lakhs in 1924 to Rs 3,23 lakhs in 1925 was due to reduced purchases of cotton, which aggregated Rs 3,64 lakhs and Rs 3,15 lakhs respectively. Exports are practically confined to rice, cotton piece goods and gunny bags.

During the fiscal year 1924-25 the import of raw cotton was valued at Rs 3,60,42,000, but decreased in 1925-26 to Rs 3,37,08,000.

**SOUTH AFRICA (UNION OF).** The value of the imports from the Union increased from Rs 50 to Rs 59 lakhs, while exports rose from Rs 2,23 to Rs 2,00 lakhs. Imports of coal from Natal showed an increase in quantity of 11,000 tons and in value of Rs 42,559. Exports of rice declined slightly from Rs 47 to Rs 46 lakhs, but gunny bags increased from Rs 82 to Rs 1,57 lakhs.

The reduced import of coal and coke from the Union during 1925-26 was responsible for lowering the total import figure for that fiscal year to Rs 41,94,000, as against Rs 59,15,000 for 1924-25. Export totals for the two periods showed little variation.

**STRAITS SETTLEMENTS.**—Imports from the Straits Settlements were valued at Rs 5,37 lakhs in 1925, as against Rs 5,03 lakhs in 1924, betel nuts, unwrought tin, kerosene and canned fish being leading items. Exports, mainly rice, gunny bags, raw rubber, cotton twist and yarn and piece goods, also wheat flour, increased from Rs 8,30 to Rs 9,12 lakhs.

Among imports during the fiscal year 1925-26 betel nuts, mineral oils, tin and fish showed considerably increased values over those for 1924-25; on the export side rice values were practically stable, but jute manufactures, including twist and yarn, registered a noteworthy rise.

**UNITED KINGDOM.**—See "Great Britain."

**UNITED STATES.**—While the American trade with India is small compared with the possibilities, the United States stands fourth on the list of countries supplying India's overseas needs. During 1925 imports from the States amounted to Rs 14 crores, a decrease of Rs 30 lakhs over 1924, but more than three times the pre-War



average. The list of imports is of wide variety, and in 1925 included machinery and millwork, Rs 1,34,61,046, hardware and cutlery, Rs 76,26,849, foodstuffs, Rs 33,75,907, electrical apparatus and appliances, Rs 20,45,664, wearing apparel, Rs 10,30,225, leather and leather goods, Rs 4,86,225, raw cotton, Rs 4,57,554, hosiery, Rs 5,14,350, cotton piece goods (grey unbleached), Rs 12,20,089, motor cars, Rs 82,11,250, and motor lorries, etc., Rs 34,35,565. The two last named items showed large increases, from Rs 78,64,963 and Rs 14,62,390 respectively in 1924.

Imports from the United States during 1925-26, totalling Rs 15,07,35,000, exceeded the total for the previous fiscal year by almost exactly one crore. The principal articles contributing to this increase were motor cars, rubber and iron and steel.

**Exports.**—The United States stands third on the list of countries taking India's exports. During 1925 shipments to the States were valued at Rs 38,93,07,932, as against Rs 32,20,18,980 in 1924 and Rs 16,83,60,000 pre-war average. The principal exports in 1925 were gunny cloth, Rs 21,50 lakhs, jute (raw), Rs 3,60 lakhs, lac, Rs 3,08 lakhs, hides (raw), Rs 2,88 lakhs, castor seeds, Rs 1,07 lakhs, gunny bags, Rs 86 lakhs, cotton (raw) Rs 84 lakhs, mica, Rs 35 lakhs, rubber (raw), Rs 31 lakhs, and manganese ore, Rs 14 lakhs. Exports of gunny cloth increased by Rs 4,54 lakhs, those of raw jute by Rs 1,41 lakhs, and those of gunny bags by Rs 32 lakhs.

Exports of raw hides and skins, raw jute and gunny cloth in 1925-26 also showed increases over the corresponding 1924-25 totals.

**TRADE BY PROVINCES.**—The total imports and exports, including re-exports of private merchandise, of the several maritime provinces during the years named were as under:—

IMPORTS	1924 Rs (LAKHS)	1925 Rs (LAKHS)
Bengal	86.82	79.22
Bihar and Orissa	—	—
Bombay	90.28	79.51
Sind	26.74	27.05
Madras	19.86	18.24
Burma	20.06	21.56
	243.76	226.18
EXPORTS	1924 Rs (LAKHS)	1925 Rs (LAKHS)
Bengal	143.75	155.63
Bihar and Orissa	2	—
Bombay	110.78	112.78
Sind	48.16	47.29
Madras	37.37	44.00
Burma	42.62	46.64
	382.70	406.94

Under imports, Bengal showed a decrease in 1925 of Rs 7,60 lakhs or 9 per cent, Bombay of Rs 10,77 lakhs or 12 per cent, and Madras of Rs 1,62 lakhs or 8 per cent, while Sind had an increase of Rs 91 lakhs or 3 per cent, and Burma of Rs 1,50 lakhs or 7 per cent, as compared with 1924. Under exports, Bengal showed an increase of Rs 11,88 lakhs or 8 per cent, Bombay of Rs 2,00 lakhs or 2 per cent, Madras of Rs 7,23 lakhs or 19 per cent, and Burma of Rs 4,02 lakhs or 9 per cent, while Sind had a decrease of Rs 87,00 lakhs or 2 per cent.

The decreases of imports into the provinces of Bengal, Bombay and Madras were mainly attributable to reduced importations of raw and manufactured cotton and metals and ores, also of machinery and millwork, mineral oils, silk and woollen goods into Bombay in particular. The increase in the case of Sind was due chiefly to larger imports of liquors and machinery, and in the case of Burma to cotton and woollen manufactures.

## COMMODITIES.

**AGRICULTURAL IMPLEMENTS.**—See "Hardware."

**AGRICULTURAL MACHINERY.**—See "Machinery."

**ALES AND BEERS.**—The total value of all ales, beers and porters imported in 1925 was Rs 83,37,115, compared with Rs 83,87,264 in 1924. The United Kingdom supplied 2,095,647 gallons out of a total of 3,433,170 gallons imported in 1925, Germany coming next with 1,072,931 gallons.

Fiscal year 1925-26. Imports, 3,498,000 galls, value Rs 85 lakhs.

**ANIMALS.**—See "Livestock."

**ASPHALT.**—See "Building Materials."

**BARLEY.**—This is an important article of India's export trade. A record was reached in 1924, when 524,249 tons, valued at Rs 5,82,84,101, were exported. In 1925 there was a fall to 98,328 tons, valued at Rs 1,30,79,169. Nearly all the exports were from Sind. (See also under "Agriculture.")

Fiscal year 1925-26. Exports, 42,000 tons, value Rs 56,23,000.

**BEET SUGAR.**—See "Sugar."

**BETEL NUTS.**—These nuts, which are extensively used in India, are imported chiefly from the Straits Settlements and Ceylon. Imports rose from Rs 2,05,11,266 in 1924 to Rs 2,24,97,973 in 1925. (See also under "Agriculture.")

Fiscal year 1925-26. Imports, 1,272,000 cwt, value Rs 2,53,04,000.

**BICYCLES.**—See "Cycles."

**BLANKETS.**—Woollen blankets imported in 1925 were valued at Rs 11,81,420, compared with Rs 7,00,295, and cotton blankets at Rs 34,98,788, against Rs 42,32,262 in 1924.

**BOLTS AND NUTS.**—See "Iron and Steel."

**BOOTS AND SHOES.**—Out of a total of 1,259,729 pairs of boots and shoes imported in 1925, the value of which was Rs 38,11,506, Great Britain supplied 653,901 pairs (Rs 25,39,883). There is also a considerable export trade in Indian manufactured boots and shoes, 170,526 pairs (Rs 4,85,446) being exported in 1925, against 202,603 pairs (Rs 4,85,446) in the preceding year.

**BRISTLES AND FIBRES.**—These are exported from India for the manufacture of brushes and brooms. The bristles are chiefly those of pigs, they are collected in the United Provinces, graded, and either absorbed by the local trade or shipped from Calcutta and Bombay for the foreign market which takes certain qualities for which there is no demand in India. The quantities and values of exports in 1925 compared with 1924 were: Bristles, 3,053 cwt (Rs 22 lakhs), compared with 3,797 cwt (Rs 24 lakhs); fibre, 5,392 tons (Rs 23 lakhs), against 5,983 tons (Rs 25 lakhs). Belgium and Germany are the largest purchasing countries.

Fiscal year 1925-26. Exports (bristles), 4,000 cwt, value Rs 19,33,000, (fibres), 5,000 tons, value Rs 22,20,000.

**BUILDING MATERIALS.**—The total value of building and engineering materials imported into India declined from Rs 1,10,13,472, in 1924 to Rs 1,13,90,274 in 1925, the principal items in the last-named year being cement, Rs 62,52,462, tiles, Rs 21,81,851, asphalt, Rs 12,79,916, and firebricks, Rs 3,61,191. The United Kingdom supplied cement to the value of Rs 55,03,556.

Fiscal year 1925-26. Imports (cement) 110,000 tons, value Rs 64,83,000, (bricks and tiles), 16,911,000, value Rs 27,43,000.

**BULLION.**—See "Coin and Bullion."

**BUTTER.**—Exports of butter totalled 4,494 cwt. in 1925, value Rs 6,09,272, compared with 4,360 cwt (Rs 5,96,666) in

1924. Exports of gbi (liquid butter) rose in value from Rs 34,85,070 in 1924 to Rs 37,83,253 in 1925.

**CARDAMOMS.**—Cardamoms, chiefly used for medicinal purposes, are exported mainly from Bombay, the value falling from Rs 23,02,324 in 1924 to Rs 12,61,847 in 1925. (See also under "Agriculture.")

**CASTOR SEED.**—There was an increase of 32 per cent in quantity and of 10 per cent in the value of castor seed exported in 1925. Shipments amounted to 111,000 tons valued at Rs 2,88 lakhs, compared with 85,000 tons valued at Rs 2,62 lakhs in the preceding year. The United States was, as usual, the principal customer, the quantity exported there increasing from 31,468 tons (Rs 90,47,902) to 40,327 tons (Rs 1,00,93,820). The United Kingdom increased her demands from 20,000 to 30,000 tons, and France from 16,000 to 20,000 tons. Bombay was responsible for some 73 per cent of the trade, and Madras for 21 per cent.

Fiscal year 1925-26. Exports, 110,000 tons, value Rs 2,67,60,000. (See also under "Agriculture.")

**CEMENT.**—See "Building Materials."

**CHEMICALS.**—The total value of chemicals imported declined from Rs 2,14 lakhs in 1924 to Rs 1,98 lakhs in 1925. Soda compounds accounted for Rs 97,60,401, compared with Rs 1,15,13,510 in 1924, the bulk coming from the United Kingdom. Sodium carbonate declined from 842,156 cwt, valued at Rs 57 lakhs to 770,441 cwt, valued at Rs 45 lakhs. Caustic soda increased in quantity from 104,000 to 183,000 cwt and in value from Rs 15,10,000 to Rs 15,17,052. Acids showed a falling off from 12,701 cwt valued at Rs 5,67,709 to 10,957 cwt valued at Rs 5,63,913.

Fiscal year 1925-26. Imports (soda compounds), 1,146,000 cwt, value Rs 88,39,000.

**CHUTNIES.**—Exports of pickles, chutnies and condiments declined in value from Rs 12,19,537 in 1924 to Rs 11,84,160 in 1925.

**CIGARS AND CIGARETTES.**—See "Tobacco."

**CLOCKS AND WATCHES.** Imports of clocks and watches (mainly from Switzerland and the United States) were valued at Rs 10,81,820 in 1924 and Rs 24,23,193 in 1925.

**COAL.**—Imports of foreign coal decreased in value in both 1924 and 1925, though rising somewhat in quantity in the last named year. Quantities imported were 430,017 tons (Rs 17,40,627) in 1924 and 459,340 tons (Rs 1,07,55,847) in 1925. The Union of South Africa increased her supplies from 172,173 tons in 1924 to 183,582 tons in 1925, while Portuguese East Africa reduced hers from 141,537 to 130,312 tons, and Australia hers from 21,803 to 7,495. The United Kingdom's shipments rose from 89,785 to 111,898 tons, but the value thereof declined from Rs 31,11,064 to Rs 29,65,309. The value of coke imported fell from Rs 13,10,628 to Rs 10,41,218.

Fiscal year 1925-26. Imports (coal and coke), 402,000 tons, value Rs 97,65,000, exports (coal and coke), 241,000 tons, value Rs 34,80,000. (See also under "Mines and Minerals.")

**COCONUT OIL.**—Exports of coconut oil declined in quantity from 118,187 gallons in 1924 to 105,292 gallons in 1925, and in value from Rs 3,00,140 to Rs 2,75,576. In 1925 the United Kingdom took 54,000 gallons at Rs 1,36,755, the United States being the next largest purchaser. Imports in 1925 were valued at Rs 45,07,390, against Rs 25,71,361 in the preceding year.

Fiscal year 1925-26. Exports, 126,000 galls, value Rs 3,28,000.

**COCONUTS.**—In 1925 some 265,000 coconuts, valued at Rs 22,922, were exported, against 300,500 in 1924, valued at Rs 46,684. Imports of coconuts amounted to 11,276,000 (Rs 9,41,410) in 1925, compared with 7,296,000 (Rs 6,42,008) in 1924.

**COFFEE.**—Exports of Indian coffee increased from 200,241 cwt valued at Rs 1,63,74,857 in 1924 to 258,952 cwt valued at Rs 2,38,63,561 in 1925. Values taken by countries of destination in 1925 were: United Kingdom, Rs 1,03,24,805; France, Rs 41,48,936; Germany, Rs 25,02,158; Netherlands, Rs 14,19,424; Bahrein Islands, Rs 12,24,951; and Mesopotamia, Rs 10,32,466. The share of Madras in the export trade was Rs 2,30,18,211, and of Bombay, Rs 8,42,520. Fiscal year 1925-26 Exports, 205,000 cwts, value Rs 1,85,20,000. (See also under "Agriculture.")

**COIN AND BULLION.**—A most important feature of 1925 was the increased import of gold on private account, which rose from Rs 45 crores to Rs 61 crores. 21 crores came from the United States, Rs 19 crores from Natal, and Rs 18 crores from the United Kingdom. Imports of gold bullion increased from Rs 35 crores to Rs 47 crores, and of sovereigns and other British gold coin from Rs 9 crores to Rs 13 crores. Exports of gold were valued at Rs 46 lakhs in 1925, against Rs 24 lakhs in 1924. Imports of silver on private account declined from Rs 23 crores to Rs 22 crores and exports from Rs 4 crores to Rs 1.51 lakhs during the two years under review.

Fiscal year 1925-26 Imports (gold), Rs 35.23 lakhs, (silver), Rs 19.85 lakhs. Exports (gold), Rs 38 lakhs, (silver), Rs 2.70 lakhs.

**COIR.**—Exports of unmanufactured coir fell from 36,170 tons, valued at Rs 1,17,38,925, in 1924 to 32,284 tons, valued at Rs 1,13,20,166, in 1925. Great Britain and Germany were the largest purchasers, the Netherlands, Belgium and France coming next.

Fiscal year 1925-26 Exports (manufactured coir), 29,800 tons, value Rs 1,07 lakhs.

**COTTON.**—Exports of raw cotton increased in quantity from 586,000 tons in 1924 to 739,000 tons in 1925, and in value from Rs 95 crores to Rs 104 crores. All the principal countries which buy Indian cotton took larger quantities during 1925, particularly Japan, which increased its share from 267,000 to 373,000 tons. Italy was the largest purchaser at Rs 12.62 crores, against China's Rs 9.99 crores, Belgium's Rs 6.61 crores and the United Kingdom's Rs 6.11 crores. Exports from Bombay in 1925 totalled 490,701 tons, valued at Rs 68.65 crores, from Sind 166,977 tons, valued at Rs 24.46 crores, and from Madras 56,948 tons, valued at Rs 8.01 crores. In the same year 192,498 tons of cotton waste were exported, valued at Rs 67 lakhs.

Fiscal year 1925-26 Exports, 745,000 tons, value Rs 94,99,28,000. (See also under "Industries" and special article on "Cotton.")

**COTTON MILL MACHINERY.**—See under "Machinery."

**COTTON PIECE GOODS.**—Both in the export and import trade of India cotton manufactures bulk very largely.

**EXPORTS.**—Of the cotton produced in India it may be said in general terms that about one-third is manufactured into yarn and cloth in Indian mills. The chief centre of the cotton manufacturing industry, as of the trade in raw cotton, is Bombay. Cotton manufactures now represent about 22 per cent of the total value of Indian manufactures exported and about 6 per cent of the total export trade of the country. The following tables show the values of the three classes of cotton piece goods exported in

the years named and the leading countries of destination—

	1924 Rs	1925 Rs
Grey (unbleached)	1,20,42,738	1,15,44,359
White (bleached)	4,75,650	3,55,406
Coloured, printed or dyed	5,32,54,090	4,80,37,211
<b>Totals</b>	<b>6,57,72,478</b>	<b>6,05,36,976</b>
LEADING COUNTRIES OF DESTINATION	1924 Rs	1925 Rs
Straits Settlements	1,38,68,502	1,46,51,664
Mesopotamia	1,11,40,908	87,15,198
Persia	99,37,432	85,64,049
Ceylon	82,23,446	84,06,713
Kenya Colony and Zanzibar	39,34,411	36,37,304
Portuguese East Africa	25,72,372	27,23,192
Tanganyika Territory	20,90,654	23,26,060
Aden	22,03,743	16,11,019
Siam	14,59,207	15,37,162
Arabia	26,05,100	13,60,784
Bahrein Islands	22,04,520	13,65,186
Other countries	54,73,075	55,39,645
<b>Totals</b>	<b>6,57,72,478</b>	<b>6,05,36,976</b>

Fiscal year 1925-26 Grey (unbleached), 37,395,000 yds., value Rs 1,03,45,000; coloured, printed or dyed, 126,545,000 yds., value Rs 5,08,86,000.

**IMPORTS.**—The imports of cotton piece goods, including fents, decreased by 3 per cent in quantity from 1,704,937,073 yards to 1,640,670,358 yards, and by 10 per cent in value from Rs 66 crores to Rs 59 crores. Grey goods declined from 818,000,000 to 734,000,000 yards, and white goods from 497,000,000 to 493,000,000 yards, while coloured goods rose from 369,000,000 to 388,000,000 yards.

The following table shows the values of these three classes of cotton piece goods imported in the years named—

	1924 Rs	1925 Rs
Grey (unbleached)	27,93,01,830	23,56,49,870
White (bleached)	18,75,46,415	17,18,92,636
Coloured, printed or dyed	19,02,43,872	17,10,42,020
Fents	65,99,388	70,61,244
	66,36,91,505	58,50,45,770

The United Kingdom supplied grey goods to the value of Rs 19 crores in 1925, as against Rs 23 crores in 1924, white goods to the value of Rs 16 crores, compared with Rs 19 crores, and coloured goods value Rs 13 crores, compared with Rs 16 crores. Japan's exports of grey goods increased by Rs 38 lakhs, and those of coloured goods by Rs 74 lakhs. Exports of grey unbleached goods from the United States rose from Rs 6 lakhs to Rs 12 lakhs.

Fiscal year 1925-26 Grey (unbleached), 709,085,000 yds., value Rs 21,88,72,000; white (bleached), 465,112,000 yds., value Rs 15,99,32,000; coloured, printed or dyed, 365,836,000 yds., value Rs 15,92,12,000; fents, 23,679,000 yds., value Rs 70,32,000. Total, Rs 54,50,48,000.

**COTTON SEED.**—Shipments of cotton seed (almost entirely from Bombay) increased from 163,576 tons, valued at Rs 1,92,91,833, in 1924 to 241,410 tons, valued at Rs 2,76,56,776, in 1925. They went, as usual, almost entirely to the United Kingdom, which took 230,905 tons in 1925, valued at Rs 2,64,99,813.

Fiscal year 1925-26 Exports, 197,000 tons, value Rs 2,18,11,000.

**COTTON TWIST AND YARN.**—Exports of cotton twist and yarn in 1925 were valued at Rs 3,21,72,442, against Rs 3,23,07,187 in

1924. China is the largest purchasing country, followed by Egypt, Persia, Aden and dependencies, and Syria.

Imports of twist and yarn declined in value from Rs 9,62,90,558 in 1924 to Rs 7,75,12,935 in 1925, Japan having taken the place of Great Britain as the chief source of supply.

Fiscal year 1925-26 Exports, 31,874,000 lbs., value Rs 2,03,37,000; imports, 51,688,000 lbs., value Rs 7,76,67,000.

**CUTLERY.**—Imports of cutlery were valued at Rs 32,15,839 in 1925, against Rs 38,25,277 in 1924. In 1925 Germany led with Rs 21,40,186, Great Britain's share of the trade reaching Rs 9,05,243.

Fiscal year 1925-26 Imports valued at Rs 33,08,000.

**CYCLES.**—Imports of all bicycles (other than motor cycles) rose in number from 56,464 in 1924 to 82,850 in 1925, the respective values being Rs 38,64,881 and Rs 48,17,585. Parts and accessories also increased in value from Rs 31,94,193 to Rs 41,95,851. In 1925 the United Kingdom's share of the total was Rs 78,02,791.

Fiscal year 1925-26 Imports valued at Rs 1,01,25,000.

**CYCLES (MOTOR).**—See "Motor Cycles."

**DATES.**—Of dried fruits these are the most imported, the value in 1925 being Rs 97,24,288, compared with Rs 1,07,15,454 in 1924.

Fiscal year 1925-26 Imports, 58,000 tons, value Rs 97,00,000.

**DRUGS AND MEDICINES.**—The imports of drugs and medicines in 1925 were valued at Rs 1.86 lakhs, an increase of Rs 8 lakhs on the 1924 total. Camphor decreased in value from Rs 25 to Rs 22 lakhs, some 14,000 lbs less coming from Japan, while China increased her consignments by 12,000 lbs. Imports of quinine salts on private account rose in quantity from 99,891 lbs to 133,132 lbs and in value from Rs 26 to Rs 31 lakhs. Imports of proprietary and patent medicines increased from Rs 23 to Rs 26 lakhs.

Fiscal year 1925-26 Imports valued at Rs 1,83,55,000; exports valued at Rs 36,77,000.

**DYES.**—Imports of synthetic dyes declined in value from Rs 2,84,06,008 in 1924 to Rs 1,59,62,802 in 1925. Of the latter total, Germany was responsible for Rs 98,22,768, the United Kingdom's share of the trade having declined to Rs 11,29,093.

Fiscal year 1925-26 Imports 10,309,000 lbs., value Rs 1.43 lakhs.

**EARTHENWARE AND PORCELAIN.**—Imports of earthenware and porcelain rose in value from Rs 71,87,583 in 1924 to Rs 75,55,818 in 1925. In the latter year Japan's share of the trade was Rs 31,67,039 and Great Britain's Rs 28,88,183.

Fiscal year 1925-26 Imports valued at Rs 76,45,000.

**ELECTRICAL MACHINERY.**—See "Machinery."

**ENGINES.**—See "Railway Material."

**FIRE BRICKS.**—See "Building Materials."

**FLOUR.**—Exports of wheat flour increased from 70,011 tons in 1924 to 75,074 tons in 1925, and in value from Rs 1,39,96,087 to Rs 1,75,87,383. In 1925 Egypt took 20,948 tons (Rs 48 lakhs) against 19,522 tons (Rs 37 lakhs) and Mesopotamia 8,884 tons against 1,541 tons, while Arabia reduced her demand from 11,696 tons (Rs 21 lakhs) to 4,335 tons (Rs 9 lakhs). Sind exported flour to the value of Rs 9 crores, and Bombay Rs 2 crores.

Fiscal year 1925-26 Exports, 67,000 tons, value Rs 1,56,20,000.



**FURNITURE.**—Imports of furniture and cabinetwork in 1925 were valued at Rs 19 lakhs, against Rs 15 lakhs in the previous year.

Fiscal year 1925-26 Imports valued at Rs 22,00,000, exports valued at Rs 6,12,000.

**GHI.**—The internal consumption of ghi in India greatly exceeds that of butter. Ghi, which is known as *ghee* in Southern India, is clarified butter prepared in practically every household by heating butter over a slow fire until an oil is formed that rises to the surface, while the refuse (mostly cascin) settles down as sediment. This oil is then decanted, and has the great advantage over butter that it will keep almost indefinitely. Ghi is used for all purposes to which butter is put in Europe, and is also extensively employed in the preparation of bazar sweetmeats. The bulk of the quantity produced is locally consumed, and supplies are reinforced by a considerable trans-frontier trade, as well as by imports by sea from Persia and the Persian Gulf, these being valued at Rs 1,97,378 in 1925, compared with Rs 70,611 in 1924. There is also a considerable export trade, which was worth Rs 37,83,253 in 1925, as against Rs 34,85,679 in the previous year.

Fiscal year 1925-26 Exports, 41,000 cwt. value Rs 40,15,000.

**GINGER.**—Exports of ginger declined in value from Rs 23 lakhs in 1924 to Rs 16 lakhs in 1925. Imports of the same commodity also fell from Rs 3,86,930 to Rs 2,49,239.

Fiscal year 1925-26 Exports, 33,000 cwt., value Rs 17,51,000.

**GOLD.**—See "Coin and Bullion."

**GROUNDNUTS.**—The greater portion of the rich harvest of groundnuts produced in India is consumed locally, but in 1925 there was a substantial rise in the volume of exports, which totalled 402,799 tons valued at Rs 12,99,59,371, against 242,770 tons, valued at Rs 6,90,32,707, in 1924. All the principal importing Continental countries increased their purchases. France was, as usual, the best customer, taking 220,084 tons, or 47 per cent of the total quantity shipped, compared with 155,383 tons in 1924. Germany took 63,703 tons, the Netherlands 63,111 tons, and the United Kingdom 30,301 tons. Of the export trade, Madras had the lion's share, viz. 382,111 tons value Rs 10,83,63,869 in 1925, Bombay being second with 80,365 tons value Rs 2,15,39,750.

Fiscal year 1925-26 Exports, 455,000 tons, value Rs 12,02,33,000. (See also under "Agriculture.")

**GUNNY BAGS.**—These bags shipped overseas numbered 437,591,846 in 1925, as against 416,008,317 in 1924, the respective values being Rs 26,75 lakhs and Rs 21,27 lakhs. Australia (Rs 4,84 lakhs), Cuba (Rs 3,20 lakhs) and Chile (Rs 1,01 lakhs) were the principal purchasing countries.

Fiscal year 1925-26 Exports (hessian), 76,873,000 bags, value Rs 3,01,16,000; (sacking), 348,210,000 bags, value Rs. 23,70,98,000.

**GUNNY CLOTH.**—In 1925 the value of the 1,484,000,000 yards of gunny cloth exported was Rs 31,50 lakhs, compared with 1,418,000,000 yards, valued at Rs 26,05 lakhs, in 1924. The United States took 1,048,000,000 yards in 1925, valued at Rs 21,5 lakhs.

Fiscal year 1925-26 Exports (hessian), 1,400,017,000 yds., value Rs 30,20,54,000; (sacking), 61,364,000 yds., value Rs. 1,59,55,000.

**HABERDASHERY.**—Total imports of haberdashery and millinery declined slightly from Rs 1,09 lakhs in 1924 to Rs 1,07 lakhs in 1925. Japan supplied Rs 21 lakhs in

1925, against Rs 12 lakhs in the preceding year. Imports from Germany fell from Rs 31 lakhs to Rs 23 lakhs, and those from Great Britain from Rs 29 lakhs to Rs 28 lakhs.

Fiscal year 1925-26 Imports valued at Rs 1,09,99,000, re-exports valued at Rs 6,99,000.

**HARDWARE.**—This is a comprehensive heading, and includes among others the following—

	1924 Rs (LAKHS)	1925 Rs (LAKHS)
Agricultural implements	18	16
Other implements and tools (except machine tools)	65	68
Builders' hardware	30	29
Domestic hardware	10	10
Enamelled ironware	31	38
Metal lumps	83	88
Metal lumps, parts	8	6
Stoves	9	10
Safes, etc.	3	3
Gas mantles	6	6
Other sorts	2 31	2 18

The total value of the imports decreased from Rs 4,96 lakhs in 1924 to Rs 4,94 lakhs in 1925. Of the latter total, Rs 1,93 lakhs represented the share of the United Kingdom and Rs 1,30 lakhs that of Germany.

Fiscal year 1925-26 Total value of imports, Rs 5,19,57,000, re-exports valued at Rs 25,70,000.

**HEMP (RAW).**—Exports of raw hemp increased in quantity from 597,352 cwt in 1924 to 976,147 cwt in 1925, and in value from Rs 1,32,80,544 to Rs 1,81,20,256. Belgium was the best customer in 1925, as in the two preceding years, taking 302,251 cwt., against Great Britain's 147,342 cwt. and Germany's 80,297 cwt. Bengal exported 418,334 cwt. valued at Rs 1,05,59,226, and Bombay 232,071 cwt. valued at Rs 68,08,325.

Fiscal year 1925-26 Exports, 624,000 cwt., value Rs 1,59,17,000.

**HIDES AND SKINS.**—The exports of raw hides and skins amounted to 47,700 tons valued at Rs 6,77 lakhs in 1925, compared with 48,000 tons valued at Rs 6,93 lakhs in 1924. Exports of tanned hides and skins increased from 18,100 tons (Rs 5,90 lakhs) in 1924 to 19,400 tons (Rs 7,18 lakhs) in 1925. The United Kingdom in 1925 took 76 per cent of the total quantity of tanned skins exported. Though India has increased her exports of dressed hides and skins, her trade in raw hides is considerably less than before the War.

Fiscal year 1925-26 Imports, 1,000 tons, value Rs 17,33,000, exports, 51,000 tons, value Rs 7,23,38,000.

**HOPS.** Some 1,500 cwt of hops were imported into India in 1925, the value being Rs 1,88,309, compared with Rs 2,16,095 in 1924.

**HOSIERY.** The value of the imports of cotton hosiery rose from Rs 1,05 lakhs in 1924 to Rs 1,37 lakhs in 1925. Japan increased her supplies from Rs 81 to Rs 1,07 lakhs, and the United Kingdom from Rs 3,50,647 to Rs 3,60,826. The United States' share also rose from Rs 4,15,940 to Rs 5,14,350.

Fiscal year 1925-26 Imports valued at Rs 1,40,46,000.

**IMPLEMENTS AND TOOLS.**—See "Hardware."

**INDIGO.**—Natural indigo, formerly cultivated to a large extent in India, received an artificial stimulus from war conditions, but is now feeling severely the competition of synthetic dyes, particularly those from Germany. The total exports in 1925 were less than half those for 1924, which again were nearly 50 per cent lower than those for

1923. In 1925 they amounted to 1,838 cwt., valued at Rs 5,27,369, against 3,884 cwt. (Rs 12,53,290) in the preceding year. The export trade is almost all equally divided between Bengal and Madras, the principal countries of destination being Egypt, Mesopotamia and the United Kingdom.

Fiscal year 1925-26 Exports, 2,000 cwt., value Rs 5,59,000.

**IRON AND STEEL.** Despite the enactment of a protective tariff on steel and the granting of a bounty to the domestic iron and steel industry, the importation of iron and steel into British India during the fiscal year ended March 31, 1925, showed a fair advance over the previous year. The figure for 1924-25—920,845 gross tons—represented a gain of 5 per cent over 1923-24 and of 1 per cent over 1922-23. During 1925-26 imports declined by about 1 per cent, decreasing to 917,247 gross tons of iron and steel, this last figure being still about 4 per cent above that for the year 1923-24. The value of all imports of iron and steel, which averaged Rs 9,61 lakhs before the War, fell from Rs 18 crores in 1922-23 to Rs 17 crores in 1923-24 and rose again to Rs 19 crores in 1924-25. In 1925-26 the total value was Rs 18.80 crores.

The following table shows the detailed imports of iron and steel into British India for the fiscal years named—

ARTICLES	IN GROSS TONS YEAR ENDED MARCH 31	
	1924-25	1925-26
Pig iron	3,425	2,895
Scrap	1,920	2,038
Angle, bolt and rod iron	740	220
Bars and channel iron	9,206	7,680
Steel bars, not cast	183,467	125,764
Ingot, blooms, billets, and slabs	626	481
Beams, pillars, girders and bridge work	80,879	98,080
Railway bridge work	10,203	1,254
Steel angles, tees	37,482	42,402
Anchor and cables	556	944
Hoops and strips	35,451	38,887
Sheets and plates		
Galvanised	209,148	283,056
Tinned	36,529	29,758
Other	118,068	91,667
Pipes and fittings, cast	12,501	11,708
Tubes, pipes, and fittings, wrought	33,810	25,270
Rails, chairs, and fish plates		
Railway	25,553	34,063
Other	16,434	
Sleepers and keys for railways	22,161	32,173
Fencing materials	6,023	8,223
Wire, other than fencing	6,588	6,605
Wire nails	16,238	7,700
Nails (other than wire), rivets, and washers	15,260	14,957
Bolts and nuts	8,033	8,604
Screws	1,997	2,007
Wire rope	2,820	2,647
Rice bowls, iron	572	700
Spring steel	4,164	5,241
Tool steel		
Carbon	956	1,223
High-speed	417	575
Cast-steel bars	730	837
Other cast steel	430	256
Other manufactures	24,341	29,308
Total	920,845	917,247

From the preceding table it will be seen that the more important losses in imports during 1925-26 were in steel bars, sheets and plates (except galvanised), railway bridgework and wire nails. Considerable advances were made in galvanised sheets, beams, pillars, etc., also sleepers and keys for railways.

The United Kingdom was the leading source for imports during 1925-26, her share of the total being Rs 11.64 lakhs, against Rs 11.88 lakhs in 1924-25. The next largest contributor was Belgium, which made some important shipments. Germany was third in the trade, while France and the United States were close contestants for fourth place.

**Exports.**—Exports of pig iron totalled 402,000 tons (Rs 1.98 lakhs) in 1924-25, against 271,000 tons (Rs 1.70 lakhs) in 1923-24. America and Japan together taking three-fourths of the quantity exported.

**JEWELLERY.**—Articles of jewellery imported, including unset stones and gold and silver plate, rose in value from Rs 12,90,423 in 1924 to Rs 16,08,881 in 1925. Exports during the same years increased from Rs 1,92,200 to Rs 7,72,111.

Fiscal year 1925-26 Imports valued at Rs 19,61,000.

**JUTE.**—Exports of raw jute increased in quantity from 676,000 tons in 1924 to 692,790 tons in 1925, while the value, on account of higher prices, showed a rise of 42.3 per cent, from Rs 26 crores to Rs 37 crores. The United Kingdom increased its takings from 170,000 to 177,000 tons, valued at Rs 6.81 and Rs 9.93 lakhs respectively, the last figure making it the largest purchaser in point of value. Germany came next, with 180,183 tons, valued at Rs 9.27 lakhs, as against 176,050 tons, valued at Rs 6.77 lakhs, in the preceding year. The value of the exports to France rose from Rs 2.90 to Rs 4.49 lakhs, to the United States from Rs 2.28 to Rs 3.69 lakhs, and to Italy from Rs 2.17 to Rs 2.93 lakhs. In quantity, Belgium, Japan and China all took less than in 1924, but Argentina increased her takings from 3,223 to 13,720 tons and the Netherlands from 9,400 to 14,430 tons. There is a growing tendency for more jute to be consumed in the Indian mills and less to be exported, the increases in the exports of manufactured jute goods being very marked.

Fiscal year 1925-26 Exports, 647,000 tons, value Rs 37,94,57,000, imports valued at Rs 96,000 (See also "Gunny Bags," "Gunny Cloth," and special article on "Jute.")

**KAPOK.**—The value of the 45 575 cwt. of kapok exported in 1925 was Rs 27,67,358, compared with Rs 24,50,794 for 42,138 cwt. in 1924.

**KEROSENE.**—See "Mineral Oils."

**LAC.**—The total quantity of lac exported increased in quantity from 430,400 cwt. in 1924 to 486,422 cwt. in 1925, but decreased in value during the same period from Rs 7.75 lakhs to Rs 7.05 lakhs. Of the total quantity exported in 1925, 77 per cent consisted of shellac, 4 per cent of button lac, 7 per cent of seed lac, 4 per cent of stick lac, and 8 per cent other kinds. Shipments of shellac increased from 328,984 cwt. to 378,709 cwt., the United States taking 192,599 cwt. and Great Britain 82,522 cwt. Out of 21,055 cwt. of button lac exported, the United Kingdom took 11,549 cwt.

Fiscal year 1925-26 Exports, 540,000 cwt., value Rs 6,90,10,000 (See also special article, "Shellac.")

**LEAD.**—Imports of lead were practically the same in 1925 as in 1924, amounting to 51,080 cwt., valued at Rs 16,40,803, compared with 51,232 cwt. valued at Rs 15,19,362. Imports of sheet lead for tea chests from the United Kingdom rose slightly from 14,159 to 14,464 cwt. and their value from Rs 4,36,875 to Rs 5,32,046. Ceylon also supplied more in 1925 than in the preceding year.

Fiscal year 1925-26 Imports, 51,000 cwt., value Rs 15,62,000.

**LEATHER.**—Imports of tanned or dressed hides and skins and of leather manufactures (excluding boots and shoes) were valued at Rs 56,02,388 in 1925, compared with Rs 52,74,794 in 1924, the United Kingdom's share of the trade in 1925 being Rs 44,95,252, an increase of Rs 1,77,352 on 1924. Exports of leather and manufactures thereof totalled Rs 7.20 lakhs in 1925, against Rs 7.02 lakhs in 1924.

Fiscal year 1925-26 Total value of exports, Rs 7,10,21,000 (See "Boots and Shoes.")

**LINSEED.**—The Indian linseed crop of 1923-24, which was marketed in 1924-25, was estimated at 493,000 tons, of which 371,000 tons were shipped, the value being Rs 9.74 lakhs, a slight increase on the Rs 9.62 lakhs obtained in 1923-24.

Fiscal year 1925-26 Exports, 308,000 tons, value Rs 8,08,53,000 (See also under "Agriculture.")

**LIVE STOCK.**—Exports of Indian live stock increased in value from Rs 20,52,695 in 1924 to Rs 32,20,330 in 1925, the total number of animals (208,593) including 120,762 sheep and goats and 10,190 cattle. Imports during the same period rose from Rs 20,17,400 to Rs 31,90,185. Imported animals are nearly all horses, 1,876 arriving from New Zealand in 1925.

Fiscal year 1925-26 Exports valued at Rs 34,62,000, imports valued at Rs 31,50,000.

**LOCOMOTIVES.**—See "Railway Material."

**LUBRICATING OILS.**—See "Mineral Oils."

**MACHINERY.**—In previous years machinery and mill-work ranked second in order of importance in India's import trade, being next to cotton manufactures. In 1924-25 there was a considerable drop in the importations, resulting in a fall back to fourth place, cotton manufactures, sugar and iron and steel occupying respectively the first, second and third positions. The total imports of machinery of all kinds, including belting for machinery and printing presses, during the year 1924-25 decreased to Rs 16 crores, as compared with Rs 20 crores in 1923-24 and Rs 24 crores in 1922-23. The values of the more important items are given below (in lakhs of rupees).

	19-24	1924-25
Prime movers	2.02	1.86
Electrical	2.23	2.02
Boilers	.90	.72
Metal working (chiefly machine tools)	.52	.37
Mining	1.08	1.26
Oil crushing and refining	.38	.31
Paper mill	.6	.7
Refrigerating	.9	.7
Rice and flour mill	.21	.28
Saw mill	10	14
Sewing, knitting	54	69
Sugar	.13	.17
Tea	.39	.46
Cotton	5.60	2.08
Jute	1.37	.93
Wool	.11	.6
Typewriters	16	15
Printing and lithographing presses	21	20
Belting for machinery	88	94

It will be observed that in 1924-25 cotton mill machinery alone accounted for a decrease of Rs 2.92 lakhs, nearly three-fourths of the total fall in trade. This was owing to the depression in the cotton mill industry in the Bombay Presidency. Jute mill machinery also showed a fall, owing mainly to lack of new extensions, while, as a result of the prosperity of the industry, tea machinery recorded a considerable increase.

The value of all textile machinery imported decreased by 47 per cent, from Rs 7.20 to Rs 3.81 lakhs, of which Rs .61 lakhs, or

95 per cent, came from the United Kingdom, compared with Rs 7.04 lakhs, or 98 per cent, in 1923-24. Wool manufacturing machinery declined from Rs 11 to Rs 6 lakhs. The value of electrical machinery imported in 1924-25 amounted to Rs 2.02 lakhs, compared with Rs 2.22 lakhs in 1923-24, the decrease being mostly in motors, which fell from Rs 72 to Rs 40 lakhs. The United Kingdom sent electrical machinery in 1924-25 valued at Rs 1.77 lakhs, an increase of Rs 13 lakhs over 1923-24, while the United States reduced her supplies from Rs 41 to Rs 15 lakhs. Prime movers (other than electrical) fell from Rs 2.02 to Rs 1.86 lakhs, of which steam engines decreased from Rs 87 to Rs 68 lakhs, while oil engines rose by Rs 11 lakhs to Rs 1.10 lakhs. There were also decreases in boilers from Rs 90 to Rs 72 lakhs, in metal working machinery from Rs 52 to Rs 37 lakhs, and in oil-crushing and refining machinery from Rs 38 to Rs 31 lakhs. Rice and flour mill machinery (Rs 17 lakhs), saw mill and wood working machinery (Rs 14 lakhs), and tea machinery (Rs 46 lakhs) all showed increases compared with the preceding year. The value of sewing and knitting machines and parts thereof increased by Rs 15 lakhs to Rs 69 lakhs, while typewriters and parts fell from Rs 17 to Rs 15 lakhs. The number of sewing machines imported increased from 48,385 in 1923-24 to 61,220 in 1924-25, of which 49,942 came from the United Kingdom and 11,257 from Germany, compared with 41,857 and 6,145 respectively in the preceding year. The number of typewriters fell from 7,930 to 7,445, of which 6,732 came from the United States.

The following table shows the relative shares of the principal countries in all imports of machinery in the years named—

	19-24	19-24	19-24	19-24
	RS	PER	RS	PER
(LAKHS)	(CENT)	(LAKHS)	(CENT)	
United Kingdom	17.02	81.2	14.13	81.9
United States	2.11	10.4	1.51	9.5
Germany	.40	2.4	.59	3.7
Japan	.57	2.8	.4	2.3
Other countries	57	2.8	4	2.6
Total	20.23	100	15.89	100

The share of the United Kingdom showed a small decrease. America also reduced her share, while Germany had an increase.

Fiscal year 1925-26 Total value of imports, Rs 14,88,59,000.

**MACHINE TOOLS.**—See "Hardware."

**MANGANESE.**—Exports of manganese ore, valued at Rs 1.76 lakhs in 1922-23, fell to Rs 1.95 lakhs in 1923-24 and Rs 1.60 lakhs in 1924-25. Belgium was the best customer in the last two years, Great Britain and France coming next.

Fiscal year 1925-26 Exports, 564,000 tons, value Rs 1,54,36,000.

**MATCHES.**—Matches imported during 1925 totalled 7,721,424 gross, valued at Rs 91,25,522, against 7,167,404 gross, valued at Rs 90,01,061, in 1924. Supplies were almost entirely from Sweden and Japan.

Fiscal year 1925-26 Total value of imports, Rs 93½ lakhs.

**MEDICINES.**—See "Drugs and Medicines."

**METALS, ETC.**—The imports of metals and manufactures thereof increased by 15 per cent in quantity from 808,000 tons in 1923-24 to 930,000 tons in 1924-25 and by 8 per cent in value from Rs 24 to Rs 26 crores. Iron and steel represented Rs 19 crores of this total, compared with Rs 18 crores in 1923-24.

Fiscal year 1925-26: Imports, 945,000 tons, value Rs 25,35,36,000; exports, 494,000 tons, value Rs 4,92,81,000. (See "Hardware," "Iron and Steel," "Machinery," and "Railway Material.")

**MICA.**—Exports of mica increased in value from Rs 94 lakhs in 1924 to Rs 1,06 lakhs in 1925, mica splittings totalling Rs 73 lakhs and block mica Rs 33 lakhs in the latter year. The United Kingdom (Rs 50 lakhs), United States (Rs 35 lakhs) and Germany (Rs 11 lakhs) were the leading purchasers.

Fiscal year 1925-26 Exports, 96,000 cwt, value Rs 1,04,17,000

**MILK.**—Imports of condensed and preserved milk increased from 89,542 cwt in 1921 to 126,111 cwt in 1925, the respective values being Rs 54 and Rs 61 lakhs. The Netherlands and Australia are the two leading countries of supply.

Fiscal year 1925-26 Imports, 136,000 cwt, value Rs 62,04,000

**MINERAL OILS.**—Imports of mineral oils into India from foreign countries increased in both 1923-24 and 1924-25, the total quantity imported in the latter year rising by 18 million gallons from 169 to 187. Imports of petrol from abroad are insignificant, almost all the consumption in India being indigenous oil. More than 38 per cent of the total quantity imported in 1924-25 consisted of kerosene oil, 48 per cent of fuel oil, and 11 per cent of lubricating oils. Kerosene increased by 3 million gallons, fuel oils by 10 million gallons, and lubricating oils by 4½ million gallons. Seventy-two million gallons of kerosene oil (bulk oil 68 million and case oil 4 million gallons) were imported in 1924-25, compared with 69 million gallons (bulk oil 65 million and case oil 4 million gallons) in 1923-24. The following table shows the sources of imports of kerosene oil during the years named—

	1923-24	1924-25
United States	16,515	34,224
Borneo	10,267	11,041
Straits Settlements	1,807	1
Russia	2,004	—
Georgia	6,013	5,328
Egypt	—	1,385
Sumatra	1,070	—
Other countries	—	1
	68,955	71,980

Fiscal year 1925-26 Imports (kerosene and other kinds), 200,410,000 galls., value Rs 10,05,11,000

**FUEL OILS.**—The steady increase in the consumption of liquid fuel by railways, steamships, and industrial concerns is reflected in the import figures. Incomings of fuel oils in 1919-20 amounted to 34,000,000 gallons, to 62,500,000 gallons in 1922-23, to 80,500,000 gallons in 1923-24, and to the then record of 90,000,000 gallons in 1924-25, valued at Rs 1,84½ lakhs, of which 77½ million gallons, or 86 per cent, came from Persia, compared with 60 million gallons, or 75 per cent, in 1923-24. Both Borneo and the Straits Settlements reduced their supplies to 11 and 1 million gallons respectively in the preceding year.

Fiscal year 1925-26 Imports, 93½ million galls., value Rs 2,11½ lakhs

**LUBRICATING OILS.**—Imports of lubricating and batching oils increased from 16,000,000 gallons valued at Rs 1,74 lakhs in 1923-24 to 21,000,000 gallons valued at Rs 2,17 lakhs in 1924-25. The United States supplied 16,000,000 gallons and Dutch Borneo 3,000,000 gallons, compared with 11,000,000 gallons and 3,000,000 gallons respectively in the preceding year. The United Kingdom sent a little over 1,000,000 gallons, compared with 1,500,000 gallons in 1923-24.

Fiscal year 1925-26 Imports, 21,363,000 galls., value Rs 2,08 lakhs.

**MOTOR SPIRIT.**—Importations of foreign motor spirit into India amounted to only 3,500 gallons in 1924-25. Coastwise imports from Burma into India proper of petrol and other motor spirit totalled 14,000,000 gallons compared with 14,750,000 gallons in 1923-24 and 15,500,000 gallons in 1922-23.

Fiscal year 1925-26 Imports, 5,600 galls.

**MINING MACHINERY.**—See "Machinery"

**MOTOR CARS.**—Since 1921-22 the importation of motor vehicles into India has steadily increased. In a recent world census of motor vehicles conducted by the United States Department of Commerce, the number of motor vehicles in India was estimated at 82,737, of which 58,303 were passenger cars. The American percentage of this latter number was calculated to be 85 per cent, with percentages very nearly as high for motor-omnibuses and motor trucks. These figures indicate the trend of the Indian import trade in motor vehicles up to and including the official year ended March 31, 1925. The figures for the year ended March 31, 1926, were, from the standpoint of the British manufacturer, much more encouraging.

With regard to motor cars, the progressive improvement in the British position is indicated by the following table which shows the imports from the chief supplying countries in the years named.

	1923-24	1924-25	1925-26
United Kingdom	1,005	1,682	2,300
Italy	570	235	800
Canada	3,200	3,956	4,775
United States	2,805	3,106	4,143
Other countries	151	401	580
Totals	7,981	9,380	12,757

Respecting values, British cars in 1925-26 displaced Canadian in the position of second in point of importance. American vehicles coming first, valued at Rs 90½ lakhs, followed by British cars Rs 77½ lakhs, and Canadian Rs 72½ lakhs. In crores of rupees, Indian purchases of passenger cars from all sources were valued in 1925-26 at 2.82, against 2.10 a year previously, and 2.04 in 1923-24, an improvement of nearly 80 lakhs in three years.

Much of the increased popularity of British motor cars in India is undoubtedly due to the East India Section of the Motor Trades Association, under whose auspices an all British motor exhibition was held in Calcutta at the end of 1926. It is confidently expected that this exhibition will result in a further improvement in the trade in British motor vehicles, and for the British light car in particular.

**MOTOR CYCLES.**—British motor cycles totalled 1,458 out of 1,629 imported in 1925-1926, these figures comparing with 1,201 out of 1,456 in 1924-25. The value of all imports in 1924-25 was Rs 9,66,000.

**MOTOR TYRES.**—Tyres for motor vehicles were imported to the value of Rs 1,08,32,069 in 1925, against Rs 1,29,95,422 in 1924. Pneumatic motor covers came mostly from the United Kingdom (Rs 30 lakhs), United States (Rs 19 lakhs) and France (Rs 16 lakhs). The United Kingdom accounted for Rs 1,48 lakhs out of a total of Rs 1,85 lakhs for the 9,457 motor-cycle covers imported. In cycle covers her share was Rs 9 lakhs out of a total of Rs 14 lakhs. Solid rubber tyres for motor vehicles were imported mostly from the United Kingdom (Rs 5 lakhs) and the United States (Rs 4 lakhs).

Fiscal year 1925-26 Imports, 1,683,739 covers, tubes and solid tyres, value Rs 1,89 lakhs.

**MOTOR VEHICLES (HEAVY).**—Under this heading are included motor omnibuses, vans and lorries. Imports of these have shown a large advance since 1922, in which, however, British manufacturers have shared to only a limited extent. The total quantity imported in 1924 was 1,809, rising to 3,987 in 1925, Great Britain's share increasing from 70 to 297, while her share of the total values (Rs 35 lakhs and Rs 71 lakhs respectively) rose from Rs 5 to Rs 11 lakhs. In 1925 Canadian exports under this heading numbered 1,808, valued at Rs 24 lakhs, and those from the United States 1,793 valued at Rs 34 lakhs.

**NUX VOMICA.** Exports of nux vomica (strychnia) in 1925 were valued at Rs 2,50,565 compared with Rs 2,03,986 in 1924.

**OILS (MINERAL).**—See "Mineral Oils"

**OPIUM.** Exports of opium on private account amounted to 3,700 chests (5,424 cwt) valued at Rs 1,56 lakhs in 1925, as compared with 4,280 chests (6,522 cwt) valued at Rs 1,88 lakhs in 1924. Siam received 1,500 chests in each year. Indo-China's share was slightly reduced to 1,225 chests and Java increased her takings from 300 to 800 chests. Exports by the Government of India declined from 3,010 chests (7,811 cwt) valued at Rs 1,10 lakhs in 1924 to 2,740 chests (5,878 cwt) valued at Rs 1,01 lakhs in 1925.

In the year 1926 the Government decided to fix ten years as the period within which the export of opium from India for other than strictly medical purposes will be progressively and finally extinguished. A 10 per cent reduction of such exports will accordingly be effected in the year 1927, so that the last export will take place in 1935.

During this period exports will be under the system of direct sale to the Government of the importing countries, the sale of opium by public auction at Calcutta having been finally discontinued with effect from April 7, 1926.

Fiscal year 1925-26 Exports, 7,000 cwt, value Rs 1,93,37,000

**PAINTS AND COLOURS.**—Imports of paints and colours reached a total value of Rs 99 lakhs in 1925, against Rs 1,05 lakhs in 1924. From the United Kingdom in 1925 came imports to the value of Rs 73 lakhs, compared with Rs 80 lakhs in the preceding year.

Fiscal year 1925-26 Imports, 358,000 cwt, value Rs 1,01,05,000

**PAPER AND PASTEBOARD.**—Imports under this heading were valued at Rs 301 lakhs in 1924 and Rs 2,75 lakhs in 1925. Packing paper increased from Rs 27 lakhs to Rs 32 lakhs, Germany and Sweden leading as supplying countries. Newsprint declined from Rs 1,14 to Rs 87 lakhs, the United Kingdom leading with Rs 28 lakhs. This country also led in the trade in writing paper and envelopes her share of the total for 1924 (Rs 56 lakhs) being Rs 32 lakhs, and of the 1925 total (Rs 51 lakhs) Rs 30 lakhs.

Fiscal year 1925-26 Imports, 1,749,000 cwt, value Rs 2,81,05,000

**PEPPER.**—The quantity of pepper shipped in 1925 declined from 84,094 cwt to 74,917 cwt, but increased in value from Rs 28 lakhs to Rs 37 lakhs. The United Kingdom and Italy are the largest recipient countries.

Fiscal year 1925-26 Exports, 129,000 cwt, value Rs 93,29,000

**PERFUMERY.**—The value of perfumery (not including spirits) imported in 1925 was Rs 3,20,142, compared with Rs 3,55,102 in 1924.

**PIECE GOODS (COTTON).**—See "Cotton Piece Goods."

**POPPY SEED.**—A considerable export trade is done in poppy seed (largely with France), exports of which were valued at Rs 17 lakhs in 1924 and Rs 16 lakhs in 1925.

Fiscal year 1925-26: Exports, 6,000 tons, value Rs 16,16,000.

**PRECIOUS STONES.**—Imports of precious stones and pearls (unset) rose in value from Rs 1.15 lakhs in 1924 to Rs 1.18 lakhs in 1925, Belgium (Rs 47 lakhs), the Bahrein Islands (Rs 23 lakhs), the United Kingdom (Rs 18 lakhs) and the Maskat Territory (Rs 13 lakhs) being the leading sources of supply.

Fiscal year 1925-26 Imports valued at Rs 1,24,03,000.

**RAILWAY PLANT, ETC.**—The value of the imports of railway plant and rolling stock on private and Government accounts combined declined from Rs 8.39 lakhs in 1924 to Rs 7.53 lakhs in 1925. Details of these imports were as under—

	1924 LAKHS OF RUPEES	1925
Carriages and wagons	4.88	4.41
Locomotive engines and tenders	1.81	1.79
Bridge work	4.2	4
Rails, chairs and fish plates of steel or iron	3	2
Sleepers and keys of steel and iron	60	54
Sleepers of wood	1	14
Other kinds	55	59
Totals	8.39	7.53

The shares of the principal countries in the above imports were as follow—

	1924 Per cent	1925
United Kingdom	94.6	87.0
Australia	1.3	—
Belgium	1.9	4.1
United States	1.2	2.6
Germany	4	2.5

Fiscal year 1925-26 Imports valued at Rs 4,99,54,000.

**RAPESEED.**—The quantity of rapeseed exported in 1925 was 168,138 tons, compared with 276,647 tons in 1924, the value being Rs 4.12 lakhs, compared with Rs 6.19 lakhs. As in preceding years, Italy was the largest purchaser, but her takings declined from 96,890 to 58,531 tons. The United Kingdom came next with purchases to the extent of 31,673 tons, against 60,982 in the preceding year.

Fiscal year 1925-26 Exports, 112,000 tons, value Rs 2,68,09,000.

**RICE.**—The two most important food crops of India are rice and wheat, and the former accounts for over 50 per cent of the total quantity of food grains and flour exported. The following table shows the figures of export of all classes of rice from India (including Burma) in the years named

	1924 Tons (1,000)	Rs. (lakhs)	1925 Tons (1,000)	Rs. (lakhs)
Rice in husk (laddy)	25	23	28	28
Rice not in husk—				
Boiled	514	8.92	584	10.21
Cleaned	1,508	24.46	1,616	24.69
Broken cleaned	113	1.50	118	1.45
Other kinds	122	1.81	123	1.79
Totals (all rice)	2,287	36.92	2,419	38.42

Exports of all rice not in the husk increased from 2,262,000 tons, valued at Rs 36½ crores, in 1924 to 2,441,000 tons, valued at Rs 38 crores, in 1925. Most of the provinces cultivate the crop primarily for home consumption, the one exception being Burma, which normally exports half her crop, the bulk of it going to foreign countries and

some to other provinces in India. The following table shows the quantities of all rice exported by provinces in the years named

	1924 Tons (1,000)	1925 Tons (1,000)
Bengal	339	197
Bihar and Orissa	1	—
Bombay	12	28
Sind	25	40
Madras	63	53
Burma	1,847	2,145
	2,287	2,419

Fiscal year 1925-26 Exports, 549,000 tons, value Rs 39,60,54,000.

**TRADE BY COUNTRIES.**—In 1925 Germany was again the largest purchaser of Indian rice taking 435,806 tons, against 421,961 in 1924. Ceylon came next with 429,095 tons, compared with 381,521 tons in the preceding year. Japan and Egypt increased their demands to 270,150 tons and 103,195 tons respectively from 233,612 and 40,614 tons, while shipments to the Straits Settlements decreased from 220,384 tons in 1924 to 208,880 tons in 1925 and to China from 130,938 to 73,150 tons. The United Kingdom (99,491 tons), Sumatra (83,329 tons), the Netherlands (100,912 tons) and Mauritius (60,655 tons) purchased more than in 1924, while Java, Cuba and Austria considerably reduced their demands. The following table gives details as to the destinations of India's rice exports, the figures being in thousands of tons and for unhusked rice only. Practically one half of the total shipments go to Asiatic countries and about one-quarter to Germany and the Netherlands.

	1924 (Tons, 1,000)	1925
Germany	422	436
Ceylon	382	430
Japan	234	270
Straits Settlements	220	209
Egypt	41	103
Netherlands	95	101
United Kingdom	94	99
Sumatra	67	83
Cuba	117	79
China	137	73
Mauritius	44	61
Java	99	43
Arabia	10	40
Fed. Malay States	35	33
Austria	34	22

(See also article on "Rice" following "Agriculture.")

**RUBBER.**—Raw rubber exported from India totalled 22,583,000 lbs. valued at Rs 2.54 lakhs in 1925, as against 17,241,000 lbs. valued at Rs 1.28 lakhs in 1924. In 1925 the United Kingdom took rubber to the value of Rs 1.07 lakhs, compared with Rs 65 lakhs in 1924, and the Straits Settlements to the value of Rs 60, against Rs 18 lakhs. Exports were about equally divided as from Madras and Burma.

Fiscal year 1925-26 Exports, 22,396,000 lbs., value Rs 2,94,10,000, imports (raw and manufactured), valued at Rs 2,17,72,000.

(See also "Motor Tyres.")

**SALT.**—The taxation of salt in India is a legacy from the Moguls and results in a considerable revenue. Imports represent about one-fourth of the total annual consumption and aggregated 541,141 tons (Rs 1.02 lakhs) in 1925, compared with 595,666 tons (Rs 1.38 lakhs) in 1924. The chief exporting countries in order are Aden, Egypt and the United Kingdom.

Fiscal year 1925-26: Imports, 560,000 tons, value Rs 1,04,20,000.

**SALTPETRE.**—Exports of saltpetre declined in quantity from 167,700 cwt. in 1924 to 126,973 cwt. in 1925 and in value from Rs 27,99,213 to Rs 19,63,301.

Fiscal year 1925-26 Exports, 134,000 cwt., value Rs 20,28,000.

**SESAMUM.**—Exports of sesamum oil fell from 73,700 gallons in 1924 to 72,202 gallons in 1925. Sesamum seed exports increased from 25,379 tons to 46,800 tons during the same period.

Fiscal year 1925-26 Exports, 40,000 tons, value Rs 1,17,34,000. (See also under "Agriculture.")

**SHELLAC.**—See "Lac."

**SILK.**—Imports of raw silk in 1924-25 increased by nearly 4 per cent in quantity from 1,365,000 lbs. to 1,414,000 lbs., but the value was Rs 1.19 lakhs, about the same as in the preceding year. Imports from China and Hongkong showed a small decrease from 1,270,000 lbs. to 1,174,000 lbs. and accounted for 83 per cent of the total quantity imported, compared with 93 per cent in 1923-24. Siam and Japan increased their supplies. Silk yarn, noils and warps increased from 967,000 lbs. valued at Rs 71 lakhs in 1923-24 to 1,525,000 lbs. valued at Rs 1.02 lakhs in 1924-25. These came largely from Japan, Italy, China and France. The quantity of silk piece goods, the most important description of manufactured silk imported, increased by 14 per cent from 14,087,000 lbs. in 1923-24 to 16,128,000 lbs. in 1924-25, and the value by one per cent from Rs 2.30 to Rs 2.33 lakhs. Ninety-eight per cent of the total quantity came as usual from the Far East (China, Hongkong and Japan). Imports of artificial silk yarn also increased during the two years under review from 496,000 lbs. valued at Rs 19½ lakhs to 1,171,000 lbs. valued at Rs 42 lakhs, both the United States and Italy considerably increasing their supplies.

Fiscal year 1925-26 Imports (raw silk), 1,325,000 lbs., value Rs 94,34,000, (piece goods), 16,281,000 yds., value Rs 2,11,62,000.

India's exports of raw silk totalled 132,504 lbs., valued at Rs 18 lakhs in 1925, against 158,462 lbs. valued at Rs 26 lakhs in the preceding year, France and the United Kingdom taking 58,880 lbs. and 34,142 lbs. respectively. The value of silk manufactures exported in 1925 was Rs 3,16,357, compared with Rs 3,07,510 in 1924.

Fiscal year 1925-26 Exports (raw silk), 1,466,000 lbs., value Rs 35,75,000, (manufactures), value Rs 3,01,000.

**SKINS.**—See "Hides and Skins."

**SLEEPERS (RAILWAY).**—See "Railway Material."

**SPICES.**—Exports of all spices increased in value from Rs 2.76 lakhs in 1924 to Rs 2.98 lakhs in 1925.

Fiscal year 1925-26 Exports, 343,000 cwt., value Rs 1,76,28,000, imports, 1,412,000 cwt., value Rs 3,28,01,000. (See also "Ginger" and "Pepper.")

**STEEL.**—See "Iron and Steel."

**STICKLAC.**—See "Lac."

**SUGAR.**—The year 1924-25 may be regarded as the turning point in the post-War history of sugar, as it witnessed for the first time an excess of world supplies over requirements. The general feature of the world's markets for the year was, necessarily, a steady decline in prices. This downward course of prices led to a reduction in the area under cane in India, and consequently the indigenous production of sugar and gur was much reduced. The result was a large increase in the importation of foreign supplies, and sugar, which in the preceding two years











had fallen back to fourth place in India's import trade, in 1924-25 ranked second to cotton manufactures. The following table shows the origin of all sugar imports in that year and in 1923-24, the rise in quantity being from 411,500 to 671,000 tons and in value from Rs 14.78 to Rs 20.37 lakhs

	1923-24 Tons	1924-25 Tons
Java	368,300	480,200
Mauritius	1,300	133,000
Straits Settlements	2,900	2,900
China and Hongkong	5,800	2,600
Egypt	700	200
Japan	-	-
Germany	5,100	21,700
Austria	6,600	2,700
Hungary	11,300	10,800
Netherlands	300	100
Belgium	2,100	6,500
Czecho-Slovakia	5,300	5,100
United States	200	600
Other countries	1,600	4,000

Total (all countries) 411,500 671,000  
Value Rs (lakhs) 14.78 20.37

Fiscal year 1925-26 Imports, 805,000 tons, value Rs 15,84,39,000

**BEET SUGAR.** In 1924-25 there was a large increase in imports of beet sugar, the total quantity amounting to 45,000 tons compared with 20,700 tons in 1923-24. The principal sources of supply were Germany, 21,700 tons (5,000 tons), Hungary, 10,800 tons (11,300 tons), and Czecho-Slovakia 5,000 tons (5,200 tons), the figures in parentheses referring to the year 1923-24.

Fiscal year 1925-26 Imports, 43,400 tons.

**TALLOW.**—Imports of tallow and stearine aggregated 91,110 cwt in 1925, compared with 74,442 cwt in 1924, the respective value being Rs 31 and Rs 26 lakhs. Exports during the same period rose from 11,472 to 11,509 cwt, valued at Rs 5 lakhs in each year.

Fiscal year 1925-26 Imports, 85,000 cwt, value Rs 29,40,000

**TEA.**—The quantity of tea exported in 1925 decreased from 344,000,000 lbs to 335,000,000 lbs and the value from Rs 33 to Rs 28 crores. The United Kingdom took 287,000,000 lbs, compared with 304,000,000 lbs in 1924.

Fiscal year 1925-26 Exports, 325,733,000 lbs, value Rs 27,12,17,000 (For further figures of the exports to various countries and from the different ports see special article on "Tea")

**TIMBER.**—Exports of all wood and timber and manufactures thereof were valued at Rs 1.67 lakhs in 1923, against Rs 1.54 lakhs in 1924. The most valuable export under this heading is teakwood exports of which rose from Rs 1.31 lakhs in 1924 to Rs 1.41 lakhs in 1925 the United Kingdom taking 20,750 tons out of the 50,710 tons exported in the latter year. In that year exports of sandalwood were valued at Rs 17,44,468, compared with Rs 14,30,107 in 1924.

Fiscal year 1925-26 Exports (teakwood), value Rs 1,69,75,000 (sandalwood), value Rs 17,36,000

**TOBACCO.**—The bulk of the tobacco grown in India disappears in local consumption, but the export trade, chiefly from Madras and Rangoon is of considerable value. In 1924-25 there was an increase in the exports of unmanufactured tobacco by 31 per cent in quantity and by 24 per cent in value, from 33,000,000 lbs valued at Rs 96 lakhs to 43,000,000 lbs valued at Rs 1,18½ lakhs. The Netherlands was the best customer as in 1923-24, and took 12,200,000 lbs, compared with 8,300,000 lbs in the preceding year. Cigars to the value of Rs 3,74,000 were exported in 1924-25 against Rs 3,98,000 in 1923-24.

Fiscal year 1925-26 Exports (unmanufactured tobacco) 37,193,000 lbs, value Rs 1,05,05,000, (cigars), 403,000 lbs, value Rs 3,69,000

**IMPORTS.** Imports of unmanufactured tobacco rose from 4,500,000 lbs valued at Rs 48½ lakhs in 1923-24 to Rs 7,000,000 lbs valued at Rs 55½ lakhs in 1924-25. On the other hand, the imports of cigarettes declined from 3,500,000 lbs in 1923-24 to 2,750,000 lbs in 1924-25. The increase in the imports of unmanufactured tobacco and the falling off in those of cigarettes are together attributable to the steady growth in the manufacture of cigarettes in India. Unmanufactured tobacco comes almost entirely from the United States, which supplied some 6,653,000 lbs in 1924-25 or 94 per cent of the total quantity. The United Kingdom had in 1924-25 nearly 90 per cent of the cigarette trade.

Fiscal year 1925-26 Imports (cigarettes), 3,412,000 lbs, value Rs 1,58,82,000, (others), 5,250,000 lbs, value Rs 54,53,000 (See also under "Agriculture" and "Industries")

**TYRES.** See "Motor Tyres"

**WATCHES.** See "Clocks and Watches"

**WHEAT.**—The following table shows the figures of exports of wheat to the various countries of destination in the years named—

	1924 Tons	1925 Tons
United Kingdom	575,280	284,177
Belgium	71,981	60,768
Mesopotamia	15	31,780
Italy	17,005	31,705
France	36,549	18,524
Netherlands	10,112	7,848
Persia	170	7,746
Arabia	3,216	7,270
Germany	9,320	6,150
Other countries	48,047	85,343

Total tons 774,595 511,311  
Value, lakhs Rs 11,56 Rs 9,08

The decrease in exports is due to the appreciably larger local consumption of wheat since the War.

Of the total value of Rs 10.84 lakhs for all exports of wheat and flour in 1925, the share of Sind was Rs 8.72 lakhs and that of Bombay 1.80 lakhs.

Fiscal year 1925-26 Exports, 212,000 tons, value Rs 3,60,25,000 (See also under "Agriculture")

**WHISKEY.**—In 1924-25 whiskey accounted for 75 per cent of the total imports of spirits from the United Kingdom, exports increasing in quantity from 527,000 to 528,000 gallons, but decreasing in value from Rs 97 to Rs 93 lakhs.

Fiscal year 1925-26 Imports 568,000 galls, value Rs 95½ lakhs

**WIRE FENCING.**—See "Iron and Steel"

**WIRE NAILS.**—See "Iron and Steel"

**WIRE ROPE.**—See "Iron and Steel"

**WOOD.**—See "Timber"

**WOOL.** As the result of higher prices and a strong demand, exports of raw wool showed a large increase in 1924, rising from 37,681,000 lbs to 51,440,000 lbs valued respectively at Rs 3.26 lakhs and Rs 4.86 lakhs. In 1925 there was a slight fall in quantity to 49,774,000 lbs and in value to Rs 4.48 lakhs. The United Kingdom took 13,674,000 lbs in 1925, valued at Rs 3.97 lakhs, the United States purchases totalling 5,031,000 lbs valued at Rs 40,21,000.

Fiscal year 1925-26 Exports (raw wool), 43,410,000 lbs, value Rs 3,79,88,000

**WOOLLEN PIECE GOODS.** Imports of woollen piece goods increased in value from Rs 2.67 lakhs in 1924 to Rs 2.86 lakhs in 1925. The total of all woollen manufactures imported in 1925 was Rs 4.14 lakhs, against Rs 3.63 lakhs in 1924.

Fiscal year 1925-26 Imports, 14,575,000 yds, value Rs 2,92,17,000 (See also "Blankets")

**YARNS.**—See "Cotton Twist and Yarns"

**THE ENTERPRISES HEREAFTER DESCRIBED AND ILLUSTRATED REPRESENT A SELECTION OF ALL THAT IS BEST IN THE COMMERCE OF INDIA. THE VIEWS OF PREMISES, EXTENSIVE SHOWROOMS AND STOCKS ARE ELOQUENT OF THE MODERN BUSINESS PROCEDURE IN VOGUE, AND THE DETAILS (PRESENTED AS CONCISELY AS POSSIBLE) EMPHASISE IN THE MOST EFFECTIVE MANNER THE EXTENT AND METHODS OF THE MARKETS OF INDIA.**

#### SHAW WALLACE & CO.

**Inception.**—The history of this firm is a record of continuous and steady expansion from the date of its inception in Calcutta on January 1, 1886, until the present time.

**Development.**—In 1901 operations were extended by the opening of an office in Bombay, followed by similar expansion in Madras in 1906, in Karachi in 1907, and in

Colombo, Aden, Morinugao, Cochin and Ceylon during subsequent years. The firm is thus established at every port of importance on the Indian Coast. Its activities are as widespread as its representation, and in practically every branch of commerce in India it has a very considerable interest.

**Premises.**—The Head Office at Calcutta is in Bankshall Street, in premises which were

built to the firm's requirements, and in which it has been established since 1911. A photograph of these premises is reproduced in this volume, and it is significant of the growth of business that whereas one half of the building was at one time leased to outside firms, only three-fourths of the ground floor remain so let. What has happened at the Head Office is in the main what has occurred at the branches.

**Activities.**—Messrs Shaw Wallace & Co are engaged directly or indirectly in practically every branch of commerce in India, as the following plainly shows

**OIL.**—In the Indian oil world they are agents for the whole country for the Burmah Oil Co Ltd and the Anglo-Persian Oil Co (India) Ltd, acting as well in the same capacity for the Assam Oil Co Ltd, the Tank Storage Co (India) Ltd, and as managing agents for the Finplate Company of India Ltd, at whose works tinplates for kerosene and petrol containers are produced in vast quantities

**COAL.**—In this trade the firm manages a number of collieries as far distant from one another as Nazim in Assam and the pits of the Pench Valley Coal Co Ltd in the Central Provinces

**COTTON AND FLOUR.**—In industrial circles it manages the Bengal Nagpur Cotton Mills Co Ltd and also such sound concerns as the Hooghly Flour Mills Co Ltd and the United Flour Mills Co Ltd

**TEA.**—In this commodity the company occupies a prominent position as agents and managing agents for numerous tea companies situated in Northern India and Ceylon, in which island it also manages rubber-producing properties

**FERTILISERS.**—It likewise takes a leading position in its arrangements to meet the growing needs of India and Ceylon in connection with fertilisers for all purposes. In its Dhappa and Atlas Works at Calcutta, and its Atlas Works at Colombo, every possible want in the fertiliser world in India and Ceylon is catered for while as agents for the British Sulphate of Ammonia Federation in India, Shaw Wallace & Co have achieved a marked success

**INSURANCE.**—In insurance the company represents a lengthy list of some of the best known houses

**Import and Export.**—On the merchant side of the business the firm as importers and exporters, plays an important part in practically every channel of commerce. On the import side it is prominent in the importation of cotton piece goods from Lancashire, Continental, American and Japanese mills. Through its Finber Department, established, like the Piece Goods Department, at all the branches, it caters for the requirements of the Indian market in Burma timbers and in pine from America, whilst the Import Department handles wire ropes, rock drills, paints, explosives, metals, agricultural implements, etc. At most branches, likewise, the company has established a Sugar Department dealing with the importation of sugar into India. On the export side its Produce Department holds a prominent position in the shipment of all grades of Indian products, wheat, rice, linseed, hemp, etc., in its Jute Department it participates on an extensive scale in the pressing and baling of raw jute under the supervision of its own staff and the shipment of this product to the markets of the world under its own marks, whilst the same product, converted into gunnies in the Jute Mills on the Hooghly, is handled by the Gunny Department, which has more than once brought the name of Shaw Wallace & Co to the head of the list of exporters of this article from India

**Head Offices.**—4, Bankshall Street, Calcutta (cables: "Shawlace," Calcutta). Also at Bombay, Madras, Karachi, Colombo, Cochin, Aden, Codes A B C 5th Edition, Bentley's, Scott's.

## JAMES FINLAY & CO. LIMITED.

**Inception.**—Founded at Glasgow in 1750 by Mr James Finlay, the firm opened branches subsequently in other cities of Great Britain, on the Continent of Europe and in America. To day the head office is still in Glasgow, and there are branch offices in London and Liverpool, while the company has cotton mills and bleaching works at Catrine and Deanston in Scotland

**Development.**—Under the administration of Mr Kirkman Finlay, a son of the founder of the business, the various enterprises made great strides, and in 1816 operations were extended to India, a branch being opened in Bombay. At the present time the organisation has four establishments in India, viz at the city just named, at Karachi, Calcutta, and Chittagong, while there is also an office at Colombo, Ceylon

**Capital.**—In 1900 the firm was converted into a private company under its present name, and in 1924 became a public company with a capital of £2,000,000

**Activities.**—The business ramifications of the organisation are wide and varied, the trading operations of the Calcutta house alone covering an extensive field in Indian commerce. This branch was opened in 1870, and the following brief summary of the interests of its various departments will convey some idea of the vast extent of its operations

### Departments :—

**TEA.**—James Finlay & Co Ltd are the largest growers in the world of Indian tea, and are the agents in Calcutta for the under-noted tea companies. The Consolidated Tea & Lands Co Ltd, Amalgamated Tea Estates Co Ltd, Kanai Devan Hills Produce Co Ltd, Anglo-American Direct Tea Trading Co Ltd, Achabam Tea Co Ltd, Borhat Tea Co Ltd, Chalgola Tea Association Ltd, Baraoota (Sylhet) Tea Co Ltd, Dhamai Tea Co Ltd, Noyapara Tea Co Ltd, Doloi Tea Co Ltd, Chubwa Tea Co Ltd, Balmatapootra Tea Co Ltd, Killing Valley Tea Co Ltd, Dhunseri Tea Co Ltd, Sapoi Tea Co Ltd, Jungpana Tea Estate, Gopaldihara Tea Estate and Avongrove Tea Estate. These concerns cultivate more than 90,000 acres of tea in North East and South India and in the State of Travancore, representing over 13% of the total tea produced in India, the teas being shipped to all parts of the world

In addition to tea, the Anglo-American Company is interested in coffee and cardamoms, owning five plantations in South India

**JUTE.**—The Champdany Jute Co Ltd, which is on the agency list of the firm under notice, owns two mills, containing 1,217 looms, where an extensive range of hessian cloths, sacking bags and twine are manufactured from jute fibre. The mills are situated on the banks of the River Hooghly, Wellington Mill at Rishra and the Champdany Mill at Badlyabati, both on the East Indian Railway. Raw jute is also shipped by James Finlay & Co Ltd to the United Kingdom, to the Continent of Europe, to South and the United States of America. They are the proprietors of M Sarkies & Son, Naraingunge, who are balers of many marks well known in the jute trade, and they control the Golaberry Co., Ltd, which has a press house in Calcutta where a large business is done yearly in pressing and exporting jute bales.

**HESSIAN CLOTH AND GUNNY BAGS.**—The firm is one of the leading shippers of gunny bags and hessian cloth, and exports such goods to all parts of the world. Its shipments of bags cover the South African, Java, South American, Egyptian, Home, Continental, Australian and Far Eastern markets, whilst hessian cloth is also shipped in quantity to both North and South America.

One of the most gratifying features of these connections is the reputation which has been built up by the firm, after many years of trading, for supplying bags of cloth of the most reliable makes

**Imports and Exports.** Cotton piece goods are imported from Great Britain and the Continent, in addition to the goods produced in the firm's own mills at Bombay. These goods are exported to various countries

Sugar is imported from Java and Europe, and the company are the managing agents for the United Provinces Sugar Co Ltd, whose factory and plantations are situated in Gorakhpore, United Provinces. They also represent the Belsund Indigo Concern in Bihar which grows and manufactures natural indigo

**Shipping.** Throughout its branches in India and Ceylon, James Finlay & Co Ltd are agents for the Clan Line Ltd of London and the Ellerman Wilson Line Ltd, Hull, which both supply regular tonnage between India and United Kingdom and Continental ports. The Clan liners are the only ocean-going ships which carry cargo direct from the United Kingdom to Chittagong, a rising Indian port. The company are agents also for the Houston Line London and the East Asiatic Co Ltd Copenhagen, likewise financial agents for Messrs William Simons & Co Ltd Renfrew, the world famous dredger building firm, which has supplied numerous dredgers to the Government of India on account of Harbour Port Trusts there

All shipping and other business connected therewith for the Central Provinces Manganese Ore Co Ltd, London is transacted by the firm's branches at Calcutta and Bombay. The manganese ore and other minerals come from the district of Nagpur in the Central Provinces

**Insurance.** Business of a general nature, chiefly fire, marine, life, motor, baggage, workmen's compensation and loss of profits, is undertaken the following companies being represented: Phoenix Assurance Co Ltd, Royal Insurance Co Ltd, South British Insurance Co Ltd, Java Sea & Fire Insurance Co Ltd, Union Insurance Society of Canton Ltd, and Queensland Insurance Co

**Other Branches.**—In Bombay James Finlay & Co Ltd are managing agents for the Finlay, Swan and Gold Mohur cotton mills and agents for the Clan and Ellerman Wilson Lines, besides carrying on a piece goods import business and an export department for general merchandise, cotton and pearls

The Karachi branch is similarly engaged in shipping, and also in the import of piece goods and the export of general merchandise

At Chittagong, a large import business in salt, piece goods, corrugated iron and rice, is effected, and here also the Clan Line, which carries a large portion of the tea grown in Assam and Sylhet, besides the native grown jute, is represented by the company

**Administration.**—The entire business of James Finlay & Co Limited is controlled from the head office in Glasgow, and the Board of Directors as at present constituted is as follows: J F Muir (chairman), Messrs. J B Muir, W Brown, R Langford James, J D Gatheral, C A W Warrington, D M Hannay and A M McGrigor

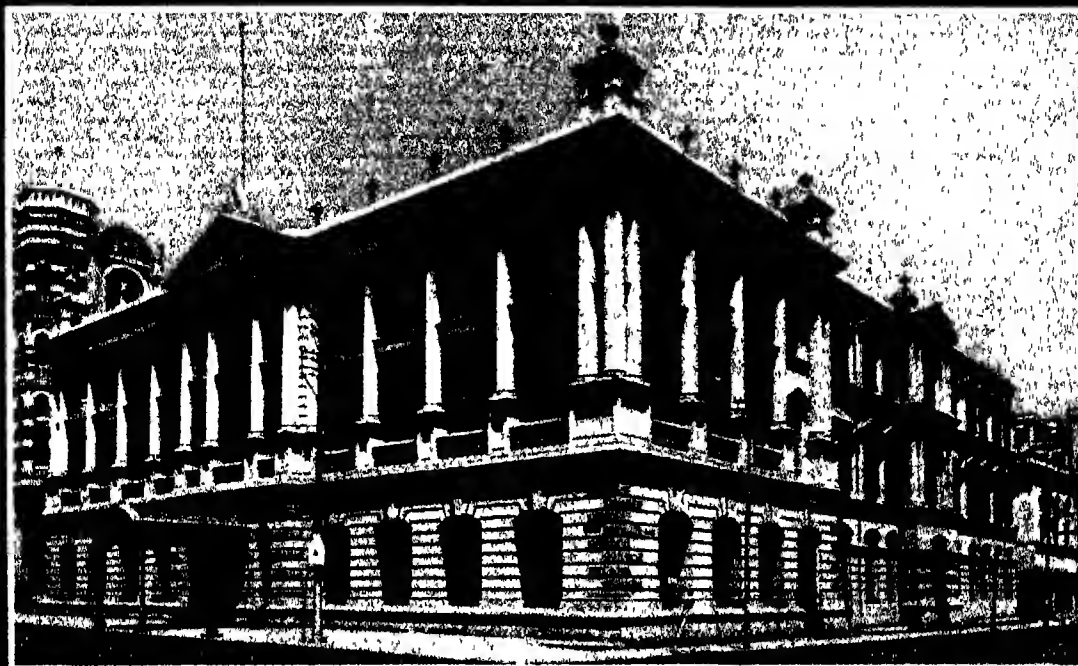
**Head Offices.**—These are at 22, West Nile Street, Glasgow

**Calcutta Office.**—1, Clive Street (cables: "Mercator," Calcutta). Codes: Bentley's, Whitelaw's, Scott's and Acme

**Bankers.**—Royal Bank of Scotland, Imperial Bank of India, Ltd., National Bank of India, Ltd., Chartered Bank of India, Australia and China.

(See also letterpress, p. 202).





AMES FINLAY & CO., LTD.

1. Head Office, No. 1 Clive Street, Calcutta.

- 1. Cop-winding, Wellington Jute Mills, Rishra.
- 2. Old Munnar Tea Estate, Southern India.

- 3 Chakanad Tea Estate, Southern India
- 5. Electrical Drawing Looms, Wellington Jute Mills, Rishra.

**McLEOD & CO.**

**Inception.**—Mr C C McLeod (now Sir Charles McLeod, Bt) was, in partnership with Mr A Campbell, the founder of this firm in 1889 at 5, Mangoe Lane, Calcutta.

**Development.**—Throughout the 37 years of prosperous trading a steady but progressive policy of expansion has been a feature of the company's operations. At first a small engineering department, seven tea estates and an insurance agency marked the limits of its interests. To day the plates at the door of the present McLeod House indicate that the firm, with six partners and 40 European assistants, controls five jute mills, two collieries, 40 tea estates, five railways, three industrial companies, and two Zemindari companies, in addition to representing four insurance companies and numerous British, Continental and American firms with interests in India.

From their original site in Mangoe Lane the offices were removed in 1890 to 31, Dalhousie Square. A second move was necessitated 28 years later, when the present building at 28, Dalhousie Square was erected, to be occupied in 1918.

**Premises.**—In 1917 the land on the west side of Dalhousie Tank—recently vacated by the Mercantile Bank—was purchased, Messrs. Martin & Co. being entrusted with the design and construction of a suitable building. The foundation stone was laid on March 22, 1917, by Mrs. Norman McLeod, and on April 4, 1918, the staff moved into the new offices. The building is an imposing one, and commands a unique view over the Dalhousie Tank, or "Tall Digi," towards the centre of the city. The style is Doric, faced with massive Ionic columns. There are four storeys, each of which provides a floor space of approximately 11,000 square feet. The general appearance is impressive, and in keeping with Calcutta's other great commercial buildings, which are rapidly replacing the old low-roofed structures of a past generation.

During the illuminations in honour of the Prince of Wales' visit in 1920-21 the McLeod House was one immense blaze of light, the entire face being decorated in coloured lights to represent a huge Union Jack.

**Departments.**—A brief summary of the interests of its various departments will help to convey some idea of the many operations of the company.

**JUTE MILLS.**—These represent one of the two main branches of business and are five in number—the Kelvin and Empire on the east bank of the river at Tittaghai, Soorah at Narculdanga on a canal, Presidency on the river at Rishra, and Chitavalah in the north of the Madras Presidency, the last having been recently taken over from South India Industrials Ltd.

Soorah is one of the oldest mills on the river, and was taken over from Marwari management. Kelvin and Empire were built and floated by the firm, but the building of Presidency (then named Benjamin) was commenced under B N Elias' management. Subsequently, when B N Elias found it impossible to complete the mill and the company was in danger of going into liquidation, the present owners took it over. The most recent acquisition is Chitavalah, which, like Presidency, was in financial difficulties. After considerable negotiations Messrs. McLeod & Co. took over the control, and a special staff was sent to attend to the local administration.

The prime movers at all the mills, except Empire, are horizontal compound steam engines, but at Empire there is a modern electrical plant. Each mill works 54 hours

per week in accordance with the Indian Jute Mills Association's Agreement, and each is a member of the association.

The following figures are eloquent of the magnitude of the business and its prosperity during the past decade.

	KELVIN	EMPIRE	SOORAH	PRESIDENCY	CHITAVASAH
Registered in	1907	1912	1919	1919	1920
Started work in	1909	1911	1913	1921	to start in 1926
Looms	630	430	375	375	350
Spindles	12,555	9,118	7,334	6,840	7,630
Europeans employed	15	17	9	10	5
Hands	4,150	3,500	1,900	1,900	1,900
Daily average consumption of Jute	7½ tons	5½ tons	20 tons	30 tons	
Yearly average consumption of Jute	11,900 tons	10,650 "	7,560 "	7,830 "	
Yards of cloth, etc., produced daily	170,000	118,770	77,188	84,754	
Miles of cloth, etc., produced yearly	2,000	14,104	11,166	17,568	
Issued capital Prof	Rs 10,00,000	Rs 10,00,000	Rs 10,00,000	Rs 23,30,000	
Issued capital, Ord	Rs 7,00,000	Rs 6,00,000	Rs 7,00,000	—	Rs 10,05,000
Debentures	Nil	Rs 10,00,000	Nil	Rs 8,17,000	Rs 12,00,000
	Per cent	Per cent	Per cent	Per cent	
Dividends 1917	100	85	15	—	—
" 1918	150	125	37½	—	—
" 1919	115	150	10	—	—
" 1920	300	200	10	—	—
" 1921	102½	70	12½	—	—
" 1922	70	10	12½	—	—
" 1923	85	50	17½	—	—
" 1924	110	70	10	10	—
" 1925	120	80	40	15	—

**Tea.**—This is the second of the firm's two main interests. The companies and gardens controlled or represented by them are found in almost every tea growing district of Northern India including the Dooars, Terai, Assam, Cachar and Sylhet.

Of the greater companies, the Imperial Tea Company Ltd. heads the list with 12,080 acres under cultivation out of a grant of 41,262 acres, a capital of £533,600 and an average annual production of 6,012,854 lbs of black tea. Its divisions number eleven, of which seven are in the Dooars, and it employs 15,516 hands.

The firm are managing agents for the Bharkawa Tea Co. Ltd., Rajahmhat Tea Co. Ltd., Rutema Tea Co. Ltd., Atal Tea Co. Ltd., and Felogan Tea Co. Ltd. while they act as agents for the Imperial Tea Co. Ltd., British Assam Tea Co. Ltd., Dooloogram Tea Co. Ltd., Hakum Tea Co. Ltd., Gingia Tea Co. Ltd., East India & Ceylon Tea Co. Ltd., Empire of India & Ceylon Tea Co. Ltd., Burmah Jan Tea Co. Ltd., and Nilpur Tea Co. Ltd.

The following statistics give a concise idea of annual production, capital invested, staffs employed, etc.—

	McLEOD & Co MANAGING AGENTS	McLEOD & Co AGENTS
Area of grants	9,417 acres	80,022 acres
Area under tea	4,230 "	30,098 "
Average yearly output of tea 1923-25	2,136,341 lbs	150,801,166 lbs
Europeans employed	12	101
Labour forces	5,313	15,934
Capital	Rs 14,05,800	£1,498,937
Debentures	Nil	£64,300

In addition to the above, Messrs. McLeod & Co. have arranged to purchase some large mouzas in furthest Assam, where it is proposed to open up two new companies for the production of "quality" teas in the next four years.

**Tea Seed.**—As agents for the Tingamira Tea Seed Company, Limited, the firm under notice is responsible for the disposal of approximately 1,600 maunds of tea seed each year of the following well-known types, "Tingamiri Assam," "Tingamiri Manipuri," "Gopani Assam," and "Kutchu Manipuri." Most of the crop is sold in Northern and Southern India, but a considerable quantity is exported to Java, Sumatra and Kenya Colony.

**Tea Boxes.**—In this highly competitive trade the company represents Iralda Ltd. in India. Large stocks are carried in Calcutta to meet urgent orders, and an average annual sale of approximately 150,000 complete chests has been reached in recent years.

**Triangle Lead Mills Company Limited.**

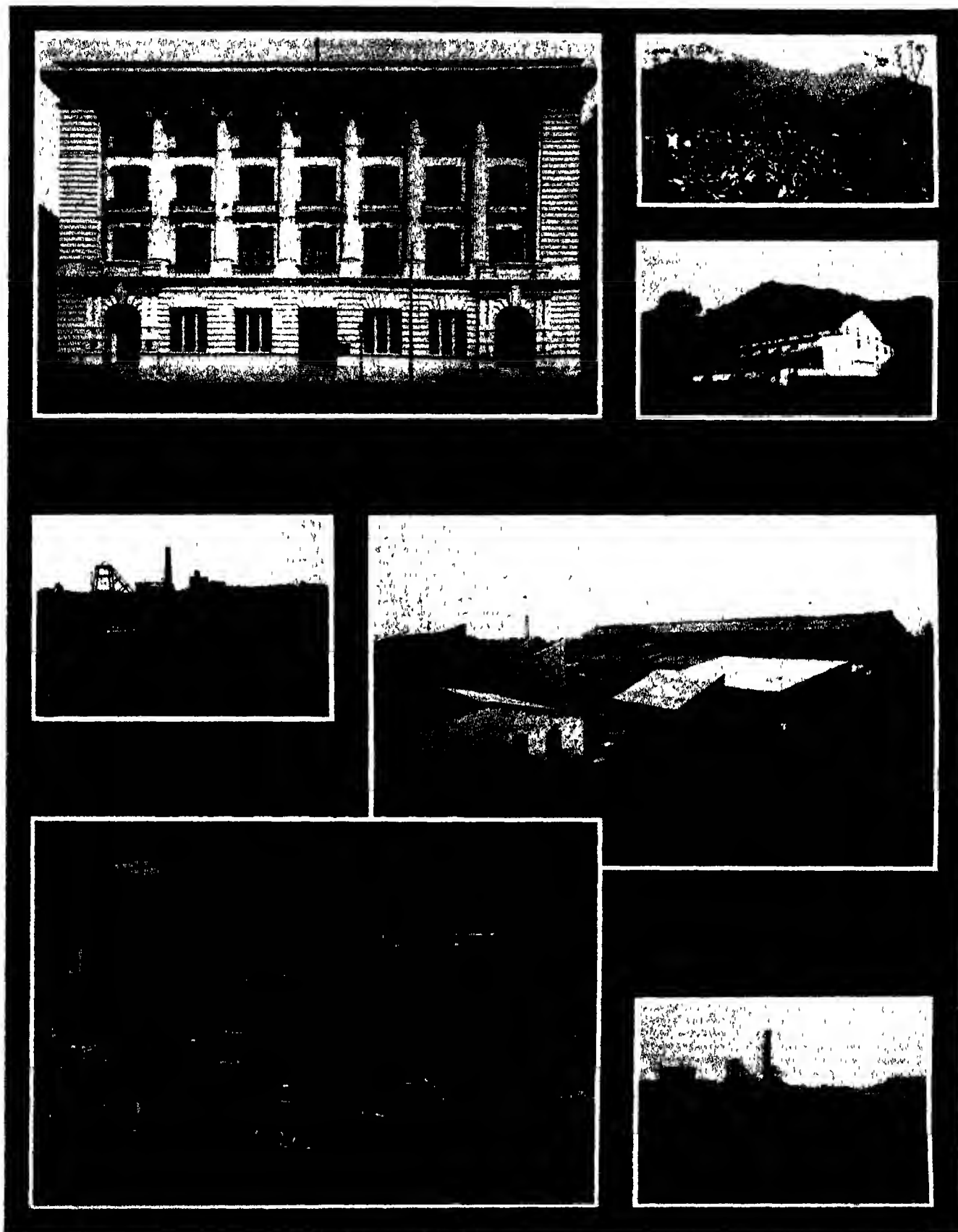
This is a private company formed in 1926 and managed by McLeod & Co. for the production of lead foil for tea box linings and other uses. It is situated at Kidderpore, and all its lead rolling machinery is electrically driven.

**Coal.**—This department controls, as managing agents, the Gopalchuck Coal Company Ltd. and the Bansjorah Coal Company Ltd. both in the Manbhum District. The output of both collieries has been sold forward by private contract for a considerable period and under normal conditions none of the coal comes on the public market. Following are details of the two companies:—

	GOPALCHUCK	BANSJORAH
Screens worked	13, 14, 15, 16, 17	10, 11, 12, 13, 14
1921 Raisins	125,015 tons	125,216 tons
Despatches	148,203 "	46,102 "
1921 Raisins	162,165 "	135,188 "
Despatches	149,886 "	65,153 "
1925 Raisins	181,740 "	70,753 "
Despatches	158,458 "	112,938 "
Europeans employed	4	1
Coolies	800	500
Capital issued	Rs 9,50,000	Rs 6,00,000
Debentures	Rs 5,50,000	—

**Insurance.**—The following British insurance companies are represented by Messrs. McLeod & Co. London and Lancashire Insurance Company, for fire, marine and workmen's compensation, North British & Mercantile Insurance Company, for burglary, all risks, personal accident, etc., Railway Passengers' Assurance Company, for motor cars and workmen's compensation, Scottish Union & National Insurance Company, for life insurance. The policy of the firm is to represent only first-class offices and so provide ample security for their constituents. All classes of insurance are transacted.

**Railways.**—This department deals with the administration and operation of light railway companies, undertakes surveys, and reports upon new projects. Five feeder railways are so administered: Katakhal Lala Bazar Railway, a feeder to the Assam Bengal Railway, Ahmadpur Katwa Railway, a feeder to the East Indian Railway; Burdwan Katwa Railway, a feeder to the East Indian Railway; Bankura Damoodar River Railway, a feeder to the Bengal Nagpur Railway; and Kalighat Falta Railway, a feeder to the Eastern Bengal Railway. The four last named railways are also operated in all



McLEOD & CO., Calcutta.

1. Head Office, Dalhousie Square.
2. Banajorah Colliery at Dhanbad.
3. Kelvin Jute Mills, Tittaghur.

- 4 & 5. Jainti Tea Estate, Eastern Doars.
6. Britannia Engineering Co., Tittaghur.
7. Another view of Banajorah Colliery, Dhanbad.

branches by this department. These five companies represent a capital of Rs 110,00,000, all subscribed in India. They carry an average of 2,100,000 passengers, with a tram mileage of 420,000 miles per annum, and afford employment to three European officers, four Indian officers, 10 subordinate officers, and 1,200 other grades.

The firm are also agents for the Tezpur Balipara Tramway Company, Ltd., in Assam. Formed in 1893 for the benefit of the tea concerns in the Tezpur District of Darrang, it acts as a link between the gardens on the north bank of the river and the steamer station at Tezpur, where Messrs. Kilburn & Co. are the local agents.

**Engineering.**—This department manages the Britannia Engineering Co. Ltd., started in 1917 with the object of specialising in the production of spare parts for jute mill machinery. That object being soon attained, the company turned to the production of cotton and tea machinery. The works cover six acres and are situated alongside the main line of the Eastern Bengal Railway near Ittaghur. In the same year that the company was started a complete smith's shop was laid down to deal with the manufacture of railway material. The foundry is able to produce iron castings up to ten tons, and particularly castings suitable for mass production. The machine shop is equipped with the latest type of machine tools and is capable of handling every class of high grade work, specialising in the gear cutting of spur, bevel, worm, single and double helical wheels and milling machine work. The forge and smith shop undertakes the manufacture of couplings, buffers, spindles, hooks, draw bars, axle guards, keys and wagon locks used on the several railways in India. One of the many interesting features of the works is the manufacture of complete machines such as looms, softeners, cop winders etc. for jute mills and patent tea rolling machines for tea gardens. A full range of tea machinery designed and manufactured at the works will shortly be placed on the market.

**Jute Export.**—This department exports jute to various countries, principally the United Kingdom, the Continent and America, the jute being bought here from Indian or European balers and then resold for shipment. The volume of business transacted during the three years named has been approximately 1923—17,200 tons, 1924—32,000 tons and 1925—25,500 tons. The firm is amongst the leading shippers of this commodity, and occupied sixth place in the shippers' list for 1925.

**Shipping.**—The import and export of material and merchandise for all departments are dealt with by this department, which also represents the Dollar Line and the Admiral Oriental Line in Calcutta.

**Solano Estates.**—The firm controls, on behalf of the proprietors, the Solano Estates, situated in the neighbourhood of Gya, Shahabad and Patna. These estates date back to 1820 when Joaquin Solano, a surgeon in the Spanish Navy, came to India. After years of successful trading he bought a factory in Bengal, since when the property has greatly increased in extent, and been handed down from generation to generation. Descendants of the original Solano are still existing.

**Agencies.**—Messrs. McLeod & Co. represent the following manufacturers in Calcutta: Davey Paxman & Co. Ltd., makers of steam engines and boilers, oil engines, etc.; Bruntons, mild steel shafting and machinery and manufacturers; Hick, Hargreaves & Co., Ltd., makers of turbines and engines of all descriptions; Bucyrus Co., manufacturers of all machinery for excavating, dredging,

mining, etc.; Dobson & Barlow Ltd., makers of textile (cotton) machinery of every description.

**Accounts and Stores.**—Separate departments each under European supervision, exist for the efficient control of these important sections.

**General.**—Other interests represented and not listed under any particular department are: Lalserah Indigo Concern (of Bihar); Irrawaddy Flotilla Company (of Rangoon); Rajghat & Furrowah Estates Ltd.

**Head Offices.** 28, Dalhousie Square, Calcutta.

**London Representatives.**—Messrs. Geo. Duncan & Co. were appointed agents at the time of the firm's inception and continued in this capacity until Messrs. D. M. Stewart & Co. superseded them in 1891. Upon the retirement of Sir Charles McLeod in 1899, Messrs. D. M. Stewart & Co. were named Stewart McLeod & Co., only to be designated a few years later McLeod, Russell & Co.

The London branch thus constituted was situated at 10 and 11 Lane Street until 1917, when a bomb from a German raider caused a removal to the present premises at 50-51 Lane Street.

**Cable Addresses.**—"Kelvin," "Dimples" and "Onthine." Codes: Bentley's A.B.C. 4th and 5th Editions, Lieber's, Broomhall's, Western Union, Premier, McNeill's, Whitelaw's, A.I., and Private.

**Bankers.**—Imperial Bank of India, National Bank of India, Ltd., Mercantile Bank of India, Ltd., Chartered Bank of India, Australia and China, Lloyds Bank, Ltd., Central Bank of India, Ltd.

#### MACNEILL & CO.

**Inception.**—Established in the year 1872, this firm has from its foundation, been closely connected with the tea industry. It has, however, other very extensive interests, which include collieries, inland steamers, jute mills, ropeworks, engineering works and printing works.

**Tea Industry.**—At the present time Messrs. Macneill & Co. are agents for 44 tea gardens situated in Assam, Cachar, Sylhet and the Doars, with an area of 112,223 acres, of which 30,422 acres are under tea cultivation, with an annual outturn of approximately 16 million pounds of manufactured tea.

**Collieries.** In connection with the coal industry they are managing agents for the following companies: Equitable Coal Co. Ltd., Aldih Coal Co. Ltd., Hurnladhi Coal Co. Ltd., Mundulpur Coal Co. Ltd., Nodhi Coal Co. Ltd., West Jamunia Coal Co. Ltd., and Dhemo Mam Collieries Ltd. These form one of the largest coal mining groups in India, with extensive properties and collieries equipped according to the latest methods. The coal seams worked are the Disherghari and Pomati in the Raneegunge Coalfield, also Nos. 14 and 17 seams in the Jharria Coalfield. The first two seams are of highly volatile coal, with a low ash content and no clinker, thus forming excellent steaming and gas coal. The seams 14 and 17 are low volatile coal, of splendid coking quality, and admirable for steaming under forced draught.

In 1925 a Coal Grading Bill was introduced by the Indian Government. This measure was necessary in order to grade the various qualities of coal mined in India, to provide buyers with grading certificates, and generally to protect the interests of buyers by ensuring deliveries of the actual grade of coal purchased. The highest quality classification under this scheme is "Selected," and it is worthy of note that the whole output raised

by Messrs. Macneill & Co. is of this special quality.

The coaling agents here named have been appointed to represent the firm at the following ports and railway junctions: Singapore, Roustead & Co. Ltd., Karachi.

Graham's Trading Co. Ltd., Bombay—Graham's Trading Co. Ltd., Rangoon—Graham's Trading Co. Ltd., Madras—Binny & Co. Ltd., Cawnpore—Allen Bros. & Co. (India) Ltd., Colombo—Mackinnon Mackenzie & Co. The Calcutta Coal Agency address is Macneill & Co. Post Box 15, Calcutta.

**Shipbuilding and Repairing.** The yards and works are at Garden Reach, on the Hooghly. All the repairs and renewing of constructional work of the British India Steam Navigation Company's vessels operating in East Indian and Far Eastern waters are carried out at this establishment, which also undertakes the repairs and renewals of vessels belonging to the Peninsular and Oriental Steam Navigation Company, the Nourse Line, and other allied companies whose vessels visit this port. Here are constructed and overhauled the splendid river vessels belonging to the River Steam Navigation Company, while every type of river craft for inland service is designed and built to contract.

**Ropemaking.**—The steadily increasing market for ropes led to the establishment in 1904 of an entirely modern ropery, under the name of the Ganges Rope Co. The site occupied by it adjoins the Ganges Jute Mill, another of the company's pioneer enterprises on the Howrah foreshore of the River Hooghly facing Calcutta City. The arrangement of the machinery in the ropewalk admits of the manufacture of ropes of 135 fathoms long without any joining or splicing whatever, and the total area occupied by the works is 11 acres. Machinery of the latest pattern has been installed at a cost of some £40,000, the preparing, spinning, cord and line laying machines being by Lawson & Sons of Leeds and the ropewalk machinery by Coombe, Barbour, of Belfast.

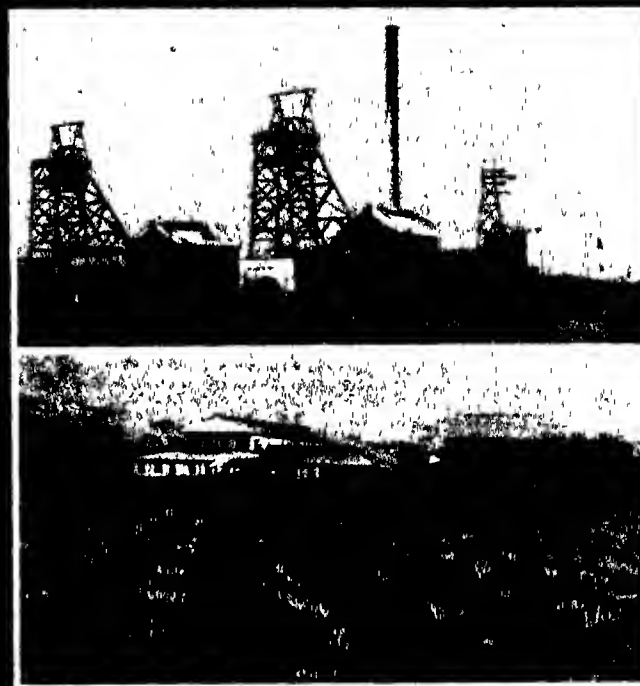
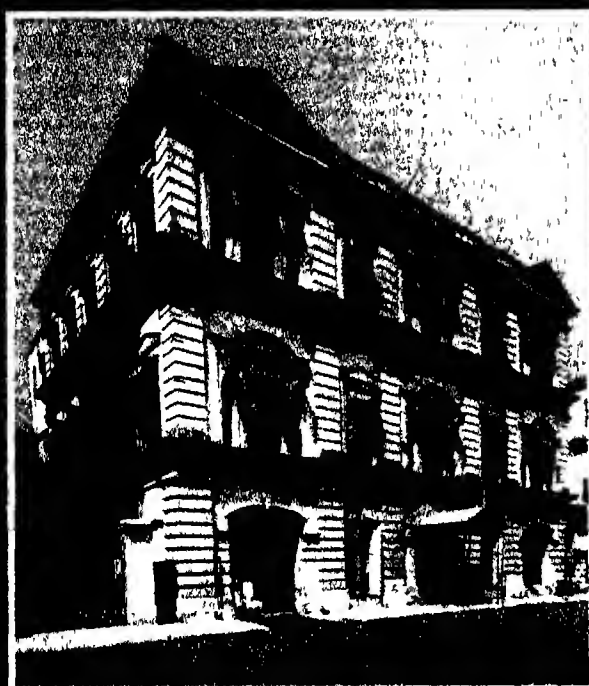
Manila, sisal fibre, country hems and various varieties of coir fibre yarns are used in the rope, etc., made at the works, and, in this matter of raw material supplies, the Indian ropeworks have a marked advantage in reduced costs, inasmuch as they are on the spot for all the Indian supplies and have a much shorter sea lead for Manila fibre. The actual sources of the Indian supplies are sisal fibre from Central Provinces and Bombay Presidency, country hems from Central India and Bengal, and coir yarns from the Malabar Coast and Western Ghats. This fact, combined with cheaper labour, places the company in an unassailable position so far as Western makers are concerned.

The quality of their productions will bear comparison with any imported ropes, as may be judged from their standards.

The capacity of the factory is 10 tons of ropes and lines per day in the following classes: Manila (oiled and dry), coir (oiled and dry), hemp (tarred and white), hemp lines (tarred and white), fishing lines, gasketings, cotton ropes, seizings, fencing strands, jute, hemp, cotton, and Manila cords, tennis and cricket nets, paulus, and all kinds of waterproof covers and awnings.

The Ganges Ropeworks Co. makes a speciality of driving ropes and ship's hauling lines, etc., made of the finest Manila hemp, and in all cases giving a maximum of length and strength for minimum weights.

**Printing.**—Messrs. Macneill & Co. act as managing agents for The Ganges Printing Company Limited, which owns an up-to-date printing press at Seebpore, Howrah. The press occupies an area of approximately 4



MACNEILL & CO. Calcutta

- |                           |  |                       |
|---------------------------|--|-----------------------|
| 2. Head Office, Calcutta. | 1. Shipbuilding and Repair Shops at Garden Reach | 4. Tea Estate, Assam. |
|                           | 3. Coal Mine operated by the Company             |                       |
|                           | 5. Paddle Steamer "Persian," built in 1922       |                       |



biggahs and contains machinery of the most modern type. The company specialises in commercial printing, but undertakes printing of all descriptions, including book-work, periodicals, and illustrated pamphlets.

**Head Offices.**—2, Earle Place, Calcutta.

**Cable Address.** "Macneills" Codes Broomhall's, A B C 5th Edition, and Bentley's.

**Bankers.** P & O Banking Corporation, Chartered Bank of India, Australia and China, National Bank of India Ltd.

#### **BALMER LAWRIE & CO. LTD.**

**Inception.**—This famous house of merchants, agents, engineers, bankers and shippers was instituted in 1867. Its subsequent history has been one of steady progress along well organised lines, the several departments having been efficiently controlled by experts and directed to meet the growing demands of Indian commerce.

**Banking.**—The banking department is operated mainly for the convenience of the firm's own clients, for whom it opens and conducts current accounts free of charge. Interest is allowed on all fixed deposits, and securities are held in trust.

**Stocks and Shares.**—The company undertakes the buying and selling of every form of Government and other securities, debentures, shares, etc., as also the collection of dividends and interest.

**Metal Department.**—In addition to being one of the largest importers of steel sectional material, G. C. iron and metals of all kinds, Messrs Balmer Lawrie & Co. Ltd. act as agents in Eastern India for the well known Katni "Castle" brand Indian Portland cement and Katni fire bricks, also as selling agents for the Manbhumi Hydraulic Lime and Stone Works' hydraulic lime. The following metal manufacturers are represented: Peter Spence & Sons Ltd. (Manganese-ferrie), F. Braby Corrugated Iron Co., "Alco" brand G. C. iron, Betts & Co., Ltd.—tea lead, The Associated Portland Cement Manufacturers Ltd.—Gillingham cement, The Hoyt Metal Co. Ltd.—metal antifriction linings, R. Hood Haggie & Sons—wire ropes, Frost Steel & Wire Co.—fencing.

**Machinery Department.**—The Engineering Department specialises in the mechanical requirements of factories, mills, collieries, contractors, Government departments and railways in India, large stocks of belting, pulleys, steam pumps, oil engines, steam engines and boilers being carried.

A speciality is made of fire-lighting appliances, and a large stock of fire engines, hose and extinguishers is held. The company, which acts as sole agents in India for Messrs. Merryweather & Sons Ltd., London, supplies fire equipment to many large towns in that country, being one of the biggest distributors to the mills and collieries.

The Machinery Department comprises a general stores in the centre of Calcutta, a heavy machinery store with siding in Howrah and a workshop under European supervision at Kidderpore. The manufacturers represented by the company in this line include International Channelling Machine Co. Ltd., "Siskol" coal cutters and rock drills, Robey & Co. Ltd., engines and boilers, Hadfields Steel Foundry Co. Ltd., colliery equipments, Pulsometer Engineering Co. Ltd., pumps, The Haslam Foundry & Engineering Co. Ltd., refrigerating machines, British Belting & Asbestos Co., cotton and hair belting, Houseman & Thompson Ltd., boiler composition, McEwan Pratt & Co. Ltd., internal combustion rail locomotives, Farrar Boiler Works Ltd., vertical boilers; Kay & Wilkinson Ltd., leather belting; R. A. Lister

& Co. Ltd., small oil engines and combined pumping sets, Merryweather & Sons Ltd., fire appliances, United Flexible Metallic Tubing Co. Ltd., flexible metallic tubing, A. G. Mumford Ltd., boiler feed pumps.

**Electrical Department.** The activities of this department include sole agencies for "Ediswan" lamps, Johnson & Phillips' A. I. R. wires and cables, Tudor Accumulator Co.'s storage batteries and the Electric Construction Co.'s A.C. and D.C. dynamos and motors. A very important section is the Mayor & Coulson's electric coal cutter agency.

The installation section undertakes electrical contract work of every kind, and has been responsible for a very large number of complete jute mill and tea garden installations, as well as town lighting schemes. The following electrical manufacturers are represented by the firm: Edison & Swan Electric Co., lamps, Tudor Accumulator Co. Ltd., storage batteries, Johnson & Phillips, cables, transformers and switchgear, Cable Accessories Co. Ltd., tins and switchgear, Nalder Bros. & Thompson Ltd., electrical instruments, Crag Miners Supply Co. Ltd., miners' electric lamps, Waygood Otis Ltd., lifts, Electric Construction Co. Ltd., electrical plants, Morgan Crucible Co. Ltd., carbon blocks, Giskel & Crocott Ltd., insulators, Belling & Co., heating apparatus, Mayor & Coulson Ltd., coal-cutters and conveyors, R. A. Lister & Co. Ltd. Lister Bruston electric sets, Robbins & Meyers, Bengal fans.

**Tea Export Department.** This department buys and ships teas in bulk to all parts of the world on the usual commission basis, and is under the supervision of expert tea tasters.

**Shipping and Passage Department.** The Anglo-Indian Carrying Co. is one of the pioneer establishments in India specialising in shipping, clearing, forwarding and transport work, and its vast experience in connection with the intricacies of Custom House requirements respecting the import and export trade, together with travelling facilities in all parts of the world is at the disposal of clients. The department looks after the interests of passengers, affording them every possible help, including the handling of baggage.

**Tea Garden Department.**—The firm acts as agents for the following tea companies in Assam and Darjeeling: Jokai (Assam) Tea Co. Ltd., Jhanze Tea Association Ltd., British Indian Tea Co. Ltd., Jampur Tea Co. Ltd., Makum (Assam) Tea Co. Ltd., Dejee Tea Co. Ltd., Namdang Tea Co. Ltd., Dr. D. O'Brien's Tea Co. Ltd., Darjeeling Consolidated Tea Co. Ltd., Lebong Tea Co. Ltd., Prithimpassa Wards Estate, Rishchehat Tea Estate, Rajabhetta Tea Estate, Balunara Tea Estate.

**Insurance Department.**—All classes of insurance are undertaken, and the company represents the Sun Fire Office, the Liverpool London & Globe Insurance Co. Ltd., the Phoenix Assurance Co. Ltd., the Alliance Assurance Co. Ltd., the Union Insurance Society of Canton Ltd. and the Fire Art & General Insurance Co. Ltd. The liberality and comprehensiveness of these companies' policies render them acceptable to leading business houses, and clients whose insurance is accepted by this department may rely on a prompt and equitable settlement of all claims.

**Produce Department.**—Established over 58 years ago for the export of Indian produce to all parts of the world, and especially to Colonies whither Indians have emigrated, this department has made progressive strides.

**Agencies.**—The following managing agencies are held:—

#### **BRIDGE & ROOF CO. (INDIA) LTD.**

Structural engineers and contractors. The works are situated at Howrah and have a private railway siding in direct communication with the East Indian Railway. They are well-equipped with modern machinery, and all orders are executed under the supervision of European experts. The company undertakes the design, fabrication and erection of all classes of steelwork—plate girder and other types of bridges, heavy steel structures, tea factories, withering houses, bingdows, cooke lines, pit head gears, screening plant, coal tubs, tanks, stagings, etc.

**THE CALCUTTA ICE ASSOCIATION LTD.** This is the oldest established ice-making company in India and among the best equipped in the East, holding large contracts with the leading railways, mills, hotels, theatres, collieries and steamer companies.

**BENGAL FLOUR MILLS LTD. AND EMPIRE FLOUR MILLS LTD.** These mills are fitted with the latest milling machinery, and their leading brands, "Peacock" and "Twin Elephant," are widely known. They produce various other popular brands to meet the different demands of consumers.

**THE BENGAL PAPER MILL CO. LTD.**—This company was registered in 1886. The factory is situated at Ranegunge on the East Indian Railway, and is equipped with the latest machinery, enabling it to produce the standard qualities of paper used in India.

**BRITISH INDIA ELECTRIC CONSTRUCTION CO. LTD.**—These electrical works, essentially modern, specialise in electrical repair work and the manufacture of plain switchboards, C.I. boxes, etc. A vacuum drying and impregnating plant, coil former winders, insulation cutters and other items necessary for the efficient handling of electrical repairs and transformer rebuilding have been added to the winding department.

The fan repair department is thoroughly up-to-date. The machine shop, foundry, carpenter's shop, plating and polishing section are all well-equipped.

The company is a recognised concern for repairs, spares and special switchgear, and its products are accepted by the Indian Stores Department, also by leading dealers and contractors in India, on the same footing as imported goods.

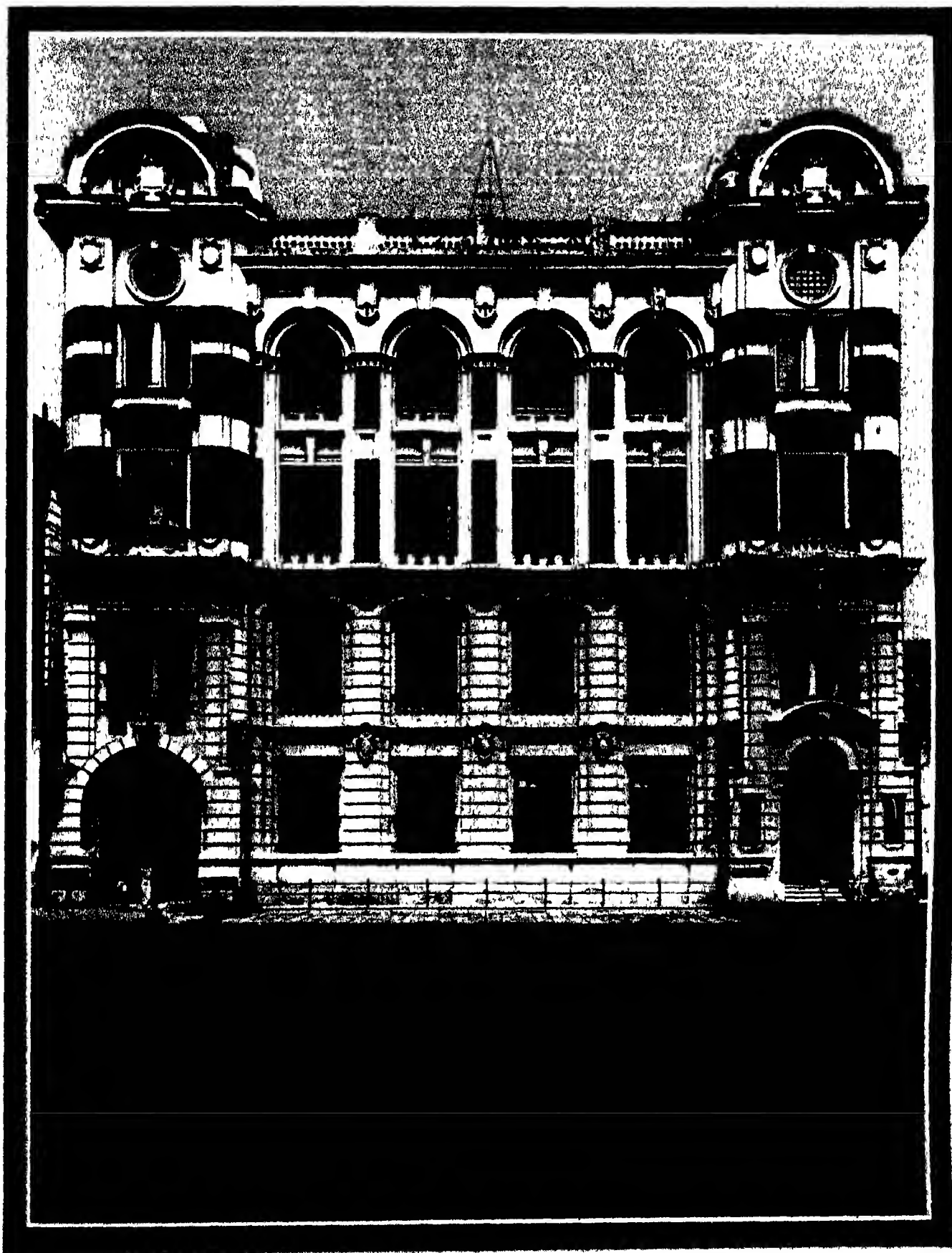
**INDIAN GALVANISING CO. LTD.**—This company specialises in the manufacture of buckets, drums, tanks, Hamilton poles and every kind of galvanised hollow-ware. The works are at Ghosery, Howrah, and the galvanising plant is one of the largest in India; there is also a notable electric welding plant of the most modern pattern. The company is a recognised supplier to the Director of Contracts, Indian Stores Department, and the leading railways, etc.

**ARTHUR BUTLER & CO. (MOZUFFERPORE) LTD.**, Mozufferpore.—This is the oldest established engineering firm in North Behar, dating back to 1851. Building work of all descriptions—structural iron work, bridges, roofs, etc.—is carried out in a thoroughly satisfactory manner.

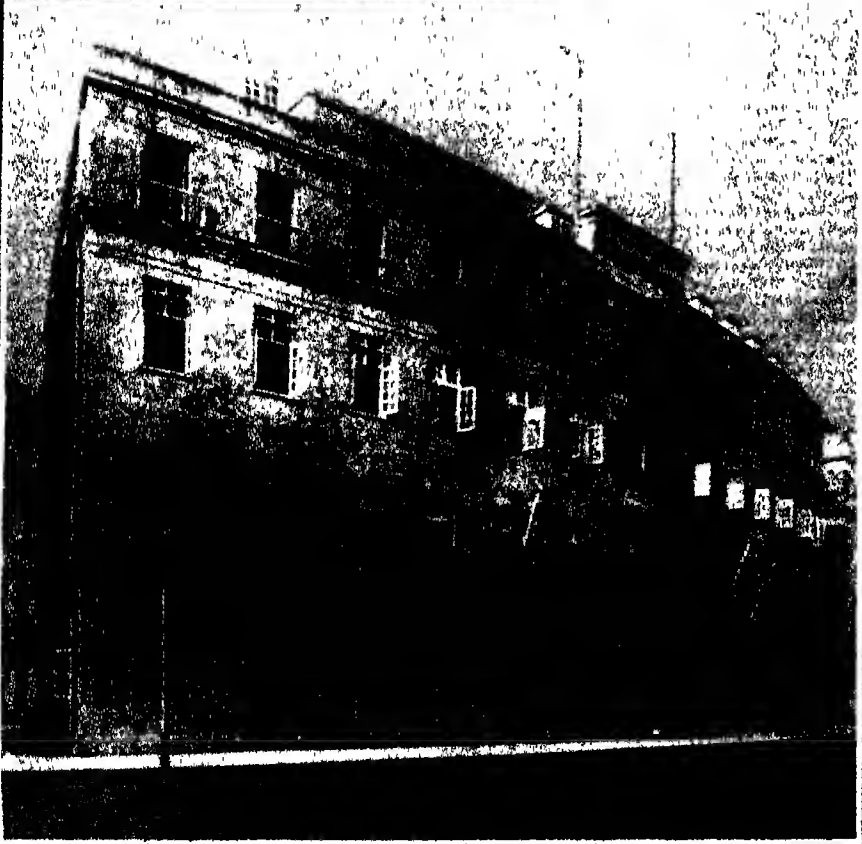
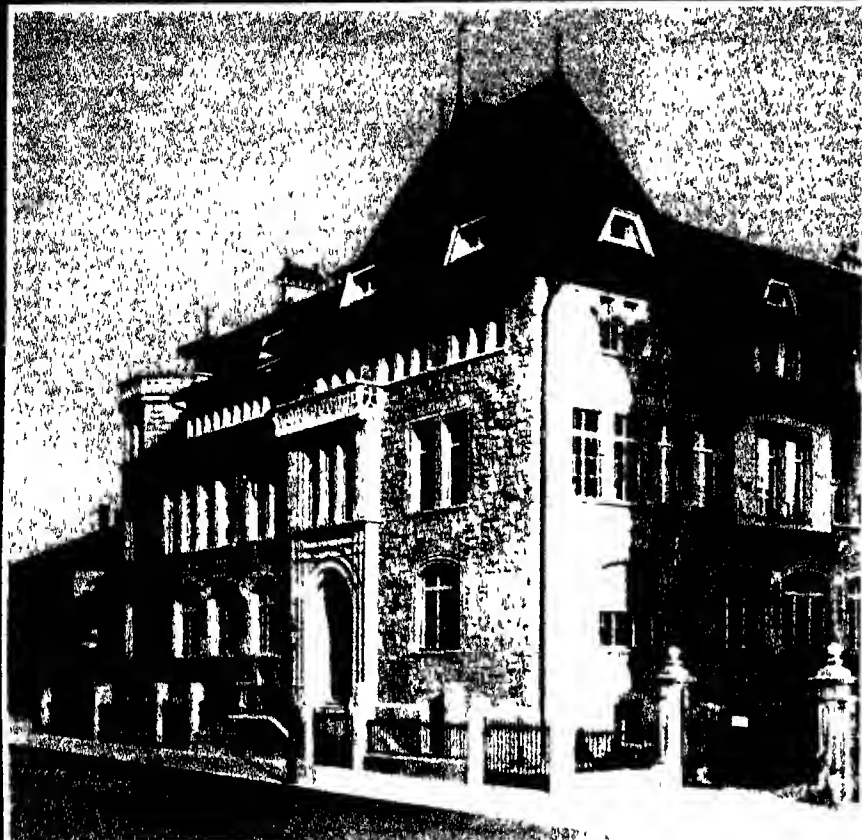
Every class of machinery is supplied, erected and repaired, the company preparing designs and estimates for building and engineering projects. The Behar Motor Works having been acquired by the concern, acts as agents for Ford cars and lorries, and for Fordson tractors with relative agricultural implements. All motor car repairs are efficiently carried out at the works.

Other interests owned by the company in the Behar Territory include a number of brickfields.





BALMER LAWRIE & CO., LTD  
Calcutta Premises.



**VOLKART BROTHERS Bombay.**

1. The Head Office in Winterthur.
2. "Volkart Building." Office of the Bombay branch.

**NEW BEERBHOM COAL CO LTD**  
and **NEW KENDAH COAL CO LTD**--  
These important collieries produce the well-known Desherghur, Rammugger and other first-class qualities of coal which are always in demand by railways and other large users of fuel.

**Directorate.** Sir Hubert Carr, A. R. Mills, W. B. Monan, J. A. Gemmiell, W. H. Bradbury and H. C. W. Bishop.

**Addresses.** - Head office - 103, Clive Street, Calcutta; Bombay branch - 5, Graham's Road, Ballard Estate; stores and show-rooms - 309, Bow Bazar Street and 6, Budge Budge Road, Calcutta; metal yard - Peelkhana Howrah; structural works - Grand Trunk Road, Howrah; London office - Alex. Lawrie & Co. Ltd., 14, St. Mary Axe, E.C.

**Cables.** "Balmer", codes used - Private and all commercial.

**Bankers.** The National Bank of India, Ltd.

#### **VOLKART BROTHERS.**

**Inception.**—Founded in February 1851 in Winterthur and Bombay, this well-known Swiss concern was established for the purpose of inaugurating direct commercial relations between India and the Continent of Europe.

**Development.**—Wide but steady, expansion has marked its progress throughout a period of 75 years, until to-day it ranks among the foremost of such enterprises in the Indian Empire. Employing about 125 Europeans and 2,000 Indian officials, together with 5,000 labourers or coolies, it controls over 100 branches, factories and agencies, as shown on the accompanying map. In addition, the organisation has offices at Singapore, London, Bremen, New York and elsewhere, while it also has financial interests in four allied concerns founded by the firm, these being Volkart's United Press Co. Ltd., Bombay; Nichizui Trading Co. Ltd., Osaka; "Fohka" Swiss-Chinese Trading Co. Ltd., Shanghai; and Volkart Brothers, Inc., New York.

**Activities.** At the outset the firm confined itself to the export of raw cotton to Europe and the importation into India of manufactured goods; to-day it handles all kinds of export and import trade, operating also in insurance and shipping.

**Export.**—The most important goods exported are raw cotton, oilseeds and oilcakes of every description, barley, maize and other foodstuffs, nux vomica, essential oils, raw hides, rubber, copra, coconut oil, coconut poonac, fish oil, ginger, pepper, coffee, turmeric, cardamoms, coir yarn, aloe yarn, coir fibre, palmyra fibre, senna leaves and pods, sandalwood, sandalwood oil, palisander wood, cocculus indicus, tamarinds, silk waste, cocoons, beeswax, jute bags, hessian cloth, and costus root.

**Import.**—In this department the principal interests are sugar, metals, matches, paper, chemicals, cotton yarn, aniline dyes, vegetable oils, vegetable fat, artificial stones, typewriters, pyrotechnic articles, amorces, gelatine, leather, wire nails, embroidery, artificial silk, mill stores, steel and baling hoops, old (unread) newspaper, pipes (water, gas, etc.) and dealwood planks.

The firm is always prepared to take up any promising fresh lines, being, with its extensive network of up-country agencies, exceptionally well placed to develop these.

**Engineering.**—Encouraged by the success of its engineering department in Japan, the firm recently organised a similar establishment in India. The staff is composed of experts, and European erectors are available for services to clients. In choosing concerns for representation, first consideration is

given to the quality of the specialty manufactured, and each supplier is selected for eminence in his own particular line. In this way the firm represents leading manufacturers of the foremost industrial countries of the world, and is always prepared to give careful attention to any proposals for new connections that may be submitted.

A considerable stock of many types of machinery and spare parts is always kept in India, the following being a selection from the machinery handled by Messrs. Volkart Brothers:

*Steam Power Plants* Boilers, superheaters, economisers, steam turbines, etc.

*Crude Oil Engines* For every land and marine purpose.

*Electrical Machinery* Alternators, dynamos, motors, switchgear, furnaces, tram lighting equipment, rotary converters, rectifiers, crane equipment, transformers, etc.

*Pumping Plant* Centrifugal, steam, hydraulic, Deepwell pumps, etc.

*Locomotives* All descriptions.

*Railway Material* Turntables, dynamometer cars, cable railways, etc.

*Steel Structures* Bridges to any size, roof and tank constructions, etc.

*Printing Machines*

*Refrigerating Machinery*

*Chemical Plants*

*Testing Machinery*

*Textile Machinery* of all descriptions.

*Presses*

*Compressors*, road making and contractors' plant, machine tools, woodworking machinery, flour and rice mill plant, oil mill machinery, scientific and optical precision instruments.

*Agricultural Machinery* Tractors, threshing machines, separators.


**Insurance.**—For many years the firm has maintained and still maintains, a trained insurance department under European supervision. The operations embrace all classes of insurance, fire, marine, transit, life, motor car, motor cycle, motor lorry, workmen's compensation, burglary, plate glass, "all risks," personal accident and sickness. The agencies accepted consist only of insurance companies of world wide repute and first-class financial standing, full advantage being taken of the network of up-country agencies, referred to previously, to develop all categories of insurance on sound and progressive lines. Prompt and equitable claims settlements are a special feature of the firm's activities.

Average and claims settling agencies of a large number of British and Continental marine insurance companies are also held, and applications are invited from first-class corporations desiring adequate and efficient representation throughout India.

**Shipping.**—Messrs. Volkart Brothers, Bombay, represent the following lines: Compania Trasatlantica, Barcelona; Deutsch-Australische Dampfschiffs-Gesellschaft, Hamburg; East Asiatic Co., Copenhagen; Roosevelt Steamship Co. Inc., New York; and United American Lines, New York.

**Offices.**—In addition to the parent house at Winterthur (Switzerland), and that in London (96 and 98, Leadenhall Street, E.C.3), the firm has the following branches and affiliated houses: Bombay (Volkart Building, Graham Road, Ballard Estate), Colombo, Cochin, Karachi, Tellicherry, Tuticorin, Madras, Calcutta, Singapore, Bremen and New York.

**Cables.**—"Volkart." Codes: Bentley's Complete Phrase Codes, A B C 5th and 6th Editions, Scott's Shipping 10th Edition, Lieber's, etc.



Showing Branches ● and Factories (Agencies) ●  
of the Firm of

**MESSRS VOLKART BROTHERS.**  
Exporters and Importers.

Parent House Winterthur, Switzerland  
Head Office in India Bombay  
(See accompanying letter press)



**DUNLOP RUBBER CO., LTD.**

1. A Corner of the Bombay Office.
2. Stocks of tyres in Store Room.
3. Head Office for India, Burma and Ceylon at Bombay.
4. Another Store Room.
5. Despatching Department.

**DUNLOP RUBBER CO. LTD.**

**Inception.**—The year 1888 proved one of immense significance in the world of wheeled transport, for it was then that the invention by Mr J B Dunlop of the pneumatic tyre laid the foundation of a gigantic industry taking every continent for its market. The Dunlop Rubber Co Ltd., incorporated in England as the pioneer firm exploiting that epoch-making discovery, has during less than 40 years built up an organisation no less international in character than is its reputation for the manufacture of motor car, motor cycle and bicycle pneumatic tyres, solid tyres for commercial vehicles, and accessories.

**Raw Material.**—In Ceylon the company owns estates extending to about 2,300 acres, while in the Malay Peninsula it possesses nearly 70,000 acres. These vast lands enable the organisation to produce a very large proportion of its requirements in raw rubber, the firm being convinced that, in order to make a really satisfactory tyre, raw materials of consistently high quality are necessary, and can only be secured by careful isolation from bulk deliveries of the highest average. As with rubber, so in the case of cotton, all but the best is rejected. The whole of the cotton fabric employed in the manufacture of Dunlop tyres is produced in the company's own mills at Rochdale, which have a floor area of 30 acres, the spinning section occupying a seven-storeyed building covering 3½ acres.

**Tyre Factory.**—Dunlop tyres are manufactured at Fort Dunlop, Birmingham, where the company's buildings cover 481 acres, 115 acres being allotted to the actual manufacturing site. Out of the 30,000 persons employed by the organisation all over the world, some 12,000 are engaged at Fort Dunlop in the annual production of millions of tyres suitable for all types of vehicles.

**Indian Activities.**—As it was the founder of the pneumatic tyre industry, so the Dunlop Rubber Co Ltd was the pioneer and the first of all big tyre manufacturers to establish a regular and organised business in India. Its scope has now reached such a pitch that the general manager for the Peninsula controls the whole of India, Burma and Ceylon, at the same time conducting minor operations with Afghanistan and Turkey. The territory covered is divided into areas each controlled by a district manager, and depôts which supply their areas are established at Bombay, Calcutta, Delhi, Rangoon, Madras, Colombo, Karachi, Lahore, and Rawalpindi. All the principal posts in the company's Eastern organisation are at present held by Europeans, while the travellers, clerks, storekeepers and working hands are all Indian.

**Stock Organisation.**—Continuous and close co-operation with the London office ensures a re-stocking system of the utmost facility. As tyres, tubes, etc., are required they are consigned direct from the factory at Fort Dunlop, weekly shipments of fresh stocks arriving at each important port in India. The motoring public can thus rely on receiving newstocks of the latest type and make.

Such services also embrace the famous "Maxfli" golf ball, which holds a well-merited premier position in the estimation of golfers in the East, and is distributed as far as Kashmir, Assam and the heart of Burma. The Dunlop tennis ball, the latest



PARRY & CO, Calcutta.

1. Type of Tea Estate Building for which the Company manufactures steel structures
2. Rolling Stock built by the Firm for Light Railways.

innovation in the rubber world, is rapidly coming to the front, and, it is anticipated, will be to the tennis player what the "Maxfli" is to the golf enthusiast.

**Road Services.**—One of the most advantageous features of the Dunlop Company all the world over, and particularly in India where good roads are scarce, is the service given to motorists. In the small villages in the mofussil the familiar yellow sign of the company can be seen, while at all the big towns the organisation maintains solid tyre presses available free of charge for the benefit of the commercial motoring fraternity.

**Head Office in India.**—The office of the general manager for India, Burma and Ceylon is situated in Bombay. The building, a handsome one close to the Taj Mahal Hotel, is the property of the company.

**Addresses.**—London 1, Albany Street, N W 1 and 55-56 Pall Mall, S W 1, Bombay "Dunlop House," Nowroji Furdoonji Road, Apollo Bunder (cables "Covers," Bombay).

**PARRY & CO.**

**Inception.**—Fifty years ago this firm, whose parent house is in Madras, opened a branch in Calcutta, where it has had a number of activities, but at the present juncture is principally engaged as agents in that city, forming at the same time the connection for its head office.

**Agencies.**—It represents Van den Berghs, United Glass Bottle Manufacturers Ltd., Natal Emigration Agents, and acts as agents

for those concerns for which the head office is managing agents, East India Distilleries & Sugar Factories Ltd., Deccan Sugar and Abkhari Co Ltd., Russelkonda Saw Mills, and New Malabar Timber Yards & Saw Mills Ltd.

**Engineering.**—The large engineering establishment at Ramkrishnapur, known as Parry's Engineering Ltd and employing about 600 hands under expert European supervision, is owned by Parry & Co. Here is turned out fabricated material for all light railway work, such as tipping tubs, coal tubs, switches and light structural steel work. A number of tea withering sheds in Assam, railway engine and goods sheds and workshops were produced at the works in question.

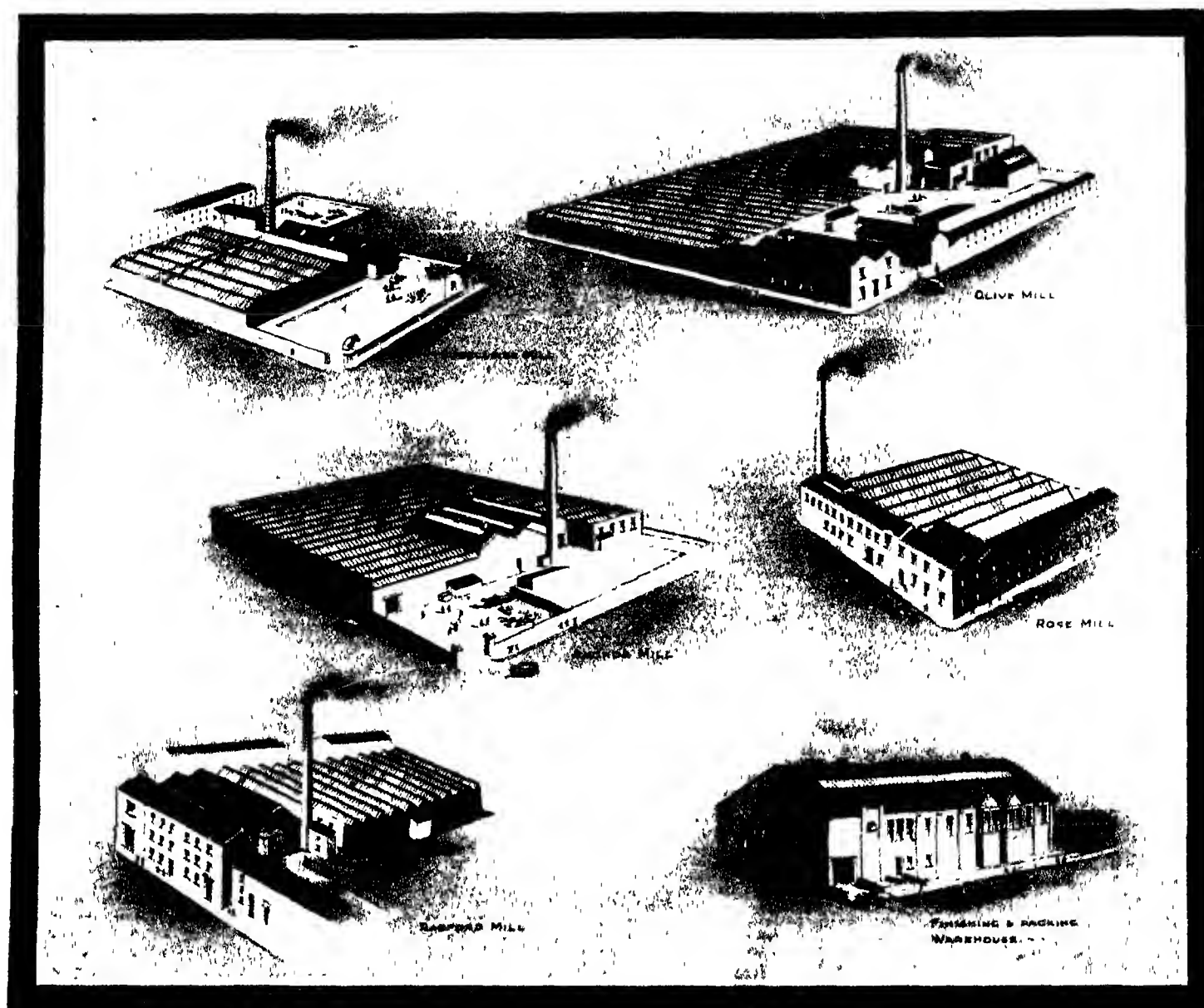
The engineering business was started at Calcutta in 1914, and the following agencies are now held: Drysdale & Co Ltd, pumps, G & J Weir Ltd, pumps, Graphite Products Ltd, paints, Ransome Machinery Co (1920) Ltd, cement mixers and steel piling, Taylor & Hubbard Ltd, cranes; James Neill & Co (Sheffield) Ltd, hack saws; Buda Co, rail motor trolleys, Chain Belt Co, "Rex" chain conveyors, Harnischfeger Corp, excavators, and Clark Bros., sawmill machinery.

**Offices.**—Madras, 1st Line Beach, Calcutta, 11, Clive Street.

**Cables.**—"Ubiquitous" and "Dogspike." Codes: Bentley's and A.B.C. 5th Edition.

**Bankers.**—Imperial Bank of India.





#### JOHN CATLOW & SONS (CALCUTTA) LTD

Mills of the Parent Company, John Catlow & Sons, Ltd., of Darwen, Lancashire, England

#### JOHN CATLOW & SONS (CALCUTTA) LTD.

**Inception.**—This company was formed in 1925 as an Indian branch of the well-known firm of John Catlow & Sons Ltd., of Darwen, Lancashire, England, the business previously having been carried on in Calcutta under the style of the parent company for a period of six years. The Home firm has, however, been shipping direct to Native houses for some 25 years, and it will thus be readily realised that its products are well known throughout the country.

**Mills.**—The mills of the original company in England number five, and comprise the Olive, Anchor, Radford, Rose and Sudside works, besides a Cotton Hall Finishing and Packing Warehouse.

**Products.**—Amongst the lines for which John Catlow & Sons Ltd. are famed are the following: grey and white shirtings, grey

and white dhooties, plain and bordered jacconets, white nainsooks, mulls, etc., prints and fancies, Para reds, a speciality, Turkey red yarns, Turkey red, Para red, and plain printed cloths. These are shipped regularly abroad and are warehoused in Calcutta.

**Agencies.**—The Calcutta firm acts as sole agents in Bengal for several well-known machinery manufacturers, among them being *Messrs. Jones Textiles Ltd., Manchester* makers of jute and cotton mill stores, cambs, healds, reeds, all kinds of bobbins, bobbin ends, shuttles, shuttle covers, temple rollers, and picking sticks. A stock of these products, sufficient for all ordinary demands, is always carried by the Indian branch. *Messrs. Willan & Mills Ltd., Blackburn* makers of cotton mill, loom and preparation machinery. *Messrs. Yates & Thom Ltd., Blackburn*

manufacturers of steam engines, boilers and mill gearing of all descriptions.

In addition to these sole agencies, the company are agents for (1) all kinds of spinning, weaving and preparation machinery by the best makers, (2) for china clay from the best Cornwall mines, (3) for all descriptions of leather beltings, pickers, picking bands and roller skins for cotton and jute mills. Immediate requirements in these lines can always be met from stock. The firm acts also as selling agents for dyes manufactured by the Berlin Aniline, Weiler-ter Meer, and Elekron Companies, Germany.

**Head Offices.** Darwen, Lancashire, England, and 11 Chive Street, Calcutta.

**Directors.**—James H. Catlow, Reginald S. Catlow, John Catlow, Harold Catlow.

**Cables.**—“Talon,” Calcutta. Codes Private, A B C 4th and 5th Editions, Bentley's, Whitelaw's.



# **ELLERMAN'S ARRACAN RICE AND TRADING COMPANY LIMITED.**

**Inception.** About the year 1882 this company established at Calcutta a branch in order to operate as rice, timber and general merchants.

**Rice.**—This commodity is imported into Calcutta from Burma in large quantities to meet the demand which comes chiefly from up-country districts. Buying arrangements operate in the interior for all types of Bengal rice for export. This work is done mainly through London, but arrangements can be made to ship direct to certain ports.

**Produce.** Messrs Ellerman's Arracan Rice & Trading Co. Ltd. are interested in the export of all kinds of Indian produce which

corrugated sheets, flat sheets, slates, etc., "Fibrent" millboard and jointings, "Fibrent" brake lining, "Crocid" liquid glues and cement, "Self Sealing" expanded metals, "Rhinos" super leather fabric, painting brushes, "Antifectol" wood preservative, Steel windows and patent roof glazing.

Messrs Ellerman's Arracan Rice & Trading Co. Ltd. are open to accept further agencies for all India or for the Provinces before mentioned for good class products, especially those of particular interest to Government and railway engineers, tea and other industries.

**Offices.** The company's office is in the Royal Insurance Building, 20, Dalhousie Square, Calcutta.

it is active in marine, railway and automotive trade and has a general section devoted to every industry in which machinery is used. The present position of the Company has been attained by its unique selling policy of "Correct Lubrication" and throughout its extensive selling organisation its representatives are trained to sell only on the basis of the "Correct" oil which will give most economical results in the working of the plant. These salesmen cover all India, Burma and Ceylon, while a staff of specialised lubrication engineers is sent out gratis to assist and advise clients on the more important technical problems. The head office is at Nicol Road, Ballard Estate, with branches and warehouses at Calcutta, Colombo, Karachi, Madras and Rangoon from



ELLERMAN'S ARRACAN RICE & TRADING CO. LTD., Calcutta  
General Office and (inset) View of the Godown

business can be conducted through the head office in London or direct with Calcutta. It imports the company is concerned with hemp, sugar, timber, etc., but it will welcome offers of business in produce lines from firms wishing to ship to India.

**Agencies.**—This department has been established for many years, and has specialised particularly in materials required for building. Large stocks of the undernoted materials are held for immediate delivery and European salesmen are regularly touring the Provinces of Bengal, Assam, Bihar and Orissa, United Provinces, Central Provinces, Central India, Punjab, Rajputana, Kashmir, N.W. Frontier Province and Baluchistan — "Malthoid" roofing, dampcoursing and flooring; "Pabco" paints, enamels and varnishes, "Pabco" waterproofing paper, "Pabco" wall board, "Fibrent" asbestos, cement,

**Head Office.**—5 and 6, Billiter Avenue, London E.C.3

**Cables.**—"Arracan", code, Bentley's

**VACUUM OIL COMPANY.**—Founded in America on October 4, 1866, by Hiram Bond Everest, this company is the oldest and largest among the lubricating oil manufacturers of the world. Having as its motto "A grade for every type of service," its growth, achieved by sound policy and the marketing of only high grade products, has been enormous, its interests being universal. It has no connection with any other oil company, but is owned exclusively by its thousands of stockholders. Opened in 1890, the Indian division has developed steadily in importance. Besides marketing those lubricating oils and greases which have earned for the firm a world-wide reputation

which goods are promptly railed to any part in Mesopotamia at Basra and Bagdad. Messrs. Cotterell & Greig Ltd. market the company's famous "Gargoyle" products. The cable address is "Vacuum."

## **L. A. STRONACH & CO. (INDIA) LTD.**

Advertising consultants and agents, Caxton House, Fretter Road, Bombay. London offices, 27, Chancery Lane, W.C.2. Possessing its own printing process, studio, copywriting, translation and research departments, with a Western-trained European at the head of each, the firm claims to be the only organisation in India, Burma and Ceylon which can give an efficient, complete advertising service, and which is so accredited by the entire newspaper press, both English and vernacular. The company's knowledge and local experience and the fact that it has trained Indians on the staff, enable it to

get correct translations, idioms and local colour, both in illustration and text, into advertising, so making it conform to the religious and caste susceptibilities of the people. The research department is unique and of particular importance to manufacturers desirous of sounding the possibilities of the Indian market for their goods. The data it already possesses, and the thorough and extensive investigations it institutes, enable it to give a report which can be taken as reliable and acted upon by manufacturers. The firm has lately enlarged and improved its facilities for turning out blocks, and is now fully organised to offer a complete service to any advertiser. For this purpose an experienced and highly skilled staff gives personal attention to all orders, while the studio department is prepared to execute ideas, drawings, designs and re-touching. Stronach & Co. manufacture all kinds of blocks, line, half-tone and 3-colour, and are stereotypers also. Cable address "Adservice."

#### JOHN DICKINSON & CO. LTD.

**Inception.**—For years the Indian interests of this world famous paper making business were entrusted to a firm of general importers, John Scott & Co. of Calcutta, now defunct. Among their operations was included speculation in precious stones, which perhaps was found more lucrative than the factoring of paper, for in 1878 Messrs John Dickinson & Co. Ltd. sent out Mr G. A. James Rothney to open a branch in Calcutta. This was a happy choice, for Mr Rothney, who was a most enthusiastic rugby player, founded also the Calcutta Football Club and was mainly instrumental in their gift of the handsome Calcutta Cup to the Rugby Union. For reasons of sentiment the old John Scott & Co. signboard was for years carefully cared for in the Calcutta office.

**Activities.**—Founded in 1805, the House of Dickinson occupies a leading position in the paper and stationery trade of Great Britain. Its four mills at Croxley, Apsley, Nash and Home Park have been operating continuously for 100 years, and the productions are known in every part of the Globe. Croxley, Nash and Home Park produce papers of every kind, from a high class printing or Esparto writing to the best type of chromo paper and boards in almost equal variety, and have a weekly output of more than 400 tons. The envelope and stationery mill at Apsley is the largest organisation of its kind in the world, and leads the way in modern appliances for the production of manufactured stationery.

Subsidiary factories exist in Manchester, Birmingham, Bristol, Leeds and Glasgow in the United Kingdom, and overseas in Australia, South Africa, New Zealand and India. The total manufacturing capacity of the Dickinson factories in envelopes alone exceeds 100 million weekly. The trade mark of the firm is the well-known "Lionbrand," and no stationery store is considered complete that does not carry a prominent display of goods bearing this design.

**Organisation.**—The history of the firm is synonymous with the development of the British paper trade in India. The firm has claimed for years to have the finest selling organisation in the industry, both at home and abroad, and when the Indian market, early in the nineteenth century, merited attention for exploitation in the distribution of "Lionbrand" products, it was fitting that Dickinson & Co. Ltd. should be the leading British paper house in "The Jewel of Britain's Crown." So much is this the case that their trade mark "Lionbrand" and a number of their other trade designations are used in the

paper markets to describe grades of paper in general demand. For example, "Lionbrand" cream laid is universally interpreted as meaning Esparto Cream Laid Paper of a certain grade, and a request for Yellow Label Quality in Calcutta or Red Label in Bombay is invariably met with the offer of a British Free Printing Lane, whilst the term "Ivory Finish," coined by Dickinsons, is freely used, not only by dealers and pressmen, but also by consumers with no claim to any technical paper knowledge. "Ivory Finish" has, in fact, become a household word.

**Development.**—After successfully weathering the critical years of the Rupee instability, the company set itself to a policy of safe but steady expansion. Mr Rothney was called to the head office as secretary of the firm, but he also occupied the position of general manager of the Export Department, and in this capacity, continued to guide the policy of the Indian business. Under his admirable leadership and inspiration the Indian connections, as well as the other overseas operations, developed rapidly, and before the century closed in 1900 stock-carrying branches were trading successfully in the four Presidency Towns—Calcutta, Bombay, Madras and Rangoon. Moreover, India was made to serve as a training ground for salesmen who passed on to the rapidly developing markets in the Straits Settlements, China and Japan.

The Indian managements were responsible for the local application of the firm's imperial trading principles, and it was their policy to vest the fullest possible powers in their Indian staffs. For upwards of 25 years the sales promotion and direction were entrusted to Babu Kah P. Ghose, and, after his death, to his son, Borendra K. Ghose. This family served the firm for three generations, and left behind them a tradition of faithful and successful service. The head Indian salesmen in Calcutta, Bombay and Madras were trained by them, and many of the firm's most valuable connections to-day were initiated 30 to 40 years ago by one or other of the Ghose family.

From 1900 the ramifications of trading grew daily, the increasing output of the mills at home and the steady improvement in printing practice in India called for specialisation, with the result that the European staff was reinforced. The slogan "Everything for the Printer" was adopted, leading not only to a wide extension of the scope of trading in papers and manufactured stationery, but also to participation in the printing machinery business.

As national sentiments began to tend increasingly towards the creation and protection of local manufactures, the company's directors gave early consideration to this problem, and, after successfully launching envelope and stationery factories in South Africa and Australia, they acquired a site of over 12 acres at Kamarhatti, Bengal, where in 1922 the first factory of this type in India was opened.

**Machinery.**—Originally regarded as an adjunct to the paper and stationery departments, this branch has now become a vital factor in the firm's trading activities. In early years the company was able to secure the sole selling rights of the leading printing machinery manufacturers in Great Britain, and to these agencies were later added a battery of very strong American and German representations, so that to-day it is able to offer machines ranging from the most simple unit needed by a humble jobbing printer, operating in a "gully" in the heart of an Indian city, to the complete equipment of an up-to-date rotary newsprinting outfit, or

a process plant for the production of the best art printing. Selected technical assistants are attached to the branches, and their services are at all times available for advice, as also for the erection and supervision of new or standing plant. All these changes have involved big accessions to the European branch personnel, and in 1925 there were 16 covenanted men from home on the staffs.

**Trade Marks.**—Amongst a host of qualities and watermarks in their paper and stationery widely in use in India are the following: Croxley Lion Ledger, Croxley Manifest Bank, Croxley Extra Strong, Croxley Cambric, Croxley Imitation Art, Croxley 1st Quality Litho, Croxley Invitation Cards, Croxley Cordelia Cover, Lionbrand Cream Laid, Pucca Note and Envelopes, Atholi Note and Envelopes, Swastika Note and Envelopes, Vanguard Boards, White Foam Art Paper, Pictorial Coated Boards, and Asoka Blotting.

Amongst the firm's registered trade marks are Lionbrand (in several representations), Deer Brand, Onu Brand, Akbar, Taj Mahal, Gold Mohur, Aurengzebe, Kutub Minar, Asoka, Shivaji, Swastika, Royal Hart, Kaiser Hind and Kolumoor.

**Agencies.**—The company acts as agents for the best known printing machinery manufacturers in England, Germany and the U.S.A., including Dawson, Payne & Elliott, Otley, England; wharfedales, John Kitchell & Sons Ltd., Leeds, England; litho machinery, Waite & Saville Ltd., Otley, England; Canadian American Machinery Co., London; folding machines, J. W. Caslon, London; types, The Winterbottom Book Cloth Co. Ltd., Manchester; John Shaw & Sons, England; ruling machines, The Miehle Printing Press Manufacturing Co. Ltd., London; The Intertype Corporation, Broadway, U.S.A.; composing machines, The Chandler & Price Co., Cleveland, U.S.A.; Gordon presses, The Thompson Type Machine Co., Chicago, U.S.A.; Thompson type-casters, Karl Krause Leipzig, Germany; box making machinery, and Gebroder Brehmner, Leipzig, Germany; stitching machines.

In paper, the representation of the famous Boregaard Mills of Norway and the Howard Smith Canadian group are also carried.

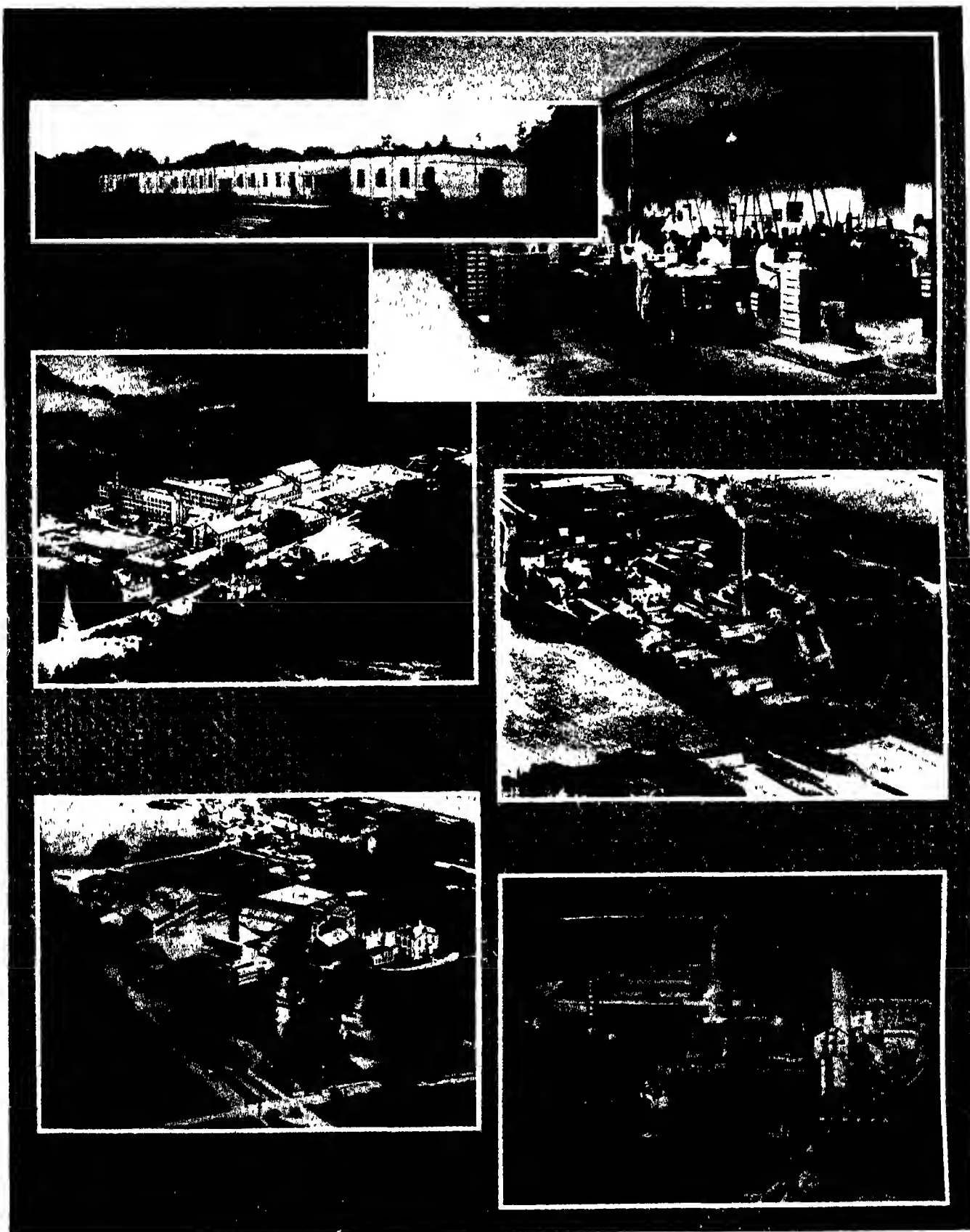
**Constitution.**—The success of the firm is largely due to its essentially democratic constitution. The associations between the directorate and the staffs have always been most cordial, and entrance to the board is by way of service in the ranks. The present chairman, Mr R. H. Ling, won his spurs by working his way step by step to a senior position at the mills and finally to the Board. Mr F. G. Hawdon, the export director, and two others of his colleagues spent many years in humble capacities of service.

**Capital.**—The firm became a limited company in 1886, and carries to-day £1,423,000 in preference and ordinary shares, besides £497,000 in debentures. A special issue of employees' ordinary shares, opened in 1922, has met with a ready response among the mill, office and overseas staffs, and at December 31, 1925, over £73,000 had been subscribed by them—another indication of the traditions prevailing throughout the company's mills and branches, and of the confidence in its future among those whose task it is to carry on the great heritage with which they have been entrusted.

**Head Office.**—In India, at Calcutta. Branches at Bombay, Madras and Rangoon.

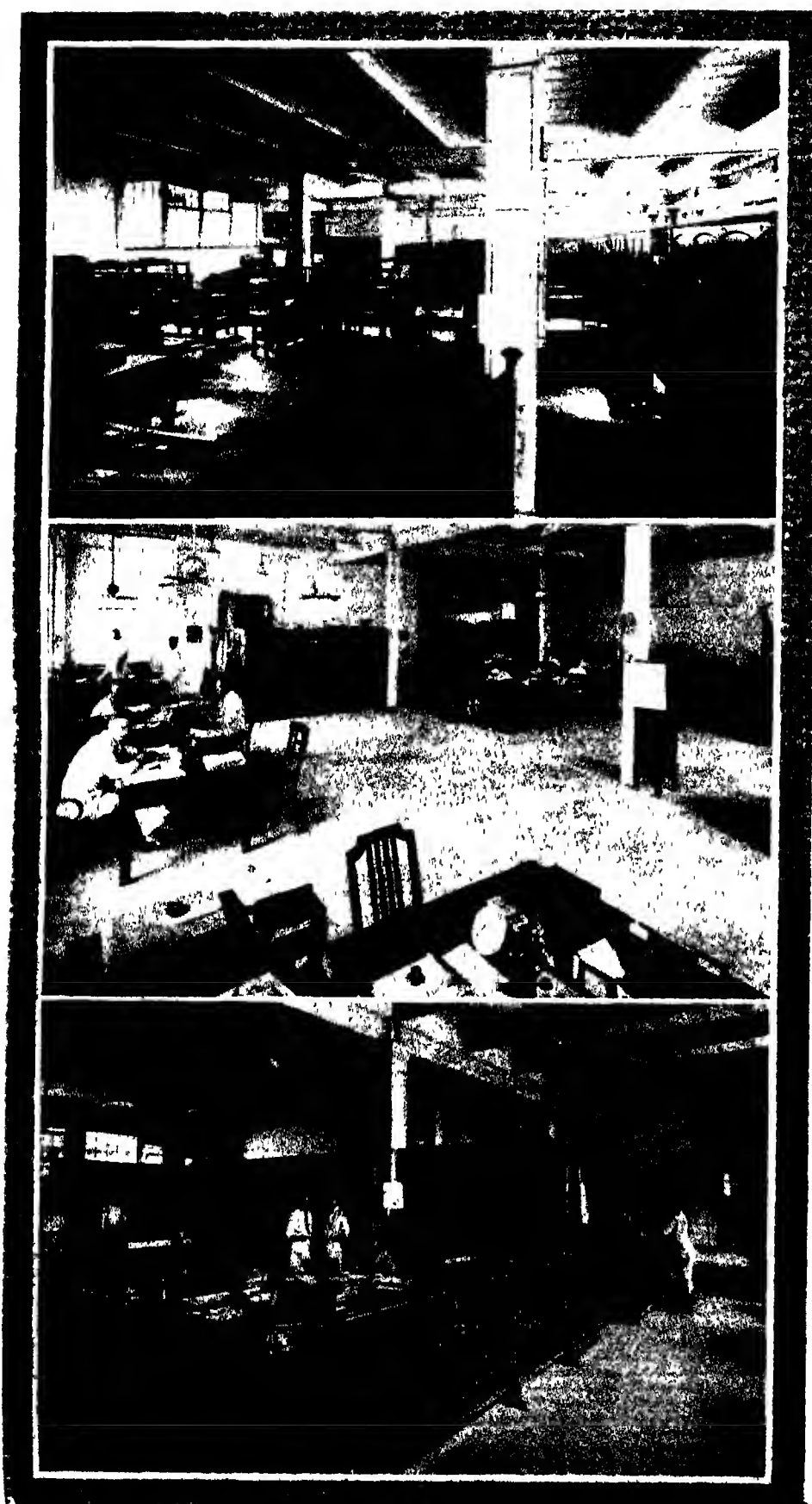
**Cables.**—"Commiles," Calcutta. Codes: A.B.C. 5th Edition, Tybo and Bentley's.

**Bankers.**—National Bank of India, Ltd.



**JOHN DICKINSON & CO. LTD., Calcutta.**

- |  |                                 |
|--|---------------------------------|
| 1. The Kamarhati Factory, Bengal.          | 2. A Department of the Factory. |
| 3. Apaley Mills, Hemel Hempstead, England. | 4. Croxley Mills, England.      |
| 5. Nash Mills, England.                    | 6. Home Park Mills, England.    |



DAVENPORT &amp; CO. LTD., Calcutta.

1. General Office.
2. Engineering Department.
3. Accounting Department.

**DAVENPORT & COMPANY LIMITED.**

**Inception.**—Founded by Mr. William Lloyd prior to 1870, this well-known house for many years traded as Lloyd & Co. In 1886, however, the name was changed to Davenport & Co., that title being continued until 1925 when the concern was incorporated as a private company.

**Activities.**—The original business of the firm was almost entirely devoted to tea garden agencies and tea buying for shipments to the markets of the world. In recent years, however, it has extended its activities, having added and developed an important engineering department at the same time representing as agents many well-known manufacturers in both Europe and the United States of America.

**Estate Interests.** The company controls a very large number of tea estates in Northern India, and acts as managing agents for the following tea companies: Belgachi Tea Co. Ltd., Gidde Tea Co. Ltd., Gulma Tea Co. Ltd., Hasimura Tea Co. Ltd., Hopetown Tea Co. Ltd., Huldibari Tea Co. Ltd., New Chumta Tea Co. Ltd., Pussimbing Tea Co. Ltd., Sonai River Tea Co. Ltd., Teesta Valley Tea Co. Ltd., and Jimsong Tea Co. Ltd.

It also represents as agents the Ambari Tea Co. Ltd., British Darjeeling Tea Co. Ltd., Laxmi Tea Co. Ltd., Nuddea Tea Co. Ltd., and Sahabad Tea Co. Ltd.

**Exporters.**—Messrs. Davenport & Co. Ltd. also hold a prominent position as buyers and shippers of tea for some of the best-known dealers in the world, and in this important connection their office and tasting rooms are splendidly equipped for that particular task.

**Engineering.**—In addition to structural work, the company act as secretaries for Messrs. Bell's United Asbestos India Ltd. and Lewis and Tyler, Ltd., also as agents for the following well-known manufacturers: Acheson Graphite Co., Brown Instrument Co., Cromul Engineering Co. Ltd., Alloy Welding Processes Ltd., August Muffle Furnaces Ltd., Burys & Co. steel drills and files, Drabble & Sanderson Ltd., saws, Exois of James Mills Ltd., Foamite Fire Foam Ltd., Henry Wells Oil Co. Ltd., Magnolia Anti-friction Co. Ltd., Milwaukee Tank Works Inc., petrol supply pumps and tanks, Norris Henty & Gardeners Ltd., oil engines, A & T Parkes & Co. Ltd., tea garden and colliery tools, Parker, Wunder & Achurch Ltd., "Empire" wire fencing, Russell Newbery & Co., electric lighting sets and industrial oil engines, Thomas Piggott & Co., Ltd., pressed steel tanks, Unbreakable Pulley & Mill Gearing Co. Ltd., Wales Dove Bitumastic Ltd., etc.

**Insurance.**—The firm undertakes insurance business, acting as agents for the State Assurance Co. Ltd. and the Ocean Accident & Guarantee Corporation Ltd.

**Directors.**—Messrs. J. M. Davenport, I. A. Magnus, and L. A. Collin.

**Head Office.**—135, Canning Street, Calcutta.

**Cables.**—"Davenports," Calcutta. Codes: Bentley's, A B C 5th and 6th Editions, and Private.

**Bankers.**—Chartered Bank of India, Australia and China.

**ANGLO-DUTCH CORPORATION LTD.**

**Inception.**—On January 28, 1926, this private limited company was incorporated under the laws obtaining in British India, and offices were opened at 3, Clive Row, Calcutta.

**Capital.**—The authorised capital of the Corporation is Rs. 1,000,000, of which Rs. 250,000 have been paid up, while the balance was to have been called for during the course of the year 1926.



DAVENPORT & CO. LTD., Calcutta  
Tea Tasting Room

**Objects.**—The company was formed to carry on the business of general importers, exporters, and commission agents, but particularly to devote itself to the exportation to all parts of the world of raw jute, jute cloth (Burlap), gunny bags, twines, yarns, raw hemp and other fibres.

**Directors.** These are Mr. J. F. Gubbay, a wealthy merchant and financier, and J. H. Ziesse, who has been connected with the Trading Company "Orient" for many years and who was manager of that concern for three years. Mr. Ziesse has a vast knowledge

of Indian trade conditions, particularly in the exportation of those commodities in which the firm specialises.

**Turnover.**—The trading account, showing a turnover of £100,000 in the two months following incorporation, is striking evidence of the volume of business handled.

**Bankers.**—The company's bankers are the Netherlands India Commercial Bank and the Netherlands Trading Society.

**Insurance.** All such risks as fire, marine, etc., are underwritten by the Corporation

which already acts as agents for the Java Sea & Fire Insurance Co. Ltd. and the Home Insurance Co. Ltd. of New York.

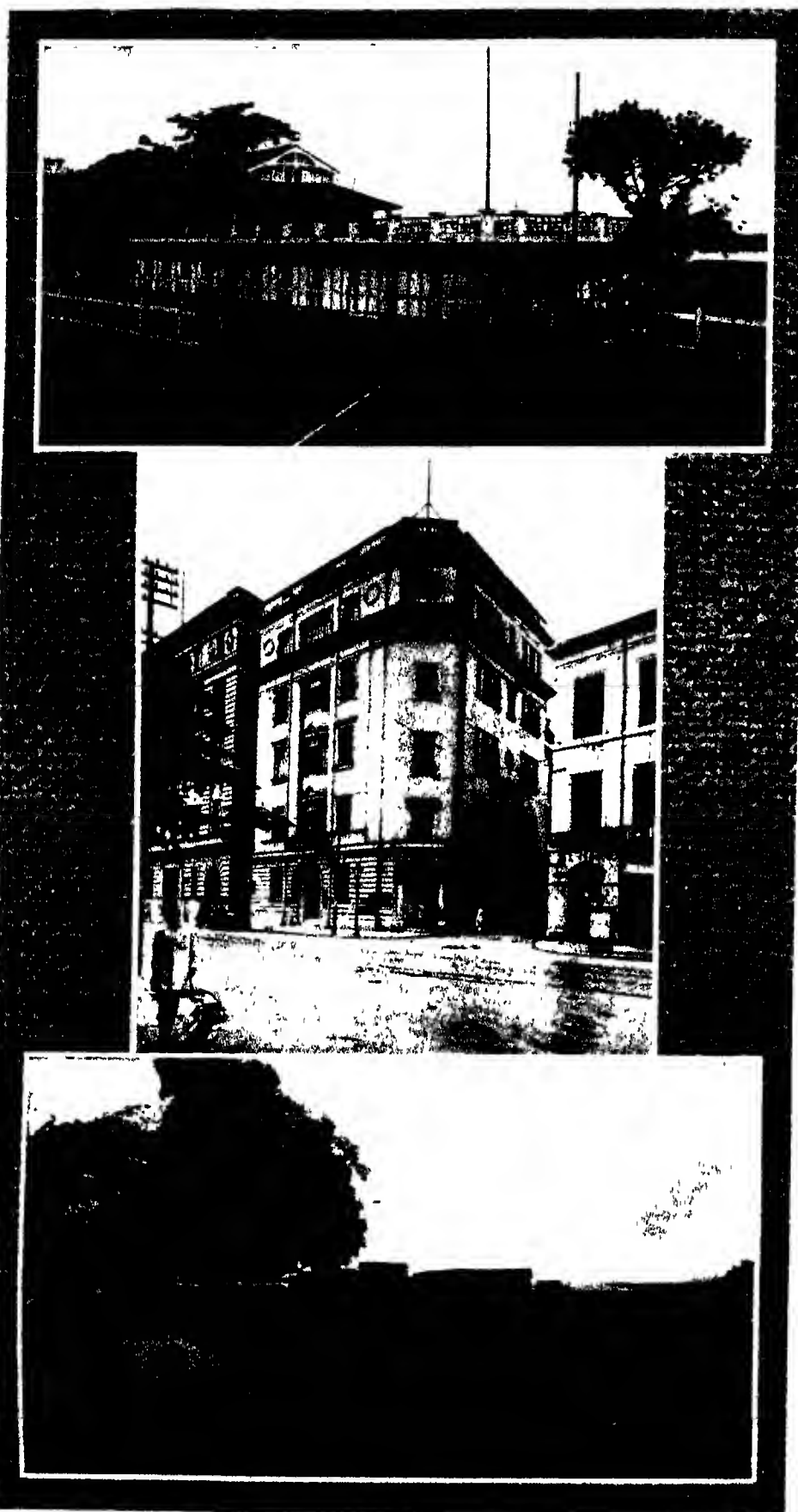
**Representatives.**—In London the firm is represented by Messrs. Falconer, Patterson & Co., 7, Minning Lane, E.C. 3 and in Australia by Messrs. L. D. and R. S. Anderson, of 21, Collins Street, Melbourne.

**Head Office.**—3, Chive Row, Calcutta. Cables: "Anglo-Dutch," Calcutta. Codes: A.B.C. 5th and 6th Editions. Bentley's and Private.



ANGLO-DUTCH CORPORATION LIMITED, Calcutta.  
Steamer loading bales of Jutes for the Company.





PLUMMER BROS. & CO., Calcutta.  
 1. Riverside Warehouse.  
 2. Offices located at No. 7, Hare Street  
 3. Timber Yard, Shalimar.

#### PLUMMER BROS. & CO.

**Inception.**—Established in 1921 by the present partners, Messrs E. T and J. L. Plummer (for 25 years connected with the firm of George Henderson & Co Ltd of Calcutta), this private business has made gratifying progress, and to-day has a staff of 40 employees.

**Activities.**—Registered as import and export merchants, the firm's operations embrace timber, in which a large turnover is done, and native produce. It also holds manufacturing and insurance agencies.

**Premises.**—The offices are situated at Allen House, 7, Hare Street, Calcutta, the timber yards, covering over 15 acres, at Sibpur and Shalimar, opposite Kidderpore Docks and adjoining the works of Turner Morrison & Co., and the warehouse, a commodious and well-ordered structure of 45 000 cubic feet, at Riverside, Strand Road.

**Import.**—A growing business is done in imports, timber, sleepers and railway materials, stores, hardware, and all descriptions of building material forming the bulk of the goods handled.

**Export.** All kinds of Indian timber, native produce, opium, and manganese and other ores are regularly exported, a large and increasing trade having been organised with Europe, South Africa and other countries.

**Agencies.**—The firm represents many important manufacturers, amongst whom are Ibbotson's Brothers & Co Ltd, Sheffield, railway steel and equipment, Ruberoid Co Ltd, London, roofing materials, District Chemical Co Ltd, London, welding rods and fluxes, Imperial Light Ltd, oxy-acetylene welding and acetylene flares, etc., railway signal manufacturers, Aspinalls Enamel Ltd, London, Sydney Smith & Son Ltd, Nottingham, locomotive boilers and fittings, and Patent Axle Box & Foundry Co Ltd, Wolverhampton. A large number of contracts has already been placed for the Ruberoid Co Ltd.

**Insurance.**—The firm undertakes insurance business, acting as agents for The Ocean Marine Insurance Co Ltd and the New Zealand Insurance Co Ltd.

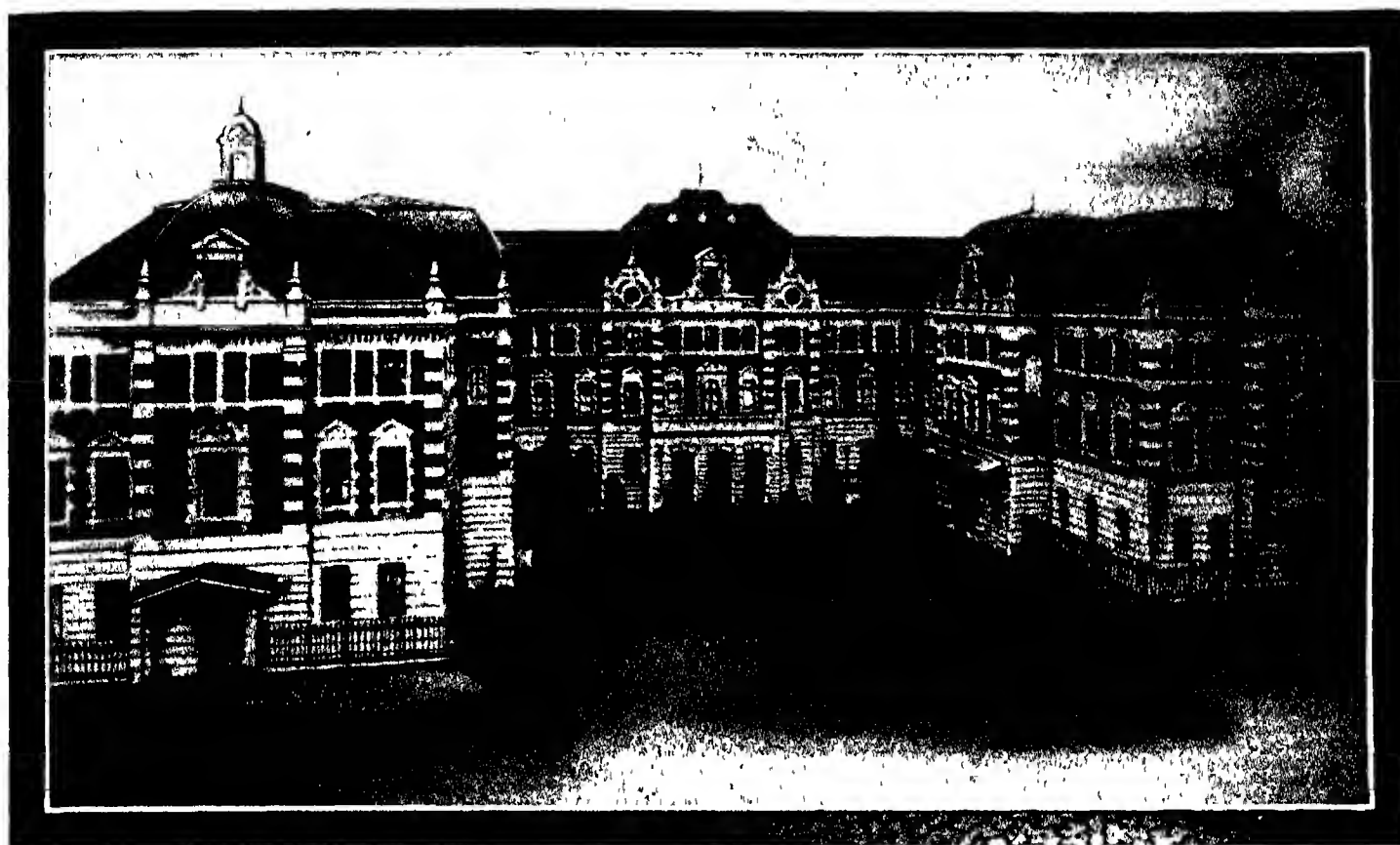
**Head Office.**—7, Hare Street, Calcutta.

**Cables.**—"Woodford," Calcutta. Codes A B C 5th and 6th Editions, Bentley's and Marconi.

**Bankers.**—The Chartered Bank of India, Australia and China.

**E. D. SASSOON & CO., LTD.**—Established over 50 years ago, this firm of bankers, merchants and mill agents has many large interests. In banking and finance it represents the Bombay Trust Corporation, Ltd., the Oriental Investment Co., Ltd., and the Asian Finance Corporation, Ltd.; in chemicals, the Eastern Chemical Co., Ltd., manufacturers and importers. In connection with cotton, agencies are held for the E. D. Sassoon United Mills Co., Ltd., comprising the Jacob, Rachel, and E. D. Sassoon Mills, the Alexandra Mills, the E. D. Sassoon Turkey Red Dye Works and the Manchester Mills; the Edward Sassoon Mills, Ltd.; the Meyer Sassoon Mills, Ltd.; the Apollo Mills, Ltd., the Elphinstone Spinning and Weaving Mills Co., Ltd., and the David Mills Co., Ltd. The company's export department is divided under three heads, the Persian Gulf section, shipping piecegoods, sugar and sundry merchandise against indents to all parts of the world; the Yarn section, exporting yarn to China, Egypt, and Syrian ports; and the Consignment section for the export of hides, skins, pearls, myrabolams, wool, ivory, spices, etc., to Europe, America and China. In insurance





MITSUI BUSSAN KAISHA LTD Head Office, Tokyo, Japan

the following companies are represented: The Royal Exchange Assurance Corporation (marine and accident), The Atlas Assurance Co (fire), The British India General Insurance Co., Ltd (fire, marine and accident), The St Paul's Assurance Co (marine) and The American Foreign Insurance Association (claims settling agents). Imports include cotton piece goods, cotton yarns, sugar, timber and ivory. The firm acts as agents for the Holland British India Line, while its Wheat and Seeds Department exports food grains, such as wheat, barley and maize, and seeds, including linseed, cottonseed, mustard-seed, etc. In wool the representation is undertaken of The Raymond Woollen Mills, Ltd., importers of raw and prepared wool, manufacturers and exporters of finished woollen and worsted cloths and yarn. The firm's general agencies include Ahmuty & Co., Ltd., with which is merged R. Bossi & Co., general importers; Tozer, Kemsley, Millbourn & Co., Ltd., commission agents, Lewis Berger & Sons, Ltd. and The Amalgamated Press of India, Ltd. Directorate: Sir Victor Sassoon, Bt., A. J. Raymond (managing director), Capt. R. E. Sassoon, M.C., and Albert Raymond. Manager, A. K. MacEwan, O.B.E. Secretary, M. P. Mehta. Head office: E. D. Sassoon Building, Ballard Estate, Bombay (cables: "Ehas," Bombay). Branches: London, Manchester, Calcutta, Karachi, Rangoon, Hongkong, Shanghai, etc.

#### MITSUI BUSSAN KAISHA, LTD.

**Operations.**—This very powerful Japanese concern, with a paid-up capital of 100,000,000 yen and ramifications extending throughout the Far and Middle East, has an important branch in Calcutta, as also in Bombay, Rangoon and Karachi, in each of which centres an extensive business is transacted.

**Import and Export.** Merchandise passing through the Calcutta house is of a general kind, including gunny, hessian cloth, jute, sugar, metals, ores, coal, seed, seed-cake, shellac, rice, chemical manures, silk goods, singlets, woollen goods, hemp, beer, confectionery, dyestuffs, drugs, chemicals, matches and match-making material, cement, paper, pulp, etc.

**Insurance.**—The company undertakes all kinds of business under this head and acts as agents for the undernamed first-class companies: Tokio Marine & Fire Insurance Co. Ltd., Union Insurance Society of Canton, Taisho Marine & Fire Insurance Co. Ltd., and The British Equitable Insurance Co. Ltd.

**Branch Addresses.**—Calcutta: Central Bank Building, 100, Chive Street—manager, Mr R. Tamaki. Bombay: Dwarkadas Building, Hornby Road—manager, Mr B. Titamura. Rangoon: 26, Merchant Street—agent, Mr S. Takeuchi. Karachi: MacLeod Road—agent, Mr I. Morioka.

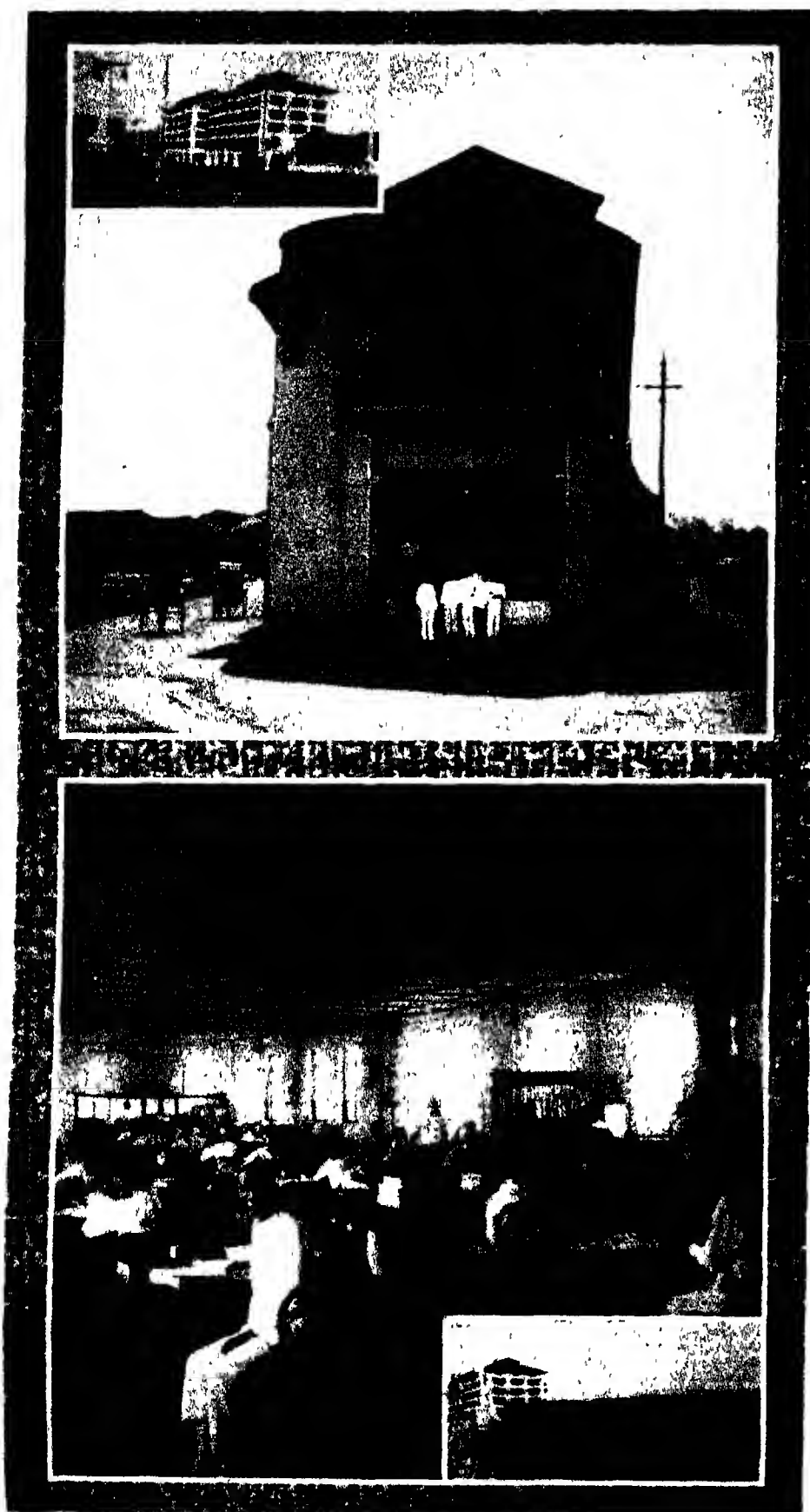
**Other Branches.**—These are:—In Japan: Otaru, Yokohama, Nagoya, Osaka, Kobe, Moji, Wakamatsu, Nagasaki and Muke. In China: Taipeh, Tsainan, Seoul, Dairen, Newchang, Mukden, Changchun, Harbin, Tientsin, Shanghai, Chefoo, Tsingtau, Hankow, Canton, Foochow, Amoy and Hongkong. In Indo-China: Saigon. In Philippine Islands: Manila. In Siam: Bangkok. In Java: Sourabaya, Semarang and Batavia. In Straits Settlements: Singapore and Penang. In Great Britain: London. In U.S.A.: New York, San Francisco, Seattle and Portland. In Australia: Sydney and Melbourne.

**Head Office.**—1, Nichome, Honcho, Nihonbashiku, Tokyo.

**Cables.**—"Mitsui." Codes: A B C 5th Edition; Scott's, 10th Edition; Bentley's and Private.

**Bankers.**—National Bank of India, Hongkong and Shanghai Banking Corporation, Chartered Bank of India, Australia and China, Yokohama Specie Bank and others.

**COBBOLD & CO. LTD.**—Mercantile Buildings, 9 to 12, Lall Bazar Street, Calcutta. Founded some years ago by Mr H. R. Cobbold, who has had nearly 40 years' experience in India, the firm as at present constituted was incorporated in 1923 as a private limited company, with Mr Cobbold and Mr Wood as directors. Mr Cobbold has retired from active work, but still retains his interest, the present directors being Mr J. M. Wood and Mr J. S. Rennie. The company supplies the products of the following machinery and equipment manufacturers: Yale & Towne Manufacturing Co., American Saw Mill Machinery Co., F. B. Mallory & Co., E. C. Atkins & Co., Rumsey Pump Co., George L. Squier Manufacturing Co., Buffalo Forge Co., Richard Lloyd & Co. Ltd., United States Rubber Export Co., Lancashire Hill Rope & Twine Co., Virax Die Stock Co., White Milne & Co., and Fitzpatrick Products Corp., employing a trained staff to draw up schemes and give advice and service in the installation of the different equipments offered by those concerns. The firm imports direct, and always carries in stock a good selection for immediate delivery. Among its clients are the Bengal-Nagpur, Eastern Bengal and East Indian Railways, the Calcutta Port Trust, Calcutta Electric Supply Corporation, Tata Iron & Steel Works, who are all users of hoisting and conveying equipment supplied by Cobbold & Co., and the various Government Forest Departments for sawmill machinery and logging equipment. Cables: "Marcellus", codes Bentley's and A B C, 6th Edition. British agents: Messrs. White, Milne & Co. Dundee. Bankers: International Banking Corporation.



TAN KAH KEE & CO., Singapore.

1. Head Office. (Inset: New Rubber Factory at Singapore.)
2. Part of General Office. (Inset: Another View of Rubber Factory, showing wharf and godowns.)

#### TAN KAH KEE & CO.

**Inception.**—This company, well known in Indian business circles, with branches or representatives in all the principal centres, was established in 1904 by Mr Tan Kah Kee, assisted by his brother, Mr Tan Keng Hean. Mr Tan Kah Kee, apart from his great business success, has given much financial support to education.

**Activities.**—The main activities of the enterprise are growing, manufacturing and exporting rubber, growing and canning pineapples, importing and exporting rice, manufacturing bricks and biscuits, operating several coasting steamers (used in connection with the rubber industry), maintaining engineering works, and operating a printing press.

**Rubber.**—This embraces the largest proportion of the firm's business, although each department is of importance. A feature in connection with rubber is the process of re-conditioning the native article, and this constitutes the removal of foreign elements such as sand, bark, etc., the presence of which, if retained, would affect the marketable value of the commodity. Water is one of the essentials to effective re-conditioning, and the company uses approximately 10,000,000 gallons per month, which, if purchased from an outside source, would cost about \$250,000 per annum. The rubber comes from Djambi, Bandjermassin, Pontianak, and Palembang to be dealt with at the company's plant, where 100 machines of 1,600 horse power, handle over 100 tons per day. The firm has extensive estates in the Straits Settlements and Federated Malay States, covering over 10,000 acres, thus ensuring a continuous supply of rubber for its own factories.

**Manufactory.**—Modern plant has been installed at the company's factories and at present the daily output is as follows: White canvas tennis shoes, 4,500 per day; bicycle tyres, 700; bicycle tubes, 300; motor car tyres and tubes, 200 tyres and 150 tubes per day when working at full capacity; raincoats, 100 per day; children's play balls, 3,000; also a limited number of tennis balls. Approximately 2½ tons of rubber are used per day. A large business is also done in raw or crude rubber, the amount handled monthly being roughly 3,500 tons which goes chiefly to America and Europe.

**Pineapple Department.**—Tan Kah Kee & Co have three factories equipped with the latest automatic machinery for canning this fruit, the installations being capable of turning out annually 400,000 cases, each of from two to four dozen tins. The factories are respectively at Singapore, Johore, and Klang.

**Rice Department.**—The company acts as rice merchants, supplying many European houses and rubber and tin mines in the East.

**Brick and Tile Department.**—The organisation has a brick kiln at Pulo Tekong, an island near Singapore, the monthly output being about 300,000 bricks.

**Biscuit and Printing Factories.**—The company's World's Biscuit Factory, at Singapore, has an output of from 5 to 6 tons per day, while the Nanyang-Siangpau Printing Press turns out the "Chinese Journal of Commerce."

**Insurance.**—The firm is agent for the Home Insurance Co Ltd, of New York, handling fire and marine risks.

**Engineering.**—Messrs Tan Kah Kee & Co are proprietors of the Khiam Cheong engineering and boiler works, equipped with powerful modern plant for metal work, etc.

**Staff.**—This numbers between 6,000 and 7,000.

**Branches.**—There are 16 branches throughout the Straits Settlements and Federated Malay States, also branches in Borneo, Java, Sumatra, Bangkok, Siam, India and China.

**Agents.**—London: Kleinwort Sons & Co., 20, Fenchurch Street; New York: C. B. Kaufmann, 77, Broad Street; Germany: L. Pehrns & Sohne, Hamburg.

**Head Office.**—1, River Valley Road, Singapore (P.O. Box 1093).

**Bankers.**—Hongkong & Shanghai Bank, Chartered Bank of India, Australia and China, Mercantile Bank of India, P. & O. Banking Corporation, Chinese Commercial Bank, Overseas Chinese Bank, and Ho Hong Bank.

**Cable Address.**—“Tanjahke.”

**E. SPINNER & CO.** Tamarind Lane, Fort, Bombay and Manchester, England. Founded in 1872 by Mr. Emile Spinner, who became resident Bombay partner, while his brother Ferdinand, who joined him in partnership, took charge of the Manchester office. The main interest of the firm since its inception has been the export of Indian cotton to Europe. Of imports, Manchester piece-goods have been dealt in most extensively, this trade being developed in a remarkable way from 1884 onwards by the introduction of fast-dyed khaki goods made according to a patented process by Leemann and Gatty (now F. A. Gatty & Co. Ltd.) at Preston, Lancashire. Through the acumen of Mr. E. Spinner and his collaborators the advantages of this invention were made to be realised by the military authorities, and in the course of the next ten years these khaki goods were standardised for use of the Army in India. The founder of the firm died in 1903, while his brother lived till 1918, but ceased to be an active partner in 1900. Being without male issue the brothers left the business to their former managers, thereby establishing a tradition which has been kept up by their successors. The present partners are Mr. E. Erb, Mr. S. Hanhart, Mr. F. Hanser and the executors of the late Mr. A. Guggenheim. Bankers in London, Glyn Mills & Co. In India, National Bank of India Ltd. and Chartered Bank of India, Australia and China. Cables: “Spinner,” Bombay or Manchester, codes A 1, A B C 4th and 5th Editions, Official Vocabulary, Berne 1894, and Bentley's.

**J. A. BEGBIE & CO. LTD.** (Incorporated in England).—Yusuf Building, Church Gate Road, Bombay. Head office at Gresham House, Old Broad Street, London. Founded in London, Bombay and Rangoon in 1894 and constituted a limited company in 1922, the firm conducts a large import and export business and holds a number of important agencies. The present directors are J. S. Wardlaw Milne, M.P., chairman, London; H. G. Buchanan, London; A. R. Finlay, Rangoon; and P. J. Arnot, London. The chief imports are sugar and cotton piece-goods, and on the export side the principal commodities of Indian produce shipped are cotton, oilseeds, spice seeds, hemp, myrabolams, wool, bristles, etc. The Bombay house acts as agents for Marine Insurance Co. Ltd., London; Union Marine Insurance Co. Ltd., Liverpool; Army, Navy & General Assurance Association Ltd., London; and Eastern Assurance Co. Ltd., Calcutta, while the Rangoon branch represents Burma Para Rubber Co. Ltd., Burma Rubber Estates Ltd., Sittang Valley Rubber Estates Ltd., Marine Insurance Co. Ltd., London, and Central Insurance Co. Ltd. The firm's bankers are: National Bank of India Ltd., Mercantile Bank of India Ltd., and all exchange banks in Bombay. Begbie & Co. are well represented throughout the Continent of Europe, their chief agents being E.



MOOLJI JAITHA & CO., Bombay.  
“Ewart House,” in which the Company's Offices are situated

Stradella & Co. Via Tommaso Grossi 7 Milan. Cables: “Begbie Bombay.”

#### MOOLJI JAITHA & CO.

**Inception.**—The history of this concern goes back to 1834 when the late Mr. Moolji Jaitha of Bombay began dealing in coconut oil, coir ropes and general produce from the Malabar Coast. Twenty years later he established the firm bearing the above name.

**Development.**—Though valuable contracts were secured by the founder, it was his son, Mr. Soonderdas Moolji Jaitha, who prepared the basis of future prosperity. Among his achievements was the consigning to Lancashire mills of six sailing vessels laden with cotton which arrived in the Mersey at the height of the cotton famine consequent upon the American Civil War, fabulous prices for their cargoes being obtained. In 1870 he began to form a number of joint stock companies comprising The New East India Press Co. Ltd. (capital Rs. 3,50,000), The Khandesh Spinning & Weaving Co. Ltd. (Rs. 7,50,000), The Sind & Punjab Cotton Press Co. Ltd. (Rs. 1,00,000), The Madras United Spinning & Weaving Co. Ltd. (Rs. 5,00,000), The Soondeidas Spinning & Weaving Co. Ltd. (Rs. 8,00,000), and finally The New Piece-Goods Bazaar Co. Ltd. (Rs. 6,00,000). Of these concerns Messrs. Moolji Jaitha are still managing agents for the Khandesh and New East India Companies and large shareholders in The New Piece-Goods Bazaar Co. Ltd.

**Activities.**—The firm to-day occupies a prominent position in the commercial life of Bombay, in which city and elsewhere it owns extensive landed property. A cotton ginning factory at Karanja is also under its

proprietorship. Another branch of activity is the subsidiary establishment known as Messrs. Chatrabhuji Gordhandas & Co., which holds the sole selling agency for all cloth manufactured by The Bombay Dyeing Spinning & Weaving Co. Ltd.

Messrs. Moolji Jaitha are agents for the Prudential Assurance Co. Ltd.

**Branch.**—In addition to headquarters at Bombay the firm maintains a branch at Cochin, whence produce is transferred to Bombay and Karachi by its own native craft.

**Proprietor.**—The present head and proprietor of the concern is Mr. Chatrabhuji Gordhandas, great-grandson of the founder.

**Head Office.**—Ewart House, Tamarind Lane, Fort, Bombay (cables: “Coronet” Bombay). Code: A B C 5th Edition.

**Bankers.**—Imperial Bank of India, National Bank of India Ltd., Chartered Bank of India, Australia and China, Hongkong & Shanghai Banking Corporation and others.

**MEHTA & CO.** 119, Meadows Street, Fort, Bombay. Started in 1906 this is one of the leading auctioneering firms in the city. Mr. K. A. Mehta being the sole proprietor. The concern is well known throughout the commercial and banking community in Bombay having an acknowledged reputation for straightforward dealing and enjoying a very sound financial standing. It is a large supplier to the Government of India, and amongst its activities is the importation of paper and piece-goods. At present it is interested in the expansion of the import section, and will be pleased to enter into correspondence with manufacturers in England or on the Continent of Europe with a view to handling the distribution of their

products in Bombay. The principal piece-goods lines dealt in are cotton, woollen, and silk. The company's bankers are the Hongkong & Shanghai Banking Corporation and the International Banking Corporation. Cables "Hallmark," "Paper," and "Papia."

**W. BILLINTON & CO.**—Engineers, head offices, 9, Clive Street, Calcutta. Bombay branch at Vulcan House, Nicol Road. The firm commenced operations with a view to handling various products of Vickers Ltd., Barrow, Sheffield and Lrith, but it now carries additional representations affecting the railways and other Government institutions. The business is under the personal supervision of the managing director, Mr W. Billinton, for over 20 years identified with the Indian engineering market, the Calcutta

office being under the management of Mr A. Roy Craven and the Bombay branch under Mr C. F. Renfree. The company is interested in all railway and mining equipment, such as special saloons, the automatic vacuum brake, railway rubber, special electric locomotive head lamps, all crushing plants, pit-head gear machinery, cement machinery, etc. It represents Vickers Ltd., George Spencer Moulton & Co. Ltd., railway rubber fittings and springs, Taylor Bros & Co. Ltd., disc wheels, tyres, axles and best Yorkshire iron. Consolidated Brake & Engineering Co. Ltd., makers of the vacuum brake, G. D. Peters & Co. Ltd., railway fittings, Wilson plastic arc welders and railodok electric trucks, Wota Limited, engineers and white metal founders, Hulburd Patents Ltd., copper-smiths and engineers, F. R. Rand, railway carriage

roofing material, Loudon Brothers Ltd., wheel lathes and machine tool makers, and acts as sub-agents for Pyle-National electric head-lamps for locomotive and Dearborn scientific feed water treatment. Among contracts executed are: The Prince of Wales' Royal Train, special saloons for H. H. The Gaekwar of Baroda, H. H. The Nawab of Rampur, special train for H. E. H. The Nizam of Hyderabad, a large ore crushing installation at Doraha, Amballa District, for the Government of India, and pit head gear for the Mysore Gold Mine. The firm introduced steel disc railway wheels into India. Bankers Hongkong & Shanghai Banking Corporation and Westminster Bank, London. Cables "Immaculate," Bombay. "Immaculate," Calcutta, codes Bentley's and A. B. C. 5th Edition.

## CUSTOMS TARIFF

**T**HE distribution of trade between Great Britain and her commercial rivals in Indian markets is necessarily closely connected with the Indian Tariff. For many years this was a revenue one, but in course of time it took on a protective character, the need for making provision for war expenses having been met by the raising of the general duty on imports from 5 per cent to 15 per cent *ad valorem*, the duty on cotton piece-goods standing at 11 per cent.

**ASPECTS (POLITICAL AND ECONOMIC).**—Nowadays the Indian Tariff is a subject with a political as well as an economic aspect. Until the formation of the Montagu-Chelmsford Reforms, India did not control her fiscal policy, but to-day the Secretary of State refrains from interfering in fiscal matters when the Government of India and the Indian Legislature are in agreement. India has not so far been able to commit herself to a policy of Imperial Preference, the principle does not even obtain in public contracts. Generally speaking, however, the policy of accepting the lowest satisfactory tender, to which the Government is pledged, has not been found incompatible with India remaining the best customer of Great Britain.

**COMMISSION (INDIAN TARIFF).**—The Indian Tariff Commission, which published its report in 1922, definitely advocated a policy of protection, and recommended the creation of a permanent Tariff Board to investigate the claims of particular industries. The Commission pronounced against a general system of Imperial Preference, though it was ready to approve preferential duties on a limited number of commodities if the Indian Legislature judged such preference desirable. The Tariff Commission added that no preference should be given in such a way as to diminish the protection required by Indian industries, and that no preference should involve on the balance any appreciable economic loss to the country. It was further proposed that any preferences which it might be found possible to give to the United Kingdom should be granted as a free gift, but that in the case of the other parts of the Empire preferences should be granted only by agreements mutually advantageous.

Such is the general policy of India to-day so far as it relates to a tariff and protection, but it must be remembered that this policy has been formulated by a politically active minority in Indian affairs, rather than by the landed and agricultural interests who make up the great part of India's population. The

fact that 70 per cent and more depend upon agriculture for a living is a sufficient guarantee that protectionists will not be able to persuade their countrymen to approve an extravagant policy.

**DUTIES (IMPORT).**—The present import duties were imposed in 1923 and were revised in certain cases in 1925. They include the following items of interest to British and foreign shippers: Ale, beer, cider and porter, 8 annas per imperial gallon or six-quart bottles, spirit unfit for consumption, 7½ per cent *ad valorem*, perfumed spirits, Rs 36 per gallon, or 15 per cent *ad valorem*, whichever is the higher, all other spirit, Rs 21 a 14 per gallon. Champagne (less than 47 per cent of proof spirit), Rs 9 per gallon, or six-quart bottles, other wines, Rs 4 a 8 per gallon. Manufactured tobacco, Rs 1 per lb, cigars, 75 per cent *ad valorem*, cigarettes—not exceeding in value Rs 10 a 8 per 1,000, Rs 7 per 1,000, exceeding Rs 10 a 8 per 1,000, Rs 10 a 8 per 1,000, other tobacco, Rs 2 a 4 per lb. Firearms (including rifles), Rs 15 each, or 30 per cent *ad valorem*, opium, Rs 24 per seer of 80 tolas.

The following goods are liable to a duty of 2½ per cent *ad valorem*: Vinegar in casks, telegraphic instruments imported by a railway, machinery, including locomotives, steam rollers, etc., electric, steam, water and other driving engines, printing presses, type, ink, lithographic stones, paper-folding machinery, etc.

The following are subject to a duty of 15 per cent *ad valorem*: Flour, provisions and oilmen's stores and groceries, spices, coffee, and other articles of food and drink, wearing apparel, including drapery, boots and shoes, and military uniforms and accoutrements; explosives, carriages and carts, including jinrickshas, perambulators and wheelbarrows, but excluding motor-cars. Chemicals, drugs, and medicines, clocks and watches, cutlery, electro-plate, hardware and other implements and instruments coming under the 15 per cent heading, as do dyes and colours, furniture, glassware, earthenware and china; machinery to be worked by manual and animal labour; iron and steel manufactures not otherwise specified; paper, stationery, account books and Christmas cards. Other goods which are liable to the 15 per cent *ad valorem* duty are: haberdashery, millinery, hosiery, thread (other than sewing or darning thread, which pays only 5 per cent.), and all other manufactured cotton goods, silks, woollen goods and other textile goods not

otherwise specified, brushes, candles, matches, oilcloth, polishes, pictures, rubber tyres, soap and toilet requisites, and umbrellas. Articles wholly or mainly manufactured not otherwise specified pay the 15 per cent *ad valorem* duty.

**DUTIES (PROTECTIVE).**—The first burst of fiscal reform enjoyed by India was utilised to secure protection by imposing a tariff and granting a bounty to the iron and steel industry. As a result of the duty on steel wares passed in May 1924 it was estimated that by 1927 the imports of the iron and steel goods affected would be reduced from 581,000 tons to 363,000 tons, while Indian production would be increased from 46,000 to 264,000 tons. In 1925 the Legislative Assembly at Simla also accepted a Government proposal for a duty of one anna (1d) per lb on writing paper and printing paper—other than newsprint—containing 65 per cent or more of mechanical pulp. Newsprint, which is imported to the extent of 17,800 tons a year, escapes the duty. As the result of this tariff alteration the Indian paper mills are expected to capture about 20,000 tons of trade. The effect of the duty has been to increase the cost of imported writing paper by 56 rupees a ton. Other Indian industries have applied to the board for the imposition of duties to protect them against outside competition, but their applications have not been granted.

**EXCISE.**—The excise revenue in British India is derived from the manufacture and sale of intoxicating liquors, hemp, drugs, toddy and opium. These (with the exception of opium) are a considerable source of revenue to the Provincial Governments, to whom excise has been entirely made over. The duties vary from province to province, the governing principle in fixing rates being the highest duty compatible with the prevention of illicit distillation.

Opium is consumed in all the provinces of India, and the sale is controlled by the Central Government, which in 1925-26 derived Rs. 3.55 lakhs from it. Excise duties are also imposed on kerosene and motor-spirit.

**COTTON EXCISE DUTY.**—Noteworthy events of the years 1925 and 1926 were the suspension and subsequent abolition of the cotton excise duty of 3½ per cent., which had been imposed in 1896 on all cotton yarns of 20's and above produced by mills in India. After 30 years of agitation, both in India (where the duty was universally unpopular) and in the United Kingdom (where Lanca-



shire free-traders were almost its only supporters), the promise given by Lord Hardinge during the War, that the duty should be abolished as soon as financial considerations permitted, was fulfilled by Lord Reading, who promulgated an ordinance in November 1925 suspending the levy and collection of the duty. Its abolition "finally and entirely" was included in the Finance Act which became law in 1926.

**EXPORT DUTIES.**—The principal export duties are as follow: Jute manufactures, when not in actual use as coverings, receptacles or bindings for other goods—Rs 20 per ton on sacking, Rs 32 per ton on hessians and other descriptions, rice, 3 annas per maund of 82½ lbs., tea, Rs 1 a 8 per 100 lbs., hides and skins, 5 per cent *ad valorem*.

**COTTON PIECE GOODS.**—The import duty on manufactured cotton piece goods is 11 per cent *ad valorem*. Now that the countervailing excise duty of 3½ per cent has been removed (see previously) the Indian cotton spinners should find their position in the local markets immensely strengthened.

**FREE IMPORTS.**—There is a generous free list, which covers such goods as arms forming part of the equipment of an officer, many agricultural implements, dairy appliances, raw cotton and wool, manures, wood pulp, cotton machinery, books, maps, music and trade catalogues and advertising circulars imported by packet, book or parcel post.

**MOTOR CARS, ETC.**—Of special interest to British manufacturers is the relatively

high duty of 30 per cent *ad valorem* imposed on motor-cars, motor-cycles, motor-scooters and parts and accessories thereof. This duty has long been the subject of complaint on the part of traders in India, and a strong agitation has been started to have it reduced.

**REVENUE (CUSTOMS).**—The total revenue realised in the twelve months ended March 31, 1926, was Rs 48,67 lakhs, as compared with Rs 49,11 lakhs in 1924-25. Import duties contributed Rs 39,16 lakhs, export duties, Rs 5,89 lakhs, excise duties on cotton manufactures, Rs 1,47 lakhs, on kerosene Rs 99 lakhs, and on motor spirit Rs 78 lakhs, land customs and miscellaneous, Rs 38 lakhs. Increases were noticeable in import duties on sugar, motor cars and cycles, iron and steel, pneumatic rubber tyres, mineral oils, cutlery and hardware, and liquors, and in export duties on rice, raw hides and skins. On the other hand, import duties on cotton yarn and piecegoods, tobacco, railway plant, silk piecegoods, match splints and veneers, and metals other than iron and steel and export duty on raw jute showed important decreases. The protective special duties collected on private imports during the twelve months April to March 1925-26 amounted to Rs 3,05 lakhs. The duties on Government stores amounted approximately to Rs 93 lakhs inclusive of the protective duties, as against over Rs 60 lakhs in the twelve months ended March 1925.

For the eight months ended November 1926 the total gross Customs revenue (excluding salt revenue) was Rs 31,97,47,000. To this amount import duties contributed

Rs 26,79,70,000, export duties Rs 3,58,66,000, excise duties on cotton manufactures, Rs 31,000, on kerosene, Rs 71,29,000; on motor spirit, Rs 65,27,000, land customs, Rs 12,06,000, miscellaneous, Rs 2,63,000.

**SALT TAX.**—The salt revenue was inherited by the British Government from Native rule, together with miscellaneous transit dues. These transit dues were abolished and the salt duty consolidated and raised. There are four great sources of supply: rock salt from the Salt range and Kohat Mines in the Punjab, brine salt from the Sambhar Lake on Rajputana, salt brine condensed on the borders of the Lesser Rann of Cutch, and sea-salt factories in Bombay, Madras and at the mouth of the Indus.

Broadly, one-half of the indigenous salt is manufactured by the Government Agency; the remainder under license and excise systems. In the Punjab and Rajputana the salt manufactures are under the control of the Northern India Salt Department, a branch of the Commerce and Industry Department. In Madras and Bombay the manufactures are under the supervision of Local Governments. Special treaties with Native States permit of the free movement of salt throughout India, except from the Portuguese territories of Goa and Damaun, on the frontiers of which patrol lines are established to prevent the smuggling of salt into British India.

The salt tax, which in 1923 stood at Rs 2 a 8, was reduced in 1924 to Rs 1 a 4. The estimated salt revenue in 1925-26 was Rs 6,95,00,000.

## ELECTRICAL DEVELOPMENT in INDIA and CEYLON

By P. S. JACKSON

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**U**ERY great strides have been made in the direction of electrical enterprise in India since the first public installation in the country was inaugurated in Madras city some thirty-two years ago. Though progress at the outset was slow, it has speeded up considerably of recent years, and we now find electrical plant and apparatus in fairly general use in the larger towns throughout the country. In fact, there is now being set in operation in Bombay one of the largest hydro-electric plants in the whole world.

It is important to remember that India is and always will be for the most part an agricultural rather than an industrial country, and that the distances encountered are very great. That being so, there is not the same scope for intensive electrical development away from the towns in India such as obtains in countries which can be classed as largely industrial, as for example in the West.

At the present time a great deal of development is taking place in the West in connection

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with the uses of electricity for agriculture, but except in irrigation it will probably be many years before the Indian agriculturist becomes accustomed to the use of electricity to any marked extent in connection with his operations, this matter will, however, be referred to later.

India's enormous water power resources, which were so ably investigated some time ago by the Hydro Electric Survey of India under Messrs G. T. Barlow & J. W. Meares, are already proving of considerable benefit to the country, and as the best sites are developed there will in time no doubt be a vast network of supertension power transmission lines which will link up large areas of country in a similar manner to that which is now taking place in the United States of America.

**1. ELECTRICAL DEVELOPMENT (GENERAL).**—Electrical development in India falls naturally under separate heads, which may be broadly classified as follow:—

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- 1 Hydro-electric development
- 2 Development of electric power from coal or oil fuel
- 3 Public electric supply for lighting, fans, and miscellaneous purposes
- 4 Electricity in industry
- 5 Electric traction
- 6 Electricity in agriculture
- 7 Telegraphs, telephones and broadcasting
- 8 Electro-medical work

What follows is intended to give a brief survey of the present position in respect to the development under each of the above headings, and to indicate the lines which electrical progress is likely to follow in the future.

**2. HYDRO-ELECTRIC SCHEMES.**—It has been computed that the total water power available in India for maximum development is equivalent to over 25,000,000 horse power. So far, of this immense amount of power less than two per cent. has been developed.

The principal hydro-electric schemes are as follow —

### 3. CAUVERY RIVER INSTALLATION.

—Prior to the Great War there was only one hydro-electric plant of first-class importance in India, namely the Mysore Government hydro-electric installation on the falls of the Cauvery River at Sivasamudram. This interesting installation, initiated by Lt.-Col. Lotherniere, R.E., and set to work as far back as 1902, has been an unqualified success from the start, and, since its inauguration with a plant capacity of 6,000 h.p., has been extended no less than six times, until at present the maximum available output of 48,000 h.p. has been reached. The total gross revenue from this scheme is expected shortly to reach the annual figure of 62 lakhs of rupees (say 467,000).

The plant was originally installed mainly for the purpose of supplying power to the Kolar Goldfields, some 92 miles distant, and the bulk of the power generated is still consumed there. Transmission lines have, however, been run to the cities of Mysore and Bangalore, where considerable quantities of power are being used not only for lighting, etc., but also for power supply to several important textile and other mills. It is interesting to note that the Kolar transmission line was at one time the longest transmission line in the world. It was originally arranged for 35,000 volts, but subsequently, as the demand for power increased the voltage was raised to 70,000.

There is no doubt that the development of the Cauvery scheme has been a very important factor in the phenomenal advancement of Mysore State. No fuel other than wood is found in the State or in the surrounding country, so that for industrial development Mysore is almost entirely dependent on water power and the greatest credit is due to the foresight of the then Dewan, Sir K. Seshadri Iyer, who first took up the scheme.

**4. GERSOPPA FALLS SCHEME.**—In spite however of the repeated extensions to the plant, the output of power has not kept pace with the demand, so that Mr. S. G. Forbes, the Chief Electrical Engineer to the Government of Mysore has been obliged to search elsewhere for other sources of power in the State. Among these the famous Gersoppa Falls on the Sharavati River near Shimoga have been investigated. The drop is 800 feet, and the falls are said to be among the highest in the world. The estimated cost of the development of this scheme is 4½ crores (say 3,400,000), and the minimum continuous power available is probably about 20,000 h.p. Two other important schemes, namely those at Shimsha and Mekadatu on the Cauvery River, are also under consideration in Mysore.

Mysore has truly set an example to the rest of India of which it may well be proud, and it is to be hoped that, for the sake of the industrial development of the country, others will not be slow to follow Mysore's magnificent lead.

### 5. TATA HYDRO-ELECTRIC SCHEMES.

—The most important developments of hydro-electric power in India, if not in the whole of the Eastern Hemisphere, are to be found in the three Tata hydro-electric schemes near Bombay.

The first of these (that of the Tata Hydro-Electric Power Supply Company Ltd.) was set to work in 1915. It comprises a series of lakes for water storage, pipe lines, power house, transmission lines, etc., etc., the transmission distance to Bombay is some 45 miles, and the voltage of transmission is nominally 100,000.

The second plant (that of the Andhra Valley Power Supply Co. Ltd.) was set to work in 1922. It has similar characteristics to those described for the Tata Hydro Co. and has, like its forerunner, proved a complete success. These two plants have an aggregate capacity of nearly 100,000 h.p.

The third and most important scheme of all is that of the Tata Power Co. Ltd., with its huge storage lake and dam at Mulshi and power house at Bhura. The plant installed in the power house is capable of a continuous output of 150,000 h.p. All three Tata water power schemes are of the high fall variety, each having a net head of the order of 1,050 to 1,750 feet. It is of interest to note that, whereas the machinery for the Tata Hydro and Andhra Valley schemes was largely supplied from the U.S.A. and from the Continent, practically the whole of the machinery for the huge installation of the Tata Power Co. was manufactured in England.

**6. UHL RIVER SCHEME.**—With regard to other water power developments in India, mention must be made of the important enterprise now being carried out by Lt.-Col. Batty for the Punjab Government known as the Uhl River scheme, in the Mandi State. This scheme is intended ultimately to supply power over the greater portion of the Punjab, and it cannot but greatly influence the agricultural and industrial development of the province.

### 7. CEYLON GOVERNMENT SCHEME.

The Ceylon Government is proceeding with a very important project known as the Aberdeen-Lixapana Hydro-Electric scheme, and considerable progress has already been made. Ceylon is entirely without native coal or oil and has therefore up to the present been obliged to import fuel from overseas. The chief industry of Ceylon is the cultivation and manufacture of tea and for this purpose a considerable quantity of electricity is required, chiefly in the form of heat for the tea drying process. It is proposed to run a network of transmission lines over the island for the supply of electricity to the tea gardens etc. and also to bring power in bulk to Colombo for general electric supply purposes. When this has been accomplished the present power station in Colombo will probably be converted into a distributing station.

**8. DARJEELING PLANT.**—The interesting old plant at Darjeeling set to work in 1897, is still undergoing extension in order to enable it to cope with the demand for electricity in Darjeeling itself and in the surrounding tea gardens.

**9. KASHMIR GOVERNMENT INSTALLATION.**—The Kashmir Government installation on the river Jhelum started in 1906 includes a generating plant of a total capacity of some 5,000 h.p. It is used for general power and lighting purposes in Srinagar, etc., and for the spinning and reeling processes in the Government silk-factory.

**10. SIMLA MUNICIPAL PLANT.**—The Simla municipal hydro-electric plant, which has been working since 1913, has been doubled in capacity, some 2,300 h.p. having been installed, but as there is no more water available it is proposed to augment the supply during the dry months by means of an oil-driven generating station in Simla itself.

**11. MUSSOORIE MUNICIPAL PLANT.**—The Mussoorie municipal hydro-electric plant at Galogi has also recently been largely augmented to a total of 5,000 h.p. and here also an oil-driven station is to be installed at Dehra Dun to supplement the supply of power during the dry months of the year.

**12. PYKARA - MOYAR PROJECT.**—A very important hydro-electric development is about to be undertaken by the Madras Government known as the Pykara Moyar project near Ootacamund. It is proposed to bring the power to Madras, electrifying a number of important towns en route, and also to electrify some portions of the South Indian Railway.

**13. ELECTRIC POWER FROM COAL, ETC.**—Many important plants have been installed in India utilising coal or oil fuel for the generation of electricity. The first plant of importance was set in operation in Madras in 1895 for working the electric tramways. This plant has now grown from its original capacity of 400 h.p. to approximately 22,000 h.p.

**14. STEAM TURBINE PLANTS.**—The Calcutta Electric Supply Corporation, which began operations in 1800 on a modest scale, has now approximately 100,000 h.p. of steam turbine plant installed in two separate power houses. The Cawnpore Electric Supply Corporation possesses a fine new power house on the right bank of the Ganges, containing 24,000 h.p. of steam turbine plant. The power is largely used in the textile mills at Cawnpore. The Lahore Electric Supply Company has recently set in operation a steam turbine power house at Shahdara, Lahore, with two 4,000 h.p. turbo-alternator sets.

Other important steam turbine installations are as follow. The Bhatpara Electric Supply Co., Calcutta possesses a large steam turbine plant for the supply of electric power to the jute mills in the district. The Tata Iron and Steel Co. has an important steam turbine plant at Jamshedpur for the supply of power not only to the steel works, but also to neighbouring industries. The G.I.P. Railway is about to construct at Kalyan a large steam turbine power house for the supply of power for the electrification of the ghat sections of the railway and there are several important steam turbine central stations in operation in the various coalfields of India.

With the exception of Lahore, all these installations are of British design and manufacture.

**15. OIL DRIVEN STATIONS.**—As regards oil-engine driven stations, several are running in Bombay in connection with the supply of electric power to cotton mills, and an oil driven power house containing some 3,600 h.p. of plant (Diesel and Fullagar engines) has recently been started at Sukkur for the supply of electricity for the Lloyd Barrage works. In addition, there are several large oil engine driven stations for public electricity supply, the most important being at Karachi, Ahmedabad and Delhi. Oil engines are much favoured in India for the smaller electricity supply stations on account of their lower capital cost and economy in fuel, consequently their number is increasing rapidly.

**16. PUBLIC ELECTRICITY SUPPLY.**—Public electricity supply is rapidly coming into being all over the country, and about 100 towns have already been electrified. The undertakings owe their success largely to the fact that in India to-day the electric ceiling or desk fan is looked upon as one of the necessities of life. Throughout the greater part of the year fans are kept running day and night, with the result that the "load-factor" of the undertaking is usually much higher in India than for a corresponding installation in the West.

**17. ALTERNATING CURRENT SYSTEM.**—The alternating current system is now the rule in the majority of public electricity schemes, partly on account of the ease of



distribution over the scattered areas frequently met with in Indian towns, and partly due to the fact that in many cases, such as in the Punjab, there is the likelihood of an alternating current supply in bulk becoming available later on from outside. In several of the older public installations both alternating and direct current supply is available—in the original supply areas at 450 and 225 volts direct current, and in areas more recently developed at 400 and 230 volts on the 3-phase 4-wire 50 cycle alternating current system.

**18. TRAMWAYS (ELECTRIC).—**The first electric tramway in India was started in Madras in 1895 on the surface contact system, but, owing to the flooding of the streets during the monsoon, this system had to be abandoned, the overhead trolley system has now been standardised in Madras and throughout India. Successful electric tramway undertakings have also been in operation in Colombo since 1899, in Calcutta since 1902, in Mandalay since 1904, in Bombay since 1905, in Cawnpore since 1907 and in Delhi and Rangoon since 1908. Several undertakings operate motor-buses as auxiliaries to the tramway.

**19. RAILWAY ELECTRIFICATION.**—Railway electrification schemes are proceeding apace in the country. The first line to be electrified was the Great Indian Peninsula Railway (Bombay Harbour Branch), which was opened for traffic early in 1925, subsequently the G.I.P. suburban lines were electrified as far as Thana and very shortly the main line to Kalyan will be converted to electrical operation. Forty-two electric main line locomotives have been ordered from British firms for the lines between Bombay, Igatpuri and Poona, which include the well-known ghāt sections, the maximum designed speed being 85 m.p.h.

The Bombay Baroda and Central India Railway Co. is also actively engaged in electrifying its suburban lines in Bombay district, and, as in the case of the G.I.P. motor coaches with trailer cars will be used for these trains. The 1,500 volt direct current overhead conductor system, with pantograph type collectors on the motor coaches, has been standardised throughout.

Other railway electrification schemes at present under consideration in India are: The Calcutta suburban lines of the East Indian and Eastern Bengal Railways and an electric elevated railway to serve the heart of Calcutta. It is also proposed to electrify certain portions of the main line of the South Indian Railway Company in Madras.

**20. AGRICULTURE (ELECTRICITY IN).**—Probably there are few fields for the use of electricity so wide in India as that of agriculture, except, however, in connection with irrigation, progress is likely to be slow. Land is for the most part cultivated in small holdings by the ryot (peasant farmer), who is quite unable to afford any but the most rudimentary implements at present, and labour is so cheap as to render competition by mechanical apparatus almost out of the question in many districts. At the present time something like 350,000,000 acres in India are under cultivation, and of this total only some 50,000,000 are served by canal irrigation, much of the balance is dependent upon wells. In this latter sphere there is a great opportunity for electricity, and already schemes have been inaugurated in which a number of wells are supplied with power from a central electric generating station. The pioneer installation in this respect was set to work by Dr. Besant at Adyar, Madras, in 1912, and it has been a complete success. Recently Sir Ganga Ram started a large electric irrigation scheme at Renala, Punjab,

obtaining about 1,000 h.p. from a fall of only six feet on the Lower Bari-Doab canal.

In other parts of the world electricity is playing an important role in connection with the following agricultural processes: ploughing, electro-culture of crops, artificial drying of crops, threshing, rice-husking, the killing of moths, silkworm-rearing, the operation of milking machines, etc. In due course India will, no doubt, reap the advantage of the experience gained in other countries by the adoption of electrical methods in agriculture, but before much can be accomplished in this direction a system of overhead distributing mains will have to be erected in agricultural districts. The importance of such a system will be apparent from the fact that over 70 per cent of the population of India is engaged in agriculture and nearly 90 per cent lives away from the towns.

The Royal Commission on Agriculture, under the Marquis of Linlithgow, is at present engaged in the investigation of agricultural problems in India and its report is sure to be of absorbing interest.

**21. TELEGRAPHY.** Extensive developments have taken place of recent years in connection with the electric telegraph in India. Thirty years ago there were only some 50,000 miles of line in operation, whereas to-day this distance has been doubled, and during the same period the number of messages transmitted per annum has been quadrupled.

The number of Government wireless transmitting stations in India at present is about 25. High-speed wireless transmission in connection with the Bandot apparatus is in continuous use between Madras and Rangoon with conspicuous success. The Indian Radio Telegraph Company has erected Beam stations at Poona and Dhond and these are expected to commence working shortly.

**22. TELEPHONY.**—Rapid developments are taking place in telephony, and approximately 250 telephone exchanges with 50,000 subscribers are operating. Long distance telephony between Bombay and Simla, etc. is available and the line between Bombay and Calcutta is expected to be opened soon. Automatic telephone exchanges are very popular, and are in use in a large number of towns.

**23. BROADCASTING.** The Indian Broadcasting Company is erecting main broadcasting stations in Bombay and Calcutta which are expected to be in operation shortly. Each station is to have a capacity of 12 k.w. A senior official of the British Broadcasting Company is about to assist in the development of the art in India. Unquestionably broadcasting has a wonderful future in the country, and if properly handled it is bound to become an immense power for the uplift of the people.

**24. ELECTRO-MEDICAL WORK.**—At the present time X-ray and other electro-medical apparatus is only used in the large towns and in other places where a supply of electric power is available, but there appears to be immense scope in India for a cheap and portable electro-medical outfit with self-contained electric generating plant operated by a small petrol engine. No doubt as electricity becomes more widely adopted in towns and villages for lighting and ventilating purposes, electro-medical treatment will become universal in the innumerable hospitals and dispensaries spread all over the country.

The Government of India X-Ray Institute at Dehra Dun is performing excellent work in the way of training local radiographers, also in centralising and co-ordinating the

supply of the necessary apparatus and materials to the hospitals, etc., throughout India.

P. S. JACKSON

## SUPPLEMENTARY DATA

**CALCUTTA-DELHI TRUNK LINE.** It was announced in February 1927 that the new trunk line for telephonic communication between Calcutta and Delhi was ready for public use. Operating in conjunction with the existing trunk lines connecting Delhi with Bombay and Delhi with Lahore, the new line affords Calcutta direct communication with Bombay and Lahore. The magnitude of this achievement may be gauged from the fact that the distance between Calcutta and Bombay via Delhi is considerably over 1,800 miles.

**CALCUTTA TELEPHONE SYSTEM.**—The introduction by the Calcutta Telephone Corporation of the message-rate system towards the end of 1924 was responsible for a considerable increase in traffic since that period. Particulars of that growth are furnished by the report of the Corporation for the year ended June 30, 1926. The average cost of an exchange line has been reduced from Rs 23 to Rs 21. As at a month, while the number of lines installed has increased by 100 a month. Since the close of 1924 the percentage of ineffective calls has been lowered from 36 to 20.

For the year ended June 30, 1926, the profit amounted to Rs 570,000. At the date mentioned the number of exchange extension and private telephonic lines working in Calcutta totalled 11,549, for a population of 1,328,000.

## IMPORTS OF ELECTRICAL EQUIPMENT

Statistics of the imports of electrical equipment into India during October 1926 showed an appreciation in value aggregating almost exactly 100 per cent over the total for the corresponding month of 1925. The respective figures were: October 1926, Rs 3,700,000; October 1925, Rs 1,853,000.

**RAILWAY AND POWER STATION CONTRACTS.**—Railway electrification schemes projected or in progress in India during 1926 furnished British manufacturers with a number of important contracts, among which the following may be particularised. The Great Indian Peninsula Railway ordered from one company 41 freight engines of 2,600 h.p., weighing 115 tons each, the most powerful locomotives yet constructed in England, also a passenger locomotive of 2,100 h.p., weighing 72 tons and capable of attaining a safe speed of 85 miles per hour. For the Kalyan extension of the same Railway's system another firm had in hand 15 motor-coach and 42 trailer equipments.

Power station equipment of great magnitude was delivered during the year to the order of the Tata Power Company. It comprised five 30,000 h.p. impulse turbines, the generators having a continuous rating of 26,000 k.v.a. at 12,000 volts and a speed of 375 r.p.m. Another machine made for the same company and installed at the Khopoli power station was a 15,000 h.p. impulse wheel.

**WIRELESS STATION.**—The wireless station established at Victoria Point, the southern extremity of the Province of Burma, was reopened on December 1, 1926, having been closed down since February of the preceding year. The discontinuance of the station had exerted a severe influence upon shipping in the Bay of Bengal. No land telegraph or ocean cable lines exist between Rangoon and Victoria Point, and the wireless station operating at the latter affords the only means of communication along that part of the coast of Burma.



BABCOCK & WILCOX, LTD., Calcutta.

1. Boilers fitted with mechanical chain-grate stokers.
2. Oil firing system as applied to Lancashire boilers installed in cotton mills.
3. Oil fired boilers as supplied to cotton mills.
4. Coal elevating buckets and bunkers for automatic stoking.

## REPRESENTATIVE ENGINEERING AND MACHINERY ENTERPRISES BABCOCK & WILCOX LTD.

**Inception.**—Established in 1867 under the title of the Babcock & Wilcox Co., the present limited company was incorporated in England in 1900.

**Organisation.**—One of the largest manufacturers of boilers and engineering plants in the world, this firm of international reputation stands for the most progressive achievement in the science of developing power from steam. Contracts are executed with H.M. Government, Admiralty, War Office, Air Ministry and Foreign Governments.

**Water-Tube Steam Boiler.**—During the past half-century of engineering activity, probably no development has been more notable than that of the design and construction of boilers, and, likewise, no improvement more revolutionary than the invention of the Babcock & Wilcox water-tube steam boiler, which after patient trials over many years was evolved to satisfy the world-wide demand for power by steam generator.

**Land Boiler.**—The usual type Babcock & Wilcox land boiler has a longitudinal drum, and with the exception of furnaces is entirely suspended by wrought steel slings. The boiler is constructed throughout of wrought steel, and is composed of a number of sections each consisting of several tubes expanded at each end into staggered headers, the headers being provided with handholes placed opposite the end of each tube to permit cleaning, or in case of need the removal of a tube. Every handhole is provided with a cap, fastened with a wrought steel bolt and clamp, and a cap nut.

**Marine Type Boiler.**—The marine type boiler for land purposes is of a different construction, but embodies the same principles as before indicated. This type when fitted with superheaters, chain grate stokers, and superposed economiser is favoured for use in electricity works owing to its occupying less space for H.P. generated than the standard land type boiler.

**Portable Boiler.**—In this type the drum is placed transversely to the tube, and for easy transportation the boilers can be constructed and shipped so that no piece exceeds 280 lbs in weight. To avoid the use of bricks the casing is constructed of steel, reinforced by fire resisting material. The boiler is also supplied with a steel chimney.

**Marine Boiler.**—This is more or less of similar construction to the marine type land boiler, with the exception that the design is for application to vessels. Over 8,800,000 h.p. of this type of boiler has been supplied or is on order. It is used in battleships and cruisers of the British, American, Italian, Spanish, Danish, Chinese, Chilean, Mexican, Cuban, Brazilian and Argentine Navies, as in hundreds of mercantile marine vessels.

**Furnaces.**—Babcock & Wilcox boilers can be fired by almost any class of fuel, and furnaces adapted for each fuel have been carefully studied and designed to give the best result. Large numbers of installations utilise wood fuel and other forms including saw dust, bagasse, oil, tar, waste from olive oils, rice husk, spent tan, etc.

**Installations.**—The total horse power of boilers in use by the clients of Messrs. Babcock & Wilcox throughout the world now represents on land 17,700,000 h.p., and over 8,800,000 h.p. in marine type water-tube boilers supplied to navies and mercantile marines.

**INDIA.**—In India the h.p. supplied at the present date to principal industries such

as the following represents: Cotton mills and ginning factories, 20,187; woollen mills, 5,481; iron and engineering works, 31,528; cement works, 9,232; jute mills, 17,783; power stations, 67,007; sewage and pumping stations, 17,380; paper mills, 2,031; sugar factories, 11,918. In addition, boiler plants have been supplied or ordered for numerous other industries in India such as chemical works, gumme factories, tea estates, leather works, bone works, coal mines, oil mills, rice mills, river steamers, dredgers, etc.

**Manufactures.** In addition to the patent water-tube boilers the firm's range of manufacture comprises steam super-heaters, mechanical stokers, feed water heaters, air heaters, economisers, soot blowers, steam piping, structural steel work, steel chimneys, water softeners and purifiers, ash plants, coal conveying machinery, electric cranes and steel works, chargers, patent boat davits, liquid fuel burning installations, boiler house accessories, oil engines, etc.

Messrs Babcock & Wilcox Ltd. are also the sole licencees and makers of the Buller Products for pulverised coal burning.

**Superheaters and Mechanical Chain Grate Stokers.** For power stations and industrial purposes Babcock & Wilcox patent mechanical chain grate stokers and integral super-heaters are usually installed, and up to the present there have been supplied throughout the world over 23,000 of the former and over 30,000 of the latter.

**Cranes.** The company's patent lever balanced lifting jib crane has been supplied extensively to the Port of London Authority's docks and wharves and many others. The lever balanced lifting jib has been furnished for lifts up to 100 tons and can be recommended as saving time and power while ensuring safety. The provision afforded for free and rapid lifting, or movement of the load to and from the crane, is an advantage of the greatest importance; ready recognition of this is shown in the large number of these cranes ordered by Dock and Harbour Authorities.

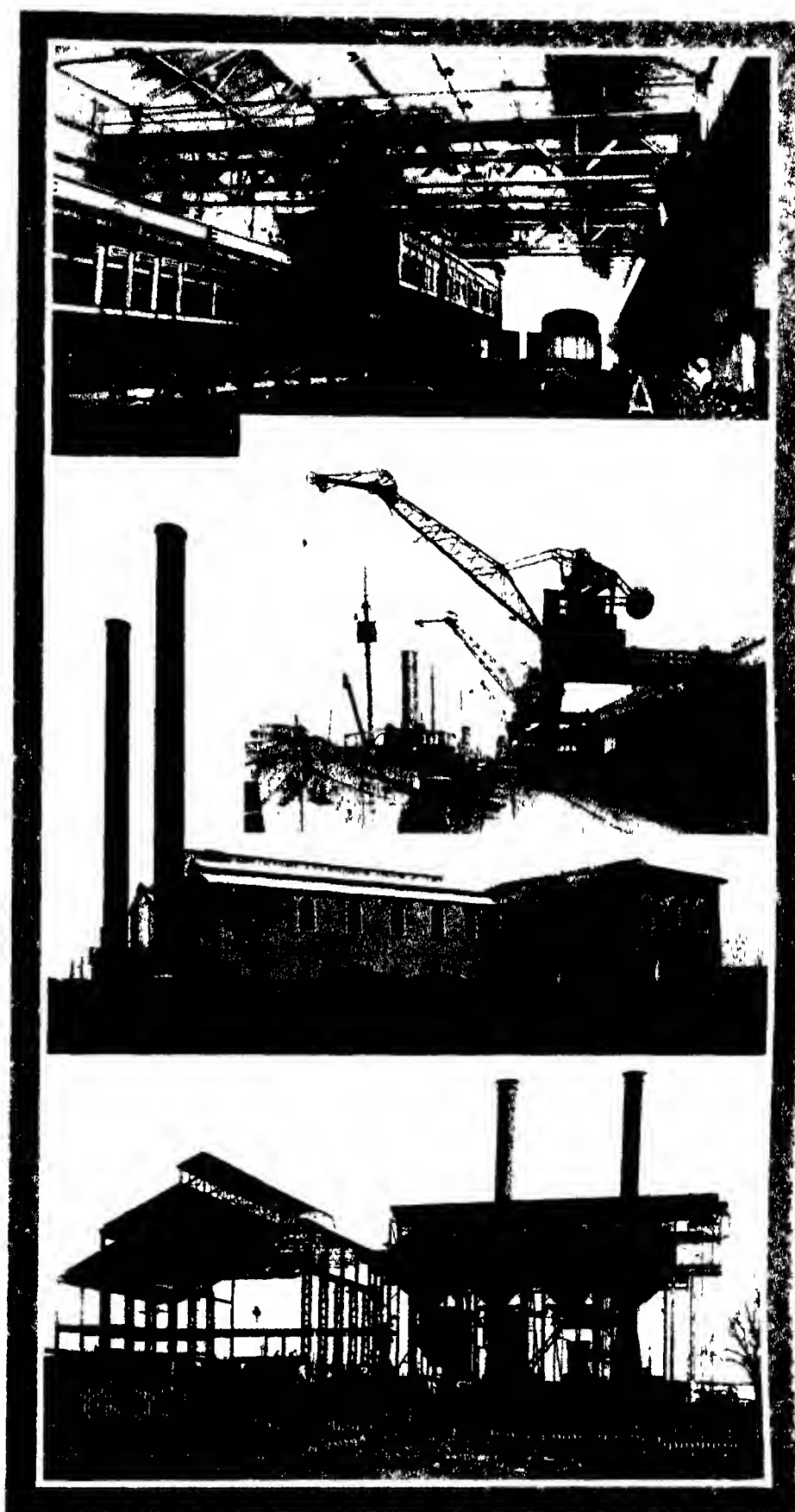
Other cranes made by the company are electric Gantt and Goliath cranes, electric overhead cranes of different types and electric jib and portable cranes, etc.

**Mechanical Conveyors.** These are manufactured by the company for numerous purposes such as the mechanical conveyance of coal, chalk, lime, iron ore and similar material. The two principal types—gravity bucket and tray—are both much used.

**Steam Generating Plant.**—Estimates, designs, specifications and schemes for the lay-out of steam generating plants to suit all conditions are prepared by the company's engineers, and clients are thus assured of the services of manufacturers who not only have experience in the production of such plant on the best and most up-to-date principle, but have vast experience in running these installations under various conditions.

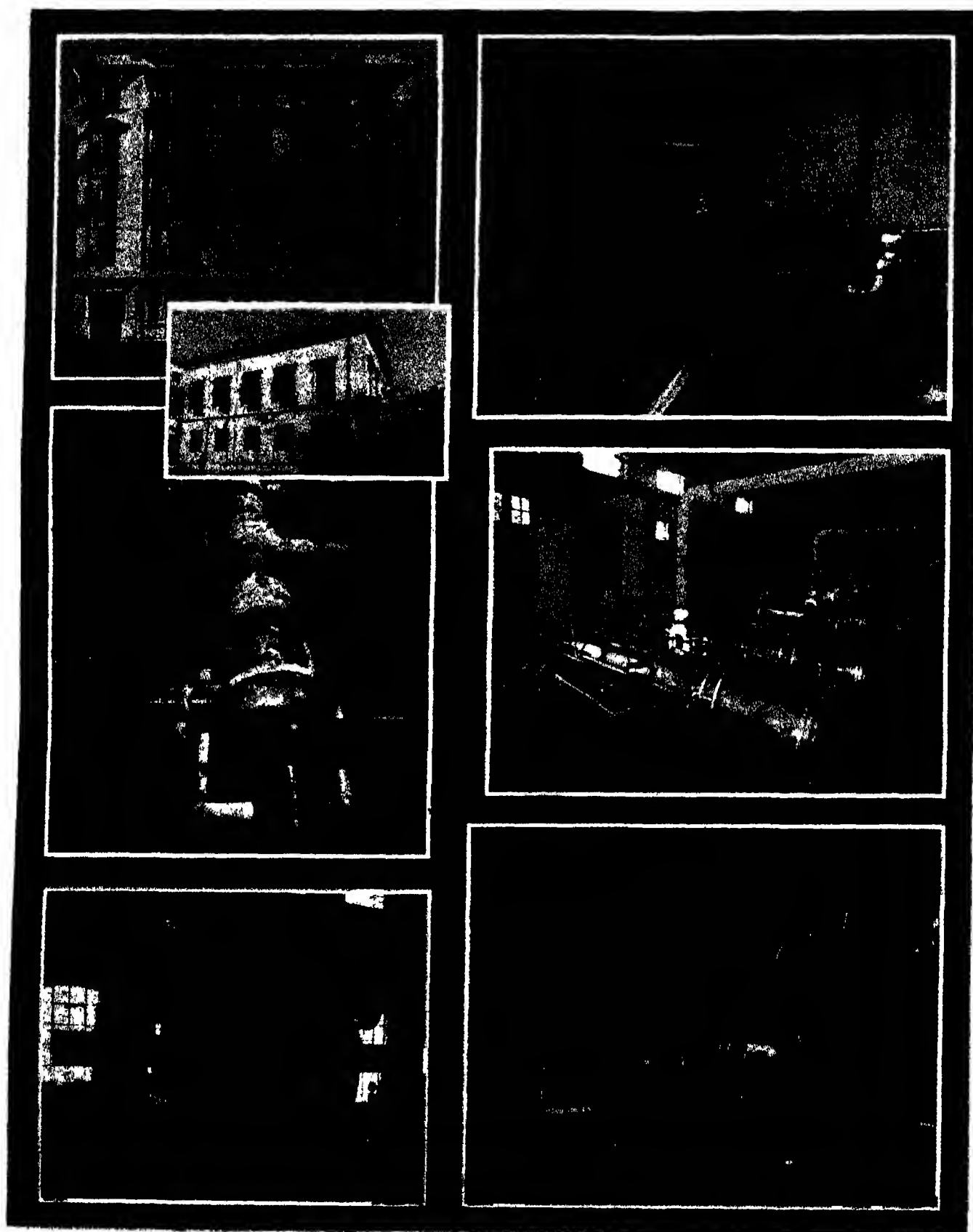
**Liquid Fuel Burning Equipment.** The Babcock & Wilcox oil fuel apparatus has been on the market for more than 20 years, and the fact that over 750 naval and mercantile vessels equipped with Babcock & Wilcox marine boilers representing some 4,000,000 h.p. have been fitted for burning liquid fuel indicates not only the suitability of the boiler for this service but also the firm's comprehensive experience in oil firing. On land the use of oil-fired boilers is also very extensive, the majority being fitted with the company's oil firing apparatus, which combines efficiency with continuous economy in fuel.

**Directorate.**—Sir John Dewrance, K.B.E. (chairman), Arthur T. Simpson, Chas. A. Knight, E. H. Wells, and Sir James Kennal (managing director).



BABCOCK & WILCOX, LTD., Calcutta.

1. Overhead crane supplied to the Bengal Nagpur Railway.
2. Type of cranes furnished to Karachi Port Trust.
3. The Bhatpara Power Station, showing the two largest steel chimneys erected in India.
4. Complete power station installation, structural steel work, steel chimney and oil burning plant (in course of construction) as supplied to collieries.



WORTHINGTON-SIMPSON LTD., Calcutta.

1. The Company's new Offices at 10 Clive St.  
Inset. Office from 1904 to 1920.
2. Delhi Irrigation System Head Works.
3. Largest pump in the East, installed at Divi  
Irrigation System.
4. New Delhi Sewerage Pumping Plant.
5. New Delhi Sewerage System Pumping Station  
from another angle.
6. Delhi Water Works Pumping Plant.

**Offices and Works.**—Head office: Babcock House, Farringdon Street, London, E.C. 4. Calcutta: 10, Clive Street (cables: "Boiler," Calcutta). Bombay: Exchange Buildings, Sprott Road, Ballard Estate (cables: "Boiler," Bombay). Codes: Western Union and Engineering. Branch offices are situated in all other principal cities throughout the world.

Principal works: Renfrew, Scotland; branch works: Dumbarton, Scotland; Oldbury and Lincoln, England; and in Australia and Japan.

**Bankers.** The National Bank of India, Ltd.

#### WORTHINGTON-SIMPSON LTD.

**Inception.** In the year 1700, when engineering was in its infancy, the business of

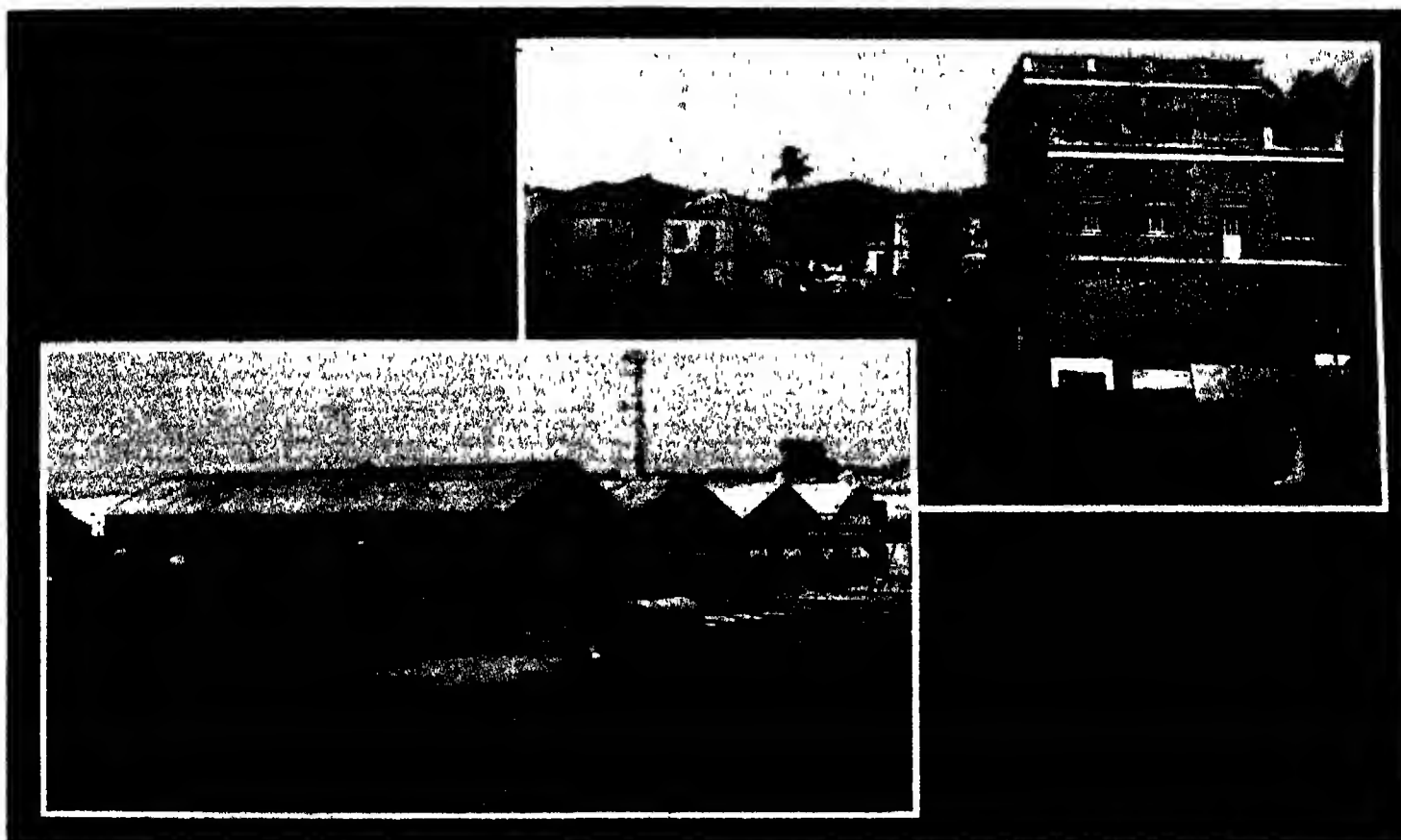
**Indian Operations.**—The firm's operations in India began some 30 years ago, when the present managing director came to that country and became responsible to the home directors for all business transacted in India, Burma and Ceylon.

**Calcutta Premises.**—In 1904 the Indian branch was transferred from Dalhousie Square to 10, Clive Street, a site it has ever since occupied. Here in 1920 a new building was erected for office accommodation, consisting of four storeys fitted with all modern equipment, the top floor being reserved for residential purposes.

**Development.**—The steady increase in business since its formation is reflected in the large staff which the Indian branch requires to-day to keep in touch with its Indian customers and the home office. On

water and the large drainage pumping station for the whole of Delhi were supplied by Worthington-Simpson Ltd. They have also been engaged in laying out complete water supplies with pumping plant, water tanks, water filtration plant, distribution mains etc. for tea estates, some of the schemes being equivalent to the water-supply of a town of 100 dimensions.

The great variety of plant produced is of interest, contracts having been executed for every condition of service imaginable, from the very large capacity irrigation pumps at Dair to the high pressure pumps at Simla Water Supply. The first are centrifugal pumps directly coupled to Diesel oil engines, the total capacity of the nine sets being the very high figure of 730 cubic feet of water per second, while at Simla the installation



VULCAN IRON WORKS LTD., Calcutta

1. Offices and partial view of the Works

2. The Works

(See letterpress, p. 46)

James Simpson & Co. was established and factories were set up in London. In 1838 the firm moved to Belgrave Road, and then to 101, Grosvenor Road, where large and complete workshops and manufacturing plant were put down. In those works were built some of the most important pumping machinery designed for London and many of the capitals of the world, also for all the most important cities in India. In 1886 the business was converted into a private limited company, and in 1900 the firm erected extensive new workshops covering many acres at Newark-on-Trent, Nottinghamshire. These works are arranged so that there is ample space for all their many requirements, and they are in direct communication by rail with the London and North Eastern Railway, providing rapid access to all the main railway lines and ports in England.

the one hand there is an organised staff of engineers in the local office, and on the other a large outdoor staff engaged on works in every corner of the territory.

**Activities.**—The name of Worthington-Simpson is synonymous with pumping plant and allied interests throughout India, and many large contracts have been carried out by the firm for water supply, drainage, and condensing installations for turbine and other steam generating plant. In all the municipal water and drainage supplies for the large towns in India their plant is to be found, and W-S feed pumps, centrifugal pumps (driven by electricity, steam or oil engines), water meters, etc., are regularly supplied to mills, tea estates, plantations and industries generally. It is noteworthy that all the water supply pumping plant for new Delhi, both for drinking and irrigation

consists of power pumps driven through gearing by A.C. electric motors and delivers the water against 2,780 feet in one lift.

**Agencies.**—The companies for which the firm holds agencies in India are as follows:

**GEORGE KENT LTD.** Luton, manufacturers of meter plant for steam, water, air and other purposes, also for meters and such material as water level recorders, etc.

**J. BLAKEBOROUGH & SONS, LTD.** Yorkshire, manufacturers of valves of all descriptions, sludge elevators, sewage screening plant, etc.

**VIGILANT SPRINKLER PLANT,** London, makers of all fire prevention materials such as sprinkler plants, etc.

**ASTER ENGINEERING CO. (1913) LTD.,** Wembley, manufacturers of high speed oil and petrol driven engines for all purposes as prime movers.



**W. SISSON & CO.**, Gloucester, manufacturers of high speed steam engines suitable for prime movers of all descriptions.

**JEWELL EXPORT FILTER CO.**, York, manufacturers of water filtration plant for domestic and industrial purposes, also agents for chlorination plant.

**SEABORNE INTERCEPTORS** (manufacturers, **THE HUNSLET ENGINE CO.**, Leeds)—Patent priming apparatus for pumping plant, making the ordinary foot valve or charging device unnecessary.

**J. DAMPNLY & CO. LTD.**, London, manufacturers of "Apexior" boiler compound for facilitating the removal of scale and "Asphaltene," a bituminous compound for preserving iron work, etc.

**AYELING & PORTER LTD.**, Rochester, England, manufacturers of road rollers, scarifiers, etc.

**Staff.**—A large technical staff familiar with the products of the above manufacturers is at the service of the head office in India, and a large stock of plant and spare parts is held by the company in such centres as Calcutta, Bombay, Madras, Rangoon and Ceylon.

**Registered Offices.**—Queen's House, Kingsway, London, W.C.

**Indian Offices.**—Calcutta (head office) 10, Clive Street (cables "Aquosity," Calcutta), Bombay Asian Building, Nicol Road (cables "Aquosity," Bombay).

**Codes.**—A 1, A B C, Lieber's Engineering, Western Union Business and 5-letter, Bentley's and Private.

**Bankers.**—Chartered Bank of India, Australia and China.

#### **VULCAN IRON WORKS LTD.**

**Inception.**—As at present constituted this company was formed in 1900 to take over the business of Messrs Parry & Co. Ltd., whose property at Garden Reach, Calcutta, had been acquired by the Bengal Nagpur Railway Company.

**Workshops.**—The ground on which the works stand was originally the site of a garden house, and the bungalow served as an office for 22 years until the present buildings were erected and the old structure pulled down. The works cover about 4 acres of land, all of which is the company's own property, and consist of machine shop, foundries (both iron and brass, including gun-metal), blacksmith's and constructional steel shops. The different shops have been extended from time to time to meet the demands of increasing business, and further extensions are at present under contemplation and shortly to be put in hand. After using steam as the driving power of the works for 24 years the firm installed an electric drive, which has proved more economical and just as reliable as the older method. The numbers employed in the workshops average 450–500 men, including nine Europeans.

**Activities.**—The Vulcan Iron Works Ltd. carry on a large general engineering business, and a visit to the works at any time will show the great variety of the contracts undertaken. If it can be said they have any specialities, mention might be made of their tanks, self-supporting steel chimneys and machinery repair work, but, so long as the firm is satisfied that it can meet the wishes of its increasing clientele, any orders will be willingly undertaken. The annual consumption of steel is about 1,200 tons, and of cast iron 800 tons, besides considerable quantities of other metals.

**Directorate.**—The board consists of Messrs. G. Perce, J. Russell, A.M.I.C.E. and J. W. Mediand, A.C.A., O.B.E.



**STEWARTS & LLOYDS, LTD., Calcutta.**

1. Transporting large steel pipe in India.
- 2 & 3. Laying Stewart's patent steel pipes in Colombo.
4. Transporting 20" diameter lap-welded steel inserted joint pipes in Ceylon, 1912.

**Head Offices** 172, Lower Circular Road, Calcutta (cables "Cupola," Calcutta) Coles A B C 5th Edition, Bentley's and Private.

**Bankers.**—Allahabad Bank, Ltd.

See illustration, p. 245.

#### **STEWARTS AND LLOYDS LTD**

**Inception.**—There are few industries which in some part of working or development do not depend upon or utilise, iron and steel tubes, a world-wide desideratum recognised and now fully supplied by the enterprise of Messrs. Stewarts and Lloyds, Ltd., incorporated in Scotland over 50 years ago.

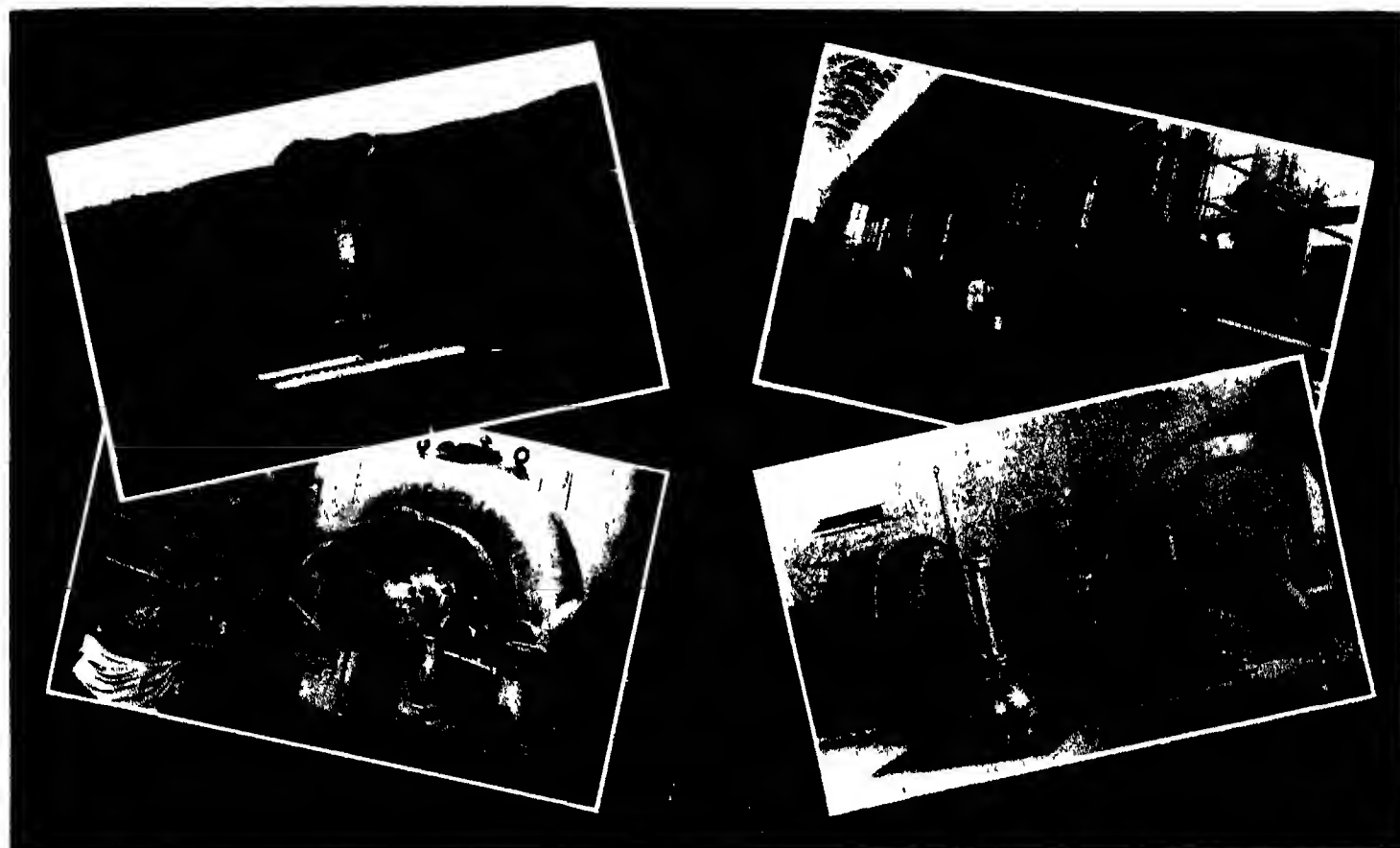
**Development.**—Since that inception the firm, whose name soon became a guarantee of the best in quality and workmanship, has developed into the largest and probably the best known of British manufacturers of iron and steel pipes of all sizes from  $\frac{1}{4}$  inch to 6 feet internal diameter and for all purposes.

**Products.**—Messrs. Stewarts and Lloyds, Ltd., manufacture steel tubes for the conveyance of water, oil, steam, gas, air, etc., weldless boiler tubes for locomotives, boats and casing tubes of every description, tubular steel columns employed in building and for tramway electric light, telephone and telegraph standards, ships' davits, derricks and masts, steel plates for boilers and for ships, bridges, tanks and wagons. Steel castings and Ashford Strainers are additional products.

**Indian Activities.**—This firm was among the first British manufacturers to recognise the potentialities of the Indian market and the necessity for being directly represented in order that engineers, contractors, and others could have the benefit of expert advice, and it is fully 20 years since they opened an office in Calcutta, from which all information relative to the multitudinous uses of iron and steel tubes can be readily obtained.

This step was more than justified, as the Indian business of the firm has increased with a rapidity beyond expectations. To-day the company's products are known in every city, town and native State in India, in mills, railways, gold and coal mines, water works, irrigation works, electric supply works and oil wells. Its pipes convey water to the inhabitants of Bombay and Calcutta, Simla and Colombo, Rangoon and Singapore, alike to the parched land of the ryot and the palace of the Rajah. Its steel tubes supply water in the Khyber Pass, oil in the Punjab and Burma, steam in every mill in the Peninsula, gas in each hotel and fresh air to the deepest gold mine. Tubular electric standards of the firm's manufacture light the way to the Taj Mahal and to the elevated palace of the Jhondpur Princes, its tubular coils are employed in ice making, and its tubular point-rod guides the tram driven by the power generated in the company's weldless boiler tubes throughout the whole of India.

**Wells.**—In recent years a great advance has been made in India in sinking wells by means of tubes, and this method is much less costly than by digging and building up with brick or stone, as was formerly done. After the well has been sunk and water reached, the most up-to-date plan is to install Ashford's "Patent Well Screen" (the licensed manufacturers being Messrs. Stewarts and Lloyds Ltd.), with a few feet of suction pipe and a reliable pump, as large tracts of rich land have in this manner been irrigated. The Government having given its approval to this method of obtaining water for irrigation, this business has since reached very large proportions, and is continually growing.



BOVING &amp; CO. LTD., Calcutta.

- 1 Pipe Line for the Bhira Power Station under erection
- 2 Burma Corporation Mansam Falls Power Plant One of three units of 3,000 H.P. erected in the shops
3. One of six 5,600 H.P. units at Sivasamudram Falls for Mysore Government
- 4 Paper making machine for high-class printing and writing paper in course of erection

**Water Distribution.**—The manufacture of steel tubes for water distribution mains is a branch of the industry to which Messrs. Stewarts and Lloyds have paid particular attention. These are much lighter than the heavy cast iron pipes formerly used; they are made in long lengths up to 50 feet in any diameter up to six feet; they are unbreakable and they combine all the essentials for India, being cheaper in first cost, easier to handle, and having fewer joints to be made than is the case with cast iron pipes. The numerous water supply schemes throughout India in which they have been installed testify to their efficiency. High pressure mains for hydro-electric power installations are also a special feature of the firm's manufactures.

**Industrial Importance.**—Although the manufacture of iron and steel tubes has not yet become a local industry, the enterprise of Messrs Stewarts and Lloyds Ltd. may be looked upon as an essential adjunct to the many industries of each and every province in India.

**Offices.**—Glasgow (registered office) 41, Oswald Street; Birmingham Broad Street Chambers; London "Winchester House," Old Broad Street, E.C. 4; Calcutta 6, Royal Exchange Place (cables "Tubemakers" Calcutta); Bombay, Dougall Road, Ballard Estate (cables: "Tubular," Bombay) Codes A.B.C. 5th Edition and Bentley's

**Bankers.**—Chartered Bank of India, Australia and China.

#### BOVING & CO. LTD.

**Inception.**—The only firm of water power and paper and pulp engineers to possess its own representative office in India, Messrs. Boving & Co. Ltd. opened premises at Calcutta in 1923.

**Activities.**—They specialise in the design and manufacture of water power and pulp and paper equipment, either as complete plants or in separate items such as water turbines of various types, pelton wheels, automatic speed governors, pipe-lines, gates, valves, etc. on one side, and in the other department digesters, diffusers, beaters, screens, paper machines, soda recovery plant and innumerable accessories. In this connection they have behind them technical designers, practical experience, manufacturing achievements, and experimental laboratories second to none, and an unequalled record of water power machinery installed overseas. During the past 15 years no fewer than 16 pulp and paper mills, representing an annual output of 120,000 tons of paper, have been supplied to Japan and the East.

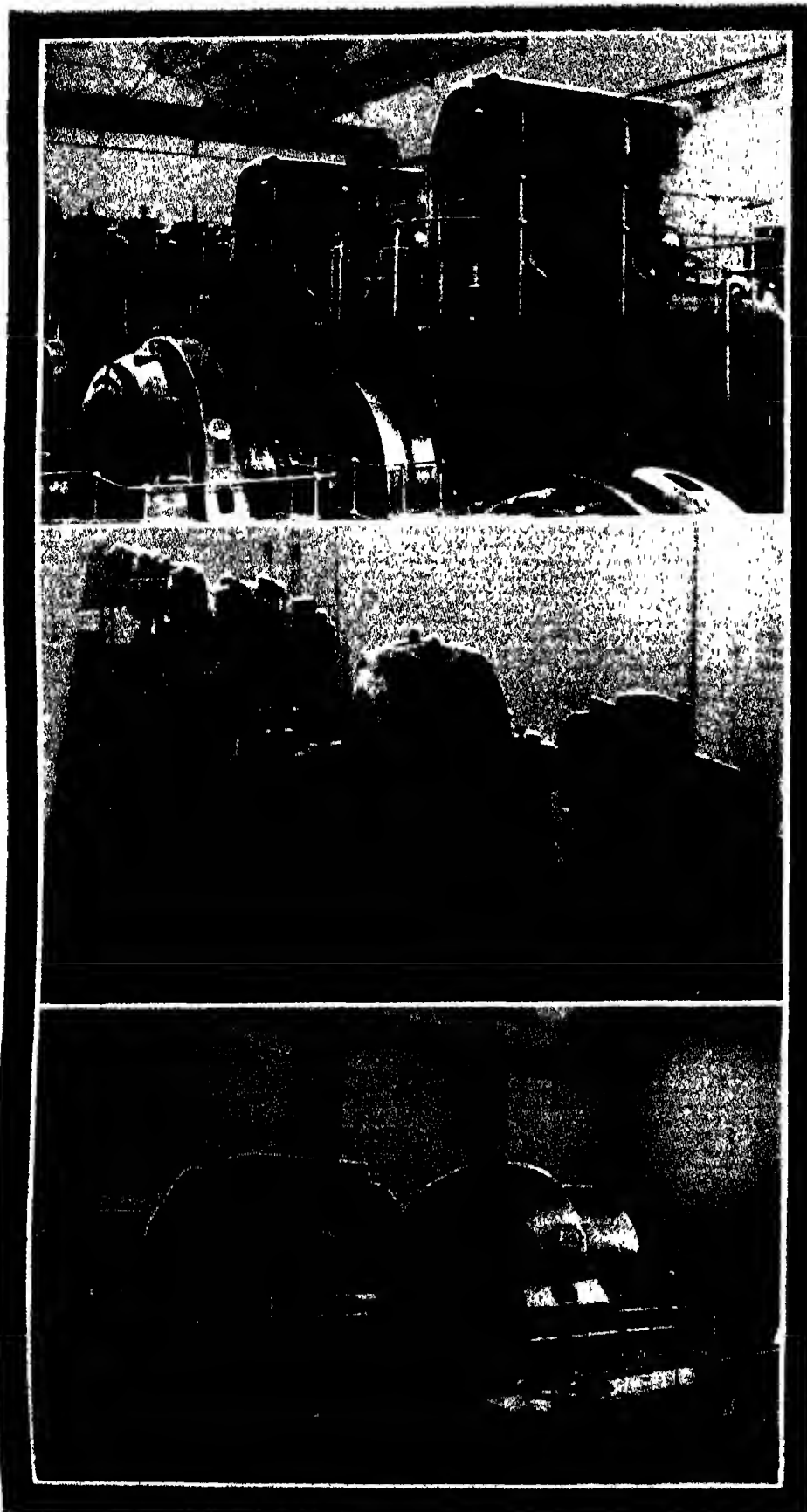
**Staffs.**—Because of their success in other fields, notably New Zealand, Australia, Japan, South America and parts of Europe, Boving & Co. Ltd. maintain in their overseas offices staffs of engineers fully qualified in all their specialised branches of engineering to advise clients and undertake investigations and reports. The availability of these consultants has proved of great service to Government officials, commercial men, and

others interested in the development of the country's resources.

**Contracts.**—The Mysore Government's hydro-electric plant at Sivasamudram on the Cauvery River stands foremost amongst the stations equipped by the firm in India. Six turbines, each of 5,600 b.h.p. under a head of 415 feet at 500 r.p.m. and two exciter sets of 470 b.h.p. each with corresponding pipes, have been supplied since 1920, and two 9,000 b.h.p. units at 375 r.p.m. with complete pipes, gates, valves, etc., are being supplied during 1926-1927. This is one of the largest and oldest stations in India, and now with the new equipment has become one among the most modern and best paying.

In 1914-15 the complete hydraulic equipment of turbines, pipes and valves was supplied and installed for the Simla Municipality station at Chaba. A further unit has since been added, and the station now aggregates 3,650 b.h.p. in six main units (and two exciters) at 500 r.p.m. under a net head of 510 feet.

Among other plants supplied, Mansam Falls, Burma, consisting of three turbines of 3,300 b.h.p. each; Gangbok, Sikkim, one turbine of 180 b.h.p. with pipes, etc.; Pulivassal, complete hydraulic equipment for two 580 b.h.p. peltons; Mussoorie, two 1,450 b.h.p. peltons; Makum, Assam, 105 b.h.p. low head turbine, are worthy of mention. On the Bombay side the firm has been associated with the supply of the Tata Power Co.'s pipe-lines at Bhira, as well as acting as contractors for the duplicate and extension pipes at



THE ENGLISH ELECTRIC CO., LTD., Calcutta.

1. Two "English Electric" 750 B.H.P. Fullagar Oil Engines and Alternators at Lloyd Barrage Power House, Sukkur.
2. "English Electric" Motors in the Jagatdal Jute Mills, Calcutta.
3. 15,000 K.W. "English Electric" Steam Turbo Alternator Set in the Coesipore Station of the Calcutta Electric Supply Corporation.

Khopoli. Some idea of the magnitude of these works can be obtained from the fact that the two sets of pipes total over 12,000 tons of steel, while some of the anchor blocks weigh over 1,000 tons each.

**Agents.**—Scotland: T. C. Lennard, Baltic Chambers, 50, Wellington Street, Glasgow. Ireland: C. Sidney Perry, 32, Nassau Street, Dublin. Victoria and New South Wales: Coates & Co. Pty. Ltd., 99, Queen Street, Melbourne. Tasmania: A. G. Webster & Sons, Ltd., Liverpool Street, Hobart. Jamaica: William Wilson, Ltd., 83, King Street, Kingston. Holland and Dutch East Indies: Technisch Bureau Sanders Barne, Laan A. Meerdervoort, 's-Gravenhage, Holland, and at Sourabaya, Java. Portugal: 1, Street & Co. Ltd., Palacio Flor da Murta, Rua Poco dos Negros, Lisbon, and 64, Rua Sa da Bandeira, Oporto, Brazil: Byington & Co., 4, Rue Albayes, Penteado, S. Paulo, and 65, Rua General Camara, Rio de Janeiro. Venezuela and Colombia: Wesselhoft & Poor, 115, Broad Street, New York, U.S.A., and Apartado 1055, Bogota, Colombia.

**Offices.** London: 50, Kingsway, W.C. 2 (cables "Jenorton," London). Calcutta: Fairlie House, 4, Fairlie Place (cables "Peltonpulp," Calcutta). Wellington, N.Z.: Huddart Parker Building, Post Office Square (cables "Lanmoor," Wellington). Tokyo: 1, Yaesu Cho, 1, Chome (cables "Jenorton," Tokyo).

**Codes.** Western Union, A.B.C. 5th Edition, Bentley's and Marconi.

#### THE ENGLISH ELECTRIC COMPANY LIMITED.

**Inception.**—Incorporated in 1918, this organisation, which has achieved the highest reputation in every part of the globe where electrical equipment is employed, represents under a new name the consolidation of a number of old and familiar interests. It controls and operates in England under one management the following manufacturing works: The Dick, Kerr Works (Preston), The Ordnance Works (Coventry), The Phoenix Works (Bradford), The Siemens Works (Stafford) and The Willans Works (Rugby).

**Manufactures.** The company exists primarily to develop by the most modern methods of manufacture a wide range of electrical and allied products, the principal items being scheduled as follows: Electric generating plant of all capacities, steam turbines and condensers, turbo-blowers, water turbines, internal combustion engines, rotary converters, static transformers, phase advancers, switchgear and controlling apparatus of all kinds, electric locomotives, electrical equipment and rolling stock for railways and tramways, electric plant for rolling mills, iron, steel, copper works, etc., electric winding equipments for mines, electrical equipment for textile mills, standard industrial motors, high-speed twist drills, milling cutters and reamers; pneumatic hammers and drilling machines.

**Indian Activities.**—In India the company has three important branches, at Calcutta (the head office for that country), Bombay and Madras. These offices were originally those of one of the former companies which were responsible for and associated with many of the early installations of electrical plant in India.

The staffs at the branches are fully trained and capable of dealing with any proposals which come within the scope of the company's activities. Many members have long and varied experience of Indian conditions, and they are thus able to render that advice and assistance which are essential in this country.

As an adjunct to the selling organisation, the branches in India maintain a large and expert erecting staff, and contracts are undertaken which include supply, erection, connecting up setting to work and maintaining complete plant installations up to any capacity.

**Contracts in India.**—Among the more important contracts and installations carried out in India may be mentioned the following:

**STEAM TURBINE PLANT**—One 15,000 k.w., 1,500 r.p.m. and one 800 k.w. 3,000 r.p.m. set for Calcutta Electric Supply Corporation, two 6,000 k.w. 3,000 r.p.m. and two 3,000 k.w. 3,000 r.p.m. sets for Cawnpore Electric Supply Corporation, three 1,500 k.w. 3,000 r.p.m. pass-out type sets for Madras Electric Supply Corporation, also one 3,000 b.h.p. 3,000/216 r.p.m. geared turbine for rope drive for the Union Jute

been supplied to various collieries, among them The Standard Collieries, Kenwadhi Collieries, Rewa State Collieries, Lodna Collieries and Argada Collieries.

**ELECTRIC TRACTION**—For the G.I.P. Railway, Bombay Suburban Electrification all the electrical equipments including motors and camshaft control gear etc., were manufactured, supplied and erected by the English Electric Co. This was the first railway electrification in India, and commenced operation on February 3, 1925. Hundreds of "English Electric" tramcar equipments are in service in Calcutta, Burma, Colombo and elsewhere.

**ROTARY CONVERTERS** (for main line electric railway automatic sub-stations)—Twelve "English Electric" 1250 k.w. rotary converters with H.T. direct current switchgear for G.I.P. Railway Kalyan

for the Government of India Salt Mines, Khewra.

**Larger Installations.**—As regards the larger installations carried out by the organisation, it may be recorded that the Tata Power Company's power house plant of which mention has been made above is one of the largest of its kind in the world. It is designed to deal with no less a quantity of water than 1,000 cubic feet per second at a head of some 1700 feet. The Tata Power Company's receiving station at Dharavi, Bombay, equipped with "English Electric" transformers, is certainly one of the largest of its kind in India.

**Associated Concerns.**—The works of the company under notice are primarily employed with the manufacture of machinery and plant, but for the expansion and consolidation of the enterprise's interests certain associa-



THE ENGLISH ELECTRIC CO., LTD., Calcutta

The first Electric Train in India on the G.I.P. Railway, Bombay, equipped with "English Electric" Motors and Camshaft Control

Mill, Calcutta, and four 2,000 k.w. 3,000 r.p.m. turbo alternator sets for the North Western Railway—Moghulpura Workshops.

**OIL ENGINES**—Two 750 b.h.p. Fullagar oil engines for Lloyd Barrage, Sukkur, also various Willans-Diesel engines ranging from 100 to 600 b.h.p. for Amritsar, Delhi, Kirkee, Bombay, Colombo, Hyderabad, etc.

**HYDRO-ELECTRIC PLANTS**—Five 20,000 k.w. and two 750 k.w. water turbine and alternator sets for the Tata Power Co., one 15,000 b.h.p. water turbine for the Kundley Power Co., and one 500 k.w. water turbine and alternator for the Nepal Government.

**TEXTILE MILLS**—The English Electric Company have extensive experience in the electrical equipment of textile mills, and have supplied plant to many mills throughout India. Complete electrical equipments have been furnished for the following: Wellington Jute Mills, Anglo-India Jute Mills, Jagatdal Jute Mills, all situated in Calcutta, also the Kasturchand Mills and the Indian Manufacturing Co.'s mills situated in Bombay, and various mills in Bangalore, Coimbatore and Cawnpore.

**COLLIERIES.**—Electrical equipments, comprising power house plant, electric winders, hoisting and pumping plant, etc., have

Many other rotary converters have been supplied for general tramway power and lighting purposes in various parts of India.

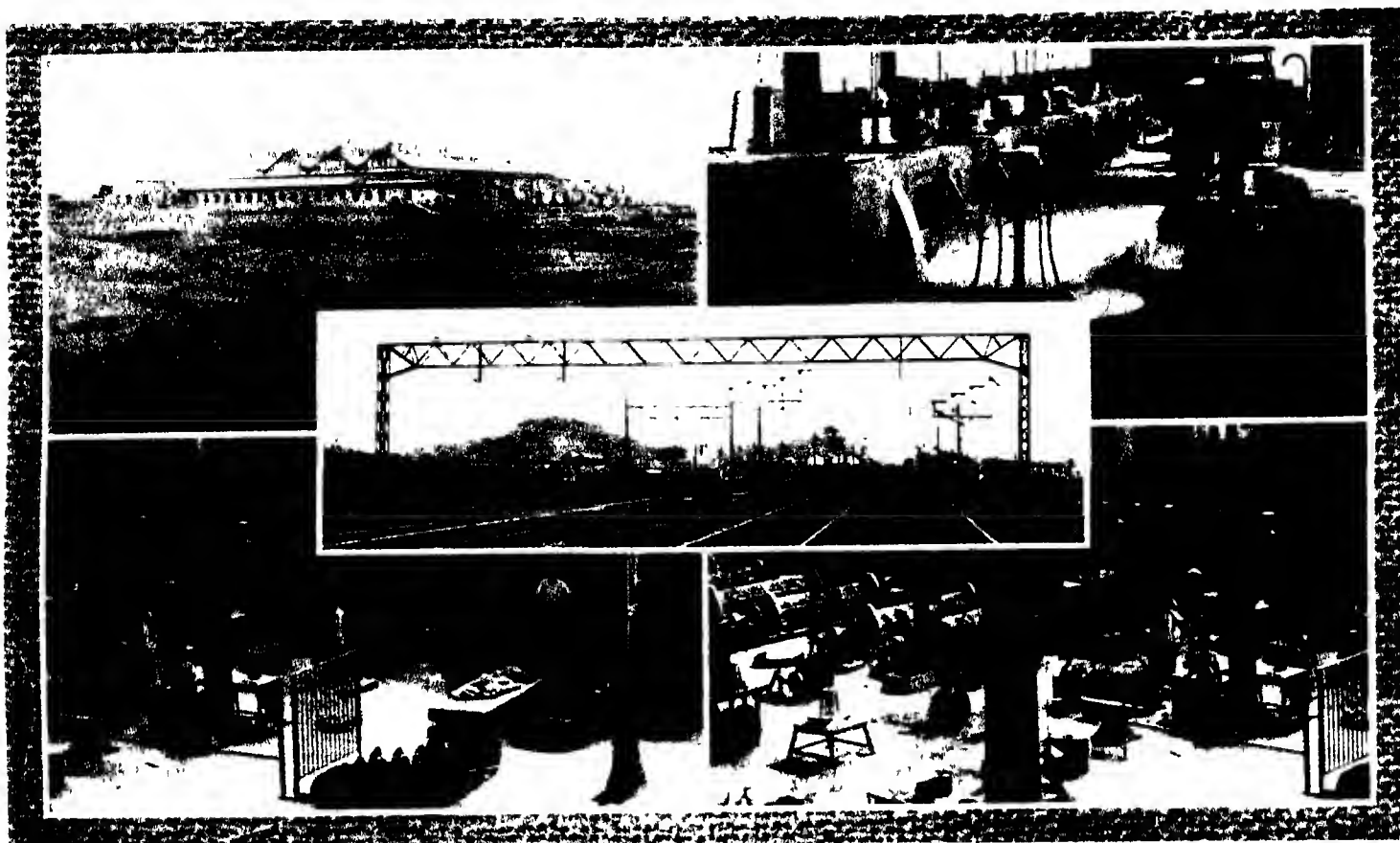
**STATIC TRANSFORMERS**—Twelve "English Electric" single-phase transformers each 10,000 k.v.a. 110,000/22,000 volts for Tata Power Co., Dharavi, Bombay. These transformers are oil-immersed water cooled for outdoor service. They are the largest transformers in India. For G.I.P. Railway, Kalyan, twelve 1,350 k.v.a. transformers, of the oil-immersed self-cooled type, have been installed. Many other transformers have been supplied throughout India for general tramway, power and lighting purposes.

**MINING EQUIPMENTS (OTHER THAN FOR COLLIERIES)**—Large electric winding engines have been supplied by the English Electric Co. for mines other than coalfields. The following are a few details of these installations: Two 2,000 b.h.p. electric winders on the Ward Leonard System, one 800 b.h.p. 3-phase electric winder, together with various motors for driving compressors, stamps, ventilating fans, etc., for the Kolar Gold Fields, Mysore, one 295 h.p. D.C. winder motor and one 75 h.p. A.C. winder motor for the Burma Corporation, two 300 b.h.p. induction motors driving compressors

tions have been arranged, those operating in India being dealt with as follows:

**Siemens and English Electric Lamp Co. Ltd.** Branches of this company have been established in the branch offices of the English Electric Company in India to act as main distributing points for the lamps, etc., manufactured at the Works at Preston and Dalston. Comprehensive stocks of standard vacuum and gas-filled lamps and special lamps such as train lighting, traction and automobile lamps are held in India. The lamps manufactured by this company are sold under the trade name of Siemens Brothers & Company Limited.

**Siemens Brothers & Company Limited.**—The English Electric Company is the sole selling agent for this company in India and holds at its branches stocks of those products which are in most demand, i.e., rubber insulated wires and cables, paper insulated cables, dry and wet primary cells and batteries, insulating tapes and materials, telephone instruments, transmission line materials, switchboard instruments, etc. The branches also undertake the supply and installation of cables of all descriptions, complete telephone equipment and complete transmission lines for high or low tension.



THE INDIAN CABLE COMPANY LTD, Calcutta  
(Managing Agents, British Insulated Cables Ltd.)

1 Indian Cable Company's factory at Jamshedpur  
Centre Overhead Equipment on the G.I.P. Railway by British Insulated Cables Ltd.  
2, 3 & 4 Views in Jamshedpur Factory.

**Directorate.**—P. J. Pybus, C.B.F. (chairman), Sir Charles Ellis C.B.E., K.C.B. (deputy chairman), Sir John A. F. Aspinall, D. Eng., M. Inst. C.E., Cland. I. Cayley, Bernard A. Firth, Sir Alex. Gracie K.B.E., M.V.O., Robert Grant, Junr., U.S.A., W. L. Hichens, Lt.-Col. Sir John H. Mansell K.B.E., D.L., and Lord Meston K.C.S.I. Managing director, V. Watlington, M.I.E.E. Assistant managing director, P. Horsfall.

**Offices.**—London (registered office) Queen's House, Kingsway, W.C.2, Calcutta D.4 Clive Buildings, 8, Clive Street, Bombay Mercantile Building, Graham Road, Madras Smith's Corner, Mount Road.

**Cables.**—"Enelectico," for all offices Codes, Bentley's, Western Union, A.B.C. 5th Edition and Lieber's.

**Bankers.**—London: Lloyds Bank Ltd., Bank of Liverpool & Martins, Ltd., National Bank of Scotland Ltd. India: P. & O. Banking Corporation Ltd.

#### BRITISH INSULATED CABLES LTD.

**Inception.**—For many years this important company was represented in India by agents, but in 1915, encountering the great demand for insulated cables consequent on the rapid development of electrical power schemes throughout the whole country, the management decided to open a direct Indian branch in Calcutta with an expert staff on the ground personally to direct the large contracts being placed.

**Activities.**—The firm specialises in complete installation contracts for overhead and

underground power distribution schemes, railway electrification, colliery installation, and telephone cable contracts. It is on the list of contractors for the Home Colonial and Foreign Governments and the principal corporations for electric lighting, traction, telephone and telegraph equipments. A staff of home trained engineers and skilled workmen, ensuring supervision and workmanship of the highest standard is employed.

**The Indian Cable Company Limited.**—This concern was floated in 1920 with an authorised capital of 15 lakhs. In 1922 British Insulated Cables Ltd. became the managing agents thereof, since when the authorised capital has been increased to 30 lakhs. The company's factory is situated in Jamshedpur and is well equipped to manufacture all kinds of rubber insulated cables, cotton covered wires, and hard drawn bare copper wires. The factory employs approximately 700 hands, and its productions are equal to the best among those either imported or locally manufactured.

**Works.**—British Insulated Cables Ltd., which is incorporated in England, has its principal works at Prescott and Helsby. At those centres everything is manufactured on a large scale by the very latest processes and under the supervision of experts.

**Head Offices.**—Telephone Building, 8, Chittaranjan Avenue, Calcutta (cables "Insulator," Calcutta). Codes, Western Union (5-letter edition) and Private.

**Bankers.**—Mercantile Bank of India, Ltd.; National Bank of India, Ltd.

#### ASSOCIATED BRITISH ENGINEERS LTD.

**Inception.** The floating of this powerful company in 1920 put into effect the policy of many of the leading British engineering concerns who considered that they could be more effectively represented in India as a combine than for each to have its separate branch there.

**Development.**—The justification of the combine policy is reflected in the rapid advance which "A.B.E.L.," as the company is termed, has made. It now ranks as one of the foremost engineering firms in India.

**Activities.**—The company's operations cover the entire field of engineering, and are in the hands of an expert staff fully qualified to deal with all enquiries, technical and commercial, and to give sound advice on types of plant or machinery for any undertaking.

**Agencies.**—A.B.E.L. act as sole agents in India for some of the foremost firms in the world, which in itself is a guarantee of the class and quality of the productions the company deals in, and the following list of their manufactures shows how comprehensive are the engineering specialities handled.

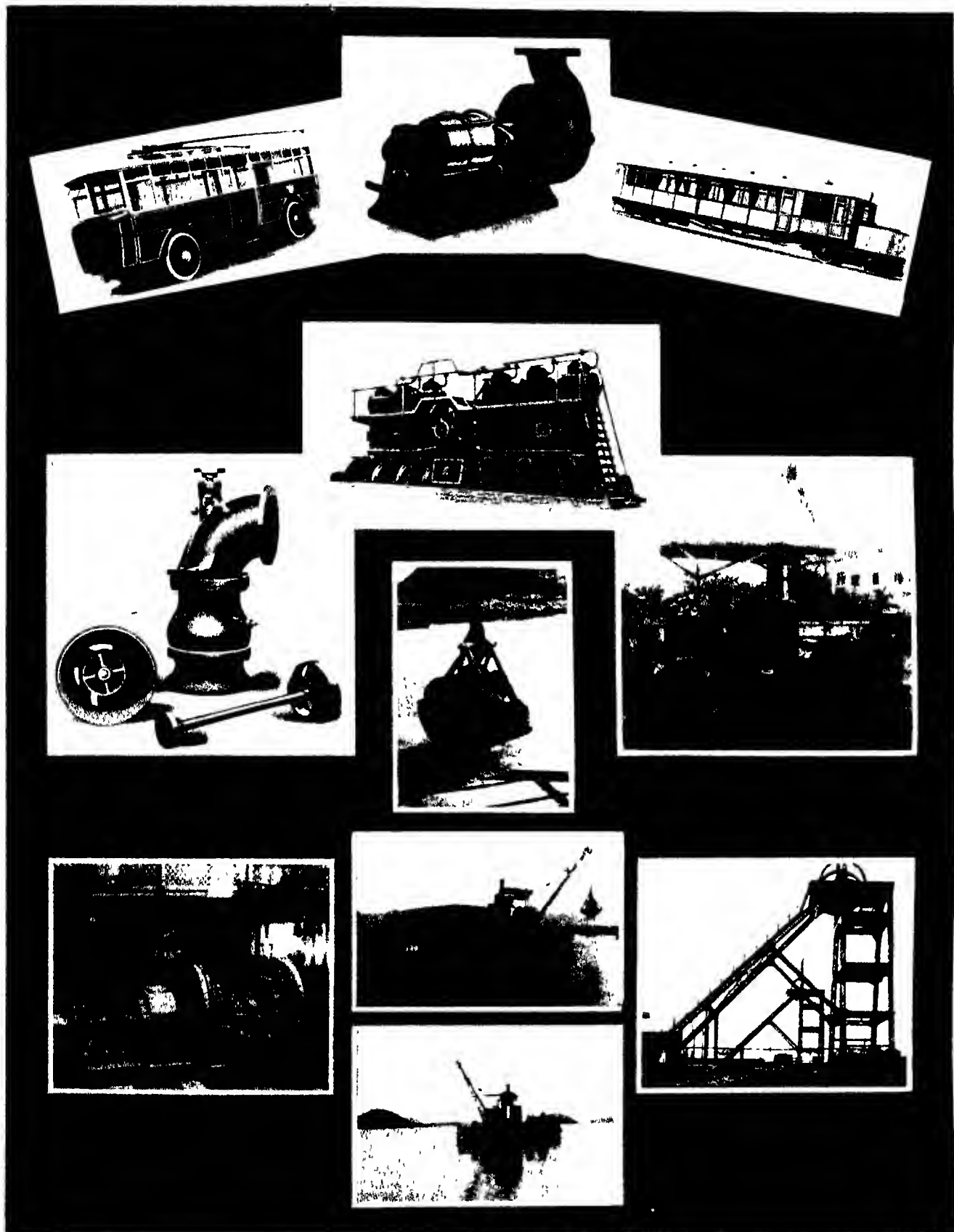
**WM. BEARDMORE & CO. LTD.**—London and Glasgow, manufacturers of steel castings, locomotives, rolling stocks, oil engines, plates and angles, barges, and pumps of all types.

**ALLEY & MACLELLAN LTD.**—Steam traps and general products.

**AVELING & PORTER LTD.**—Steam and motor road rollers, from 2 to 18 tons.

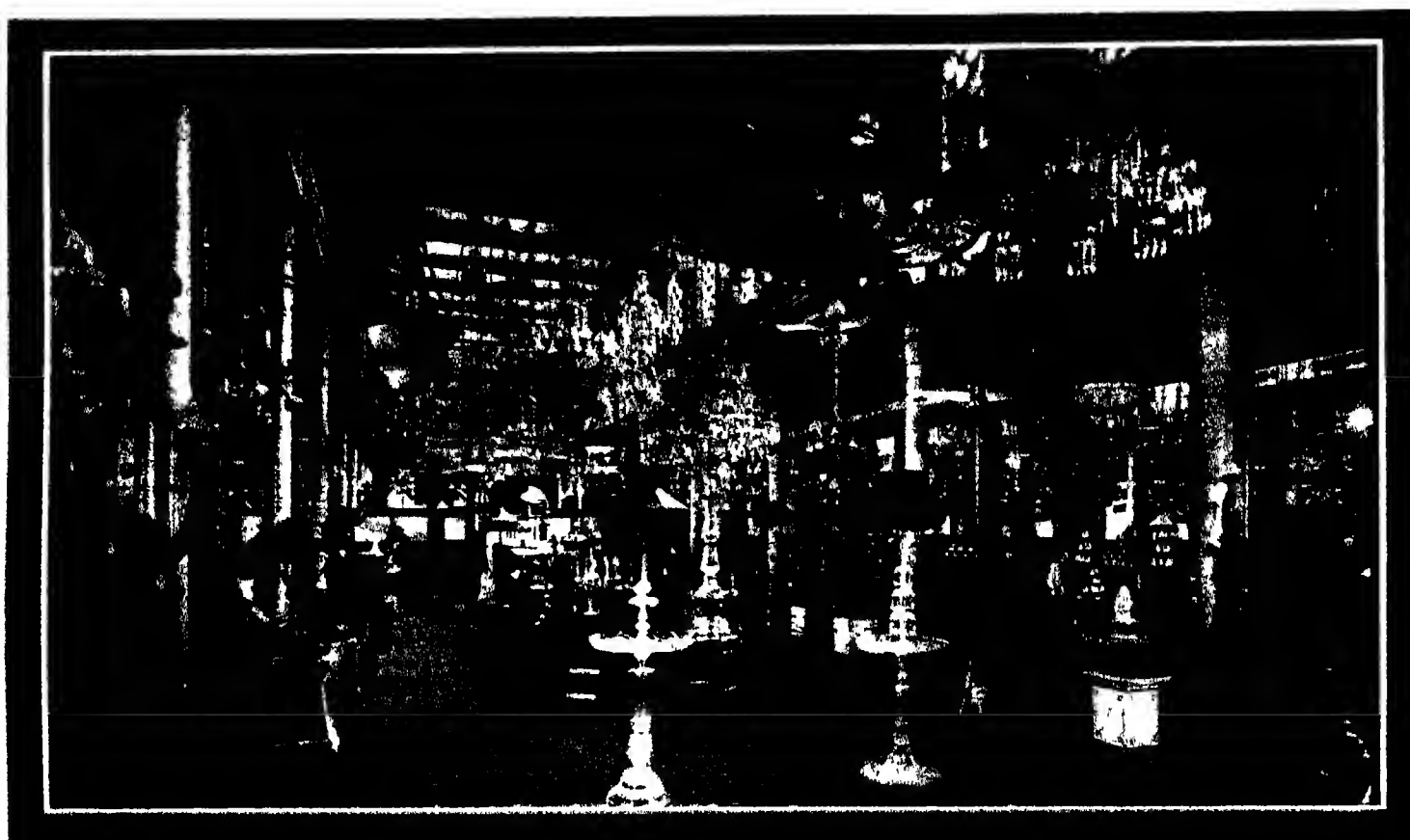
**CHANCE BROS. LTD.**—Channel lights, gas buoys, etc.





## ASSOCIATED BRITISH ENGINEERS LTD, Calcutta.

- |   |  |  |
|---|--|--|
| 1. Railless Limited : Type of Railless low floor car. | 4. Beardmore Centrifugal Pump                            | 9. Light Railways Limited : Railway Steam Car  |
| 2. Latest kind of vertical spindle Helivane Pump.     | 5. Beardmore 750 B.H.P. new type Engine (one of a pair). | 10. Aveling & Porter Steam Rollers. (Quick reversible steam roller as used by Calcutta Municipality) |
| 3. Haulage Gear as fitted for collieries.             | 6. Priestman Dredger Grab.                               | 11. Goodall, Clayton & Co. Ltd. : Pit headgear.  |
|   | 7 & 8. Priestman Dredger Barge.                          |  |



F & C OSLER LTD  
Beautiful Showroom at Calcutta

**HAGGILL BROS LTD**—Gateshead on Tyne—All classes of wire rope and fittings for mining and other uses.

**HATHORN DAVY & CO LTD**—Makers of all kinds of pumping plant, including triple plant, hydraulic pumping sets of every description and their latest vertical spindle "Helivane" pump.

**LIGHT RAILWAYS LTD**—All classes of light railway trucks and requirements, including special steam coaches, petrol locos, wagons, tubs, etc.

**PRIESTMAN BROS LTD**—Makers of grabs of every description, grab line excavators, and grab dredgers.

**RAILLESS LTD, LONDON**—Builders of railless trolley buses, overhead equipment and all accessory plant.

**WALKER BROS (WIGAN) LTD**—Makers of high class mining machinery and colliery equipment, including haulages, winders, air compressors, and Pagefield motor vehicles, etc.

**GOODALL CLAYTON & CO LTD**, Leeds.—Manufacturers of the most up-to-date coal handling plants, headgears and all kinds of structural engineering requirements.

**BECKETT & ANDERSON LTD**, Glasgow.—Manufacturers of the famous "Becander" haulage gears, "Becander" electric rotary drills and "Becander" Mining switchgear, of which several are already in operation in the Indian coalfields.

**MAIN ROPEWAYS LTD**, London—Makers of every kind of aerial ropeway.

**JOHN BIRCH & CO LTD**, London—The world famous exporters founded in Liverpool in 1875, whose operations, commencing in Egypt, have during half a century extended to every part of the habitable globe where British machinery has penetrated.

**INTERNATIONAL CHANNELLING MACHINES LTD**—Sheffield—Makers of the world-famous "Siskol" coal cutters.

**PATTERSON & CO**—Manufacturing miners' safety lamps (approved by British Mines Department).

**GOODWIN BARSBY & CO LTD**, Leicester—Makers of the "Acme" stone breaker in fixed and portable types with or without automatic screens, the "Acme" granulator, "Open Drum" concrete mixer and "Springfield" concrete block machine.

The Associated British Engineers Ltd hold extensive stocks of such products, and are ready at all times to go into specification details with clients.

**Cementation**.—Although this process has not been applied to any extent in India, ABEL, which represents Blandford & Gee of Doncaster, the well-known cementation experts and consulting engineers, will be pleased to go into details of any undertaking where the process is applicable and submit a report and estimate after inspection.

**Head Offices**.—23, Ezra Mansions, Government Place, East, Calcutta (cables "Abel" Calcutta).

#### F & C. OSLER LTD.

**Inception**.—Founded in Birmingham, England, in 1807, this is the oldest firm of electrical contractors in India, its connection with that country dating back to the days before the Mutiny.

**Activities**.—Messrs Osler Ltd are manufacturers and designers of electric light fittings and fans, having carried out many important electric light and power installations in various parts of the country, their work in the native States at Gwalior, Mysore, Jamnagar, Kashmir, Hyderabad, Nabha,

Jind, Alwar, Rewari and Benares being particularly well known. They were entrusted with the very fine and up-to-date hydro electric scheme at Kabul, which marked the introduction of electricity into Afghanistan, and completed important work for the Government of Nepal.

At the Coronation Durbars at Delhi in 1903 and 1911 they were responsible for a great deal of the electrical work, including the whole of the installation in the camp of H M the King Emperor.

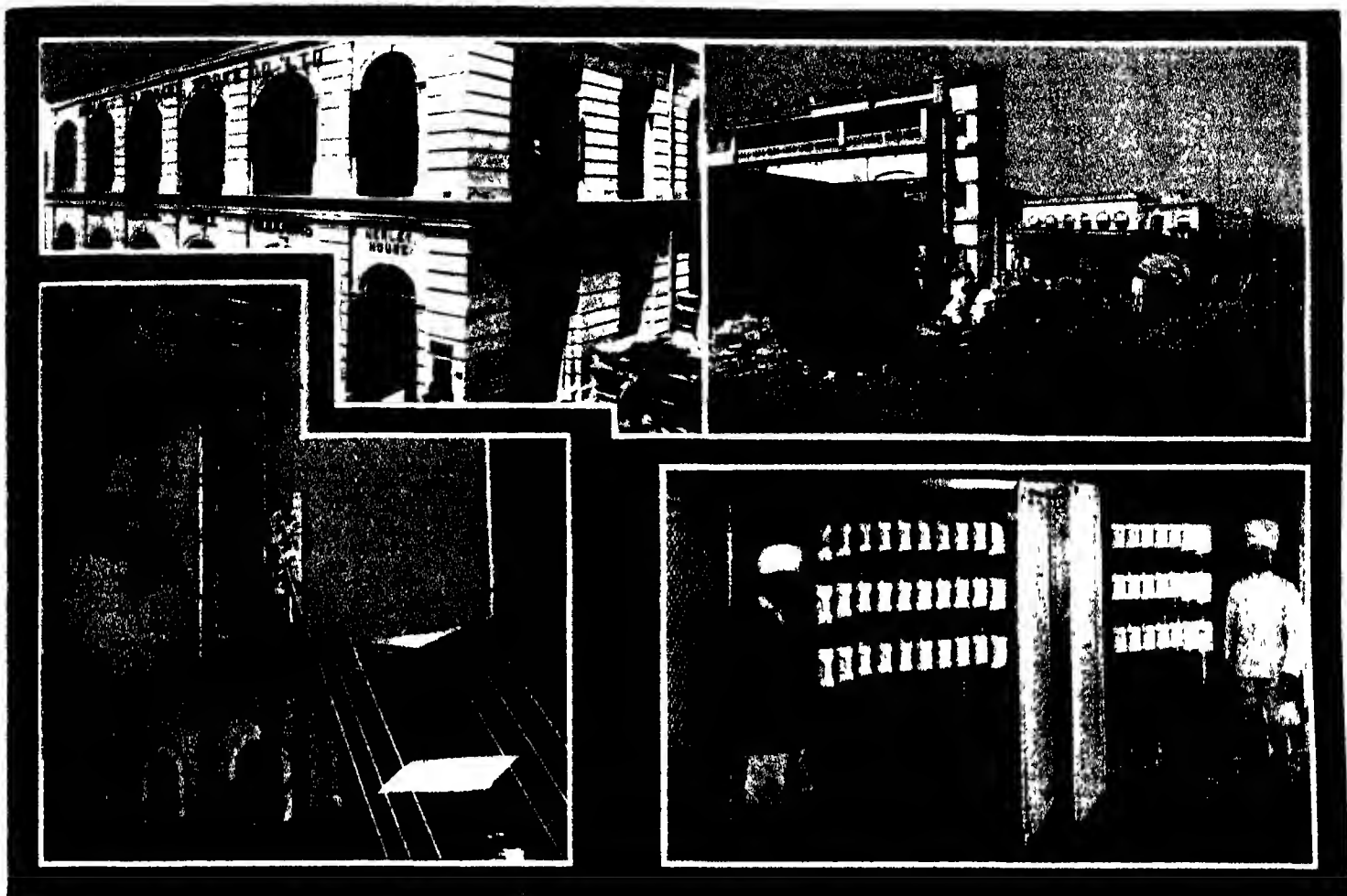
**Agencies**.—The name Osler is synonymous with quality products, and is known throughout the length and breadth of India in connection with Osler fittings, Osler fans, or the other electrical and mechanical apparatus for which the firm has sole agency rights in India, Burma and Ceylon. These agencies include "Cosmos" electric lamps, W T Glover & Co Ltd, V I R cables, R A Evans Ltd, electric lifts, Wardle Engineering Co Ltd, street light fittings; Rees Roturbo pumps, dynamos, motors and condensers, The Arrel Manufacturing Co Ltd, tools, Leyland-Roturbo fire pump, Exide batteries, The Relay Automatic Telephone Co. Ltd and British-Sangamo electricity meters.

**Showroom**.—The firm's showroom has long been famed as one of the sights of Calcutta, containing many fine examples of the art of electric light fittings design and workmanship.

**Branches**.—Bombay, Madras, Delhi and Lahore, sub-agencies. Karachi and Rangoon.

**Head Offices**.—12, Old Court House Street, Calcutta (cables "Oslerco" for Calcutta and branches). Code: A.B.C. 6th Edition.

**Bankers**.—Imperial Bank of India



W. T. HENLEY'S TELEGRAPH WORKS CO. LTD., Calcutta

- |  |   |
|--|---|
| <p>1 The Company's premises at Calcutta</p> <p>3 Showing main terminal structure outside the Power Station, Budge Budge Jute Mills</p> | <p>2 Laying Henley cables in the streets of Calcutta</p> <p>4 Two 10-way interconnected 3-phase 550 Volt Henley Patent Unit Type Distribution Panels for Auxiliary Plant in Power Station of Gourepore Co. Ltd. near Calcutta, supplying power to Nuddea and Gourepore Jute Mills, etc.</p> |
|--|---|

#### W. T. HENLEY'S TELEGRAPH WORKS COMPANY LTD.

**Inception.**—Manufacturers of electric cables ever since electrical energy was first transmitted as a commercial proposition through insulated conductors in 1837 this world-famous concern was early in the field in India. It was not, however, until 1911 that Messrs. Henley's opened their own office in Calcutta, followed in 1912 by one in Bombay, but prior to that they were represented in both cities by agents.

**Activities.**—Their business consists of the manufacture and supply of electric cables of every description and for every purpose, and they also undertake overhead line work, cable electrification of cities and mills, and cable laying contracts, of any magnitude.

**Contracts.**—Among contracts carried out since April 1913 the following are noteworthy: His Majesty's Mint, Calcutta supply and erection of cables from power house to distribution board; The Aldah Colliery; supply and installation of shaft and distribution cables, Bombay Port Trust supply and laying of paper insulated, lead covered and armoured cables, 400 volt 3

phase supply for lighting and power to Queen Alexandra Docks, The Empire Jute Mills, Calcutta supply and erection of overhead mains and cabling to motors, The Fata Cotton Mills supply and erection of main and auxiliary cables, Mazagon Docks, Bombay supply and erection of main and auxiliary cables on solid system, East Indian Railway, Belur supply and laying of F.H.T. 3 core paper insulated and bitumen sheathed cable for pumping station, Elgin Mills Co. Ltd. Cawnpore Textiles Ltd. New Victoria Mills, Baginath Balmukund Woollen Mills, Swadeshi Cotton Mills supply to each of these Cawnpore companies and installation of all main and auxiliary cables, 550 volt, 3-phase supply, The Dumbur Cotton Mills, Calcutta supply and erection of overhead lighting mains for mill and road lighting, 110 volt D.C., United Provinces Government, Nani Tal supply and erection of underground cables, boxes, etc., for lighting of grounds, Government Posts and Telegraphs Department, Calcutta laying of cables (approximately 2 miles), Government Marine Department, Bombay supply and erection of L.T. feeders and distributors in R.I.M. dockyard, The Model Mills, Nagpur

supply and erection of all main and auxiliary cables, 550 volt, 3-phase Bartholomew & Co. Calcutta supply and erection of L.T. switchgear and cables for lighting also fan mains for Mackinnon Mackenzie & Co.'s offices the largest office building in India, The Cleveland Bridge & Engineering Co., Calcutta supply and erection of overhead distributor and interior cabling, 440 volt 3-wire, North Alliance Jute Mills, Calcutta supply and installation of main and auxiliary cables, 3,300 volt, 3-phase, Commissioners for the Port of Calcutta supply and erection of feeder cables on solid system for hydraulic pumping installation, Budge Budge Jute Mills, Calcutta supply and erection of overhead mains and 3-core cables, 550 volt, 3-phase, and overhead lighting mains for mill and road lighting, 110 volt D.C., Nasmyth Jute Press, Calcutta H.T. and L.T. cables between transformers, switchgear and motors, Corporation of Calcutta supply and erection of all cables for electrically driven pumps for water supply, 6,000 volt, 3-phase, Kotah State Rajputana supply and erection of overhead and underground mains, H.T. and L.T.



SULZER BROTHERS, Calcutta

- 1 Refrigerating plant with ammonia compressor, direct coupled to Diesel Engine.  
3 Special type of Centrifugal Pump for Pumping Sewage

- 2 Cross Compound Extraction Steam Engine at the Delhi Cloth and General Mills  
4 1,500 B.H.P. Two-cycle Diesel Engine

switchgear for lighting and water supply, —H.T. supply 3,300 volt, 3-phase, L.L. supply 400 volt, 3-phase. Government of India Army Department, Lucknow supply and erection of overhead feeders and distributors for lighting scheme, 440 volt, 3-wire D.C., also sub-station cabling. The Auckland Jute Mill, Calcutta supply and erection of main and auxiliary cables 3,300 volt, 3-phase. East Indian Railway at Ondal and Moghal Serai, supply and jointing of underground cables. United Provinces Government Public Health Department, Hardwar supply and erection of 4-core paper insulated, lead covered and armoured cable for pumping station, 3-phase, 4-wire supply, 400 volt, The New Egerton Woollen Mills Co. Ltd., Dhariwal supply and erection of cables and distribution boards in power house, D.C. 440 volt, Indian Ordnance Factory, Ishapore supply and erection of cables for power house and of overhead mains to Palta estate, East Indian Railway, Moghal Serai supply and jointing of underground 2,200 volt, 3-core cables, disconnecting and non-disconnecting joint boxes, The Gourepore Co. Ltd., Calcutta supply and erection of 3-core cables, 20-way distribution panel and two 8-way distribution panels for power station auxiliaries, Jessop & Co. Ltd., Calcutta supply and erection of cables and boxes at the Port Engineering Works, Jardine Skinner & Co. supply and erection of material for overhead transmission line, 6,900 yards,

6,000 volts at Jealgora, Indian Stores Department Sukkur laying and connecting 2 cables across the River Indus. The cable for this contract was supplied on two drums each weighing 10 tons 3 cwt. the heaviest drums hitherto imported into India.

**Wiring System.** Henley's first introduced "lead" covered wiring into India where almost any type of "lead" covered wiring is now known as "Henley wiring." This system has been installed in practically every building of note including Government House, Calcutta, Memorial Church, Cawnpore, The Amir of Afghanistan's Palace, Kabul, Agra College, all Calcutta hospitals, Calcutta and Bombay Cathedrals, Mackinnon Mackenzie & Co.'s offices, Calcutta, Council Chambers in Calcutta, Madras, Simla, Bankipore and Shillong, Bengal and U.S. Clubs, Calcutta, Imperial Bank buildings, Colombo and Calcutta, etc.

**Agencies.**—The firm acts as agents for Griffiths Bros. & Co. (London) Ltd., insulating, varnishes, etc., Thos. De La Rue & Co. Ltd., "Telenduron" insulators, and The Diamond Coal Cutter Co., Ltd., of Wakefield.

**Share Appreciation.**—The £1 share was on November 12, 1926, quoted on the London Stock Exchange at £4.

**Directorate.**—The Board consists of Sir George Sutton, Bt., M.I.E.E. (chairman and managing director), R. J. Hattan, W. J. Potter, A.A. Campbell Swinton, F.R.S., and Sir Montague Hughman.

**Head Office.**—Holborn Viaduct, London, E.C.1

**Indian Head Office.**—The head office for India, at Henley House, Old Court House Corner, Calcutta controls Burma, Ceylon, Mesopotamia and Aden.

**Bombay Branch.**—Henley House, Ballard Estate.

**Agents.**—The firm is represented by agents at Madras, Rangoon, Karachi and Aden, as follow:—Madras: The Crompton Engineering Co. (Madras), Ltd., Burma: C. R. Cowie & Co. Rangoon, Sind and Baluchistan: The General Electric Trading Co., Karachi, Aden: Cowasjee, Dinshaw & Bros., Steamer Point.

**Cables.**—"Wiring," Calcutta and Bombay Codes: Bentley's, Western Union (Universal and 5-letter), A.B.C. 5th Edition and Private.

**Bankers.**—The Chartered Bank of India, Australia and China.

#### SULZER BROS.

**Inception.**—As far back as 1876 and 1878 this famous Swiss firm installed "Sulzer" steam engines in Mandalay and Bombay respectively, and from that time has been a regular supplier of engineering plant to all parts of the country. In 1923 it was decided to centralise the firm's activities in India, and offices were opened in Calcutta in that year.

**Activities.**—Manufacturers of centrifugal pumps, high and low pressure fans, Diesel oil engines, steam engines, refrigerating



machinery, water tube and Lancashire boilers. Messrs Sulzer Bros. undertake the supply and installation of such plant throughout India. Some of the more important electric generating stations utilising "Sulzer" Diesel engines are the Patna Electric Supply Co., the Dacca Electric Supply Co., the Delhi Electric Tramways & Lighting Co. and the Colombo Electric Tramways Co.

In addition to the above, recent orders have been obtained for the Dehra Dun Power Plant of the Mussoorie Municipality, having a total capacity of 900 kw. and comprising three "Sulzer" Diesel Engines, each having an output of 500 b.h.p., while a further 500 b.h.p. engine has recently been ordered for the Patna Electric Supply Co. and three similar engines each of 500 b.h.p. have been purchased by the Bhagalpur Electric Supply Co. for their new Power Station.

**Specialities.** The "Sulzer" centrifugal pump is famous throughout the coal-mining world, and some of the important collieries in the Bengal coalfields using these pumps are the East India Coal Co., the Central Kurkend Coal Co., the Tata Iron & Steel Co., and the Bengal Iron & Steel Co. A recent important order is for the pumping plant of the Multan Waterworks, comprising four sets of electrically driven "Sulzer" borehole centrifugal pumps. Sulzer Bros. are pioneers in this type of pump, which they have been manufacturing for over 20 years.

The cross-compound extraction steam engine, as supplied to the new mills of The Delhi Cloth & General Mills, is capable of giving a continuous output of 1,125 b.h.p. and is the first installation of its kind in India. Its chief feature is its power to extract a certain proportion of the steam from the receiver between the h.p. and l.p. cylinders, such steam being used for heating purposes in the mills at practically no cost. The installation of this most economical prime mover is an all important consideration for manufacturers in the light of the stricter economic conditions prevailing to-day.

**Head Offices.**—11, Chive Street, Calcutta.

**Works.**—Winterthur, Switzerland.

**Cables.**—"Geba Sulzer," Calcutta. Codes Bentley's and Schofield's Eclectic.

**Bankers.**—The International Banking Corporation, Calcutta.



THOMAS ROBINSON & SON (INDIA) LTD., Calcutta

- 1 The Company's Offices
- 2 Handsome Showrooms at Calcutta

### THOMAS ROBINSON & SON (INDIA) LTD.

**Inception.** The amalgamation of several leading British and American engineering concerns formed the origin in November 1924 of this enterprise.

**Development.** The company is one of the most progressive of its kind in India, and within ten months of its inception had secured the first complete contract ever placed by an Indian railway for fully equipped workshops. This was for the erection and completion of buildings, cranes, machines, shaftings, pulleys, etc. for the new saw mills of the East Indian Railway. The company's designs and lay outs having met with the unqualified approval of the engineers in charge. The firm under notice is one of the few in India to submit designs and estimates and send its own expert staff to supervise the erection and starting up of the plant supplied. Several minor contracts of a similar nature for machine shops, etc. have been successfully handled within the past year.

**Branches.**—Already offices have been opened at Lahore, and a further extension at Bombay is under consideration.

**Constituent Firms.** The principal engineering firms comprising the organisation are: Thos. Robinson & Son Ltd., Rochdale; Craven Bros. (Manchester) Ltd., Reddish; The Gloucester Railway Carriage & Wagon Co. Ltd., Gloucester; Laurence Scott & Co. Ltd., Norwich; The Atlas Engineering Co., London; Reavell & Co. Ltd., Ipswich; The Phosphor Bronze Co. Ltd., London and Birmingham; Alfa-Laval Co. Ltd., London; The

Brooke Tool Co. Ltd., Birmingham; J. Beardslow & Son Ltd., Baltic Steel Works, Sheffield, C.A.V. Small Tools Ltd., Brighton; J. B. Corrie & Co., London; The Equipment & Engineering Co. Ltd., London; John Robson (Shipley) Ltd., Shipley; The Longford Wire Co. Ltd., Warrington; Hancock & Co. (Engineers) Ltd., Croydon; Brown & Sharpe Mfg. Co., Providence, Rhode Island, U.S.A.; Warner & Swasey Co., Cleveland, Ohio, U.S.A.; The Cushman Chuck Co., Hartford, U.S.A.; The Vitrified Wheel Co.,

Westfield, U.S.A.; The Landis Machine Co., Pennsylvania, U.S.A.; and Alfred Baillet & Co., Paris.

**Directorate.**—The board consists of Messrs Charles J. Robinson (chairman), J. B. Corrie, Kanai Lal Jatia and C. Warren-Boulton (managing director).

**London Offices.**—15, Victoria Street, Westminster, S.W.

**Head Offices and Showrooms.**—24, Park Street, Calcutta (cables "Thorobind" Calcutta). Code Bentley's.

**Bankers.** The Chartered Bank of India, Australia and China.

### GREAVES COTTON & CO. LTD.

**Inception.**—Founded in 1863, this company conducts the business of general import merchants in metals, piece-goods and machinery, electrical and mechanical engineers and contractors and manufacturer's representatives.

**Representations.**—Very valuable agencies are held in all the lines covering the cotton and woollen textile industries: cotton ginning and pressing, ice-making, pumping, flour milling and agricultural machinery, and electric generation and distribution. The company represents 15 leading British and American firms in mechanical engineering, eight textile machinery manufacturers, over a dozen electrical engineering concerns, and some of the best British houses for engineers' and mills' stores.

**Insurance.**—This department of the firm represents the Sun Insurance Office (Asiatic Agency), Western Assurance Company,





GREAVES COTTON & CO., LTD.  
Head Office at Bombay  
(See *Literary*, p. 145)

Reliance Marine Insurance Co. Ltd., South British Insurance Co. Ltd. and the National Mutual Life Association of Australia Ltd.  
**Management.**—The company is controlled by the Managing Agents Greaves Cotton & Co. Ltd., the partners being Messrs. J. B.

Greaves, N. G. Hunt, A. McIntosh and A. St. P. Pooley.

**Buying Offices.**—James Greaves & Co. 14 John Dalton Street and 11-13 Ridgely Manchester

**Branches.** Calcutta, Karachi, Ahmedabad and Lahore.

**Head Offices.**—1, Forbes Street, Bombay (cables "Greaves," Bombay). Codes Bentley's and Private.

**Bankers.** Bank of England, Manchester & County Bank for James Greaves & Co. and Hongkong & Shanghai Banking Corporation, Lloyds and other banks for Greaves Cotton & Co. Ltd.

#### DUNCAN, STRATTON & COMPANY.

**Inception.**—This firm was established in Bombay in 1881 by the late Mr. T. W. Shallis, the original designer of the Nasmyth cotton baling press, the most popular of its kind in India.

**Representations.** Operating as engineers and machinery importers, Messrs. Duncan, Stratton & Co. represent many leading manufacturers, the chief being Henry Simon Ltd., Nasmyth Wilson & Co. Ltd., Ransomes Sims & Jefferies Ltd., Brooks & Doxey (1926) Ltd., Crofts (Engineers) Ltd., Vickers Boiler Co. Ltd., Greenwood & Batley Ltd., Sir James Farmer Norton & Co. Ltd., Skefko Ball Bearing Co. Ltd., Alexander Shanks & Son, Ltd., Power-Gas Corporation Ltd., The Texas Company, New York, Sulzer Brothers, Winterthur, Clyde Oil Fuel System Ltd., BSA Tools Ltd., Ames Crosta Sanitary Engineering Co. Ltd., and Lea Recorder Co. Ltd., etc.

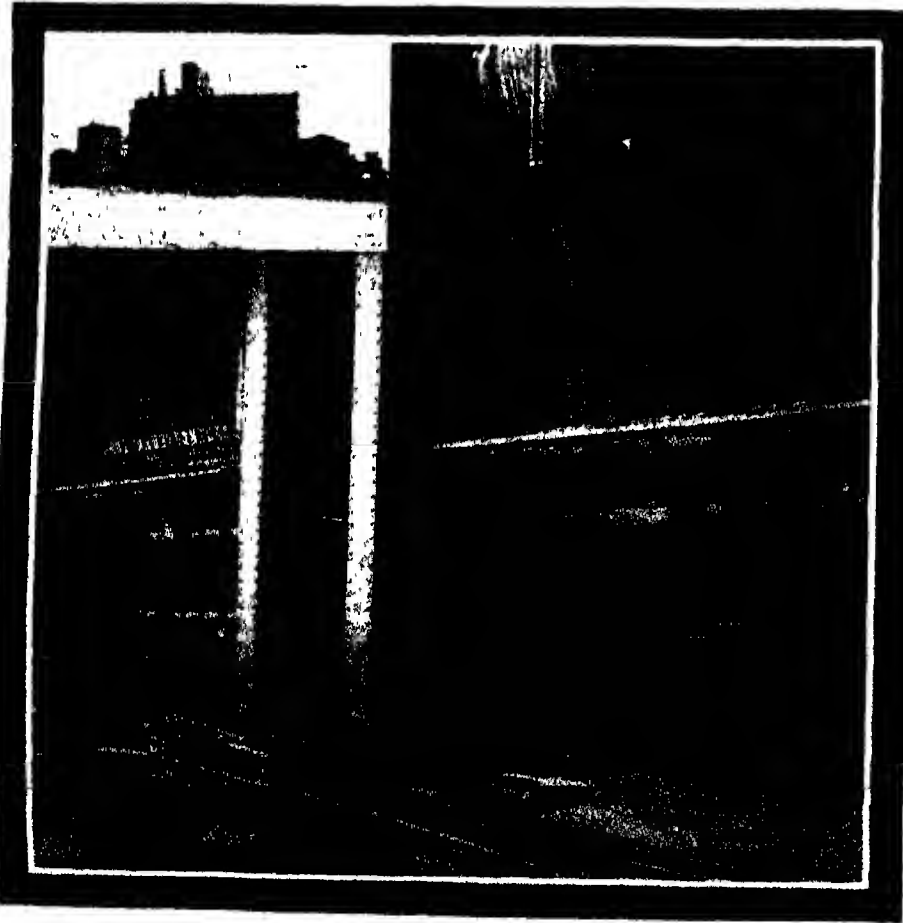
**Administration.**—The organisation is divided into sections, each controlled by a trained specialist in every line handled by the company. The firm has built its connection on the basis of service to clients, and with this object in view has always made the closest study of Indian conditions, relying for its technical information on its principals in England.

**Head Office.** 5, Bank Street, Fort, Bombay (cables "Hydraulic," Bombay).

**Branches.**—100, Clive Street, Calcutta (cables "Dunstrat," Calcutta); and 86, The Mall, Lahore (cables "Hydraulic," Lahore). Code Bentley's.

**London Representative.**—Mr. F. Harwood, Atherstone, Upper Brighton Road, Surbiton.

**Bankers.**—The Mercantile Bank of India, Ltd., The P & O. Banking Corporation, Ltd.



DUNCAN, STRATTON & CO., Bombay.

Boiler House of Southern Power Station, Calcutta, designed and installed by Messrs. Duncan, Stratton & Co. Ind. Ganeesh Flour Mills, also designed and constructed by the Firm.

**WILLIAM JACKS & CO.**

**Inception.**—The present Indian branch of these well-known metal merchants of London, Birmingham and elsewhere, whose weekly metal market report is a feature of local newspapers throughout India, was established some 20 years ago.

**Activities.**—The firm operates as importers and exporters, builders, engineers' suppliers and reinforced concrete specialists among its clients being the Government of India, the Provincial Governments, the Railways and all the leading commercial organisations in the country.

**Agencies.** Messrs W. Jacks & Co. are sole agents in India for a number of important manufacturers, including

**THE ARMCO INTERNATIONAL CORPORATION**, makers of 'Armco' Ingot Iron, the purest iron made and in great demand by the P.W.D., Railways, District Boards, Port Trusts, M.F.S. etc. the "Armco" Corrugated Nestable Culvert, the strongest, simplest and most economical nestable culvert for the solution of the small bridge and drainage opening problem, and the "Armco" Lennon Type Flume, largely used in India and Burma for irrigation and hydro-electric works. **THE EXPANDED METAL CO., Hartlepool** whose productions have been supplied to many of the largest projects in India, **THOS. TIRTH & SONS LTD., Sheffield**, the world famous steel and stainless steel manufacturers. **THE AMERICAN ROLLING MILLS CO., Ohio**. **THE CALIFORNIA CORRUGATED CULVERT CO., West Berkeley** and the **SENTINEL WAGON WORKS LTD., Shrewsbury**, makers of steam rail coaches, patent locomotives, tipping wagons and lorries. The company also acts as secretaries for the **Crittall Mfg. Co. (India) Ltd., Bombay** manufacturers of steel windows.

**Branches.**—The company is also established at Calcutta, Karachi and Madras, and represented at Lahore by Messrs W. J. Knott & Co., Charing Cross.

**Partners.** John Gray, Buchanan, Stewart, Barry and R. Russell Walker.

**Head Offices.**—Westminster House, Old Broad Street, London, E.C. 2.

**Bombay Offices.**—Ballard Estate.

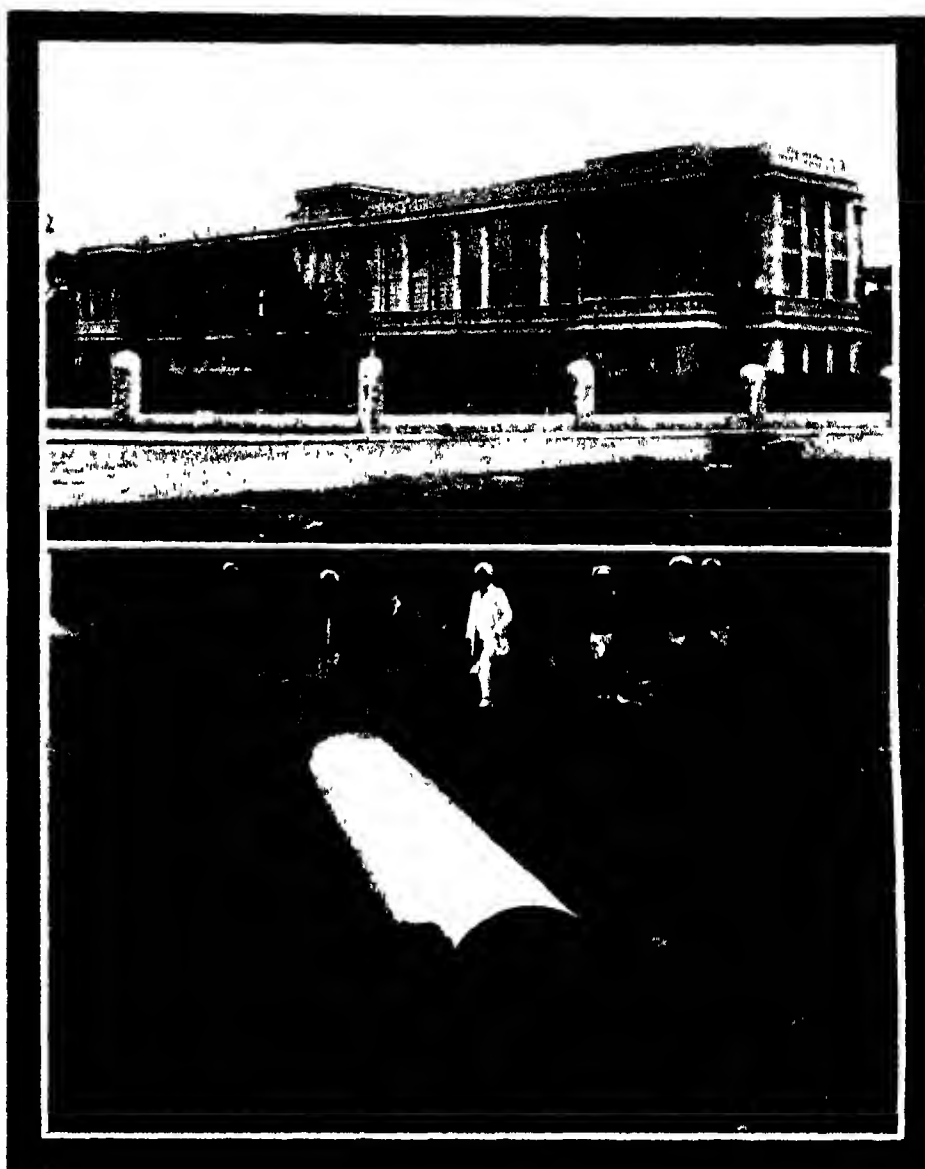
**Cables.**—"Alkalize," London. "Terrocere," Calcutta. "Astorr," Bombay and Karachi. "Limpet," Madras. Codes: A.B.C. 5th Edition, Bentley's and Acme.

**Bankers.**—The Chartered Bank of India, Australia and China and the P. & O. Banking Corporation.

**ALFRED HERBERT (INDIA), LTD.**—13, British Indian Street, Calcutta. Engineers and machine tool importers. Branches at Bombay, Lahore and Madras. Agents for Alfred Herbert, Ltd., Coventry; C. Redman & Sons, Halifax; Webster & Bennett, Ltd., Coventry; E. G. Herbert, Ltd., Manchester, etc. Cables: "Machine" Codes: Western Union, A.B.C., Lieber's and Private.

**ALLEN, W. H., SONS & CO. LTD.**—26, Strand Road, Calcutta. Works: Bedford, England. Mechanical and electrical engineers, manufacturers of steam engines and turbines, condensing plants, pumps, Diesel and semi-Diesel oil engines, electrical machinery, fans, etc. Cables: "Darby."

**ANGUS KEITH & CO.**—98-5, Clive Street, Calcutta. Importers of hardware, machine and small tools and engineering stores. Agents and stockists for many well-known manufacturers. Cables: "Conformity." Code: Bentley's.



WILLIAM JACKS & CO., Bombay

1. The King Edward Memorial Hospital, Parel, Bombay, where steel windows manufactured by the Crittall Manufacturing Co. (India) Ltd., of which Wm. Jacks & Co. are Secretaries, were utilized.
2. Installing a 36" Armco Corrugated Culvert (manufacturers, The Armco International Corporation, another important representation held by William Jacks & Co. in India) under supervision of the Public Works Dept., Vizagapatam Division.

**ASBESTOS AND BELTING CO., LTD.**—7, Council House Street, Calcutta. Manufacturers of "Salva" asbestos packings and jointings, asbestos and magnesia boiler and steam pipe coverings, hair, balata, cotton and leather beltings, Trafford tiles, asbestos cement sheets and slates and steel roof framework. Cables: "Asbestos" Codes: Bentley's, Western Union 5-letter Marconi, A.B.C. 5th edition and Private.

**ASSOCIATED BRITISH MACHINE TOOL MAKERS, LTD.**—Temple Chambers, 6, Old Post Office Street, Calcutta. Registered offices: 17, Grosvenor Gardens, London, S.W. 1. Formed by the co-operation of nine well-known firms to improve design and reduce cost of machine tools, this company is in no sense a "Trust" or "Combine." An efficient sales organisation is being established to further the interests of British trade in all parts of the world. Cables: "B. Toolmak." Calcutta.

**AVERY, W. & T., LTD.**—Head office for India and the East: Calcutta. Office and showrooms: Waterloo Street. Works: Dacres Lane, Godowns, British Indian Street. Incorporated in England. Bombay sub-branch office: 11, Dongall Road, Ballard Estate. Other branches at Lahore and Rangoon. British offices and works: Soho Foundry, Birmingham. Cables: "Weighme" Codes: A.B.C. 5th Edition and Marconi International.

**BALDWIN LOCOMOTIVE WORKS.**—5, Dalhousie Square East, Calcutta. Head office: Philadelphia, U.S.A. Locomotive builders and railway engineers, machine tools. Agencies: "Sunbeam" electric headlights; Fairmont motor trolleys; Watson Stalman drop pit jacks, etc. London office: 34, Victoria Street. Paris office: 14, Rue Duphot. Cables: "Baldwinloc." Codes: A.B.C. 5th Edition, Bentley's and Private.



LONGOVICA INDUSTRIAL &amp; COMMERCIAL EXPORT CO., LTD

General view of Steel Depot

**LONGOVICA LTD.**

**Inception.** Commencing operations in Calcutta in September 1922 this important engineering concern made rapid headway and in December 1925 opened a sub-agency in Madras.

**Activities.**—The firm's operations cover a wide field embracing electrical mechanical civil and structural engineering the manufacture of rolling stock for railways and tramways, and the importation into India of hardware, steel, tubes and building material. The office staff numbers 50 under European supervision.

**Premises.** In addition to the office buildings the company has its own godowns for hardware such as bolts and nuts, rivets, galvanised wire and wire of all descriptions, wire nails, hoop iron, etc., covered sheds for light steel sections, and an open yard for heavy sections like joists, ship plates, structural sections, etc., all situated on the Howrah side. Further, the establishment is directly connected by rail with the Calcutta jetties, having one siding close to Jagannath Ghat and the Durmahatta Street Market, and therefore in the best position to comply with up-country orders and the local demand.

**Stock.**—The total tonnage of goods of all descriptions constantly in stock amounts to 3,500—4,000, while the regular consignments arriving every week allow the firm to push its business on an extensive scale.

**Godowns.**—5, Rose Mary Lane, Howrah.

**Head Offices.**—102, Clive Street, Calcutta (cables "Longovica," Calcutta) Codes Bentley's, A B C 6th Edition and Private.

**Bankers.**—Anglo-South American Bank Ltd., London, National Bank of India, Ltd., London and India.

**BEHRENS, SIR JACOB, & SONS** F-4 Clive Buildings, Clive Street, Calcutta. This firm of merchants is also established at Delhi, Manchester, London and Bradford. Bombay agents: W. N. Cresswell & Co. Cables "Narakmo" Codes A B C 5th Edition Bentley's, Western Union Whitclaw's 301 and 1020 Million Artificial Words and Private.

**BRADY, W. H., & CO. LTD.**—20, Strand Road Calcutta. Head office: Royal Insurance Buildings, Churchgate Street, Bombay, and at 154-155 Popham's Broadway, Madras Canal Range, The Mall, Cawnpore. Manchester office: 10, John Dalton Street. Merchants, machinery agents, engineers and contractors, etc. Cables "Darby" Codes A 1, A B C 5th and 6th Eds., Bentley's and Private.

**BRAITHWAITE & CO., ENGINEERS. LTD.**—7 Royal Exchange Place, Calcutta. Incorporated in England. Structural and mechanical engineers. Registered office: Broadway Buildings, Broadway, London, S.W.1. Works in England: Crown Bridge Works, West Bromwich. Cables "Brom-kirk," Calcutta, and "Braithwaite," Bombay. Codes A B C 5th Ed. and Bentley's.

**BRITISH MANNESMANN TUBE CO. LTD.**—C-6 Clive Buildings, Clive Street, Calcutta. Incorporated in England. Manufacturers of Weldless (Solid Drawn) steel tubes of every description, including boiler tubes, water, gas, steam, air and sewage mains, electric transmission, lighting, traction, telegraph and telephone poles, etc. Cables "Tubular," Calcutta, and "Seamless," Bombay.

**BRITISH ROPES (INDIA), LTD.**—1, Mission Row, Calcutta. Steel wire rope manufacturers, engineers and contractors for aerial ropeways, cableways, suspension bridges.

Sole agents for: George Cradock & Co. Ltd., Leeds; Meter Co., Bootle; Martin & Co. Cables "Ropes" Codes A B C 5th Ed. Bentley's and Private.

**BRITISH THOMSON - HOUSTON CO. (INDIA), LTD.** Head office: A-3 Clive Buildings, Clive Street, Calcutta. Also at Bombay, Cawnpore and Madras. Electrical engineers and contractors, manufacturers of steam turbines, electric generators, motors, rotary converters, railway and tramway apparatus, measuring instruments, etc. Cables "Mamland" all offices. Codes Schofield's and Private.

**CAMMELL, LAIRD & CO. (INDIA), LTD.**—Registered office: 5, Fairlie Place, Calcutta. Suppliers of rolling stock and all parts for same, tool steel, spring steel and files. Secretaries: Hoare, Miller & Co. Ltd. London correspondents: Hoare, Miller & Co., Pinners Hall, Austin Friars, E.C.2. Cables "Hoare-miller," Calcutta.

**GENERAL ELECTRIC CO. (INDIA), LTD.**—Head office: 14, Old Court House Street, Calcutta. Branches at Bombay, Madras and Lahore. Manufacturers of everything electrical. Bombay branch: Sohrab House, 235, 237, 239, Hornby Road, Madras branch: 100, Armenian Street, Lahore branch: Lawrence Road. Cables "Kilowatt," Calcutta.

**GLENFIELD & KENNEDY, LTD.**—Fairlie House, 4, Fairlie Place, Calcutta. Incorporated in Scotland. Hydraulic engineers, manufacturers of reservoir iron works and all classes of water supply fittings, valves for water, steam, gas and oil, hydrants, air-valves, etc. Head office and works: Kilmarnock, Scotland. London office: 39, Victoria Street, S.W.1. Cables: "Glenfield," Codes: A.B.C. 5th Ed., Engineering 2nd Ed. and Private.

**HEATLY & GRESHAM, LTD.**—6, Waterloo Street, Calcutta. Incorporated in England. Engineers, railway specialists, metal, asbestos sheets, and general merchants. Bombay office 204, Hornby Road, Lahore. The Mall, Head office 40, Wood Street, Westminster, London, S.W. Engineering works 22, Gobra Road, South, Entally, Calcutta. Cables "Brake" Codes A B C 5th Ed and Bentley's.

**INGERSOLL-RAND (INDIA), LTD.** 15, Chive Street, Calcutta. Incorporated in Calcutta, December, 1922. Limited liability company working under the London office of Ingersoll-Rand Company, Ltd., 165 Queen Victoria Street, London. Mining, tunnelling and quarrying plants, rock drills, water leucydrills, jackhammers, air compressors, etc. Cables "Ingersoll."

**INTERNATIONAL GENERAL ELECTRIC CO.** (of New York)—Stephen House, Dalhousie Square, East, Calcutta. Also at Bombay and Bangalore. Electrical engineers and contractors, manufacturers of hydro-electric plant, electric railway and tramway plant, steam turbines, transformers, switch gear, electric motors and generators, fans, lamps and fittings. London office Crown House, Aldwych, W.C.2. Cables "International," all offices. Codes Schofield's, Bentley's and Private.

**IVAN JONES, LTD.**—12, Mission Row, Calcutta. General merchants. Godowns 5, Mangoe Lane. Motor section and engineering works 206 Lower Circular Road. Amongst this firm's activities it controls the following departments: General sales, railway engineering, motor and motor engineering,

general and analytical department for the commercial analyses of coal, iron and steel, shellac, etc. Cables "Lustitz" Codes A B C 5th Edition, Western Union and Bentley's.

**KEYMER, BAGSHAW & CO. LTD.**—5, Mangoe Lane, Calcutta. This office was established about the year 1902. The firm specialises as combustion engineers and maintains an expert staff for advising on and drawing up prospective schemes on all matters pertaining to combustion, including pulverised fuel and heat efficiency generally. Many large industrial schemes have been carried out throughout India, including those for the leading State Railways. Cables "Keymerco," Calcutta. Codes A B C 5th and 6th Eds.

**LIGHTFOOT REFRIGERATION CO. LTD.**—138, Balhaghatta Road, Entally. P.O. Refrigerating machines, ice manufacturers, oxygen production and welding appliances. Cables "Lightfoot."

**LINOTYPE & MACHINERY, LTD.**—Linotype House, 21, Bowbazar Street, Calcutta. Engineers and printing machinery manufacturers. Inventors and manufacturers of the linotype composing machine. Head office 9, Kingsway, London, W.C.2. The Indian branches at Calcutta and Bombay are staffed by English engineers and specialists, and maintain stocks of machines and spare parts. Manager for India Mr A. J. May.

**MATHER & PLATT, LTD.** (Incorporated in England)—7, Hatfield Street, Calcutta, P.O. Box No. 389. Phone No. 1557, manager James Widdup. Bombay office Bombay

House, Bruce Road, Fort, P.O. Box No. 327; Phone No. 21753, manager W. Davidson. Cawnpore district representative S. J. Ricks, "Invernal," Nawabganj. London office Park House, 14, Great Smith Street, Westminster, S.W.1. Works Park Works, Newton Heath, Manchester. Manufacturers of the Grinnell Sprinkler, fire extinguishing appliances, armoured fire doors, electrical machinery, pumping machinery, bleaching, dyeing and finishing machinery, patent tram lighting dynamos, Vortex humidifiers, etc. Cables "Sprinkler," all offices. Codes A B C 5th Ed., Tybo, M & P.

**McKENZIE, G. & CO. (1919), LTD.**—General manager's office and showrooms, 18a, Park Street, Calcutta. Motor engineers. Branches in India Ranchi, Lucknow, Cawnpore, Delhi, Agra, Jaipur, Lahore, Rawalpindi, Peshawar, Bareilly and Rangoon. Cables "Oland," Calcutta and Rawalpindi, and "Overland," all other Indian branches. Code Bentley's.

(See also letterpress, page 274.)

**METROPOLITAN-VICKERS ELECTRICAL CO. LTD.** Head office for India Hongkong House, Council House Street Calcutta. Incorporated in England. Manufacturers and suppliers of electrical machinery of all descriptions, including A.C. and D.C. generators, motors, transformers, switchgear, controlgear, electric railway and tramway equipments, steam turbines, condensing plant, hydro-electric plant, motors, instruments, electric fans, installation and electrical accessories. Branch at Murzban Road, Fort, Bombay.

## BENGAL PRESIDENCY

THE Presidency of Bengal, which comprises the lower valleys and deltas of the Ganges and Brahmaputra, in the main consists of a great alluvial plain intersected in its southern portion by innumerable waterways. It has a total area of 82,277 square miles and a population of 47,592,462. Included within this area are the two Indian States of Cooch Behar and Tripura, which are now placed in direct political relations with the Government of India.

**ADMINISTRATION.**—The present form of control in Bengal dates from January 1921. In 1912 the Government of the Province underwent an important change, when, in accordance with the Proclamation of His Majesty the King-Emperor at Delhi, that Province, which had previously been administered by a Lieutenant-Governor, was brought under the direction of a Governor-in-Council, thereby coming into line with the Presidencies of Madras and Bombay. In 1921, under the Reform Scheme, the Local Government was reconstituted, certain of the departments being placed under the control of Ministers appointed from among elected members of the Legislative Council. There are normally four members of the Executive Council, who are in charge of the "reserved subjects," and three Ministers in charge of the "transferred subjects,"

but in 1924, owing to political reasons, there were only two Ministers, and these had to resign owing to the refusal of the Legislative Council to vote their salaries. On their resignation the administration of transferred subjects was thereupon assumed by H.E. the Governor of Bengal, and subsequently the Secretary of State ordered the suspension of transfer of all transferred subjects in Bengal until January 21, 1927.

The present Governor of Bengal is H.E. the Right Hon. the Earl of Lytton, P.C., G.C.I.E., who assumed office in 1922. The capital and seat of the Provincial Government is Calcutta.

**COMMERCE.**—In 1925-26 the foreign seaborne trade of Bengal (excluding treasure but including Government stores) amounted to Rs 276 crores, of which Rs 104 crores represented imports and Rs 172 crores exports. The six chief exports from Bengal are in order of importance: jute (raw and manufactured), tea, lac, gram (pulse and flour), seeds, hides and skins (raw), while the six leading imports are cotton goods, metals and ores, sugar, machinery and millwork, railway plant and rolling stock, and oils. (See also general article, "Commerce.")

**FINANCE.**—The estimated revenue of the Province of Bengal for the financial year 1925-26 was Rs 12,16,60,000, of which Rs 2,11

lakhs were derivable from land revenue, Rs 3,31 lakhs from excise, and Rs 3,41 lakhs from stamps. Expenditure was estimated at Rs 10,77,01,000, leaving a favourable balance of Rs 1,39,59,000.

**MANUFACTURES.**—The main industries in Bengal, in addition to agriculture (jute, rice, wheat, barley, pulses, oil-seeds, sugar and tobacco), which employs over 77 per cent of the population, are the jute mill industry, the tea industry (largely an Assam industry), and coal mining. The jute mills in and around Calcutta constitute the principal manufacturing industry of the Presidency, and at the beginning of 1926 there were about 80 such mills at work, operating a total of 49,399 looms and over 1,200,000 spindles. The average number of persons employed daily is about 325,000. (See also special article on "Jute.") Other principal industries of the Presidency are cotton twist and yarn, silk yarn and cloth, hand-made cloth, sugar, molasses and paper. The manufacture of tea is carried out on an extensive scale in Darjeeling and Jalpaiguri. Coal mines worked in Bengal in 1924 numbered 270, their total output exceeding 5,000,000 tons.

(For details bearing upon the Presidency of Bengal see separate articles in this Section as indicated in the "Contents" pages and "Index.")



DALHOUSIE SQUARE.

The Buildings of McLeod &amp; Co, The Royal Insurance

## CITY AND PORT

### CITY

**T**HOUGH not enjoying quite the antiquity of the capital of either of its two sister Presidencies, Bengal's premier city, which was also for years the capital of British India, out-distances both Bombay and Madras in point of size and population. Its history begins in 1690, when the earlier English settlement at Hooghly was abandoned in favour of the present site, on which the three villages of Sutanati, Kalikata, and Gobindpur then stood, Job Charnock being the leader of the merchants who settled there. These estates were sold to the East India Company in 1700, and in 1707, when the population of Calcutta was already 10,000, Bengal was formed into a separate Presidency, independent of Madras. In 1756 Calcutta was lost to the Nawab of Murshudabad, but was retaken by Clive in the following year, and from that time onwards the city has enjoyed continued and increasing prosperity. A succession of great governors and of public spirited citizens—Indian as well as English—has endowed it with fine buildings and beautiful palaces. It is now the second city in the British Empire as regards population, and, with centuries of history behind it, may confidently look forward to a future of splendid growth and development.

**ART GALLERY.**—The Government Art Gallery and School of Art occupy the Southern end of the Indian Museum in Chowringhee. The Art Gallery, which contains a fine collection of paintings of the Hindu and Mohammedan periods, is open to the public.

**BLACK HOLE.**—The actual site of the famous Black Hole of Calcutta (see "History") is at the north-east corner of the General Post Office, and the small railled-off enclosure was paved with black marble by Lord Curzon. The pavement marks the exact breadth of the prison (14 ft 10 in), but not its full length, 18 ft, about a third of the area at the north end being covered by the Post Office buildings.

**BUILDINGS.**—See special article following.

**CHAMBER OF COMMERCE (BENGAL).**—(See under "Commerce.")

**CHURCHES.**—Of old and new places of worship Calcutta has its full share, all creeds and denominations being represented. St Paul's Cathedral, on Chowringhee Road, dates from 1847, and is built in a spurious Gothic style, modified to suit the Indian climate. Its principal features of interest are the tall graceful spire 201 ft. high, the west window by Burne Jones, and the many memorials to civil and military notabilities. The old Church of St. John, built after the model of St. Stephen's, Walbrook, was originally the Cathedral Church of the diocese. Here are the tomb of Lady Canning and a large picture of the Last Supper by Zoffany, in which the Apostles are all portraits of well-known inhabitants of Calcutta. The Old Mission Church (*Purana Giryā*) stands in Mission Row. St Andrew's (Presbyterian) is an outstanding feature of the Radha Bazar, and St. James' Church in Lower Circular Road is noted for its double steeple. The Roman Catholic Cathedral of

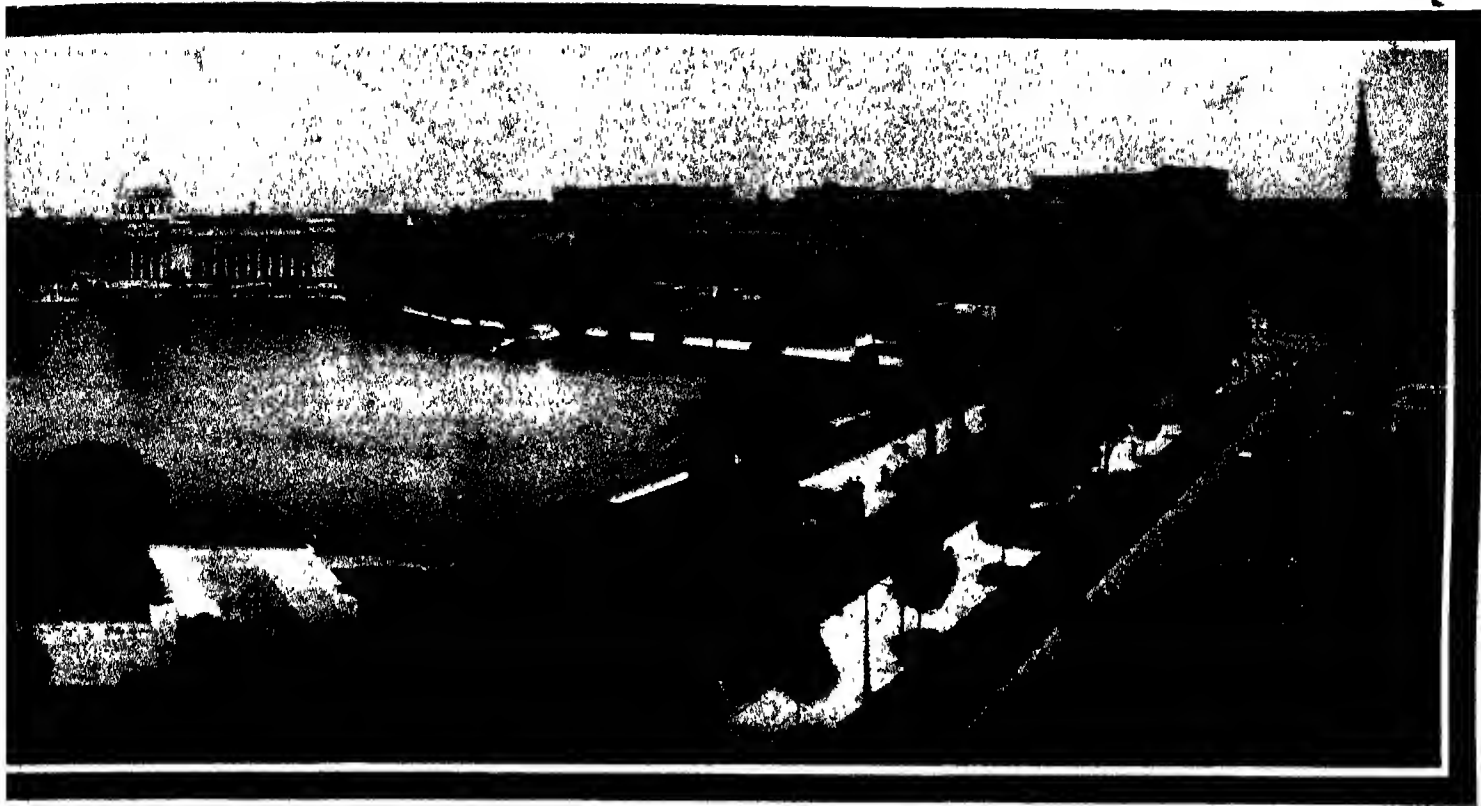
Our Blessed Lady of the Rosary is the old Portuguese Cathedral of Murgibhatta, and dates from the time of Charnock. The finest Mohammedan Mosque in Calcutta is that known as Tipu Sultan's Mosque, which stands at the corner of Esplanade East and Durrumtola Street, and whose white domes and slender minarets with their gilded pinnacles provide a pleasing contrast to the monotonous flat-roofed buildings surrounding it. The Jains have a handsome series of temples in Halsi Bagan, off Upper Circular Road, known as the Temples of Pareashnath. The largest Parsee fire temple is situated in Metcalf Street.

**CLIMATE.**—The climate of the city of Calcutta is essentially tropical, but the temperature varies considerably, ranging from 52° to 106°F. The most unhealthy times are the months after the end of the rains, the most enjoyable those of the winter period, that is from November to the end of February. The humidity is great, the average rainfall being about 66.04 inches. The biggest rainfall occurs in August and the smallest in December.

The situation of Calcutta is very flat (16 to 19 ft. above sea level), and being less than a hundred miles from the sea it is subject to violent cyclones and hurricanes, which sweep up from the Bay of Bengal and often do much damage to the shipping in the harbour and the houses on shore. Calcutta is also liable to occasional shocks of earthquake.

**FORT WILLIAM.**—The largest fortress in India was completed in 1773 at a cost of





CALCUTTA.

To, and General Post Office (with dome) are seen in the centre

## OF CALCUTTA.

two millions sterling. The fort is really a miniature town, and has seven gates, being built in the shape of an irregular octagon five sides facing the land and three the river. It is surrounded by a ditch which can be flooded with water from the River Hooghly.

**GHATS.**—Objects of considerable interest in Calcutta are the many Ghats or landing places along the banks of the Hooghly, some of which are used regularly as bathing places by the faithful. The most important of these Ghats are Baboo Ghat, which lies a little to the south of the High Court, opposite Auckland Road, and has fine Doric pillars, Chandpal Ghat, named after a certain Chand Pal (who sold coarse refreshments to pedestrians and boatmen), and the favourite starting point for river expeditions, Kali Ghat, which is the shrine of the patron Goddess of Calcutta, and is visited annually by thousands of pilgrims from all over the country, Outram Ghat, opposite the Eden Gardens, a landing stage for passengers to and from England, and Prinsep's Ghat, now the state landing stage of Calcutta, where both the present King-Emperor and his father (when Prince of Wales) landed on the occasions of their respective visits to India.

**HOWRAH BRIDGE.**—The pontoon bridge across the River Hooghly connects Calcutta with Howrah. It was originally constructed as a temporary measure and opened to traffic in 1874, the question of a permanent bridge, however, has not been settled to the present day. In 1922 a New Bridge Committee reported that, in view of the serious condition of the existing floating

bridge and the grave consequences which would result from its failure, no time should be lost in providing a new bridge over the Hooghly and that the structure should be on the cantilever principle. The present bridge is 1,528 ft in length, and consists of 14 pairs of wrought-iron pontoons, the central portion is movable, and is removed at appointed times to allow ships to pass along the river.

At either end of the bridge the visitor will notice in the morning an immense concourse at the bathing "ghats" which have been built by pious Hindus. A mixed crowd of men and women can be seen taking their morning "dip," a practice which is considered a sacred duty.

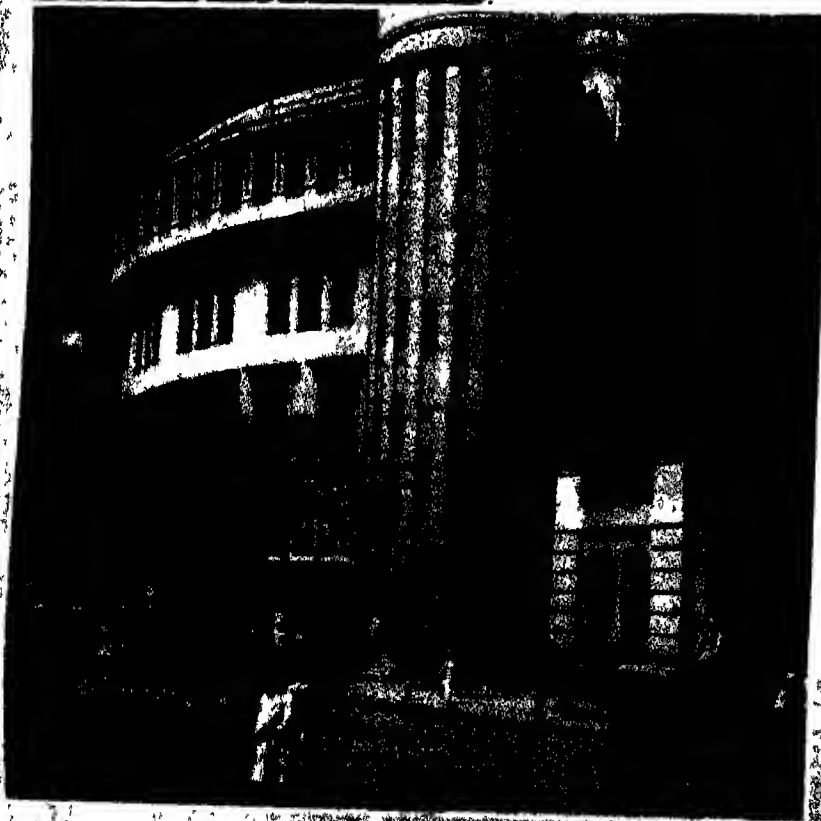
**IMPROVEMENT TRUST.**—The Calcutta Improvement Trust was instituted by Government in 1912, with a view to making provision for the improvement and expansion of Calcutta by opening up congested areas, laying out or altering streets, providing open spaces for purposes of ventilation or recreation, demolishing or constructing buildings and re-housing the poorer and working classes displaced by the execution of improvement schemes. The problem of expansion has always been a difficult one because of the peculiar situation of Calcutta, which is shut in on one side by the Hooghly and on the other by the Salt Lakes. During the 14 years that it has been at work the Trust has spent over 7 crores of rupees on capital account, among other important road-making schemes has laid out the Central Avenue, has provided parks and playgrounds,

and has constructed many blocks of chawls for working-people.

**INDUSTRIES.**—Calcutta is, next to Bombay, the greatest manufacturing city in India. The chief of the manufactures is the spinning and weaving of jute, Calcutta having become the world's supplier of jute-cloth and gunny bags. There are also cotton mills, paper mills, rope works (hemp and coir), sugar factories, engineering works and iron foundries. A great advantage to the manufacturers of Calcutta is the nearness of the Raniganj coalfield, from which cheap fuel can be procured. In the manufacture of jute, also, Calcutta has a great advantage in the monopoly of the crop, which grows at its doors, and in cheap labour and land. (See also special article on "Jute.")

**LIBRARIES.**—The Imperial Library, which is included in Metcalfe Hall, was founded by Lord Curzon, who amalgamated the old Calcutta Public Library with the Government of India Home Department Library. "The Imperial Library Council aim at making the Library one from which or through which any book may be obtained that anyone in India may want." The Bohar Library consists of a collection of valuable Arabic, Persian and Urdu books and manuscripts. The Imperial Library is open from 10 a.m. to 7 p.m., and the spacious reading rooms are very freely used; admittance to the private reading rooms is granted only to persons engaged in protracted research work.

The Library of the Asiatic Society of Bengal, situated in Park Street, contains over 15,000 volumes, more than 5,000 of which



MERCHANT PRINCES OF INDIA.

1. Clive Fow, showing Jardine Skinner's Building on the right.
2. Clive Street. Head Office of Martin & Co. in the right foreground.

are Sanskrit, Arabic, Persian and Hindi manuscripts. There is also a fine collection of Burmese, Nepalese and Tibetan manuscripts. Included in the library is a rich collection of copper *sanads*, portraits, pictures and busts, and these are well worth inspection.

Mention should be made of the Commercial Library and Reading Room at 1, Council House Street, which has been organised to meet the needs of the commercial and industrial public, offering to it unique facilities for the borrowing or consultation of books.

**MARKET (MUNICIPAL).**—The Municipal Market, the main entrance to which is in Lindsay Street, is called Sir Stuart Hogg Market after the name of a Chairman of the Calcutta Corporation and Commissioner of Police, in whose time (1874) it was founded. It is one of the best managed and most magnificent public markets in the world, and certainly the best and biggest in India and the East. Originally a food market it has developed into one where anything and everything can be bought, the different departments being well set out and arranged in groups.

**MINT.**—His Majesty's Mint occupies a handsome building in Grecian Doric style on the Strand Road north of Howrah Bridge. It is said to be the largest Mint of its kind in the world, having occupied from 1824 to 1830 in building, the construction cost 13 lakhs of rupees and the machinery 11 lakhs. In normal times the output is six lakhs of rupees per day, but during the Great War it was increased to 20 lakhs. Though gold coin is no longer struck in the Calcutta Mint, some very fine specimens of coins and medals minted are preserved in show cases.

**MUNICIPALITY.** For municipal purposes the civic administration of Calcutta is vested in the Corporation, which was remodelled in 1924 and now consists of 85 councillors, of whom ten are appointed by the local Government, 75 being elected by the ratepayers and certain public bodies. Five aldermen are elected by the councillors, and at the head are a Mayor and Deputy-Mayor, who are elected for one year by the councillors. For the purpose of electing councillors, Calcutta is divided into thirty-two general constituencies, in addition to which there are several non-territorial constituencies for the representation of the commercial communities. For valuation and administrative purposes the municipal area is divided into districts comprising 32 wards, which correspond to the constituencies. The income of the Corporation, which exceeds 114 lakhs of rupees, is derived chiefly from a consolidated rate and taxes on trades and professions and on vehicles and animals, and there is a municipal debt of about 400 lakhs in the form of loans. The present Corporation, which was created by the Act of 1899, has amply justified its existence, as very great improvements have been effected during recent years in water-supply, drainage, road paving, conservancy and municipal amenities generally.

**MUSEUMS.**—Calcutta's leading museum is the Indian Museum, an immense building which stands at the corner of Chowringhee and Sudder Streets. Its architecture is in the Italian style, and in Persian it is known as *Ajash Khana*, or the House of Wonders. It contains a particularly comprehensive collection of Indian antiquities. Special sections are devoted to the archaeological, ethnographical, geological, numismatic, Indo-Scythian, industrial and zoological collections, which are of great interest and value, many of the fossil remains, especially the Siwalik mammals and birds, being unique. The collections of zoölites and meteorites are amongst the finest in the world. In the adjoining Economic Galleries are fine samples of the products of Indian manufactures. The

Indian Museum is visited by over half a million people annually. In Council House Street is the Commercial Museum, an institution established in 1916 and housing a collection of Indian manufactures.

**OBSERVATORY.**—The Alipore Observatory is one of the first class observatories under the Government of India Meteorological Department. It possesses a transit instrument and gives Calcutta mean time to the port and shipping. The observatory also publishes daily weather reports and warnings.

**PARKS AND GARDENS.**—See special article following.

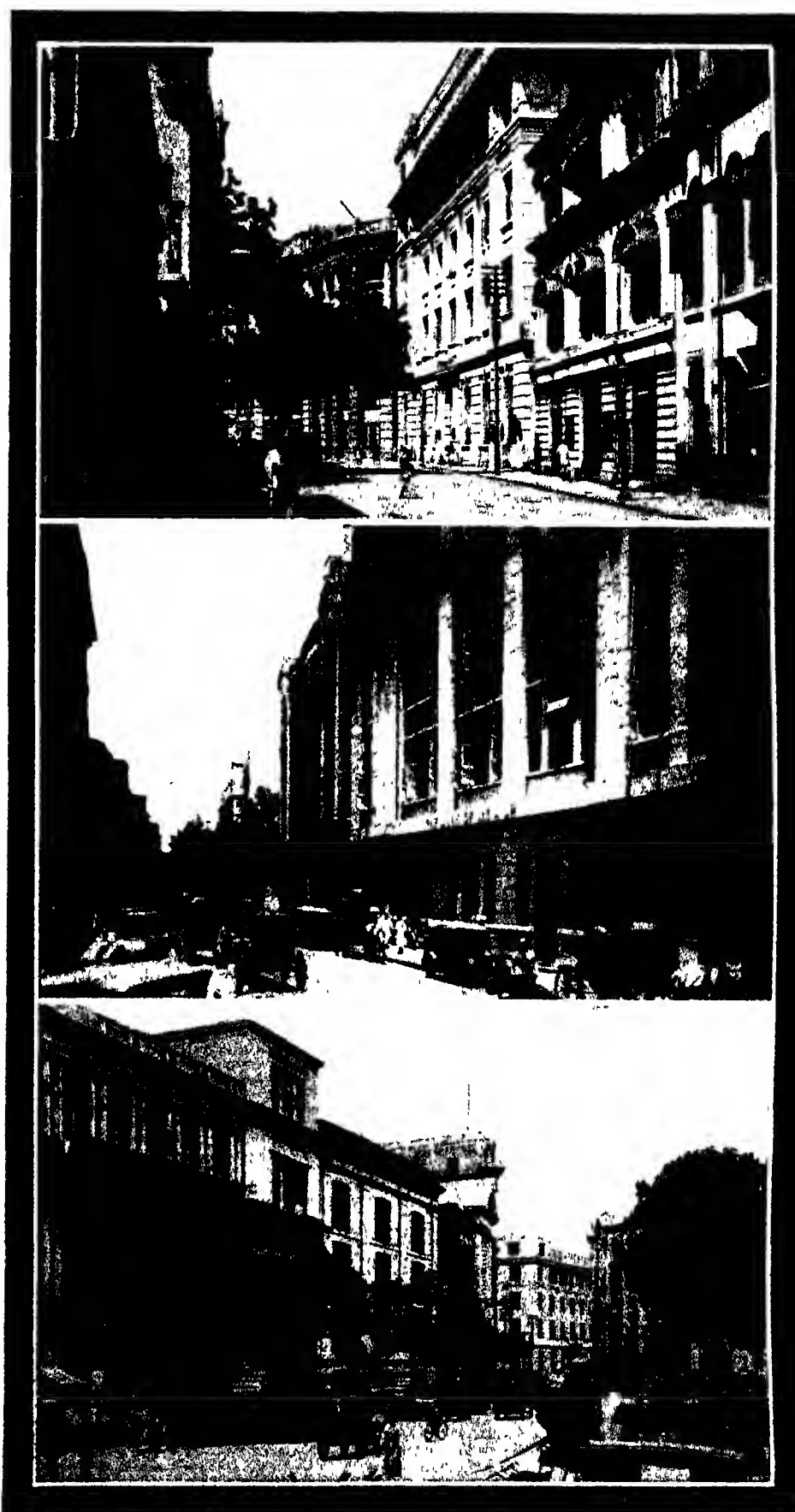
**POPULATION.**—The area of modern Calcutta with its suburbs is 42 sq. miles, with a population of 1,327,517, of which 940,841 are Hindus and 325,093 Mohammedans. Calcutta proper, excluding the suburbs, has an area of 32 sq. miles, with a population of 907,851.

**RACING (HORSE).** The racetrack at Calcutta is a famous institution and is about two miles long. It lies to the west of the Victoria Memorial, at the south end of the Maidan. The racing season begins in November and continues till the middle of March. There is also a monsoon meeting. Christmas week meeting is the great attraction, and the Viceroy's Cup, which is run during this carnival, is a great social event. The Royal Calcutta Turf Club was established in 1861. There are also fine racetracks at Tollygunge and Dum Dum.

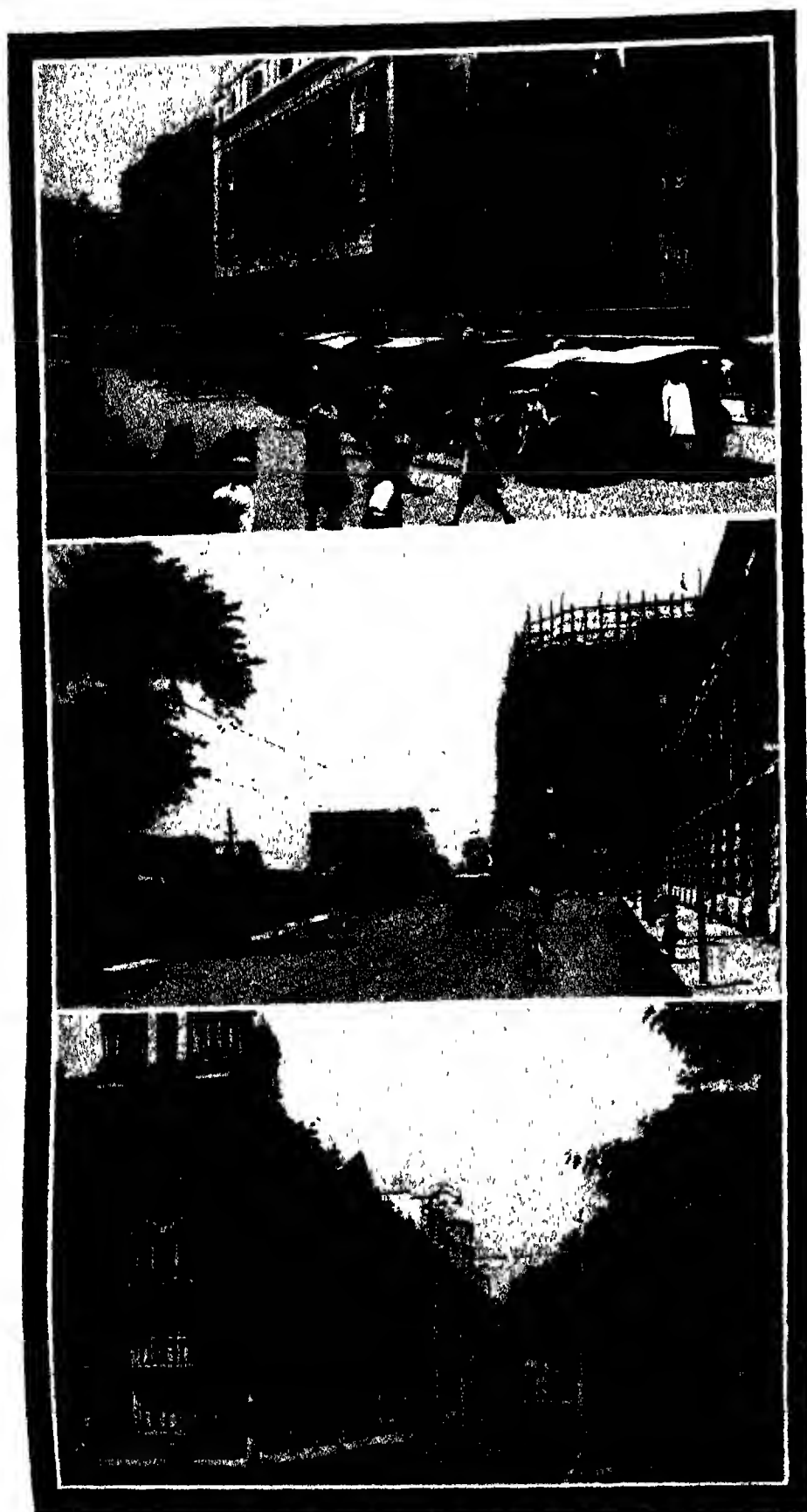
**SCHOOLS AND COLLEGES.** Among the many educational institutions of which Calcutta is a notable centre is the Medical College of Bengal, the oldest and largest institution of its kind in India; the School of Tropical Hygiene and Institute of Medicine, in Central Avenue; the Carmichael Medical College, Belgachia; the Campbell Medical School and Hospital; the Presidency College, which was established in 1855 by the East India Company; the Government Sanskrit College and the Calcutta Madrassah, which are schools of Oriental studies; the Scottish Churches College; and St. Xavier's College, the deservedly famous school of the Jesuit Fathers. The Bengal Engineering College at Shibpur is affiliated to the Calcutta University, and the Bose Research Institute, founded by the distinguished Indian scientist, Sir J. C. Bose, is accomplishing a great deal of useful scientific work. (See "University.")

**SPORT AND RECREATION.**—The climatic conditions of Calcutta do not lend themselves to any appreciable extent to such strenuous games as football or hockey, but these are, nevertheless, played year in and year out by a large number of persons. There are over 150 Association football clubs in Calcutta and district, "soccer" has always been the great game of the British regiments stationed at Calcutta and many excellent matches are played there. Rugby football is indulged in only during the monsoon period, and then almost entirely by military teams. Cricket is played throughout the cold weather season, the ground of the Calcutta Cricket Club in Eden Gardens being one of the best, if not the best, in India. During the short Christmas season some very good cricket is seen. Tennis has attained to extraordinary popularity in Calcutta and its environs, and many Indians have taken it up with great success. The Bengal Tennis Championship, which takes place at the Eden Gardens each winter, is one of the sporting events of the year. Polo is played by British and Indian military teams, Calcutta claiming to have been the birthplace of the game. (See also "Racing" and general article on "Sport.")

**STATUES.**—There is probably no other city in the Empire so richly adorned with statues of public persons as is Calcutta. The



1. CLIVE STREET, Calcutta, from just below Messrs. Marshall & Co.'s Building, seen in right foreground.
2. The same thoroughfare, showing the Worthington-Simpson Building on right.
3. Another view of Clive Street.



1. ROYAL EXCHANGE PLACE, Calcutta.
2. STRAND ROAD, with Mackinnon Mackenzie's Building, in course of construction, in middle distance.
3. DALHOUSIE SQUARE; Standard Life Assurance Building on the left.

Maidan, in particular, is dotted with statues of Viceroys, Commanders-in-Chief and other notabilities. Nearly opposite the United Service Club rises the fine bronze statue of Outram, the Bayard of the East, while facing the south entrance of Government House is a full-length bronze statue of John Lawrence, well conveying the dignity and power of the saviour of the Punjab. Near by are statues of Canning, Napier of Magdala, the first Lord Hardinge, Mayo, David Ochterlony, the hero of 50 wars, and Bentinck the wise administrator. From the Ochterlony monument a beautiful view of Calcutta can be obtained.

More recent additions are the statues of Lord Curzon, Lord Kitchener and Lord Ripon. Lord Curzon's stately bronze statue faces the main entrance to the Victoria Memorial (see later) and is a worthy memorial to a great administrator. The Calcutta Cenotaph in memory of "the glorious dead" who fell in the Great War, stands at the head of the Red Road, facing the Ochterlony Monument. Another beautiful war memorial is that erected to the south of Prinsep's Ghat and known as the Lascar's War Memorial.

**STREETS.**—See special article following.

**SUBURBS.**—Most of the suburbs of Calcutta are situated in the districts in which busy native bazars predominate. Mention should be made of Alipore, named after Mir Muhammad Jaffer Ali, Nawab of Murshidabad, and Calcutta's most fashionable suburb. Here most of the houses have fine and spacious compounds and there are many places of interest connected with old Calcutta, as for instance Penn Road, which is a remainder of the extensive estate of Warren Hastings. Barrackpur, the big military cantonment, lies some 14 miles from Calcutta and is used by the Viceroy as an occasional weekend residence. Chandernagore, 21 miles from Howrah, is a French settlement with its own Governor and administration. Hooghly and Howrah are notable as being respectively great educational and industrial centres, and Lillooah is the pretty garden city planned and owned by the East Indian Railway Company, the site of their large workshops. Serampore and Sibbala have interesting buildings and temples, and Ittagarh is famous as having been once the stronghold of Thugs. It was on the bank of the Hooghly, near Ittagarh Factory, that Job Charnock dramatically rescued from the funeral pyre the beautiful young Hindu widow whom he afterwards married. At Tollygunge, four miles from Government House, are the ruins of the palaces once occupied by the eleven sons of Tipu Sultan of Mysore. Among Europeans, Tollygunge is noted for its fine racecourse and meetings, while the Tollygunge Gymkhana Club and the Golf Club for both sexes are famous throughout the East.

**TRAMWAYS.**—The tramway system of Calcutta has been since 1880 under the control of the Calcutta Tramways Company, Limited, which in that year obtained a "running" concession for 21 years, extended in 1901 for a further period of 31 years, about which time the installation was converted from steam and horse-power to electric traction. The system is a satisfactory one, most of the rising suburbs having been linked up with the central portions of the city. First and second-class cars (trailers) are run on all sections, and the convenience of the travelling public is further considered by the issue of transfer tickets, enabling passengers to change cars from one section to another at the different junction stations. On the working for 1925 there was an available balance of Rs.1,54,296, due largely to the traffic receipts for that year having shown an increase of Rs.6,69,388 over 1924.

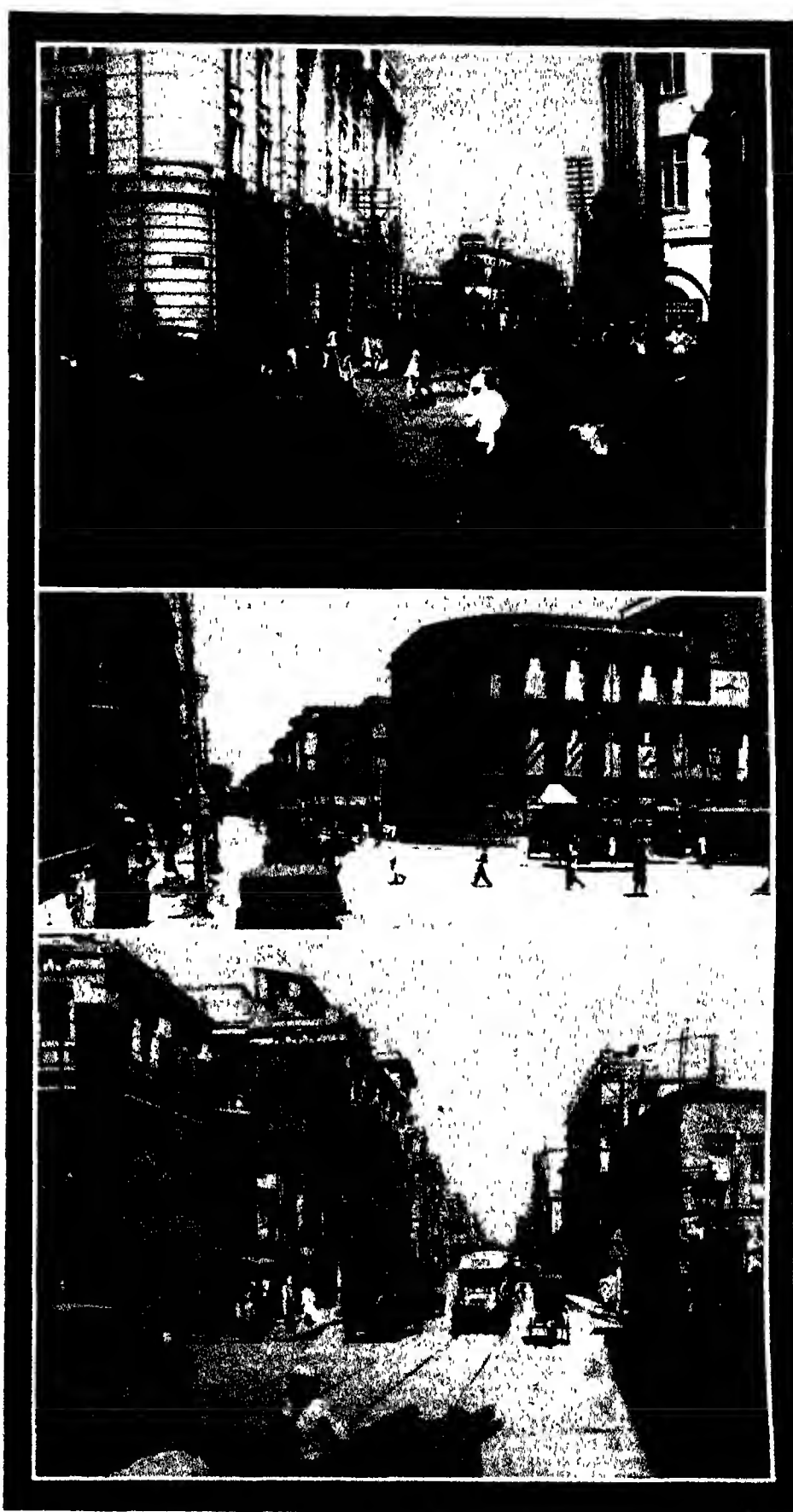
**UNIVERSITY.**—The Calcutta University is the oldest institution of its kind in India, having been founded in 1857, with "The Advancement of Learning" as its motto and the Governor-General of India as its Chancellor. In 1921 the Viceroy ceased to be the Chancellor, the office now being held by the head of the Provincial Government. The University of Calcutta was started as a federal university, with an examining body modelled on the lines of the University of London, and had affiliated to it the Colleges of Lahore, Allahabad, Aligarh, Nagpur, Patna, Gauhati and Rangoon. From the time of the Chancellorship of Lord Curzon the teaching has gradually taken the form of a University institution. Since 1904 its post-graduate department has developed considerably, and now includes the teaching of Pali, Tibetan, Japanese and Chinese among modern languages. A scheme for a Department of Technology, Agriculture and Commerce has been put into operation. The Senate is divided into five faculties, namely, those of Arts, Science, Engineering, Medicine and Law. There is a Board of Higher Studies in the different subjects of Arts and Sciences.

The buildings known as the Senate House are situated in College Square. They were completed towards the end of the year 1872 at a cost of Rs 4,34,697, and the University took possession of them early in 1873. The meetings of the Senate are held in the western hall of this building, and the annual Convocation takes place in the spacious Senate Hall, which is provided with a fine auditorium at the back of the hall. This hall is more than 200 ft in length and 60 ft in breadth. In the Darbhanga Library Buildings, to the west of the Senate House, are accommodated the University Law College, the University Library, and the University classes. The University College of Science, thanks to the munificence of the late Sir Taraknath Palit and Sir Rashbehary Ghosh, has been installed in fine buildings in Upper Circular Road.

**VICTORIA MEMORIAL.**—This Memorial has long since taken its place as one of the noble buildings of the modern world. Its conception as a great treasure house of Indian history and art which should at the same time commemorate the reign of the great Queen-Empress was due to Marquess Curzon, but the funds for its construction, amounting to no less than Rs 76 lakhs, were voluntarily subscribed by the Princes and peoples of India. Of this beautiful building, which stands to the west of the Cathedral, and is constructed throughout of pure white marble, the foundation stone was laid by His Imperial Majesty King George V, when Prince of Wales, on January 4, 1906, on December 28, 1921, it was formally opened by his son, H R H the Prince of Wales.

The main entrance is to the north, and inside the garden immediately in front of the steps leading to the north entrance and facing Queen's Way is a majestic bronze statue of Queen Victoria enthroned. The south gate has a lofty white marble arch, surmounted by a fine equestrian statue of King Edward VII. Lord Curzon's statue facing the south entrance has already been described. Within the Memorial are halls and galleries containing many interesting pictorial and historical records of Indian history and of the Victorian era in particular.

**WATER SUPPLY.**—At one time noted for its insanitary conditions, Calcutta now possesses an excellent pure water supply and a thoroughly efficient drainage system. The first attempt to supply filtered water was commenced in 1867 and took three years to complete. A supply of 6,000,000 gallons per day at 15 gallons per head was estimated, and the project cost 67 lakhs of rupees.



1. The busy Junction of Clive and Canning Streets, Calcutta; Messrs. Davenport & Co. are located in Building on the left.
2. Hare Street, Messrs. G. F. Keilner & Co.'s city deposit on the corner.
3. Lall Bazar.



With the inclusion of the southern suburbs in the main area, arrangements were made for supplying 20,500,000 gallons per day. The rapid growth of the population rendered further extension necessary, and the improved scheme now provides for a supply of 40,000,000 gallons of filtered water per day. A pumping plant at Pulta puts pressure on the mains to Calcutta through which water formerly flowed only by gravitation. There is also a large reservoir of 9 million gallons capacity at Tallah into which filtered water is pumped. From here it gravitates throughout the town, and the tank also acts as a

reserve if the pumps at Pulta fail. The water-supply is obtained from the River Hooghly at Pulta, which is about 17 miles above Calcutta. Here the water is put into settling tanks to allow the matters held in suspension to settle with the assistance of a small quantity of alumino-ferric, which helps the process of sedimentation so very necessary during the rains when the water gets muddy. From these settling tanks the water is conducted slowly to sand filter-beds, and after filtration flows by gravitation to collecting wells. It is thence pumped through two cast-iron mains of about 4 feet diameter to

the overhead reservoir at Tallah, the capacity of which is 9 million gallons.

**ZOOLOGICAL GARDENS.**—These gardens, which cover about 40 acres of ground in Alipore near Belvedere House, date from 1875, when they were planned by Sir Richard Temple, Lieutenant-Governor of Bengal. The popular name for the Gardens is *Chura Khana* (the aviary), but the collection also includes many remarkable animal varieties, as well as reptiles and fishes. On January 1 each year a Fancy Fair is held in the Zoo, which is an event of great importance.

## CONSTRUCTIONAL AND ARCHITECTURAL ASPECTS OF CALCUTTA

By A. de BOIS SHROSBREE, F.S.I., F.San.I., M.T.P.I.

Architects and Builders  
Architectural Mistakes  
Architectural Successes  
Barabazar  
Chowringhee Road  
Clive Street

Para 18 Clubs  
14 Congestion  
15 Dalhousie Square  
9 Docks  
5 Future Needs  
7 Growth of City

Para 18 Improvement Trust  
10 Maidan (The)  
8 Municipal and Other Services  
11 Old Court House Street  
18 Railway Services  
2 Suburban Areas

Para 3  
4  
17  
8  
12  
13

**C**ALCUTTA is on a marsh, and for nearly two and a half centuries it has been fighting this handicap. To-day the census shows a city with a population of nearly a million, that of Howrah on the opposite bank of the river making up a total of over one and a quarter million people. In the left half of the great Ganges delta British grit and British energy have inspired the languid Bengalee to co-operate and build on the bank of the Hooghly an island of industry, which now extends 45 miles north and south with a maximum width in the centre of but two or three miles. Here traders have settled from every part of India and Asia, indeed from the whole world, and a migratory population, only to be numbered in millions, flows into the mills and shops to gather a store of rupees before returning to the villages to carry on the cultivation of ancestral lands by methods which are rooted in the very origins of agriculture.

**2. GROWTH OF CITY.**—Job Charnock, trader, John Company's official and soldier, three times sailed to Sutanati before he finally decided that its strategic and commercial advantages were unique, but in 1690 he landed, stayed and acquired by purchase some 2½ square miles of marsh and villages. The stockaded trading centre, or Fort, was rapidly raised by digging earth from the surrounding areas and forming "tanks" or large ponds, which has been the universal method of making building land from mud, and accounts for one of the most conspicuous features of the town and its suburbs to-day. So the place began, and traders settled outside the walls in a confused and congested muddle, the clearance of which is still one of the city's most pressing problems. The settlement grew, great houses appeared, the "Black Hole" tragedy became a memory, public buildings, churches, courts, and a new and mighty Fort William arose, and Calcutta became the first city of India, a metropolis whose fame has spread throughout the world. The Mutiny left it untouched, and it flourished with the recovery of trade after that grim chapter closed, but the

discovery of the commercial possibilities of jute in the latter part of the nineteenth century gave an impetus to its development, which has made it equally independent of and indifferent to the transfer of the Central Government to the splendid solitude of New Delhi, islanded by the tombs of the dead cities of the scorching plains.

**3. IMPROVEMENT TRUST.**—Meanwhile the city had grown where it willed, its organisation and planning were left to chance, except when plague-induced panic and efforts were made to remedy the more obvious sanitary defects. The normal death rate was appalling, water-borne diseases, cholera and malaria decimated the population annually. Justices and Lottery Commissioners made valiant efforts to end the muddle, till gradually a network of straight streets cut the swarming human cheese into squares and produced the semblance of a plan within the Circular Road, a wide avenue looping round the city and formed by filling in a moat or ditch which had been dug as a protection against marauders from the west. Successive Municipal Corporations struggled with the sanitary and planning problems, always well in arrear of the abuses which increased faster than they were mended, and eventually the accumulation was seen to be beyond any normal means of disposal. So the Improvement Trust was called into being, and, thanks to its strong personnel, a new Calcutta is arising despite the bitter opposition of the Indian landowners to its inception and its main schemes. Forty-five miles of new main roads have been authorised for the city and its suburbs, and a substantial proportion of these has already been constructed. The great Central Avenue has broken through the clotted mass of buildings which was North and Indian Calcutta, and joined up with the broad avenues of the South City. Roads 100 and 150 ft. wide are bringing the suburbs into direct communication with the centre; parks and squares are springing up everywhere; and over a hundred miles of subsidiary roads are making possible building sites in garden suburbs and clearance

schemes. The work of the Trust will see out the twentieth century, but it has already produced such enormous and obvious benefits that it is one of the most popular public bodies in the East.

**4. MAIDAN (THE).**—The present city is grouped round the Maidan, a magnificent open space which was originally cleared as the field of fire for Fort William when it was constructed on its new site. It is over 5 miles in circumference, having an area of 2 square miles, and is well planted with forest trees. The principal recreation ground of the city, portions of it have been laid out as gardens (the Victoria Memorial, a white marble palace standing in one, the other being Curzon Gardens), with a park and magnificent cricket ground, the Eden Gardens. It runs for two miles along the River, and the fine embankment road is a popular resort for driving of an evening, the shipping at the moorings being particularly picturesque as the sun sets over the smoky factories of Howrah on the opposite bank.

**5. CHOWRINGHEE ROAD.**—On the east of the Maidan lies the principal European residential quarter, well laid out with wide roads, large gardens, and numberless flowering trees of every size, shape and colour, the principal being the glorious gold mohur. Whole streets have been planted with this flaming forest giant, and in May the sight is as unforgettable as it is unique. Chowringhee Road, a two-mile broad avenue, bounds this quarter and runs along the Maidan. On it stand the Theatres, the Clubs, the Museum and the Cathedral; at the north and business end are fine shops and two of the European hotels, the Continental and the Grand; here also are found "Furpo's" restaurant and dance-hall, which have brought the standards of the West to Calcutta and in cuisine and "flair" are unique. Further south are the fine Museum, blocks of flats, boarding and private houses, and at the extreme south the road runs on into the new Indian suburb of Bhowanipore, out to the famous (and hideous) temple of the Goddess Kali. Central Avenue has been

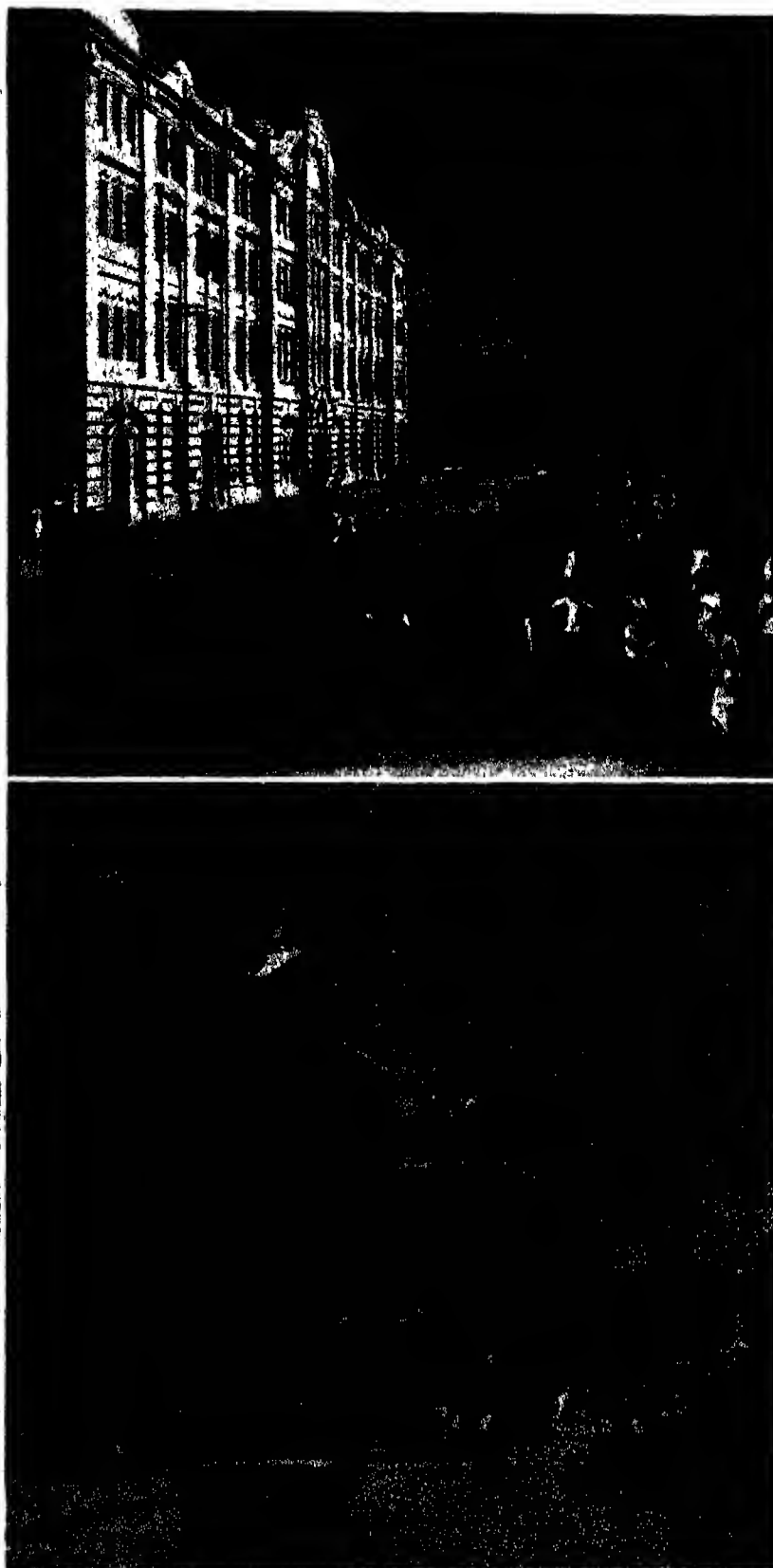
joined on to it at the north, and eventually there will be a through trunk road, nowhere less than 100 ft wide and almost straight throughout, with an unbroken length of over 20 miles.

**6. DALHOUSIE SQUARE.**—North of the Maidan is Government House, a real palace with fine grounds. To the north again, and along its eastern side lie the great commercial areas of the city, the civic centre being Dalhousie Square, containing an enormous tank which was formerly the sole water supply of the town. Around this stand Writers' Buildings, the offices of the Government of Bengal, the General Post Office, a fine building of the classical style much in favour for public buildings in the city, the Telegraph Office and the Commerce and Industry Building, both good, if dull, examples of similar modern treatment, the Currency Office, McLeod House and the Hongkong and Shanghai Bank, typical contractors' designs, and miscellaneous commercial structures.

**7. CLIVE STREET.**—Clive Street continues the west side of the square to the northwards, and this is the site of the principal commercial buildings, including the Royal Exchange, erected some ten years ago to the designs of Messrs King and Stevens of Bombay, one of the most beautiful buildings in the city. Clive Street contains the offices of the East Indian Railway, the Chartered Bank, the Eastern Bank, Lloyd's (Cox's) Bank and the National Bank, also a number of commercial firms, including Messrs James Finlay & Sons, Bird & Co, the South British Insurance Coy, Martin & Co, the well-known contractors, whose works include small towns, institutions and buildings in all parts of India, Gillanders, Arbuthnot & Co, Graham & Co, Duncan Bros, George Henderson & Co, Balmer Lawrie & Co, and Hoare Miller & Co. In turnings out of the main street there are Kilburn & Co, the Imperial Tobacco Coy (India) Ltd, The Eastern Bengal Ry, Shaw Wallace & Co, Cox's Shipping Co, Mackinnon Mackenzie & Co and the P & O Bank, the Port Commissioners, the Customs House, Girdlay & Co, King Hamilton & Co, Burn & Co, Gladstone Wyllie & Co, Jardine Skinner & Co, Birkmyre & Co, Andrew Yule & Co, the Central Bank of India, the Allahabad Bank, Turner Morrison & Co, and many others.

**8. OLD COURT HOUSE STREET.**—The eastern side of Dalhousie Square is continued to the south as Old Court House Street, the site of some of the finest old-established shops whose names are woven into the fabric of Anglo-India history, such as Manton's, the gunmakers, Osler's of glass (now electrical engineers), Hamilton's, Garrard's, the jewellers, T. Cook & Son, Ranken's, Harnack's and others for men's clothes and uniforms, Murray's for clocks and chronometers, The Great Eastern, the premier hotel, and Pehti's, restaurateurs to all the Viceroys. In this locality also are Thomas & Co and all the other tea brokers, Mackintosh Burns, the contractors, Walter Locke & Co., T. E. Thomson & Co., and W. Leslie & Co, all hardware merchants and ironmongers.

**9. BARABAZAR.**—North and east of this area lies the Indian town, and near the centre, particularly by the river, the congestion and intensity of trading premises reach a degree which is almost unbelievable. North of Clive Street, just beyond a densely crowded Jewish quarter which has housed the Sassoons, the Manassehs, the Elias's, the Ezras and others for a century and a half, the great speculating trading community of this side of India, the Marwaris, have established themselves firmly by forcing out all competitors and building great square blocks



MERCHANT PRINCES OF INDIA.

1. Bankshall Street. The Head Office of Shaw Wallace & Co. dominates the view.
2. Clive Street. James Finlay & Co.'s building in left foreground.

of buildings, one floor generally being occupied by the owner, the ground floor a maze of small shops and "godowns". another name for warehouses—and the remainder cut up into small rooms facing the central courtyard, each box-like cupboard of them containing a family. Two hundred is a common number of occupiers in one house, and in some cases they exceed the thousand mark. This is Barabazar, notorious for its congestion, its plagues and its filthy narrow lanes, there being not a single street in the area with a width exceeding 10 ft. Fortunately the Improvement Trust is now taking it in hand.

**10. CONGESTION.**—The remainder of North or Indian Calcutta is much of a pattern. Within the chessboard of main streets hundreds of houses hold each other up in a formless mass, every one crowded with joint families, coolies or students, who have to reach their homes through narrow lanes and passages winding and staggering in a crazy way. Mixed up in this are dozens of great "palaces," some still maintained with a crude and muddled grandeur, but many falling into decay with dissipation or folly as the explanation. Property descends to all members of the family, so that unless there is a strong member to insist on work and trade to increase the family fortunes, eventual break-up is inevitable. In the north city also are to be found on the main roads the University Buildings and the colleges and the great hospitals, always crowded in spite of the prejudice against them on the part of strict Hindus. The famous School of Tropical Medicine is on Central Avenue. Thousands of qualified graduates are turned out by the colleges every year, of whom the greater number are doomed to permanent unemployment.

**11. DOCKS.**—The whole of the riverside north of the Maidan is occupied by the import jetties of the Port Commissioners, and along the rear of them runs the Port Trust Railway, which connects them with the Docks on the south of the town. The Commissioners have under construction a new dock system which will eventually accommodate all overseas traffic, and the first portion of the new King George's Dock will be open in 1928. They have also constructed a number of riverside berths as part of the new dock area, all of which is tending to relieve congestion in the centre. The Commissioners, in addition, maintain the Howrah Bridge and run a fine service of river steamers. They own, in connection with their new dock scheme, several square miles of land to the south of the town.

**12. RAILWAY SERVICES.**—Three main railways serve Calcutta, the Bengal Nagpur Railway and the East Indian Railway having their termini at Howrah, both being trans-Indian lines. The third is the Eastern Bengal Railway, with its terminus at Sealdah on the east of the town, it serves Northern Bengal and Assam and carries the tea and jute traffic. The latter two lines are State-owned and worked, and a new bridge is being constructed across the Hooghly some 5 miles north of Howrah Bridge which will enable the main line trains across India to be worked from Sealdah station. A project is also under consideration for electrifying the suburban services and bringing them to a new Central Station in Dalhousie Square by an overhead line.

**13. SUBURBAN AREAS.**—The outer areas of the city are becoming more densely populated every day, and the Corporation's jurisdiction has recently been extended by the inclusion of all adjacent suburban areas. Fine European suburbs have grown up in Ballygunge and Alipore to the south. The

European Hospitals, the Military Works and Stores and the Police Training School all lie between the Maidan and these suburbs; the Government lands at this point also housing the Zoo, Belvedere—the Viceroy's Calcutta House—the Prisons and the Agri-Horticultural Society's Gardens.

The Botanical Gardens, with the famous Banyan tree, are on the Howrah side of the river to the south of the town, while 16 miles to the north is Barrackpore Park, containing the country house of the Governor and a public park of much quiet beauty. Both banks of the river from Budge Budge on the south and even below, to Naihati on the north, are lined with a succession of jute mills, designed and constructed by engineers and severely utilitarian in aspect, but maintained in perfect order, and representing tens of millions of sterling investment. Outside the mills are congested masses of huts occupied by the operatives and standing upon lands which the owners refuse to sell at any price to the mill companies, who, whatever they can obtain land, build model "lines" of quarters for their employees. Legislation is urgently required to deal with this very unsatisfactory state of affairs.

#### 14. ARCHITECTURAL MISTAKES.

Some of the principal buildings of the city have already been referred to. Calcutta has not been well served in the design of its buildings, and there is more than a trace of "Victorianism" in its less attractive aspects in the majority of the more ambitious efforts. It is possibly fitting therefore that the city should contain the Victoria Memorial, a great mass of white marble whose restless and disorderly detail prevents it from being completely dull. Even the severely classic beauty of the Royal Exchange, the home of the Bengal Chamber of Commerce is completely out of relation with any other adjacent building, and it has no apparent connection with the site and its position. The High Court, on the other hand, does fittingly occupy its position at the head of the Maidan, and it has no neighbours to distract from its Gothic intentions. The buildings of the city generally show clearly the fact that only since the War have there been any independent professional architects practising there. Indian architecture simply does not exist, the prevailing principle being to make as large a mass as money will produce and load it with wedding cake finery, finishing the whole in all the primary colours. The Jain Temple, a vaunted "sight," is a collection of bath-room tiles, broken china paving and soda water bottle decorations, while the "Marble Palace" is an exact copy of an Italian house with crude additions, crowned and smothered with tawdry statues and "novelties" of every description.

#### 15. ARCHITECTURAL SUCCESSES.

Government Buildings have saved the older city from complete architectural anarchy, although they are mostly copies by soldier engineers of models in all parts of the West, they frequently show ingenuity in adaptation and a good sense of proportion. Such are the Cathedral, well placed on the Maidan, Government House, the Imperial Bank, Writers' Buildings and some of the hospitals. Of a subsequent date there are many examples of the work of Sir John Begg, the late architect to the Government of India, and these are generally successful even if they are entirely Western in conception and eloquent of a great opportunity lost. The Indian Museum on Chowringhee, however, must be recognised as inspired work. Mr. Henry Crouch, sometime architect to the Government of Bengal, has left much similar work. The late Mr. Edward Thornton, architect to Messrs. Martin & Co., has two ambitious commer-

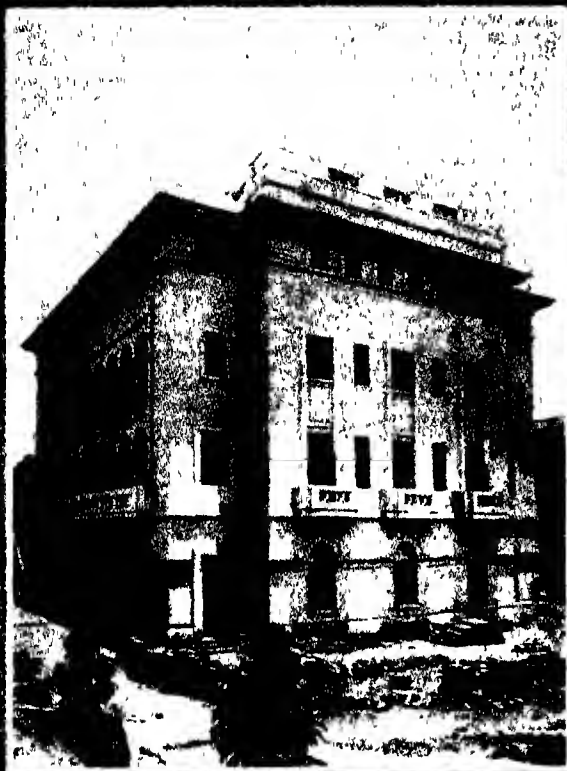
cial blocks with elevations recalling the Indo-Saracenic in the Chartered Bank and Clive Buildings. There are many large blocks of commercial buildings for which Messrs. Mackintosh Burn are responsible in design and building, whose main impression is that of solidity, but this is preferable to the architectural conceptions in Whiteaway Laidlaw's building and the Bengal Club. Apart from these, nearly all property in the city is Indian-owned, and to a large extent follows Indian traditions. The exceptions are the blocks of flats and mansions which have arisen out of the enterprise of Jewish and Armenian landowners, had it not been for this, which is responsible for the majority of European house accommodation, the rent levels would have been more notorious than they are at present.

What then is the justification for the name of the City of Palaces? There are many explanations of its origin, but if it is justified to day it is principally so on account of the size of its buildings rather than any claim to beauty or good proportion. The visitor will be impressed with the great and lofty rooms which are a common feature in the European houses in fact with the spaciousness of life generally.

**16. CLUBS.** The Clubs in the town, the Bengal United Service, New, Calcutta, Saturday, and others, all are in harmony with this, and the Turf Club, with its beautiful Club House and one of the finest racecourses in the world, completes the picture. Recently the Turf Club has laid out an entirely new course on most modern lines at Barrackpore. In the southern suburbs lie the golf links, Tollygunge Club with a perfect park course and a fine gymkhana race track, the Royal Calcutta Golf Club with two of the best courses that money can make from the cultivated lands of the plains, and the Jodhpur Club, a beautifully kept golf and gymkhana institution. Other sports are catered for by cricket, football and rowing clubs, the latter shortly moving into new headquarters on a great lake excavated by the Improvement Trust for raising building sites in the south of the city.

**17. MUNICIPAL AND OTHER SERVICES.**—Municipal administration is fairly efficient, but is inclined to fall back since Indian political extremists came into power on the grant of full self-government. There are excellent markets and a satisfactory drainage system in spite of ever-increasing difficulties. The water supply is good, but limited largely owing to Indian waste, and a scheme is in hand for increasing supplies by several hundreds *per centum*. There is a good tramway service maintained by the Calcutta Tramways Company, which is now putting several bus services on the streets to meet growing competition from private motor bus companies. The Walford Transport, Ltd., runs lorry services as well as buses.

The whole city is served by the gas mains of the Oriental Gas Co., and many of the streets are lighted by high-power gas lamps. The remainder are electrically lighted by the Calcutta Electric Supply Corporation. The coming of electricity has revolutionised the life of the people by the introduction of the electric fan, which has made the hot weather and rains merely uncomfortable instead of almost impossible. The consumption of current is growing so fast that the Corporation has had to duplicate its main power station on the north of the city with one in the Dock area, and the latter is rapidly approaching completion. Practically all the mill areas are electrically lighted, either from mill installations or from companies organised to supply the mills. The Bengal Telephone Company provides the public services, but Government has its own exchange, which is connected



**BRITANNIA BUILDING & IRON COMPANY, LTD., Calcutta:**  
(Holmes, Wilson & Co. Ltd., Managing Agents.)

1. Sir Archy Birkmyre's Hostel nearing completion.
2. Allan House, Calcutta.
- 3, 4, 5. Three aspects of goods-sheds construction contracts at Lucknow, covering an area of 134,000 sq. ft.

(See letterpress, p. 270, also Fraser & Neave Co., pages 122-123).

with its general post and telegraph services. Long distance Government 'phones join up the coal areas with the city.

**18. FUTURE NEEDS.**—Thanks to its Improvement Trust, which is inspiring the Corporation to emulation, and to the gradual enlightenment of landowners and merchants, Calcutta has set out upon an endeavour to remedy the mistakes of the past and to ensure that the city shall grow in future upon orderly and sanitary lines. Howrah, however, festers in filth on the opposite bank of the river, and there are sections in all the riverside municipalities which reek to the heavens, calling for a strong hand to force Government to cleanse them or wipe them out. The new politics, however, have made the old landowners more powerful than ever in obstruction, and the future looks none too bright, but health and sanitation are but common sense, and common sense prevails. Calcutta, especially greater Calcutta, awaits the strong man who will again make straight roads and destroy its disease-ridden hovels, who will in short make the crooked paths straight and the rough places plain.

A DE BOIS SHROSBREE

## REPRESENTATIVE BUSINESS ENTERPRISES

### BRITANNIA BUILDING AND IRON COMPANY, LIMITED.

**Inception.**—Responsible for the erection of some of the most modern and well-known structures in Calcutta, this company was registered as a joint stock corporation in 1919, being an amalgamation of the old-established building and contracting firm of Messrs. K. L. Mukherjee & Co. and the Britannia Brass Works. The former of these two concerns was founded as an engineering and building business in 1867, and up to the time of its being merged in the company now under notice had to its credit many prominent erections in the "City of Palaces" and its environs, including the East Indian Railway offices in Fairlie Place, the steelwork of the Jubilee Railway Bridge over the Hooghly River at Naihati, the Hooghly Flour Mills, built for Messrs. Shaw, Wallace & Co., and the factory buildings and all machinery for the Britannia Biscuit Co., Ltd. Messrs. K. L. Mukherjee & Co. were also one of the first firms of the kind to be placed on the Government List, this distinction being confirmed by the Public Works and other Departments when the present company took them over.

For the Britannia Building and Iron Co., Ltd., the managing agents are Messrs. Holmes, Wilson & Co., Ltd.

**Holmes, Wilson & Co., Ltd.**—In addition to the building company just mentioned, Messrs. Holmes, Wilson & Co., Ltd. act as managing agents for the Fraserpet Fibre Co., Ltd. (see page 122 in the "Agriculture" section of this volume). In their capacity as general merchants they hold the sole agency in India for Rutherford & Kay's "Silverburn" and "Dreadnought" whiskies, wines, etc., and also represent Messrs. Galloways, Ltd., Archibald Kenrick & Sons, Ltd., Anglo-Enamelware, Ltd., United Hinges, Ltd., and The Commercial Cable Co. Insurance activities include a fire and general accident agency for the Prudential Assurance Co., Ltd., and marine business on behalf of the Atlas Assurance Co., Ltd. The firm's London correspondents are Messrs. Alex. D. Wilson (101, Leadenhall Street, E.C.), and T. A. Shepherd & Co., Ltd. (16, St. Helen's Place, E.C.3).

**Capital.** The capital of the Britannia Building and Iron Co., Ltd. is Rs 5,00,000.

**Contracts.** The following details of contracts executed with the utmost efficiency and despatch by the company indicate the scope and importance of its operations. Allen House, Calcutta, a steel frame and masonry building constructed for Messrs. Allen Bros. & Co. (India), Ltd. in 1921-22, the extension to the Allahabad Bank Buildings, the steel work for which was fabricated in the company's workshops and erected in three and a half months, dwelling houses to the firm's own designs, providing for handsome exteriors, comfortable rooms and economy in construction, residential quarters for the B.O. Co., consisting of three large two-storied houses, residential quarters for the A.P. Co., the new palatial club quarters for the Saturday Club Calcutta, interior brick and ornamental plaster work for the new P.O. offices, Calcutta, interior decorations, embracing ceilings, cornices, capitals and wall panelling of a kind described as the finest of its class in Calcutta, roofs, steel bridges and frame structures such as the public race stand built for the Tollymore Club in just over five weeks after the placing of the order, steel and building work for five and six storey offices in Calcutta, goods sheds for the O. & R. Railway at Lucknow covering an area of 131,000 square feet, cast iron overhead tanks and stagings, passenger station platform roofing, foot overbridges and workshop buildings for the E.I., B.N., and E.B. Railways, well crabs for the new King George's Dock, tea houses, withering houses, bungalows, etc.

**Activities.**—The company is fully equipped for the complete construction of any class of building, guaranteeing first-class materials and supervision by qualified and expert engineers. Repairs, re-decoration and alterations of any kind, including sanitary and plumbing work, are promptly undertaken.

**Workshops.** The workshops, situated on the Grand Trunk Road, Howrah, are completely equipped with up-to-date machinery for steel fabrication of all descriptions.

**Managing Directors.** A. Paterson and D. G. McGilveray. Manager, S. N. Dass.

**Offices.**—Norton Buildings, Old Court House Corner, Calcutta. Cables "Bentley's" Calcutta Codes A.B.C. 5th edition, Bentley's and Private.

**Bankers.** National Bank of India, Ltd., and Mercantile Bank of India, Ltd.

See illustration, page 269.

### THE PATERSON ENGINEERING COMPANY (INDIA) LTD.

**Inception.**—Intimately associated with the most valuable achievements in the organisation of water purification in India, this well-known engineering concern commenced operations some 16 years ago in that country. During that period its installations have been set up in most of the progressive cities and towns of India.

**Research.**—Water purification requires for its successful accomplishment the application of plant carefully designed on reliable technical data and experience of local conditions. During the past 16 years the Paterson Company has carried out in various parts of India much valuable research and experimental work in conjunction with Government and other authorities, enabling a large volume of scientific knowledge and experience relating to Indian waters to be accumulated for future works.

**Technical Department.**—The firm has fully qualified technical staffs at the Calcutta and Bombay offices, and in the former city

possesses its own chemical and bacteriological laboratory, where investigation and analytical work is conducted. The technical organisation—drawing office and research laboratory—based largely on the result of 16 years' strict specialisation on Indian water purification problems, is available for service in any part of India whenever required.

**Contracts.**—During the past 16 years over 80 Paterson plants have been installed in India, and the total amount of water treated by the Paterson system at the present time is over 500 million gallons daily. The following are some of the important contracts, with in most cases the capacity in gallons per day dealt with: Imperial Delhi Water Works, 15,000,000; Simla Municipal Water Works, 3,000,000; Kukee Water Works, 1,000,000; Deolali Water Works, 1,250,000; Peshawar City and Cantonment Water Works, 3,500,000; Bannu Municipal Water Works, 500,000; Allahabad Municipal Water Works, 15,000,000; Lucknow Municipal Water Works, 3,000,000; Naini Tal Water Works, 300,000; Poona Cantonment Water Works, 3,000,000; Sukkur City Water Works, 2,000,000; Ambernath Water Works (Bombay Development), 3,000,000; Bombay Municipal Water Works, 200,000,000; Calcutta Municipal Water Works, 60,000,000; Chittagong Water Works, 1,000,000; Comilla Municipal Water Works, 250,000; Uttarpara Municipal Water Works, 250,000; Hyderabad and Secunderabad Water Works, 10,000,000; Jammu City Water Works, 1,000,000; Jamshedpur Water Supply, 2,500,000; Abadan Water Supply (Persia), 500,000; Lahore Municipal Water Works, 10,000,000; Fardla Water Supply, 200,000; Kalyan Water Supply, 1,400,000; Bhilsawal Water Supply, 2,300,000; Dhond Water Supply, Dhanbad Water Supply (B.I.R.), 300,000; Lyallpur Water Supply, 500,000; Achi Water Works; Rangoon Water Works, 15,000,000; Metur Water Works, 1,000,000. Numerous jute mill and factory installations have also been executed.

**Specialities.**—The Paterson water purification plant is the outcome of 25 years of strict specialisation. The fundamental principles and general design are protected by over 50 patents granted in Great Britain, France, Belgium, Germany, U.S.A., Canada, India, Japan and other industrial countries. Their originality is attested by Letters Patent having been granted on the first application in Great Britain, Germany, the United States and elsewhere. This system is in extensive use among railways, mills, tea estates and other industrial concerns.

**THE PATERSON CHLORONOME (Chlorine Dispenser).**—Chlorine is one of the cheapest, most conveniently handled and effective disinfectants for the purification of water supplies and sewage. Accurate regulation, measurement and administration are ensured by the use of the Paterson Chloronome, it is entirely British made and has been widely installed throughout India both in municipal undertakings and commercial enterprises.

**Head Offices.**—2, Dalhousie Square, Calcutta (cables: "Cumulative," Calcutta).

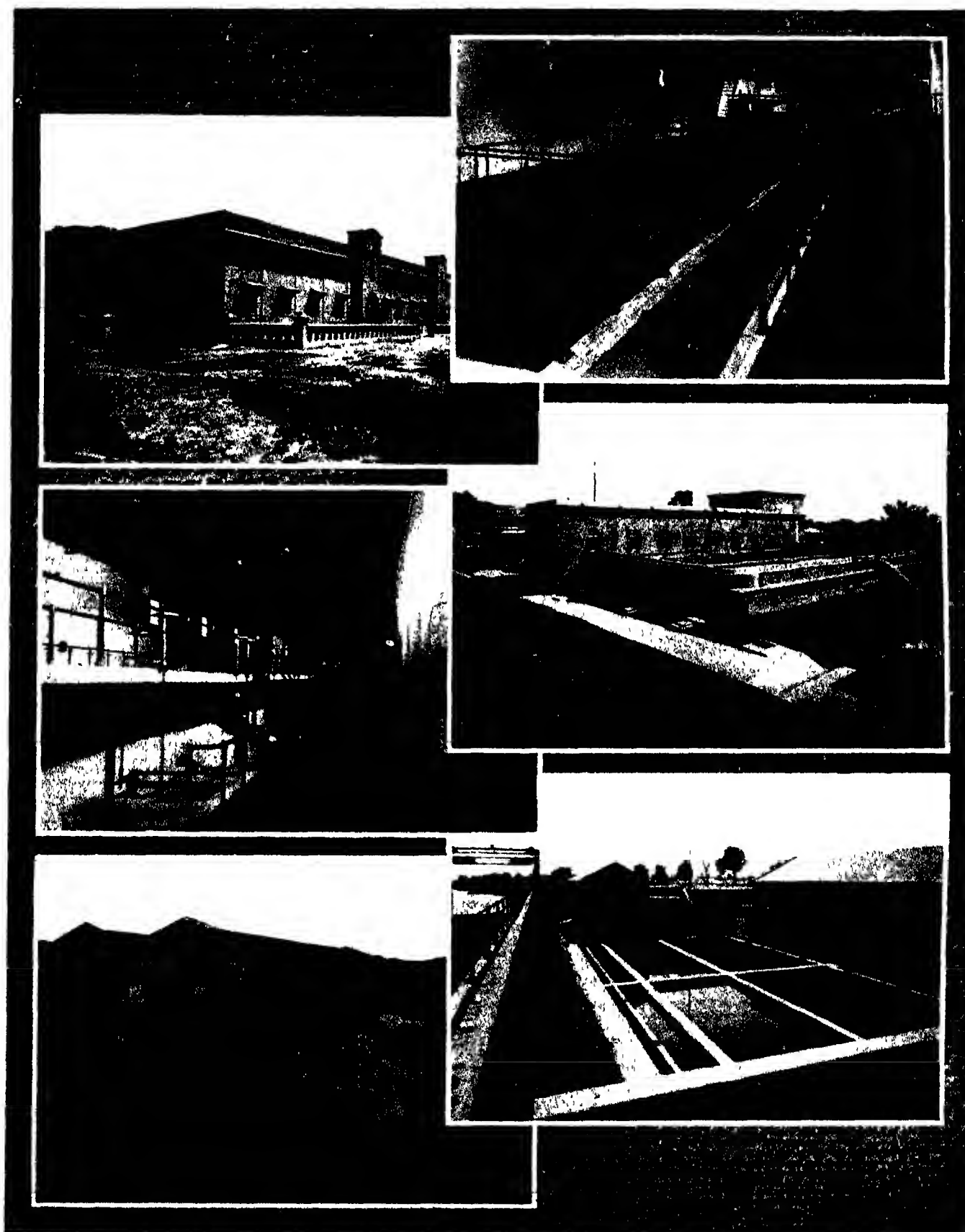
**Bombay Branch.**—Gateway Building, Apollo Bunder, Bombay (cables: "Cumulative," Bombay).

**London Correspondents.**—Paterson Engineering Co. Ltd., Windsor House, Kingsway, W.C.2.

**Codes.**—Marconi, A.B.C. 5th Edition and Private.

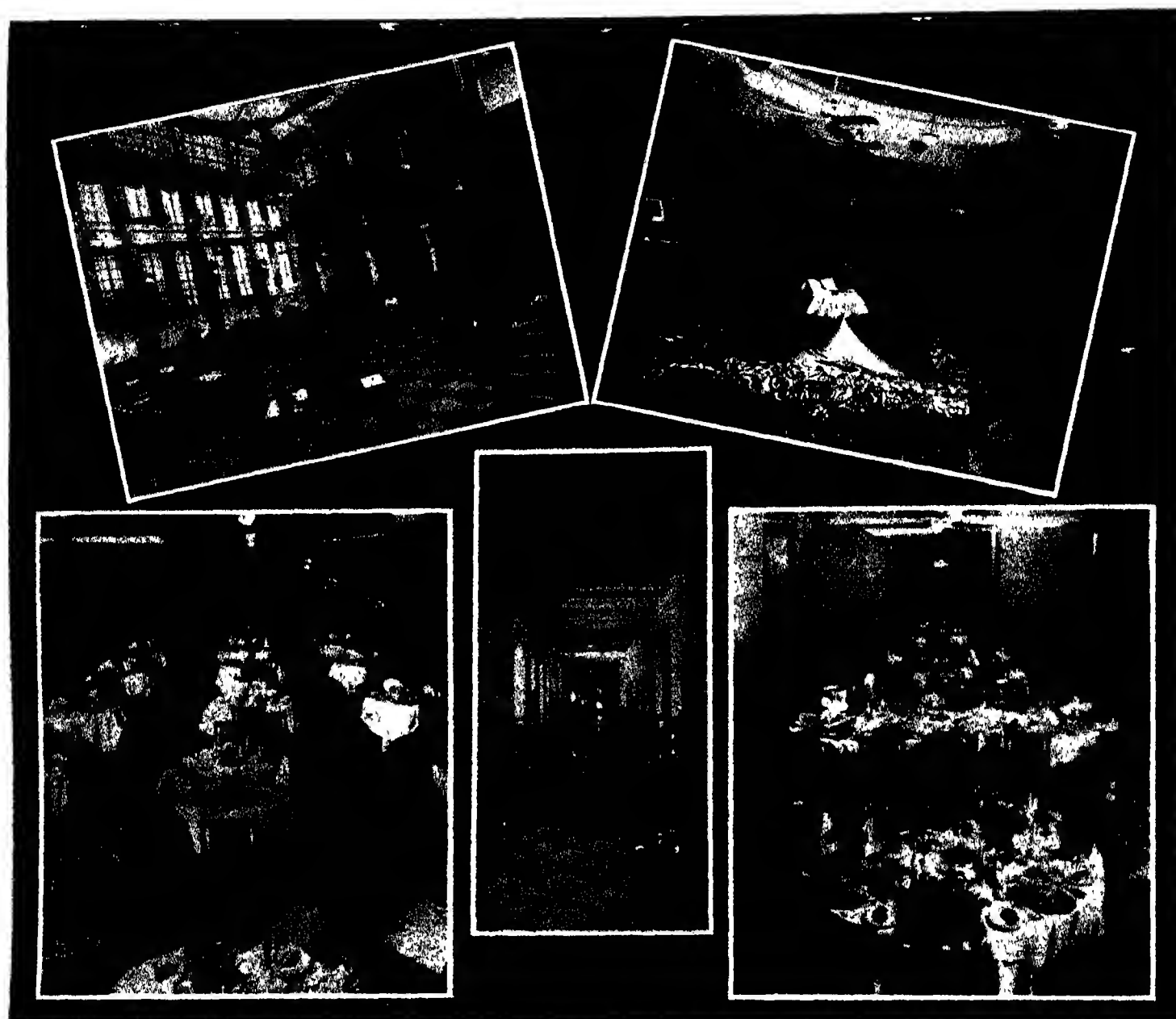
**Bankers.**—Lloyds Bank, Ltd.





THE PATERSON ENGINEERING CO. (INDIA) LTD. Calcutta.

1. Lucknow Water Works.
2. Simla Water Works : Filter Units and Operating Platform.
3. Delhi Water Works : Filter House, showing Liquid Chlorine Plant in foreground.
4. Jamshedpur Water Works : Coagulating Tanks, Filter House, and Wash Water Tank.
5. Poona Cantonment Water Works : Filter House, showing Inlet Pipe, Mixing Trough and Coagulating Pipes.
6. Ambernath Coagulating Tanks of Water Works.



THE GREAT EASTERN HOTEL LTD., Calcutta.

1. Winter Garden Lounge      2. Private Suite Sitting Room.  
3. Section of Dining Room.      4. A Corridor.      5. Restaurant.

#### THE GREAT EASTERN HOTEL, LIMITED.

**Record.**—Nearly three generations of travellers visiting Calcutta have been accustomed to make the Great Eastern Hotel their headquarters, recognising its generous provision for every comfort and convenience that guests may desire. The establishment has now been in existence for over 80 years, and its enviable reputation has become almost traditional.

**Situation.**—The hotel faces Government House, being within a few minutes' walk of Dalhousie Square, the commercial and financial centre of the city.

**Accommodation.**—Contained in this solidly-constructed building are 186 bedrooms and suites, all of which have hot and cold running water laid on and modern sanitary arrangements. The floors are connected by three fast electric lifts.

**Dining-Room.**—This is one of the prominent features of the hotel, being very cool and most attractively appointed. There are, in addition, three private dining-rooms available for the use of guests or special parties. The establishment's own orchestra plays daily at tiffin and dinner.

**Lounges.**—The spacious and comfortable lounge on the ground floor is the rendezvous for many of the best-known people of Calcutta, while the palm-court and lounge on the first floor add yet another to the distinctive features of the hotel.

**Facilities.**—For the use and convenience of guests there are provided within the premises an excellent billiard-room, a first-class hair-dressing saloon, a newsagent's stand and a chemist's store. Porters meet all boats and trains with the hotel omnibus.

**Board of Directors.**—E. L. Watts, G. F. Ross, E. Nussim, O. Josephson and G. N. Roy.

**General Manager and Secretary.**—W. J. Reynolds.

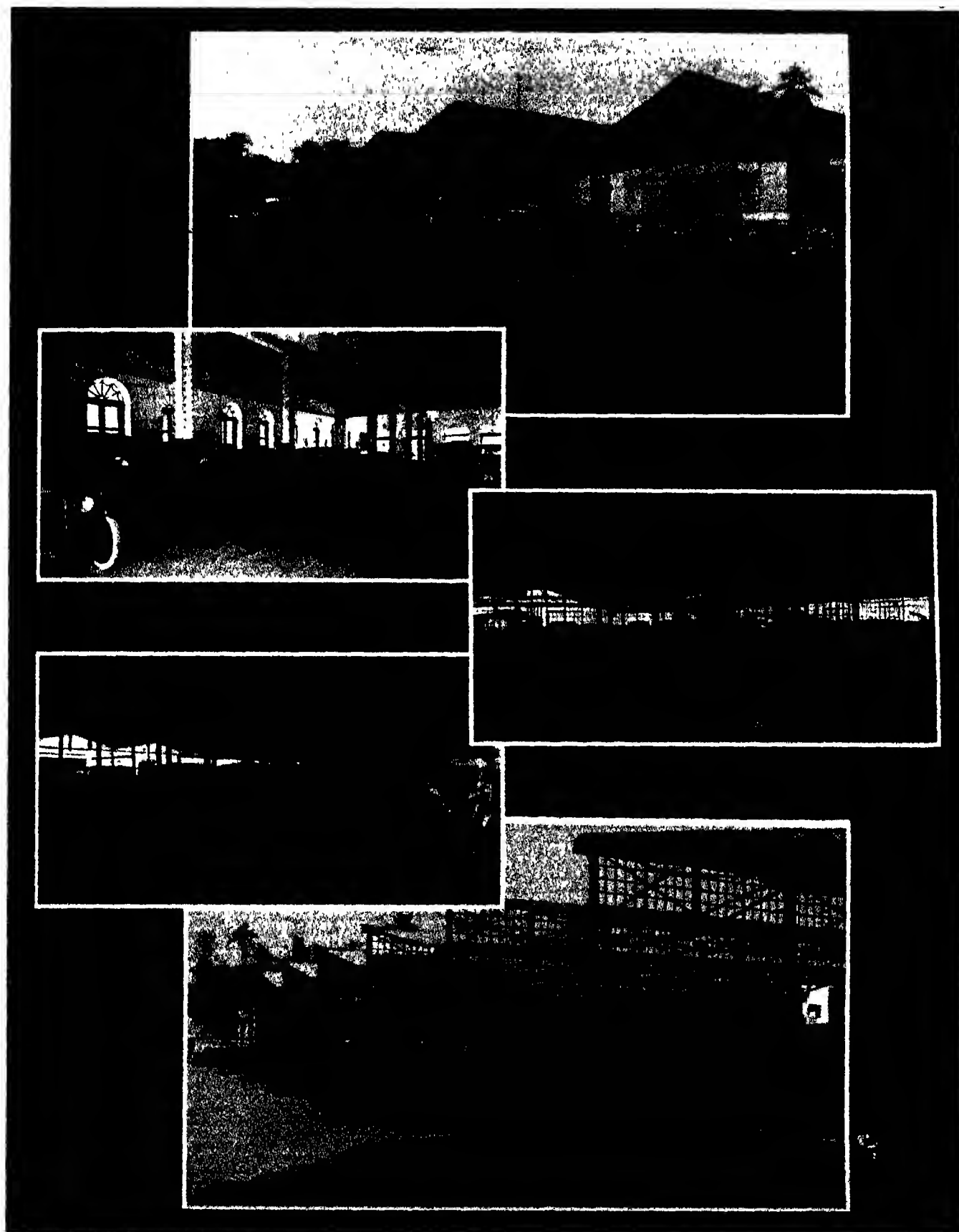
**Address.**—Old Court House Street, Calcutta (cables "Greastern," Calcutta) Codes A B C, 4th and 5th editions, A I and Bentley's.

**Bankers.**—Chartered Bank of India, Australia and China.

#### STEUART AND COMPANY.

**Inception.**—In all probability this is the only commercial firm in India showing an unbroken record of over 150 years' trading. It was founded in 1775 by Mr. A. Steuart, who set up as a coachbuilder at No. 8 Old Court House Corner, premises which were occupied up to 1907, when a move was made to Mangoe Lane.

**Personal.**—It is to be regretted that the early records of the firm are not available for inspection. Some were destroyed ruthlessly,



STEUART & CO., Calcutta.

1. Section of Body-building plant at Ballygunge
2. Partial View of Showroom.
3. Second Storey Garage.
4. A small section of large Garage at Calcutta.
5. New Body-building Plant at Ballygunge.

while others were eaten by white ants. When, in 1885, the safe in which they were deposited was opened there remained only a heap of dust. The efforts of Mr. Frank Bushby, senior partner in 1885, were successful in unearthing some authentic documents, which showed that Messrs. Robert, James and John Hastie, who had arrived in India in 1807, 1811 and 1818 respectively, were partners in 1824. After them came Mr. Burkinyoung in 1841 (master of the 'Trades' Association in Calcutta for two years), who was a partner until 1860, Mr. W. Roberts, who retired to Europe after some years' service, Mr. T. C. Carter, made a partner in 1860, Mr. R. Allardice, jun., and Mr. P. M. Kilgour, from 1868 to 1879, Messrs. Kilgour and Hay, from 1881 to 1885, Mr. W. Bushby and Mr. A. W. Westrop, from 1886 to 1893, Mr. W. Bushby, sole partner from 1894 to 1901, and Messrs. W. Bushby and R. E. Josland in the following six years. Mr. Walter Bushby retired in 1907, leaving Mr. Josland, Mr. A. H. Martin and Mr. Frank E. Bushby as partners. In 1911 Mr. Josland retired, when Mr. Frank E. Bushby became senior partner, his colleagues being Mr. G. Berridge Page, M.I.A.E., and Mr. W. Shenton. Some old leases relating to the original property of the firm are still in existence, and contain the names of Captain Robert Steuart and Lady Mary Steuart, who probably were descendants of the founder.

**Development.**—Steuart & Co. have kept pace with improved methods of road transport from the days of the pack-horse to the automobile of to-day. There has not been a vehicle on the roads for the past 150 years which has not had its type in their workshops. The palanquin, sedan chair and the springless lumbering coach of early days up to the more modern and luxurious buggies or ralla carts, mail phaetons, broughams, victorias, landaus, barouches and State coaches have been in turn built in their shops.

**Contracts.**—In addition to carts and carriages for every-day use, Steuart & Co. build elegant State coaches, largely composed of gold, silver and precious stones, and fitted with the most costly appointments. Among contracts executed were the State howdah for King Edward in 1876, a carriage for the Maharajah of Jind, enriched by 25,000 tolahs (tolah—7 dwts. 12 grains Troy) of silver in

1878, in 1882 and subsequent years, gorgeous vehicles were constructed for the Nawab of Bhowalpoore, the Commander-in-Chief of Nepal, and the Amir of Kabul, a solid silver howdah for the Durbar held by Lord Curzon in 1902, no fewer than 22 landaus and 18 victorias for the Viceroy's personal guests, a most ornate carriage for H.M. the King-Emperor when, as Prince of Wales, he visited India in 1906, and another in 1911 after his succession to the Throne, when many State and other carriages were built for ruling chiefs, princes, and other notabilities. The company has held special appointments to all the Viceroys and has enjoyed the patronage of nearly every ruling chief in India.

**Motor Cars.**—The advent of the motor car opened up new possibilities, which the partners quickly seized upon. They obtained immediately agencies for the leading manufacturers in England and established a factory to build their own cars. The chassis are imported, but the whole body-work is constructed by them of indigenous timber, as being more suited to the Indian climate than other woods. They know the requirements of patrons and guarantee their work to be equal to that of the best London tradesmen.

**Agencies.** The firm acts as representatives in India for the Austin, Essex, and Hupmobile Companies, and has received innumerable letters of appreciation proving the high qualities of these cars for that country. Visitors to the workshops in Calcutta may see the bodies in all stages of construction and clients may have these made with fittings conforming to any design.

**Workshops.**—These have been considerably enlarged owing to the rapid expansion of the motor business, and there is now ample accommodation for carrying out all kinds of alterations and repairs, for storing motor accessories and spare parts, and for a large garage. Fully competent workmen are employed in each branch, and the sound, practical experience of the partners ensures thorough supervision of every detail of work.

**Directors.** H. Hannay, S. Weston, J. H. Pattinson and G. H. Crane-Williams.

**Head Office and Garage.**—3 Mangoe Lane.

**Cables.**—"Cotelme" Codes A B C 5th edition, Bentley's, Motor Trade Telegram Code.

**Bankers.** Mercantile Bank of India, Ltd.

#### G. MCKENZIE & COMPANY (1919) LIMITED.

**Inception.**—The rapid development of the motor engineering industry in India is strikingly exemplified in the growth of this concern, which, in less than 10 years, has attained a most prominent position and possesses the largest organisation of its kind in the East. Originally established in Burma in 1917, it was formed into a limited company in 1919, and immediately began to open up branches in India, with headquarters at Calcutta.

**Branches.**—These are situated in the following cities of India and Burma: Calcutta, Ranchi, Cawnpore, Lucknow, Bareilly, Agra, Delhi, Jaipur, Lahore, Rawalpindi, Peshawar, Rangoon, Mandalay, Moulmein, Thabon and Yenangyaung.

**Agencies.** The firm represents, among others, Willys-Overland cars, Federal lorries, Royal Cord tires, and Stewart Warner Service Agencies.

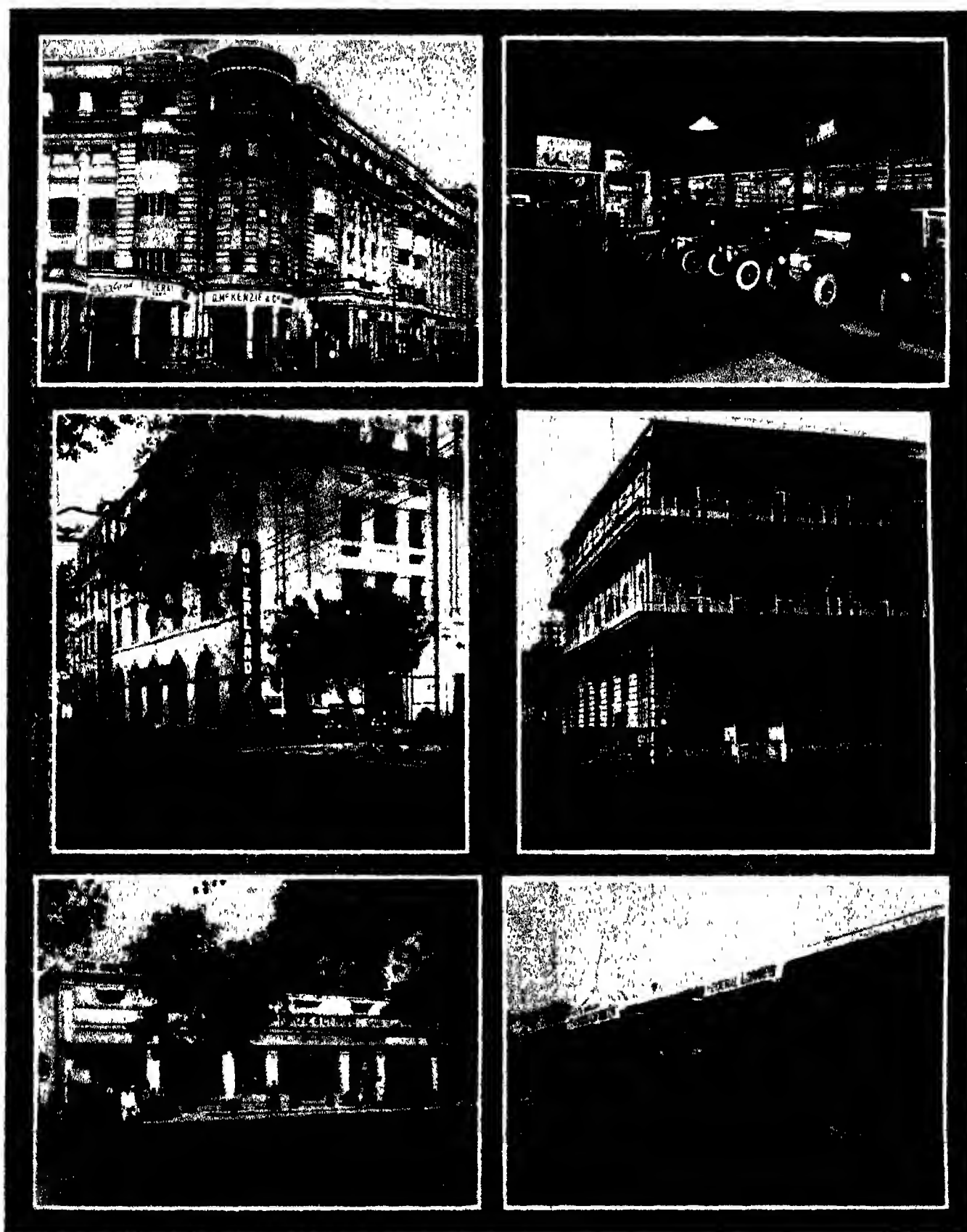
**SLEEVE-VALVE ENGINES.**—A great asset lies in being representatives of the world's largest manufacturers of sleeve-valve engines in view of the remarkable development now taking place in the United States regarding this particular type of engine. The Willys-Knight engines, noted for their smooth, silent running and economy of up-keep, have proved exceedingly popular, especially for transport work—e.g., Gauhati to Shillong in Assam, or Khatgodam to Nainital in the United Provinces. The same engine is fitted to the light-weight Federal lorries and is extremely efficient in omnibus services in Calcutta, also in transport services on the Frontier, where conditions are very difficult.

**TRANSPORT.** The chief trade routes to India via the Khyber Pass, from Kabul to Peshawar, 191 miles, and the road from Kandahar to Quetta, 125 miles, are quickly covered by Federal-Knight expresses carrying 1½ tons per trip over sandy, stony and excessively hilly tracks. Mountain ranges, chief among which is the Hindu Kush, cover three-fourths of the Afghan territory, the elevation being generally over 4,000 feet and the roads probably the worst in the world for wheeled traffic. The steady transport services that are now maintained are striking testimony to



1. FAIRLIE PLACE, Calcutta, showing Messrs. Mackenzie's new Building in course of construction.

2. A view on the Madan; fleet of Essex, Hudson and Hupmobile Cars (represented by Messrs. Stewart & Co.).

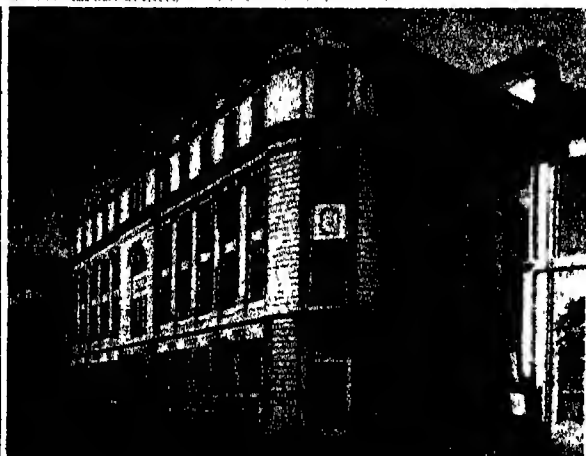


G. McKENZIE & CO. (1919), LTD.

1. Company's Showrooms and Offices at Calcutta.
3. The Company's Premises at Delhi.
5. Handsome Showrooms at Cawnpore.

2. Garage at Calcutta
4. The Lahore Premises.
6. Showrooms at Rawalpindi.





H. M. MEHTA & CO., Bombay.

1. The Calcutta Premises.
2. Building in which the Company's Head Office is situated.
3. Fine Showrooms.

the efficiency of the Federal-Knight. There are over 30 motor buses carrying passengers and baggage daily on the Peshawar-Kabul route alone. Among other users are the Royal Mail Service (Pabbi Cherat Hill Road), the Army Canteen Board (Bannu to Razmak, 7,500 ft. elevation), Torkham-Kabul Transport Co. (with a climb of 10,000 ft.), and the majority of bus owners on the Kandahar-Chaman-Quetta run.

**Showrooms.**—The firm has recently opened what are claimed to be the finest motor car showrooms in India. Located on the Park Street-Middleton Row corner of Stephen's Court, the premises have a very attractive exterior, and are large enough to effectively display the full range of motor cars distributed by the company. From the popular and low-priced Overland Whippet to the elegant Willys-Knight Six there is a car in either four or six cylinders that should satisfy every taste.

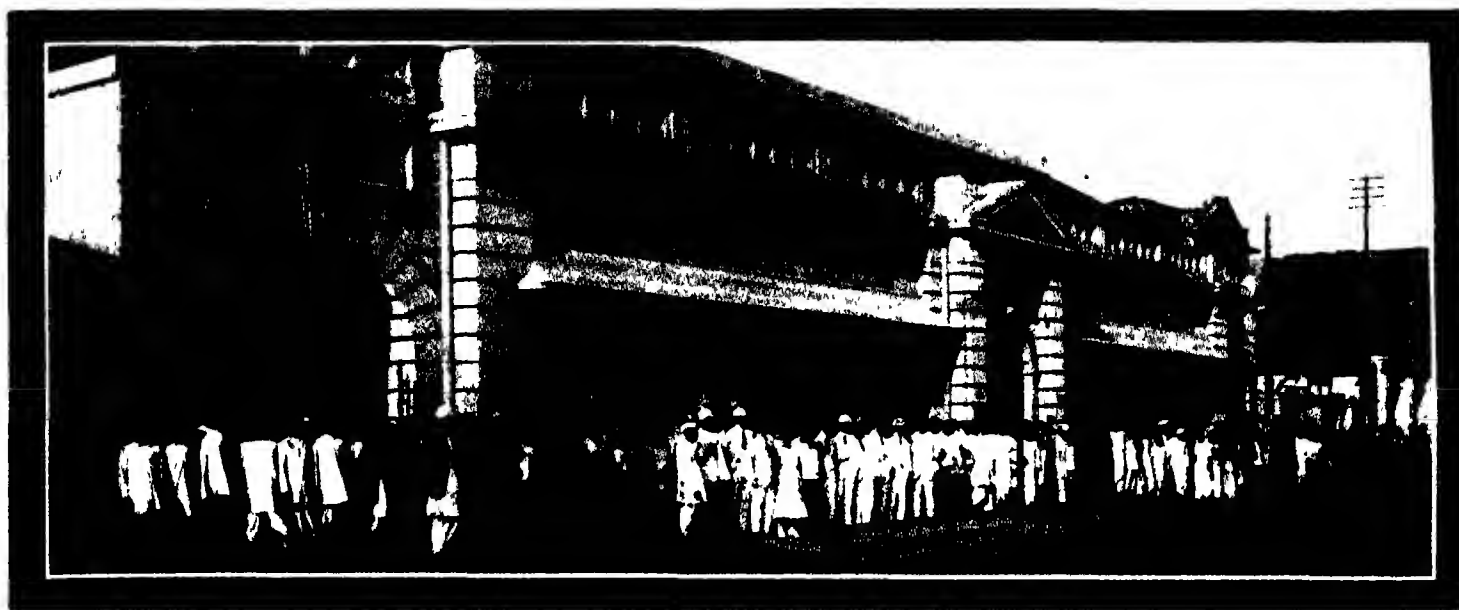
**Policy.**—The firm believes in providing efficient after-sales service and in rendering genuine help to owners, and it is largely due to this policy that so many branches have been opened up for the convenience of its ever-increasing clientele. The showrooms and the imposing range of cars are ample proof of Messrs Mackenzie & Co.'s aim to give the motoring public the best car possible at the lowest price, as well as a first-rate service to all car-owners. A centralised purchasing department for the 15 branches enables them to effect savings impossible in a smaller concern, while, with the distributing facilities of so many branches, they eliminate, for the benefit of motorists, the profits taken in many cases by middlemen and brokers. Such a policy, combined with its progressive methods generally, shows a keen sense of discrimination in the business administration of the company.

**Head Offices.**—18a, Park Street, Calcutta (cables "Oland" Calcutta) Code Bentley's.

**Bankers.**—International Banking Corporation.

#### MEHTA, H. M., & CO.

In 1918 Mr. H. M. Mehta, one of the original partners in the firm of H. M. Mehta & Co. (founded in 1896), established the business of T. R. Pratt (Bombay), Ltd. motor dealers and engineers, whose head offices, showrooms, garage and workshop are situated in fine premises in Hughes Road, Bombay. In 1919 Mr. Mehta, in partnership with Sir Victor Sassoon, founded the motor engineering firm of M. T. Ltd., which possesses head offices in Bombay and a fully equipped establishment in Calcutta. The two companies mentioned are now conducting a flourishing business, controlling the sales of the Buick car throughout Bombay and Calcutta and representing the Lancia, Standard, Cadillac and other well-known automobiles. Before turning his attention to the motor car trade Mr. Mehta and the firm to which he gave his name had been instrumental in floating The Mill Stores Trading Co. of India, Ltd., and in purchasing and converting into limited concerns various cotton mills. Other operations of the enterprise cover hessian, paints, insurance and electrical engineering. (For fuller details see letterpress in "Industry" section.)



A. MILTON & CO., LTD., Calcutta  
Head Office Premises and Staff

#### A. MILTON AND COMPANY, LIMITED.

**Inception.** This well-known motor and mechanical engineering firm is the successor to A. Milton & Co. established in 1886 by Mr. Alfred Martin Milton. The business is now under the able management of Mr. Morgan B. Milton, and enjoys a sound reputation in commercial circles.

**Development.** Expansion has kept pace with road transport improvement, passing from horse-drawn to mechanical methods. The firm imported horses for some 30 years, dealt in grain, maintained large numbers of bullock and buffalo transport wagons, and specialised in all kinds of coach, wagon and wheel work. Then, about 15 years ago, it entered whole heartedly into the mechanical

transport trade, in which it maintains a commanding leadership in India.

**Agencies.**—As agents for the Dennis, Fiat, Republic, Reo and Chrysler cars and lorries, Miltons have carried mechanical transport to the utmost limits of India, Burma and Ceylon, and have distributed thousands of transport units of practically every known type.

**Municipal Vehicles.** The firm specialises in such municipal vehicles as gully flushers, dump and tipping wagons, oil and water tanks, sprinklers, etc., and has supplied fire engines, tenders and other fire appliances to the leading municipalities.

**Premises.**—The city premises, comprising showrooms, offices, machine shops, body-building and assembling plants, occupy

several acres and employ 500 to 600 workmen. The new structure (showrooms and offices), shown in the accompanying view, is a thoroughly modern and distinctive architectural achievement, built of ferro-concrete and occupying the main frontage site of the old headquarters. It is one of the finest buildings of its kind in India.

**Offices.**—156, Dharamtala Street, Calcutta, 44, Park Mansions, Calcutta, and Milton Park, Ballygunge.

Fiat Motors Eastern Indian Agency, Madras, is a branch of the company's Fiat Department.

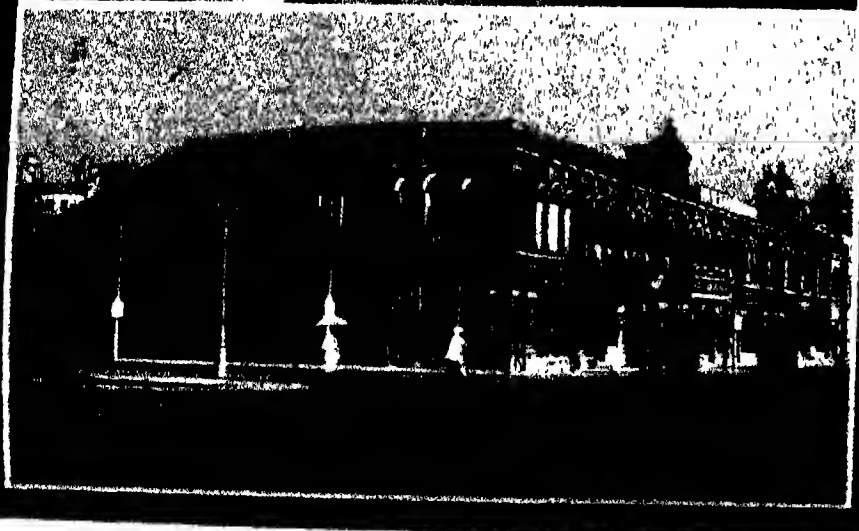
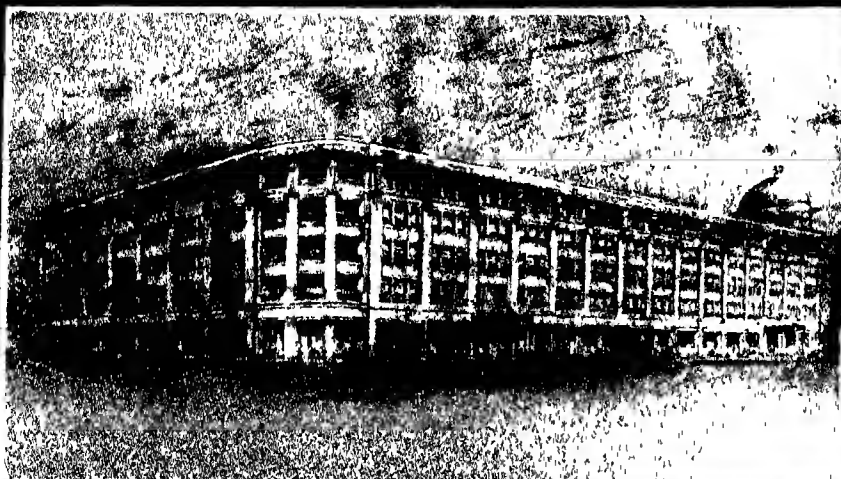
**Cables.**—“Amilco” Codes A.B.C. 5th edition, Bentley's, Lubber's, Western Union 5 letter, and Private.



THE FASHIONABLE SHOPPING DISTRICT, CALCUTTA.

1. Esplanade East.

2. Chowringhee Road, with Meera Hall & Anderson's old building on the right, now being replaced by a palatial modern Store.



HALL & ANDERSON, LTD., Calcutta.

1. Architectural elevation of new Building, the first section of which has been recently opened.
2. Soft Furnishing, Household Linen and Drug Department, covering 25,000 square feet of floor space, housed in the new section.
3. The older portion of the Store at the corner of Park Street and Chowringhee, having a frontage of 600 feet.

A SELECTION OF THE MOST REPRESENTATIVE RETAIL ESTABLISHMENTS, GIVING A COMPREHENSIVE IDEA OF THE EXCELLENT SHOPPING FACILITIES AT CALCUTTA (FOR CONSULAR AND OTHER ADDRESSES. SEE "VISITORS' GUIDE," PAGE 288)

#### HALL AND ANDERSON, LIMITED.

**Inception.**—Founded in 1894, this firm, which conducts a well-known departmental store, was converted into a private limited company in 1913. The enterprise is entirely British-owned, and owes its position as one of the most important businesses of its kind in India to the range and variety of the great stock carried. It holds the appointment of furnishers to H. I. M. The King-Emperor, and has been confirmed in similar appointments to most of the Viceroys during their terms of office. There is a branch of the establishment at Datjeching.

**Buildings and Showrooms.**—The photographs here reproduced show the present premises, part of the new building, and a perspective view of those premises when completed. This magnificent edifice at the corner of the two most important thoroughfares in Calcutta, Chowringhee and Park Street, will have a frontage of 850 feet, five floors of a total height of 120 ft., and a floor space of approximately half-a-million square feet, making it the finest departmental store in India.

**Departments.** Visitors are catered for in 28 different sections, each of which is replete with all that is new from the leading markets of the world. The following is a summary of these departments, which will be added to when the new premises are complete.

**FURNISHING.** This section has an area of 50,000 square feet and is situated in the new portion of the building. It contains one of the most up-to-date selections of modern furniture and reproductions to be seen in the East, furniture expressing the best traditions of workmanship and finish, from the simplest pieces to examples of the finest art in dining-room, drawing-room and bedroom suites of every period and style, as well as every article of furniture for the saleroom or domestic use.

**SOFT FURNISHINGS.**—A fine selection of silks, brocades, damasks, printed linens, cretonnes, poplins, and furnishing fabrics of exclusive designs and wonderful colours at very reasonable prices is available for inspection.

**CARPETS.** The largest display in the East of Axminsters and Wiltons, in ready-made squares and in body and border, in addition to Indian carpets from Benares, Kashmir, Mirzapore and Ellore, is to be viewed in this department.

**BEDSTEADS AND BEDDING.**—A large range of all-metal and wood bedsteads is carried, and a special feature made of bedding manufactured in the firm's workshops.

**UPHOLSTERED FURNITURE.**—This is made by the company's experts and is unsurpassed in all India for wear, comfort, artistic design and coverings.

**ESTIMATES.**—These are prepared and submitted for schemes of any size, from the furnishing of a bungalow to a prince's palace. The furnishing departments are entirely supervised by European experts, whose advice is at the disposal of all intending purchasers.

**LINEN**—The stocks of household linen embrace the best that Ireland, England and Scotland produce in napery, fancy linens, sheets, blankets, quilts, towels, flannels, etc., in addition to the famous "Palmetta" household linens for which Hall & Anderson, Ltd., are sole agents.

**CROCKERY AND GLASS**—The choicest Royal Worcester and Crown Derby are to be found in the large selection of exclusive designs in dinner ware, tea ware, dessert ware, toilet sets, etc., at reasonable prices. The glassware section contains the very latest from the English and Continental markets.

**CUTLERY AND PLATE**—This division contains a splendid selection of modern plated ware comprising tea sets, coffee sets, trays, etc., of the newest designs at moderate prices.

**IRONMONGERY**—In this section there is to be seen everything necessary for the household, including the firm's famous range of "Hercules" aluminium ware.

**LADIES' DEPARTMENT**—Organised on most up-to-date lines it contains one of the finest selections of gowns, millinery, lingerie, dress materials, silks and hosiery in India, all chosen in the best English and Continental markets.

**GENT'S DEPARTMENT**—This has the largest stock in India of men's requirements—suits, shirts, ties, collars, underwear, boots and shoes. Visitors will see here the latest and best goods produced by high-class manufacturers only.

**TRAVELLING REQUISITES**—"Travel in comfort" might be the motto of this modern department, which displays everything needed under that head.

**STATIONERY AND FOREIGN FANCY**—Messrs Hall & Anderson, Ltd., carry one of the finest stocks of stationery in the East, and do their own die-stamping and cutting. The display of fancy leather goods such as dressing-cases, bags, attache cases and writing cases, is much appreciated by visitors.

**PERFUMERY AND TOILET REQUISITES**—In this division are to be found the newest and best toilet preparations by all the best known makers.

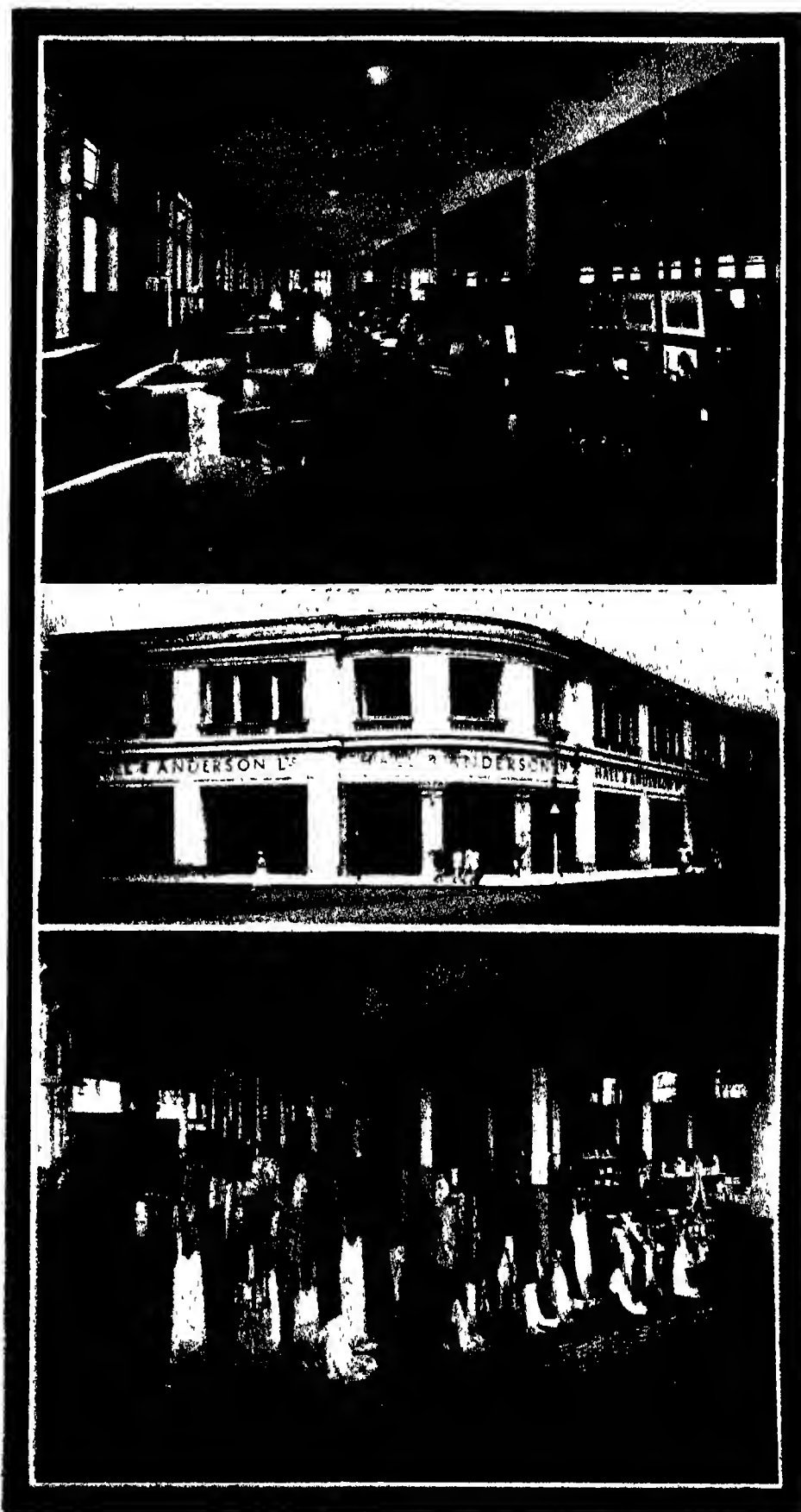
**MAIL ORDER**—One of the most important sections of the business and organised on the latest principles, the mail order department employs a large staff to deal with orders by post arriving from all parts of India, Burma, Shan States, Ceylon, Aden and Mesopotamia. The company does a large mail order business, which it encourages, and issues in the course of a year 100,000 catalogues. The principal one is the Red Catalogue—known throughout India as the "Lal Kitab," and acknowledged to be the finest shopping guide produced outside of London—which consists of 600 pages, profusely illustrated and is published every October.

**Workshops**.—These have recently been considerably enlarged and fitted with modern machinery, so that specially urgent joinery and cabinet work for interior decoration, etc., can be carried out under expert supervision in the shortest possible time.

**Inspection**.—Visitors are cordially welcomed to visit Hall & Anderson's when in Calcutta, where they are always certain to see many interesting displays. When the new premises are completed they will find that even shopping can be a real pleasure in a tropical land.

**Head Offices**.—Chowringhee and Park Street, Calcutta (cables: "Hallson," Calcutta). Codes: A.B.C.\*6th edition and Bentley's Complete Phrase.

**Bankers**.—National Bank of India, Ltd.



HALL & ANDERSON, LTD., Calcutta.

1. Furnishing Department, covering a floor space of 30,000 square feet in the new section.
2. View of that section at the corner of Russell and Park Streets, having a frontage of 275 feet.
3. The Fancy Departments in the older section of Store.



**RANKEN & CO. LTD.**  
Fine Store at Calcutta

**RANKEN AND COMPANY, LIMITED.**

**Inception.**—Over a century and a half ago, in the year 1770 the tailoring establishment of this name was founded in Calcutta

city. To-day, after the lengthy interim, it still flourishes and retains the prestige it gained in the days of the Honourable East India Company.

**Activities.**—From its early days the firm has specialised in military, court and tropical outfitting, and its name is known throughout the Indian Empire for the quality of its productions.

**Military.** In the first years of the Indian Army the gorgeous uniforms worn by many of the regiments, some of which have since been disbanded or have lost their old identity under new designations, were designed and made by Ranken's, whose reputation is such that most of the present-day units patronise the establishment.

**Court.** They have been appointed tailors to H. M. The King Emperor and H. R. H. The Prince of Wales, and have been so honoured by other members of the Royal Family, by different Viceroys, Governors and Commanders-in-Chief in India. They are robe-makers to the Most Exalted Order of the Star of India and the Most Eminent Order of the Indian Empire, and for long years have enjoyed the patronage of many of the ruling princes of the country.

**General.** Excelling in all branches of tailoring, Ranken's keep stocks of the most exclusive articles of men's wear and equal to any found in the highest class establishments of London or Paris. In fact it has been remarked that the house maintains in India a much larger stock of woollen and silk goods than can be found in most fashionable London retail stores. The quality and workmanship of their tropical outfits, political uniforms and dress clothes leave nothing to be desired. The firm is, and has been from its commencement, under European supervision, and the premises in Calcutta occupy a large area.

**Branches.**—These are established at Delhi, Lahore, Rawalpindi, Simla and Murree, where every facility for turning out high-class work is equally available as in Calcutta.

**Head Offices.**—4, Old Court House Street, Calcutta.

**London Agents.**—Ranken & Co., 20, George Street, Hanover Square, London, W. 1.

**Cables.**—Mentally for head offices and all branches. Codes A B C 4th and 5th editions.



**RANKEN & CO. LTD.**  
One of Calcutta's most exclusive Stores.



**HAMILTON AND COMPANY, LIMITED.**

**Inception.**—Known throughout India as 'The Government Jewellers,' this house was founded in 1808 by Robert Hamilton under the direct patronage of the Honourable East India Company with a recommendation to the Court of Directors to the Government of India, by whom he was permitted to display their arms as jewellers and silversmiths to the Government.

For 118 years it has occupied the same premises, and in 1920 was formed into a private limited company, with Mr J F Snaith as managing director and Messrs Wm Smith, C H Pratt and F J Read as directors.

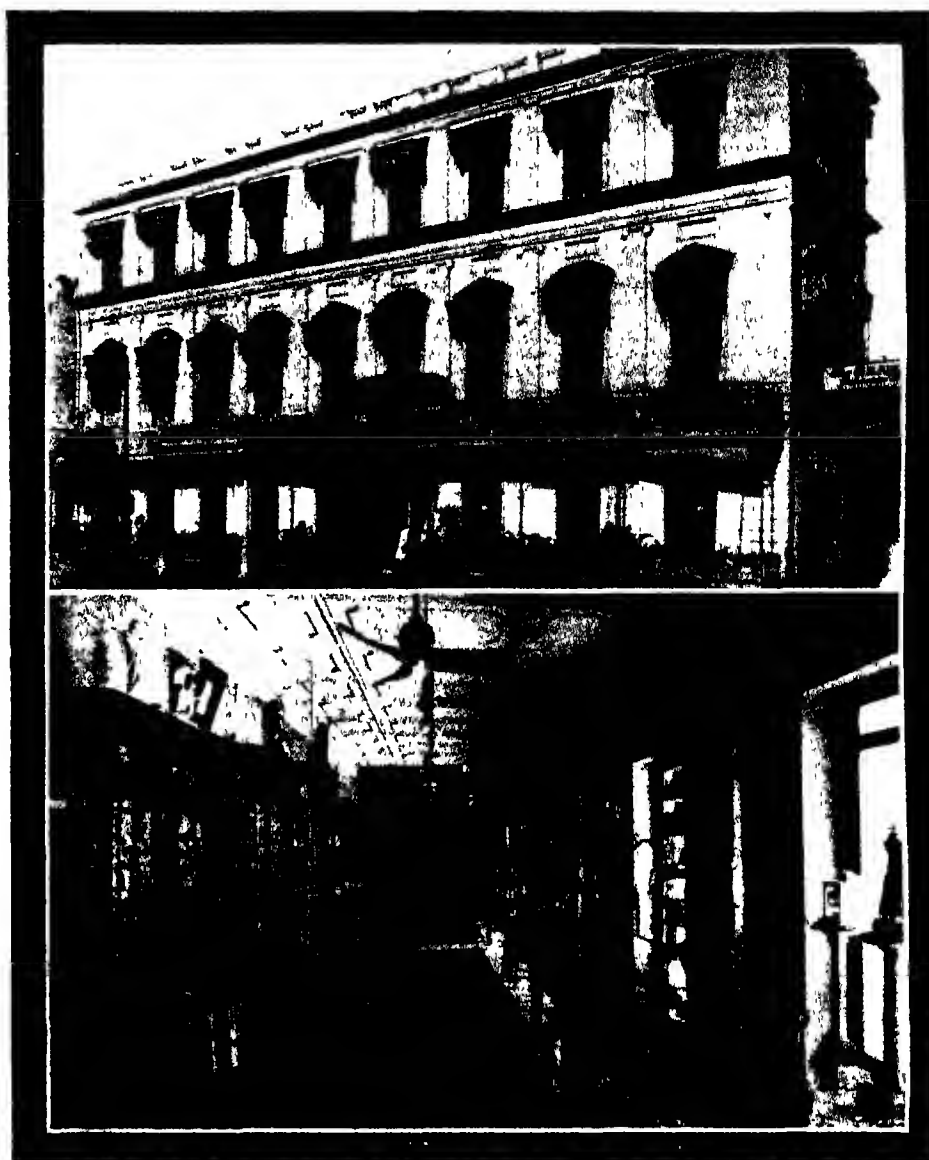
**Appointments.**—Ever since the founder was permitted to display the Government of India arms the house has been honoured with the patronage of Viceroys and Governors-General. In 1877 Messrs Hamilton & Co had the honour of being appointed by Royal Warrant jewellers in Calcutta to H R H the Prince of Wales, in 1901 to H I M King Edward VII, in 1911 to King George V, an honour continued to the new company, and in 1922 silversmiths in ordinary to H R H the Prince of Wales. Under instructions from the Government of India the firm has conducted sales by auction of Toshakhana and property in the form of jewels, precious stones, etc.

**Workshops.** The manufactory, the largest of its kind in India, is devoted exclusively to the production of jewellery, gold and silverware. The remodelling of jewels, the modernising of State ornaments and diamond mounting in platinum are specialties. Over 200 skilled Indian workmen under direct European supervision manufacture silver thrones, howdahs, assahs, and other State paraphernalia, and these workshops turned out the silver-gilt thrones used by Their Imperial Majesties at the Delhi Durbar in 1911-12.

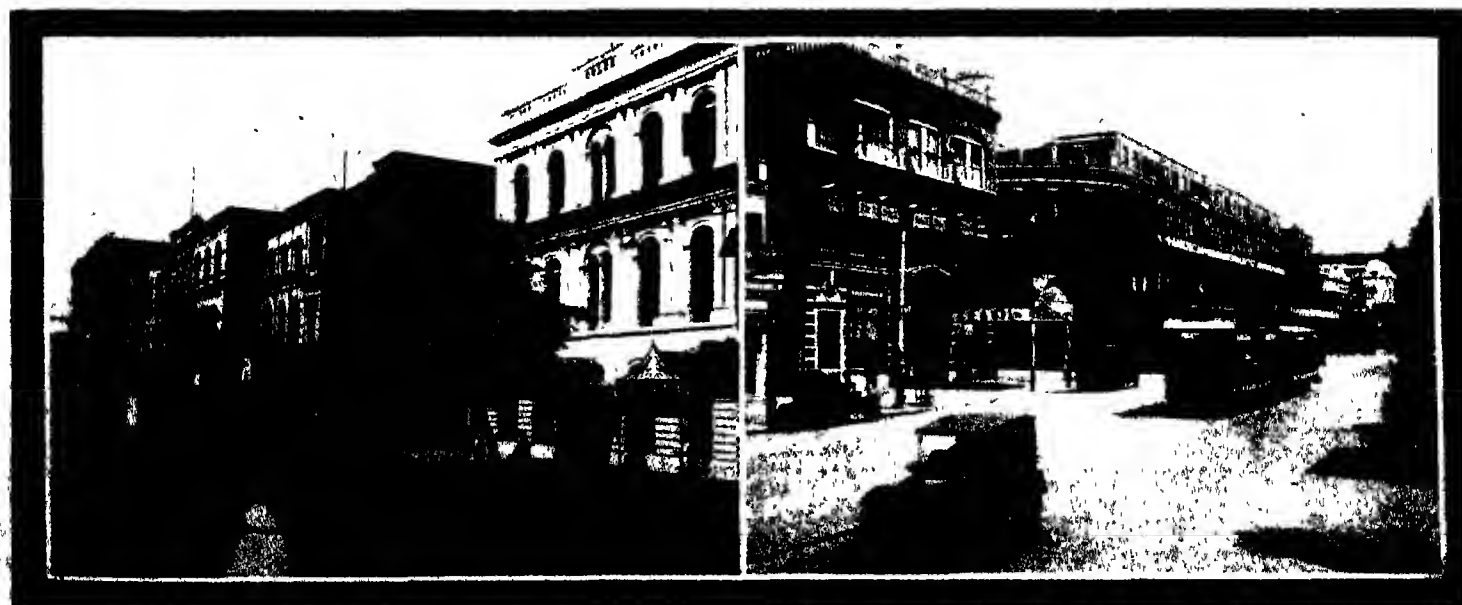
**Showrooms.** These are among the finest in the East, being replete with choice specimens of the jeweller's art and the silversmith's craftsmanship.

**Branches.** The Delhi branch is open from November to March, and the Simla one from March to October.

**Head Offices.**—8, Old Court House Street, Calcutta (cables "Hamiltons," Calcutta).

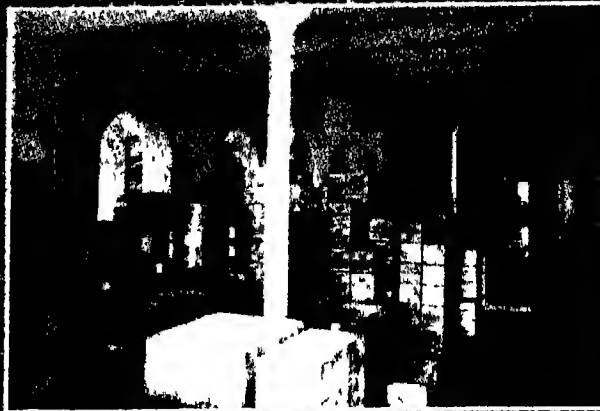
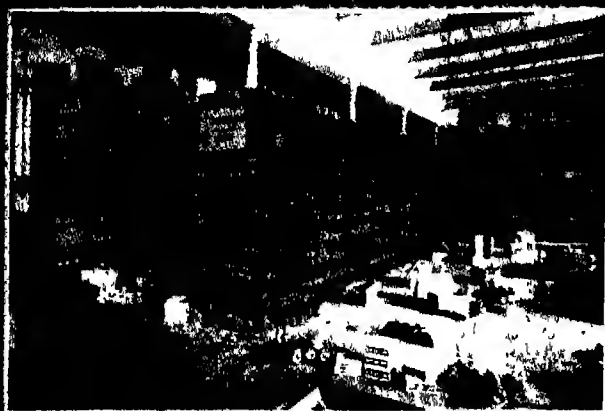


HAMILTON & CO LTD., Calcutta. 1. The Company's Premises. 2. Showroom.



1. OLD COURT HOUSE STREET Calcutta, looking towards Dalhousie Square. Messrs. Oshar & Co.'s Showrooms are marked by the tree.

2. Same thoroughfare showing Ranken's Store and Great Eastern Hotel in left foreground.



G. F. KELLNER & CO. LTD., Calcutta.

1. Wine Stores.

2. Tinned Goods Store.

Centre. One of the Retail Stores.

4. Packing Department.

5. Bottling Department.

**G. F. KELLNER AND COMPANY, LIMITED.**

**Inception.**—The opening of the railway refreshment room at Burdwan on the East Indian Railway in 1853 by the late Mr. George F. Kellner marked the beginning of the enterprising business conducted by this company.

**Activities.**—In addition to being one of the leading wine merchants in India, the firm directs a large railway and general catering business and imports on a big scale tinned bottled and fresh provisions.

**Railways.** For 73 years it has catered continuously for the East Indian Railway, and to-day controls 30 refreshment rooms and branches, besides providing the excellent catering on the dining cars of the East Indian Bombay Mails between Calcutta and Jubbulpore, the East Indian Punjab Mails between Calcutta and Delhi and, on alternate weeks, the outward and inward Imperial Indian Mail Train running in connection with the P & O mail boats.

**General.**—In addition to these normal railway responsibilities, the firm invariably looks after the comfort of large parties of American tourists who come annually to India. That the service responds successfully to such onerous demands and satisfies a clientele inexperienced in Indian conditions is in itself a commendation of the efficiency and elasticity of its organisation.

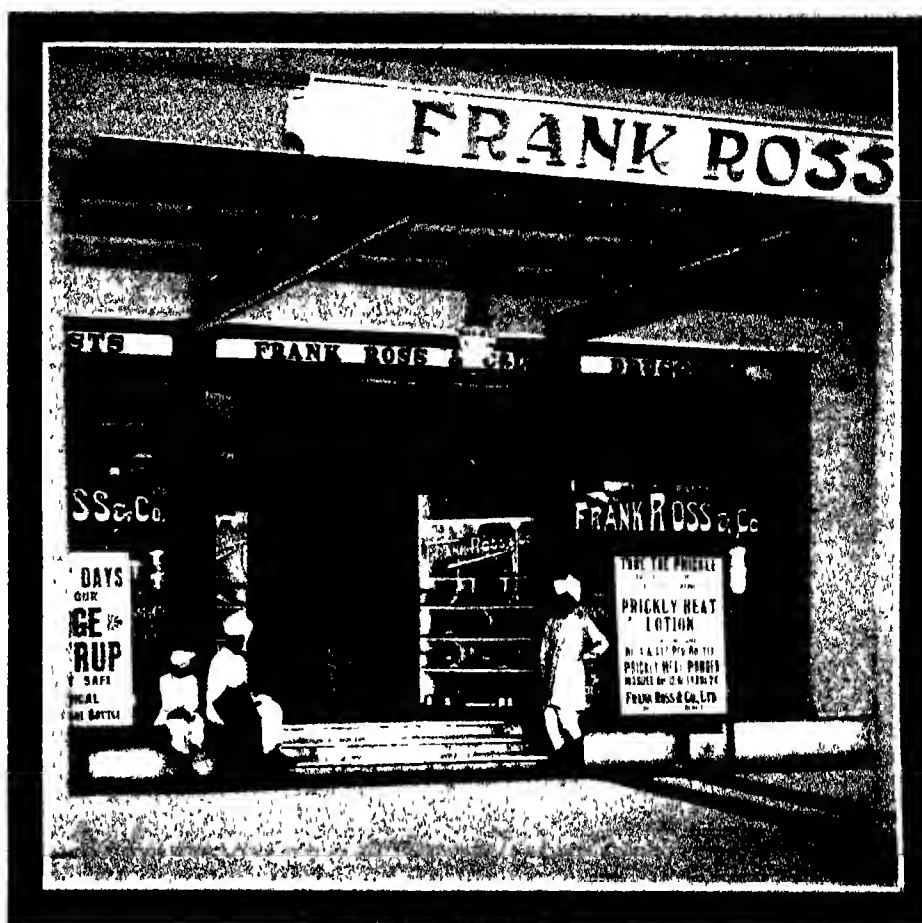
A special feature of the activities of the catering department is the appointment from the Royal Calcutta Turf Club, which the company has held for many years, as caterers to the public. It is entrusted also with the catering arrangements at many other race meetings throughout the year in Eastern India.

**Special.**—Besides catering for the general public, this firm *par excellence* has often superintended the arrangements for many Royal and exalted personages during their Indian tours. At the Delhi Durbar in 1911 it conducted the messes of the camps of the Government of India, the Army, the Cavalry, the Provincial camp and those of Indore, Pudukkotta, Kashmir and the Press (European and Indian).

**Wine Merchants.**—In the wine trade Kellner's are second to none, and for over 70 years have specialised in wines and spirits to suit the climate. Their policy is to provide the highest quality only, so that when buying a wine or a whiskey from them one does not require to be a connoisseur, for the knowledge of the connoisseur and of the wine merchant with a reputation is clearly illustrated in the brands and vintages Kellner's offer their customers. The highly-skilled European staff which supervises this department has experience such as is only to be acquired in Europe. The magnificent warehouses furnish the necessary facilities for bestowing the special care that good wines require if they are to reach the consumer in perfect condition.

**Stores.**—The extensive development of this business has entitled the firm to be called India's "Fortnum & Mason" in much the same way as the pioneer work in railway catering earned it the name of the "Spicers & Pond" of India. The facilities and arrangements at Chowringhee and in some of the branches are calculated to make shopping as pleasant as in London's best stores.

**Agencies.**—The policy of representing only the best houses has given Kellner's an unique position in Eastern India, a status which their excellent service consolidates daily. Among the representations are: The Distillers' Co., Ltd., Edinburgh; King George IV Whisky,



FRANK ROSS & CO LTD  
Premises in Chowringhee, Calcutta

John Haig Whisky, Sanderson's Vat 69 Whisky, Arthur Bell's Perth Whisky, Pommery et Reims, Mackenzie & Co., Jerez de la Frontera, Mackenzie, Discolli & Co., Oporto, Feuerheerd Wearne & Co. Ltd, London, A. Lalonde et Cie, Bordeaux, Maire et Fils, Beaune, Cote d'Or, A. Wood Campbell & Co., London, Hatch, Mansfield & Co., Ltd, London, Hedges & Butler, Ltd, London, Rutherford & Co., Madeira, Ewald & Co., Rudesheim, Langenbach & Sons, Worms, S. Smith & Sons, Yalumba, Vin de St. Raphael Co., Valence, F. Cusenier Fils Aine et Cie, Paris, The D.O.M. Benedictine Co., Fecamp, Peter F. Heering, Copenhagen, Drambuie Liqueur, Francesco Drogh, Zara, Girolamo Luxardo, Zara, Collier & Co., Plymouth, Martini & Rossi, Turin, Boord & Sons, London, Wolfe's Schnapps, Read Bros, Ltd, London, Beck & Co., Bremen, Spatenbrau Brewery, Munich, Lowenbrau Brewery, Munich, Kloster Brauerei, Schweppes, Ltd, London, Kia Ora Co., Ltd, London, O.T. Co., Ltd, Australia, Henley's Cider, Rose's Lime Juice, Getz Bros, San Francisco, Heinz Pure Food Products, Pittsburgh, Gillard & Co., Ltd, London, El Trio Manila Cigars, Genesee Pure Foods Co. (Jello), 4711 Eau de Cologne, Johana Faber, Nuremberg, Royal Baking Powder Co., and Spencer & Co., Ltd., Madras, cigars.

**Head Offices.**—32, Chowringhee, Calcutta (cables "Kellners," Calcutta) Code Bentley's.

**Bankers.**—The Chartered Bank of India, Australia and China, Mercantile Bank of India, etc.

**FRANK ROSS AND COMPANY, LIMITED.**

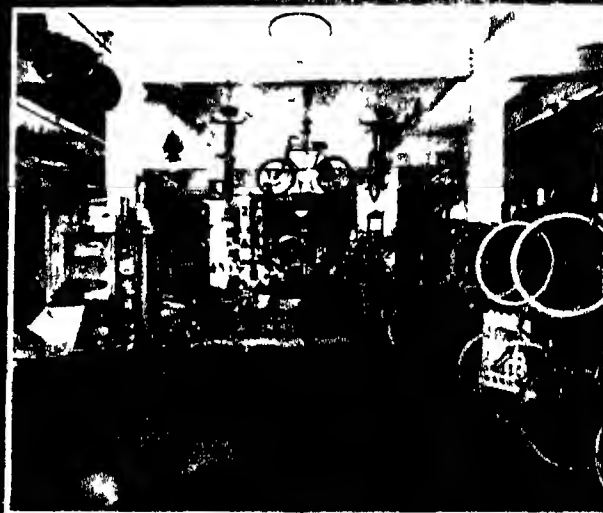
**Inception.**—This well-known firm was started in 1908 as a private concern at its present address. So rapidly did it advance that large godowns and manufacturing premises were soon added, while branches were opened at Camac Street, Calcutta, and Commercial Row, Darjeeling. In 1919 it was converted into a public limited liability company with a fully-subscribed capital of 5½ lakhs.

**Activities.**—The principal business is that of manufacturing and retail chemists and druggists. Drugs and chemicals are supplied to tea gardens, collieries, shipping companies, missions, etc., while the firm manufactures and sells many of its own specialties. It carries large stocks of toilet goods, druggist's sundries, and surgical instruments, and has installed a photographic chemicals department and Kodak agency. The Camac Street branch caters for the southern area of Calcutta, and the Darjeeling branch supplies visitors to this favourite hill station all the year round. Mofussil orders from practically every area in India, Burma and Ceylon are dealt with by a special department. The firm specialises in regular fresh importations of important lines from England, the Continent and America, and manufacturers of proprietary articles will find it an excellent distributing agency.

**London Agents.**—Frank Ross & Co., 6, Jewry Street, E.C.3.

**Head Office.**—15/7, Chowringhee, Calcutta.  
**Cables.**—"Chemicus," Calcutta. Code: Bentley's.

**Bankers.**—National Bank of India, Ltd.



W. LESLIE & CO.

1. Premises at Calcutta.
2. Mr. William Leslie, founder and sole proprietor.
3. Grocery and Hardware Department.

4. Ground Floor Showroom.
5. Bicycles and accessories, etc.
6. Sanitary Installations.

**W. LESLIE AND COMPANY.**

**Inception.**—The House of Leshe, to use the title by which the famous organisation is best known throughout India and Mesopotamia originated in a modest way when Mr Wm Leshe, the present chief, began business on his own account in 1890.

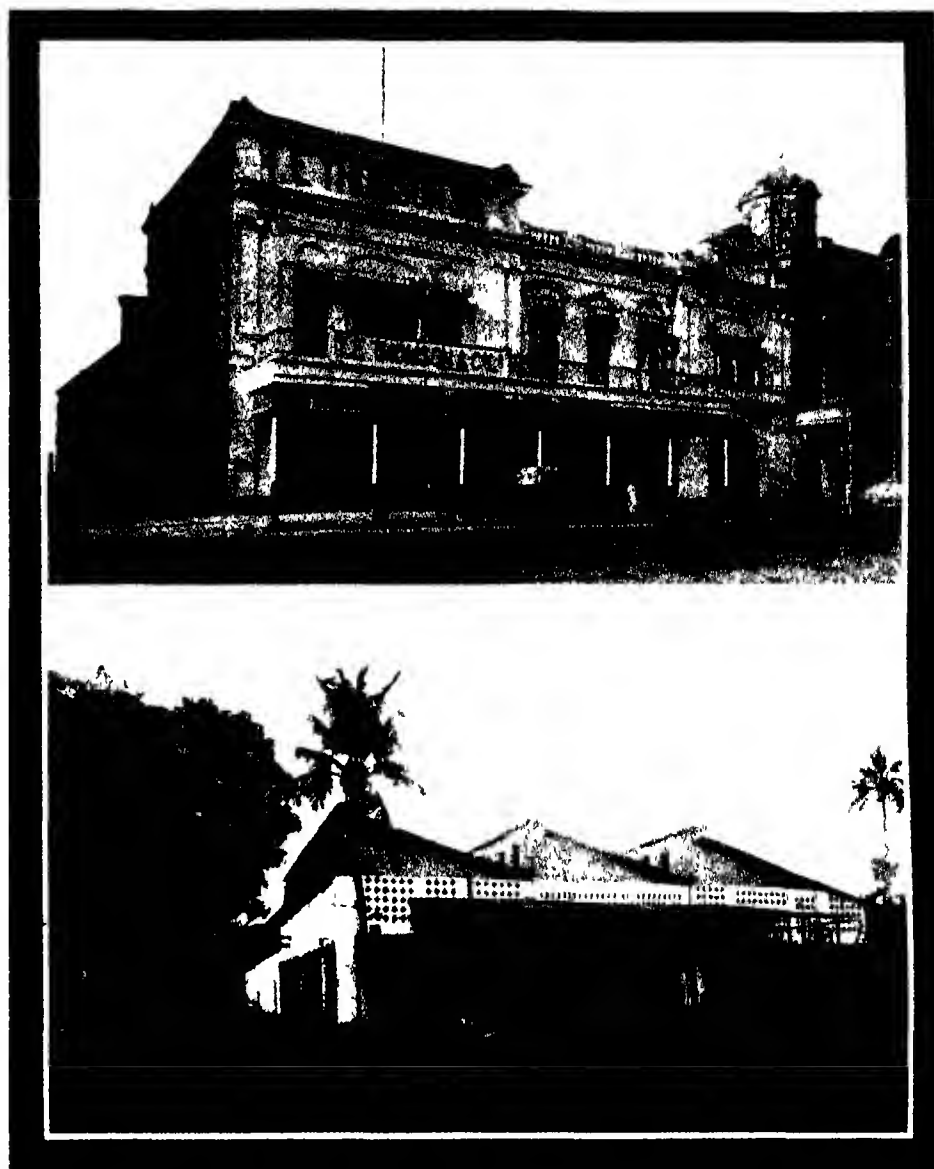
**Activities.**—Acknowledged to be the largest firm engaged in the hardware and metal business in Asia, the firm handles the goods of the leading British manufacturers.

**Premises.**—The enterprise rapidly outgrowing its original premises, was moved into larger quarters. These in turn became too small, and additional houses had to be obtained to accommodate each increase until 1911, when Mr Leshe decided to erect a building which would combine all the departments under one roof. He proceeded to construct premises on a block of land owned by him in Chowringhee, but it was only two years ago that the firm was able to occupy them, the War had interfered with their completion, and the finished portion was taken by the Government for its munitions department. During the War the company rendered great services to the Empire under difficult circumstances. The staff was greatly depleted, and Mr Leshe was left practically alone to supply to the Government in Calcutta, Bombay and in Mesopotamia material in large quantities that could not have been obtained through any other agency.

Leshe House, Chowringhee, Calcutta is even now not complete, for the southern end has still to be erected. Nevertheless the late Governor, Lord Ronaldsday, described it as a worthy addition to that thoroughfare of palaces.

**Directors.**—So far the firm has not become a limited liability company, but remained entirely in the hands of Mr Leshe himself until recently, when he took in as partners his two sons, Mr Mark and Mr Kenneth W. Leshe, Mr J. B. Greig (who had been several years with the firm), and Mr George Nicholson, who had served in India and acted for some years as London manager.

**Agencies.**—The firm has confined itself entirely to the hardware trade and its aim has been to supply only goods which it can guarantee as first class. Among the leading British manufacturers whose products are handled are Wm Bam & Co, Ltd, Wm Briggs & Sons, Ltd, Caledonian Wire Rope Co, Ltd, wire ropes for mining, engineering, oil wells, shipping, fishing, dredging, steam ploughing, aerial ropeways, etc., Carron Company, ranges, fire-grates, stoves, electric and gas fires and cookers, cooking apparatus, stable fittings, baths and lavatory stands, gates and railings, and engineering specialities, James Cartland & Son, Ltd, brass founders, James Chesterman & Co, Ltd, rules and tape measures, Clyde Rubber Works Co, Ltd, Coalbrookdale Co, Ltd, art castings and ornamental work, Daniel & Arter, Ltd, silver and silver-plated ware, Darlington Fencing Co, Ltd, Jos Evans & Sons, Ltd, toolmakers, Jos Evans & Sons (Wolverhampton), Ltd, pumps, R. C. Gibbins & Co, Ltd, hoisting and lifting tackle, Gitting & Hills Ltd, varnishes, paints and enamels, C & J Hampton, Ltd, Hardy Patent Pick Co, Ltd, Harrison MacGregor Co, Ltd, food-preparing machinery, Hayward-Tyler & Co, Ltd, soda water machinery, James Hinks & Son, Ltd, Hobbs, Hart & Co, Ltd, safe-makers, R. Hunt & Co, Ltd, Wm. Hunt & Sons, Ltd, The Brades, Ltd, James Cycle Co, Ltd, Jonas & Colver, Ltd, Jos. Kaye & Sons, Ltd, Kitson Engineering Co. (London), Ltd, C. H. Leng & Sons, R. A. Lister & Co, Ltd, London Emery Works Co, Ltd, J. & G. Meakin, Ltd, pottery



**T. E. THOMSON & CO LTD**

- 1 The Company's Head Office at Calcutta
- 2 Workshop at Ballygunge

works, A. I. Morse Sons, & Co distempers, paints and varnishes, Wm Newman & Sons, Ltd, door and floor springs, Newton Shakespeare & Co Ltd, Henry Pooley & Sons, Ltd weighing machinery, John Rabone & Sons Ltd rule and tape makers, Wm Ridgway & Sons, Ltd augers and bits, Rippingillies Albion Lamp Co Ltd, stoves, Jos Rodgers & Sons, Ltd cutlery, George Salter & Co Ltd, Stewarts & Lloyds, tube-makers, Slack & Brownlow, Slack, Sellars & Co Ltd, saws, Stonehouse Works Co, Ltd, Twyford, Ltd, sanitary ware, Sam Tyzack & Co Ltd, Welsh Tin-plate & Metal Stamping Co, "Goat" brand hollow-ware, Whitfield & Bedsteads, Ltd and John Yates & Co Ltd, plantation tools.

**Head Offices.**—19 Chowringhee, Calcutta  
**Workshops.**—24, Canal South Road, Langra

**London Office.**—11 Queen Victoria Street, E.C.4.

**Cables.**—"Metals" and "Manicature" (Reuters) Codes, Private, A B C 5th and 6th eds., Engineering and Bentley's

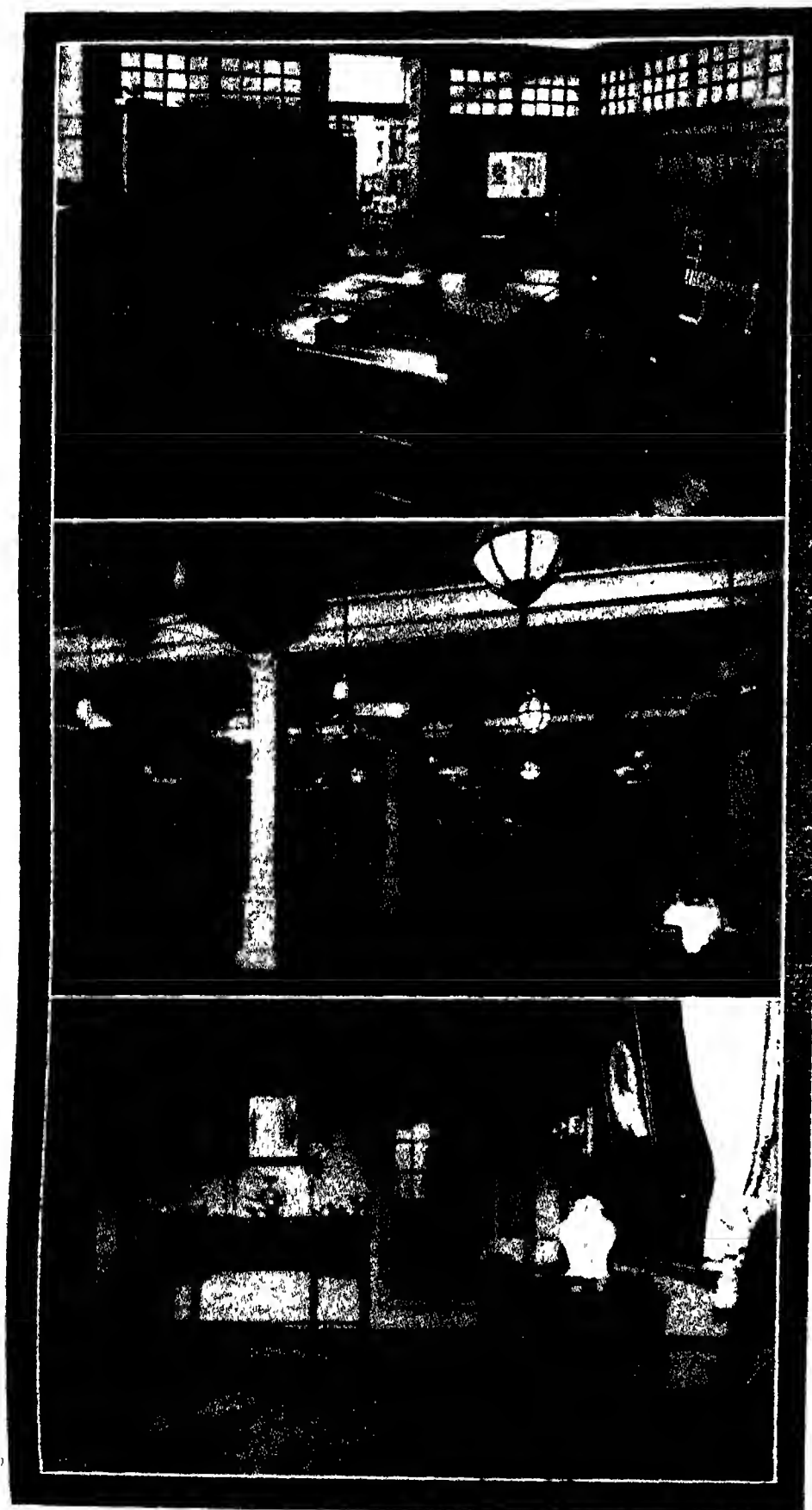
**T. E. THOMSON AND COMPANY, LIMITED.**

**Inception.**—This large firm of engineers, ironmongers, metal merchants and contractors whose parent house is John Shaw & Sons (Wolverhampton), Ltd, was originally established by a Mr T. E. Thomson in 1820 on a site now occupied by a part of the Great Eastern Hotel, when the Earl of Mordaunt was Governor-General of Fort William.

**Premises.**—Those at 9, Esplanade East, have been occupied since 1853 and cover a land area of over 20,000 square feet. Consequently, however, on the rapid expansion of business and the need for more warehouse accommodation, the firm acquired some years ago a large site near Ballygunge Railway Station. Here were erected a modern workshop and foundry under expert European supervision and a commodious warehouse of the latest design.

**Activities.**—Thomson's are among the largest and best known of European firms throughout India and Burma in the hardware trade and carry immense stocks of all kinds including engineering machinery. Their catalogue is one of the most comprehensive in the East, and is regarded as the authoritative and most up-to-date medium in the





C. LAZARUS & CO., LTD., Calcutta.  
Some Furnishing and Decorative Schemes carried out by the Company.  
1. Executive's Office.  
2. Ball Room.  
3. Private House.

hardware business. It brings large returns in direct orders from all over India, and its annual issue is eagerly anticipated by dealers and public alike.

**Agencies.** Among the well-known British and American manufacturers represented by them are Petters Ltd., Yeovil, oil engines, Thomas Chatwin Birmingham, engineers' tools, Smith & Wellstood, Bonnybridge, cooking ranges Samuel Osborn & Co., Sheffield, files Richmond & Chandler, Ltd. Manchester, corn crushers, L. S. Starrett & Co., fine tools and Charlton Silicate Paint Co., paints.

**Head Offices.** 9, Esplanade East, Calcutta (cables "Hardware" Calcutta) Codes A B C 5th edition and Pantelegraphy.

**Bankers.** The Imperial Bank of India and Hongkong & Shanghai Banking Corporation.

#### C. LAZARUS AND COMPANY, LIMITED.

**Inception.**—This company whose high-class productions are well-known throughout India, was established more than 100 years ago as cabinet-makers and billiard table manufacturers.

**Stock and Plant.**—The first essential to the manufacture of sound furniture in a tropical climate is a good stock of thoroughly seasoned timber, and this the firm always has on hand and is very particular to keep replenished. The second is an up-to-date electrically driven plant that will enable large orders to be turned out in the shortest time and this also it possesses.

**Activities.**—Messrs Lazarus specialise in complete furnishing and decorating, office fitting and billiard table making. They undertake work at any distance and seek further connections in Java, Malaya and up the China coast.

**Furnishing.**—The company has very old connections with all the big Indian States whose rulers require up-to-date furnishing for their palaces. Most of its work is in connection with large orders for princes and rich merchants, the houses being taken over after the builders have finished, when the remaining work, including plaster decorations, wall-papering, painting, parquet flooring and furnishing, is undertaken. Colour schemes are developed for the different rooms, and the furniture is designed in the various English and French period styles, being turned out in solid teak or mahogany at the price paid for veneered furniture in England. No glue is used, and all furniture is constructed specially to suit the varying climates in different parts of India. In addition to this class of work, simpler types of furniture for less pretentious homes are made to meet the requirements of different customers.

**Decorating.**—The firm is probably alone in being thoroughly equipped for this work, and employs a large staff of competent workmen. It acts as agents for Tynecastle decorations and for Sanderson's wallpapers, and executes fine work in fibrous plaster.

**Billiard Tables.**—These are produced in the company's own works, with the exception of the cloth and slates, which are imported from England, and are to be found all over India, Burma, parts of China, Malay States and the Philippine Islands. An expert European is in charge of the billiard section, and fitters are sent everywhere to overhaul and execute table repairs.

**Office Fitting.**—Messrs Turner Morrison & Co's new building and the office of the North British and Mercantile Insurance Co. were fitted and furnished by Messrs Lazarus.

**Soft Furnishings.**—A large stock of carpets, curtain materials, etc., is carried.

**Head Offices.**—Park Street, Calcutta.

**Cables.**—"Mahogany," Calcutta. Code: A.B.C. 5th edition.

**Bankers.**—Imperial Bank of India.



1 Head Office in India

HOUGHTON BUTCHER (EASTERN) LTD., Calcutta

2 Large Staff at Head Office, Calcutta

**HOUGHTON BUTCHER (EASTERN), LIMITED.**

**Inception.**—This company, well known to photographers throughout the East, is subsidiary to Houghton Butcher (Great Britain), Ltd., the largest manufacturers in the Empire of photographic goods, and acts as their sole distributing agents in India. The wholesale depot is at 10, Hungerford Street, Calcutta, and there are retail depots at 12b, Park Street, Calcutta, and 4, Queen's Road, Bombay.

**Activities.**—The firm does an extensive developing and printing trade, giving the most prompt and efficient service in the East through its staff of expert assistants, who advise and help customers in every way. Large stocks of photographic sundries are carried, and a prominent display is made of the famous Ensign, Carbine, Popular Pressman, Sanderson and other cameras manufactured by the British company. A wireless section dealing in wireless accessories is a growing feature of the business.

**Agencies.**—It acts as sole distributors in India for: Ilford, Ltd., plates, paper, roll films, etc.; Johnson & Sons, Ltd., photographic chemicals, Fordham & Co., Ltd., mounts, boards, etc.; Ross, Ltd., lenses, Williamson Kinema Co., Ltd., kinema machinery and cameras, and Mullard, Ltd. wireless valves, etc.

**Registered Offices.**—88-89, High Holborn London.

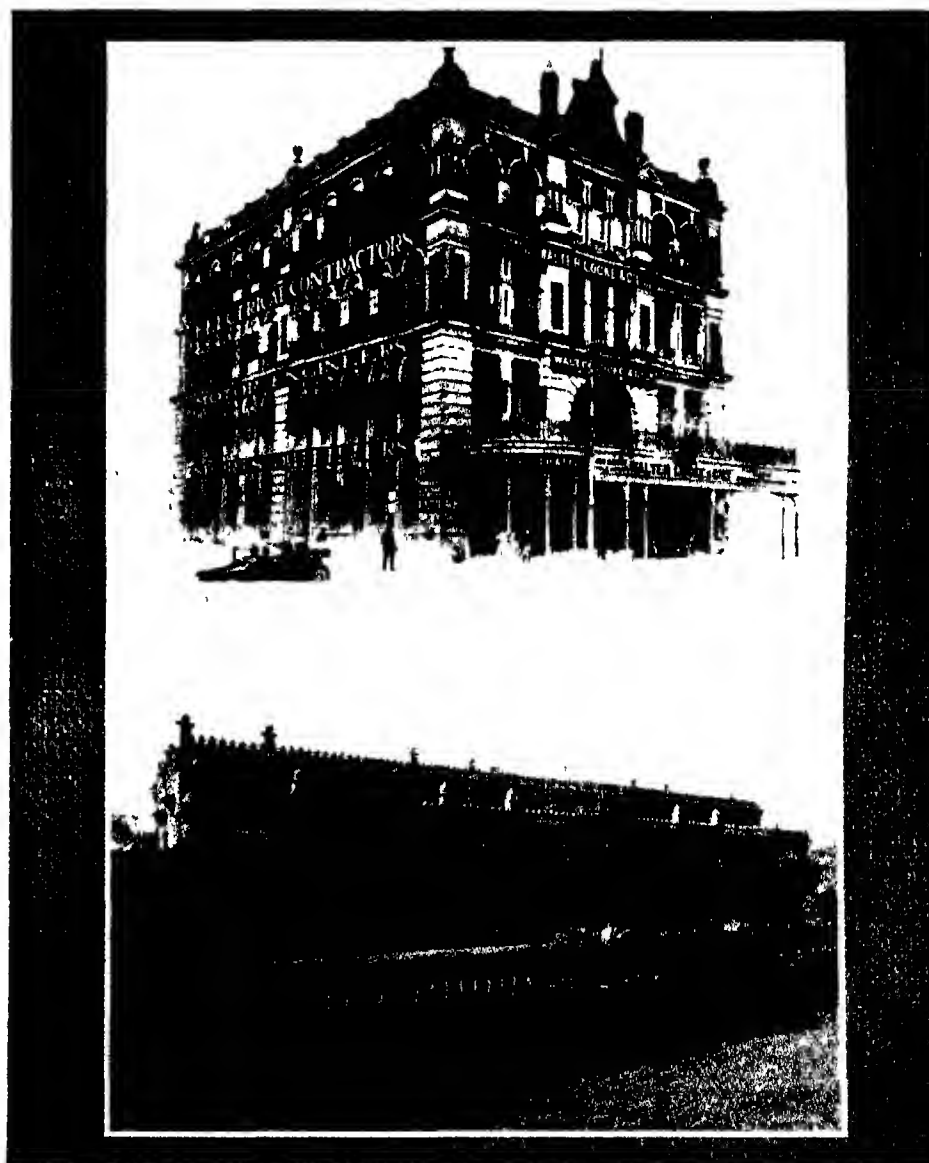
**Cables.**—"Ensignette," Calcutta Codes A B C, 5th edition, Marconi International and Private.

**Bankers.**—National Bank of India, Ltd.  
**WALTER LOCKE AND COMPANY, LIMITED.**

**Inception.**—In 1884 this important firm established a sports emporium which now ranks among the leading Calcutta enterprises.

**Activities.**—In its rapid progress there have been added a number of new departments, embracing electrical engineering, cycles and motors, safes and meters, silverware, and refrigerators.

**Sport.**—Messrs Locke represent the leading houses for sports and games and such well-known gun and rifle makers as Holland & Holland, Webley & Scott, Westley Richards, Winchester & Remington Arms Companies, and are special agents for Diamond grain sporting cartridges.



WALTER LOCKE &amp; CO. LTD.

1. The Calcutta Premises.

2. Branch at Lahore.

**Electrical Engineering.**—The workshops are extensive and equipped for the repair of fans, motors, etc. The Locke fan is well known, and the company are agents for the Lally Automatic Lighting Equipment, sole agents for the Ky-Ho hot air fan and contractors to the Government, Calcutta Corporation, Port Commissioners and the Indian Railways.

**Cycles and Motors.**—They are also the chief distributors for the Raleigh Cycle Co., and represent Jowett motor cars, Raleigh, Lewis and Indian motor cycles. The works and garage are equipped to meet the general requirements of motorists.

**Sales and Meters.**—Besides being chief distributors for the Ratner Safe Co., the firm represents the National Meter Co., having supplied many thousands of water meters to different municipalities.

**Silverware.**—Another representation is that of Elkington & Co., Ltd., for electro plate racing and sporting trophies.

**Refrigerators.**—Manufacturers and proprietors of Tundice Refrigerators, the company under notice have appointed the following overseas agents, Caldbeck, MacGregor & Co., Ltd., Federated Malay States and Hong

kong, Barrow, Brown & Co., Ltd., Bangkok, Siam, The Real Estate Syndicate, Ltd., Beira, East Africa, J. Lyons & Co., Ltd., Accra, Gold Coast, and Lindet eyes-Stokvis for Batavia.

**London Agents.**—Lancelot Dent & Co., Ltd., 24, Martin Lane, E.C. 4.

**Head Office.**—4, Esplanade East, Calcutta. Managing director J. B. Harper.

**Branches.**—Delhi and Lahore.

**Cables.**—"Wattlocke" Code A.B.C. 6th Edition.

**Bankers.**—The National Bank of India.

### VISITORS' GUIDE

**CLUBS.**—Bengal—33, Chowringhee Road, Bengal Gymkhana—1, Chowringhee Road, Calcutta—241, Lower Circular Road, Delta—4, Kyd Street, New—38, Chowringhee, Royal Calcutta Golf—Maiden and Tollygunge, Royal Calcutta Turf—11, Russell Street.

**BRITISH TRADE COMMISSIONER.**—Lamb House, Lamb Place.

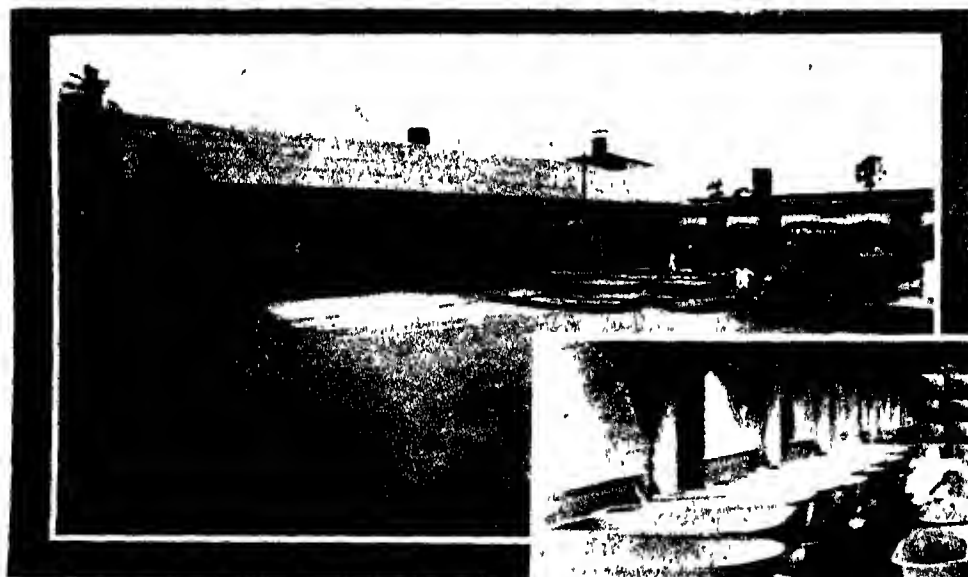
**CANADIAN TRADE COMMISSIONER.**—Allen House, 7, Hare Street.

**CONSULATES.**—Argentina—5, Fairlie Place, Belgium—4, Galstaun Mansions, Park Street, Brazil—Grand Hotel, Chowringhee, France—2, Auckland Place, Germany—2, Store Road, Ballygunge, Italy—21, Theatre Road, Japan—7, London Street, Netherland—13, Chive Buildings, Norway—22, Canning Street, Siam—2, Dover Park, Ballygunge, Spain—26, Dalhousie Square, Sweden—21, Buidwan Road, Alipore, United States—9-10, Esplanade Mansions.

**GENERAL POST OFFICE.**—Kola Ghat Street.

**HOTELS.**—Bristol—1, Chowringhee Road, Continental—12, Chowringhee Road, Eastern Bengal Railway—128, Lower Circular Road, Grand—Chowringhee Road, Great Eastern—Old Court House Street, Savoy—39, Bentinck Street, Spencer—Wellesley Place.

**THEATRES.**—Bijou—7, Lindsay Street, Elgin—137, Manicktolla Street, Elphinstone Picture Palace—Chowringhee Place, Empire—Chowringhee Place, Globe Grand Opera House—Lindsay Street, Palace of Varieties—Coraton Street, Pathe Frères Cinema—Dharamtollah Street.



### CONTRACTORS

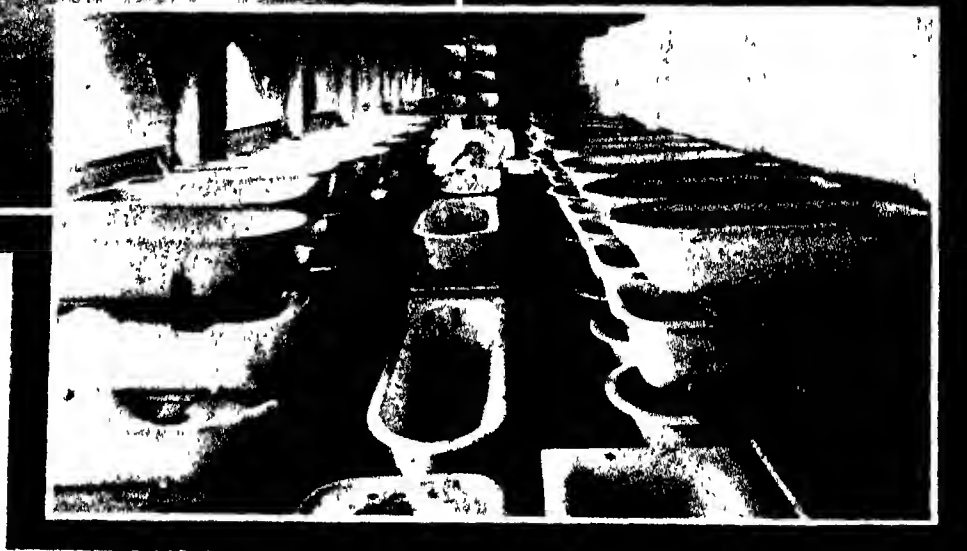
#### J. B. NORTON AND SONS, LIMITED.

**Inception.**—Established in 1869 by Mr J. B. Norton on the site of the Old Court House, this firm and its affairs remained in the hands of the family, through the sons, until 1911, when a private limited liability company was formed with Mr H. B. Norton as managing director. The old building was demolished in 1910 and replaced by the present commanding block, while in 1910 land was acquired at Entally, where an extensive works, capable of meeting the demands of a rapidly increasing business, was erected.

**Capital.**—This at present is Rs 7,50,000 (£50,000).

**Activities.**—The firm carries out sanitary engineering contracts all over India, and is a large supplier to the trade. The works comprise iron and brass foundries, machine, riveting, pattern, smith and plating shops, all fitted with modern machinery.

**Branches.**—In 1912 a branch was opened at Kashmir Gate, Delhi, and in 1916 one at The Mall, Simla. From the Delhi and



J. B. NORTON & SONS, LTD.

1. Warehouse at Calcutta.
2. Large stocks of Sanitary Fittings are carried

Simla establishments many important contracts in the Punjab, Rajputana and Central India have been undertaken.

**Contracts.**—The firm employs a large staff of expert European engineers, and the work turned out is equal to the best western standards. The following are a few of the contracts carried out in widely separated

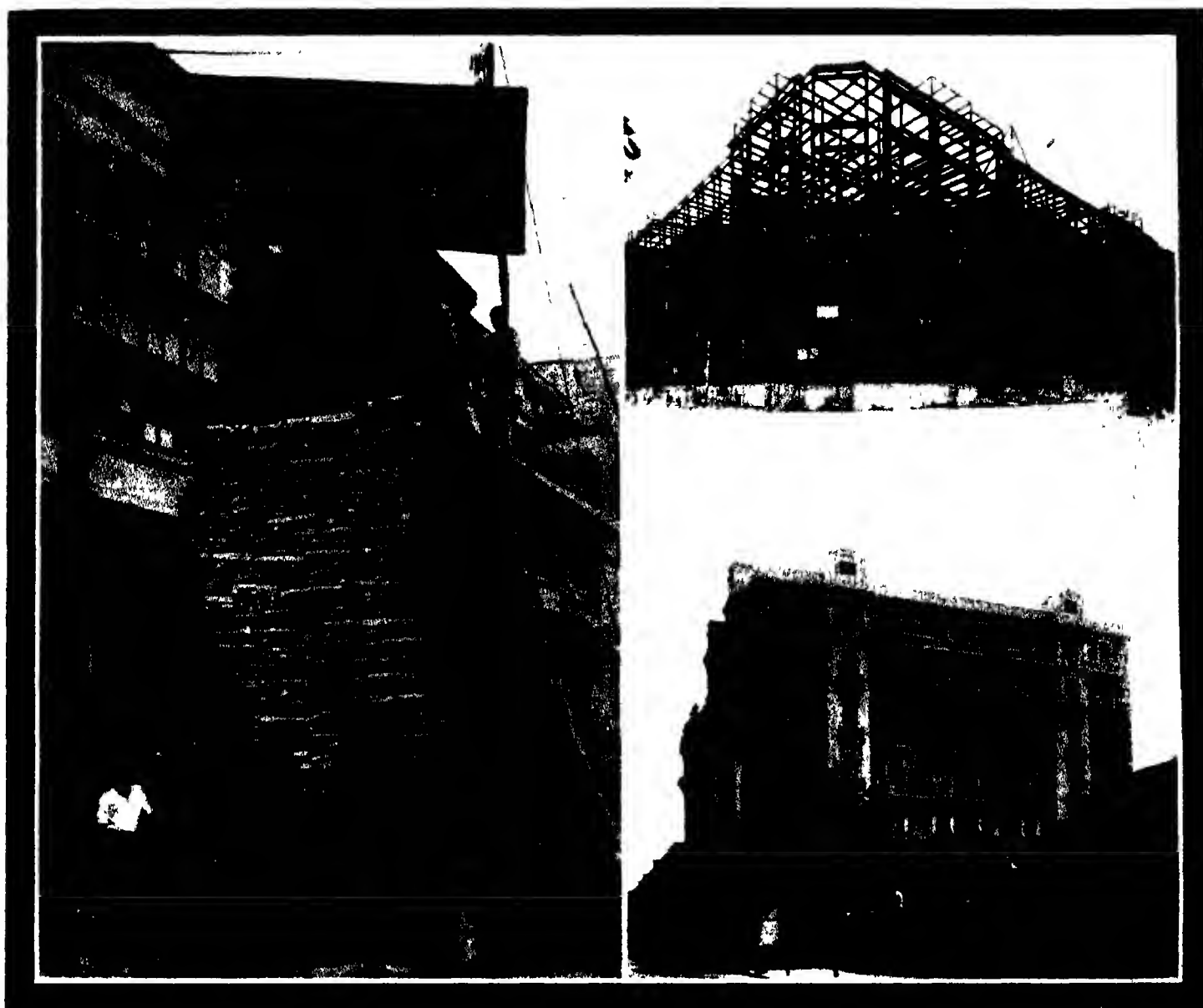
parts of India. Medical College and Presidency General Hospitals, Government House, Belvedere (Viceregal Residence) and railway offices, banks and jute mills in Calcutta, Government Houses at Darjeeling, Ranchi and Simla, The Cinnamara Tea Co., Jorhat, and The Assam Tea Co., Mariani, Assam, British Legation Buildings, Kabul, Afghanistan, Viceregal Lodge and Lady Hardinge Hospital, Delhi, Mayo Hospital Lahore, Moti Bagh Palace, Patiala, etc.

**Directors.**—The present board consists of Messrs W. T. Hamlyn, J. H. Hamlyn and

H. M. Rodden, with Mr F. J. Inness as secretary.

**Head Offices.**—Norton Buildings, Calcutta (cables: "Nortonson," Calcutta). Codes: A.B.C. 5th edition and Bentley's.

**Bankers.**—The Mercantile Bank of India, Ltd.; The Chartered Bank of India, Australia and China.



# SIMPLEX CONCRETE PILES (INDIA) LTD., Calcutta.

1. A Test Load at the E. I. R. Offices

2. Mackinnon Mackenzie's New Building under construction  
3. Aquilina and Louaza Building, Cairo, supported on Concrete Piles.

## SIMPLEX CONCRETE PILES (INDIA), LIMITED.

**Inception.**—Owing to the very bad subsoil in and around Calcutta many important buildings, erected upon ordinary foundations, have settled unevenly, causing damage to their superstructure. In 1924 Mackinnon Mackenzie & Co adopted Simplex concrete piles for the foundations of their new building, the largest and heaviest of its kind in the East. A total of 2,330 piles were installed by Simplex Concrete Piles Ltd., London within six months, and so quickly did it become evident that this type of pile was eminently suitable for heavy foundations in Bengal that an Indian company was incorporated in December, 1924, under the name of Simplex Concrete Piles (India), Ltd.

**Activities.**—The company designs and constructs foundations and executes all classes of reinforced concrete work.

**Contracts.**—After a satisfactory test, the Calcutta Port Commissioners adopted the Simplex concrete piles for shed foundations at the new King George's Docks, where many

of the piles have been driven to a depth of over 65 feet.

In 1925 an interesting test was made by the East Indian Railway on four Simplex piles driven to a depth of 55 feet. A load of 280 tons was placed upon the foundation and so successful was the result that the firm under notice was entrusted with the whole piling and reinforced concrete foundation for the new railway offices in Farlie Place, Calcutta.

Other contracts have been executed in Great Britain, Trinidad, Johore, Europe, India and America.

**Description of Piles.**—A steel tube with an enlarged cast iron shoe is driven until solid ground is reached, the reinforcement is placed inside the tube, which is then filled with freshly mixed concrete. When the tube is withdrawn the concrete flows out and cements itself to the surrounding soil.

**Advantages.**—(1) The pile is not subjected to damage during installation, as with pre-cast piles; (2) The concrete hardens below ground and is not affected by extremes of temperature; (3) A greater skin friction is

obtained, (4) No wastage occurs. The tube is filled to the required level, never too short or too long, as with pre-cast piles, whose lengths are predetermined, (5) Concrete piles are not subject to rotting, (6) They can be installed immediately the pile driver is on the site, whereas pre-cast piles have to be manufactured and left to mature before being driven, and (7) Simplex piles effect a saving in reinforcement. No moulds are required for casting.

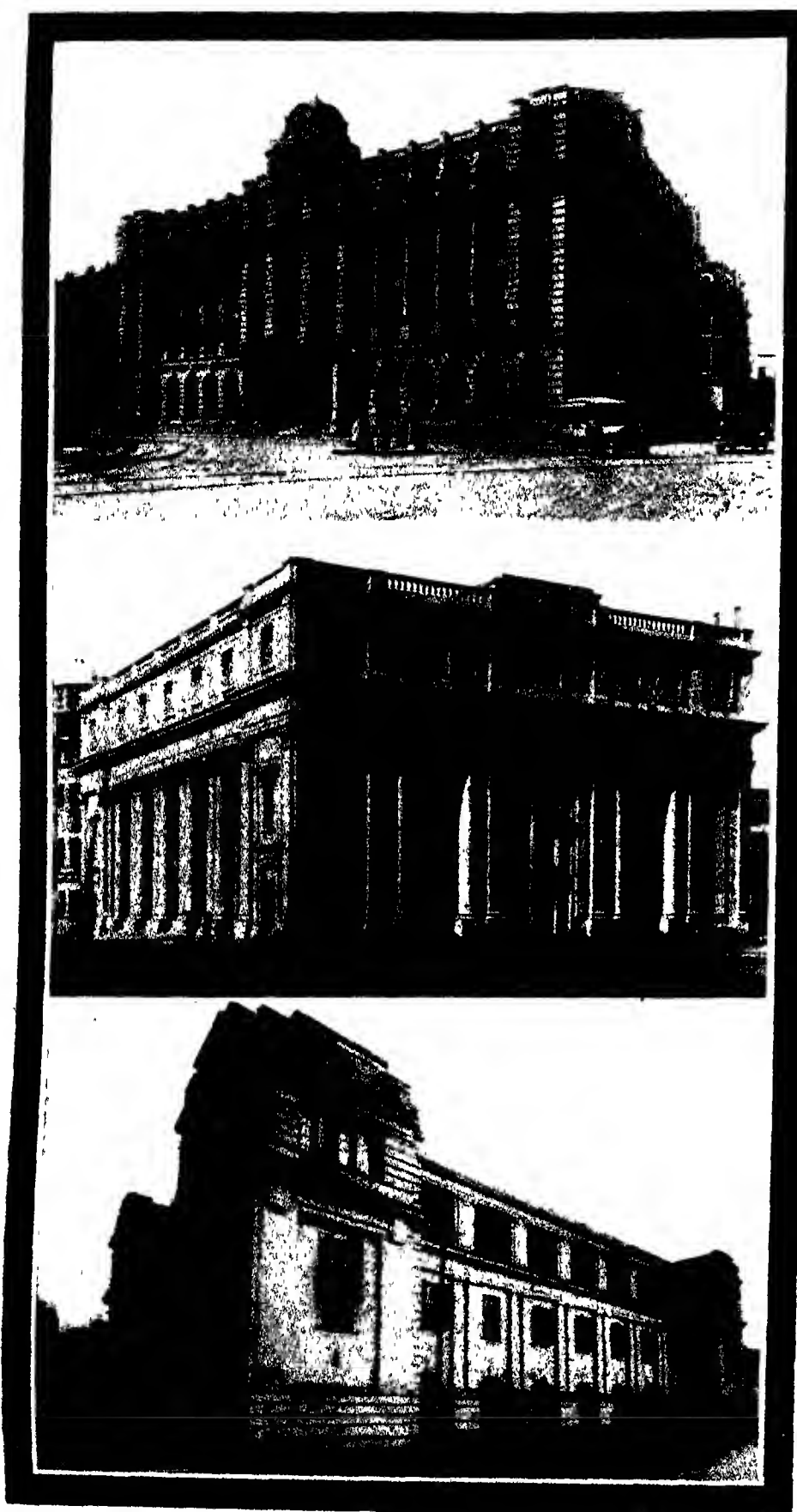
**Agents.**—United Engineers, Ltd., 240-241 Merchant Street, Rangoon, represent the company in Burma, and Hettner Brothers (15, Hammam El Talat, Cairo, and at Alexandria) in Egypt.

**Offices.**—**ENGLAND**—London (head office) 137, Victoria Street, Westminster, S.W. 1, Warrington, 31, Bold Street.

**SCOTLAND.**—10, Cook Street, Glasgow.

**INDIA**—Simplex Concrete Piles (India), Ltd., 8, Strand Road, Calcutta, P.O. Box 2159 (cables "Simplexco," Calcutta). Code: Bentley's Complete Phrase

**Bankers.**—Eastern Bank, Ltd.



J. C. BANERJEE, Calcutta.

Three of many important constructions by the firm.

1. Hongkong Bank Building.
2. Royal Exchange Building, Calcutta.
3. University Institute, Calcutta.

#### J. C. BANERJEE.

**Inception.**—This private firm, which has erected so many substantial buildings in Calcutta, was established there in 1907 by Mr J. C. Banerjee, well-known in financial circles as a director of some 20 public companies in India and a Commissioner for the Port of Calcutta. His partner in business is the eminent engineer, Mr P. B. Bhattacharyya.

**Activities.**—The operations of the enterprise are extensive, including structural and electrical engineering, building, contracting, import and export of hardware and metals, and the manufacture of bolts, nuts, rivets, dogspikes and railway and engineering materials. In addition, the firm are the proprietors of The Burdwan Electric Supply Co., Calcutta Housing Co., The Kenduguri Tea Estate and Chunar Stone Quarry, and managing agents for Matidhar Tea Co., Ltd. and Bijnmoni Tea Co., Ltd., Purnea.

**Premises.**—The stores, godowns and offices are at Strand Road, the structural workshops, metal yard and foundry at Andul Road, Shahman, the stone works at Upper Circular Road, and The Standard Rivet, Bolt and Nut Works at Ramkrishnapur.

**Development.**—Beginning work under the Port Commissioners, the firm soon obtained contracts from the Public Works Department, and within two years was placed on that body's roll of first class contractors. Then followed rapidly contracts from corporate bodies, the Government, princes and large commercial concerns in Calcutta and other parts of India. The numerous substantial buildings constructed by it during the past 20 years are indeed monuments to the skill and prestige of the organisation under notice, whose head Mr J. C. Banerjee, was styled the 'Prince of Contractors' by His Excellency Lord Carmichael, Governor of Bengal, when he opened the University Institute, one of the firm's great achievements, in 1915. Among so many noteworthy buildings, the following few and their approximate cost will convey an idea of the gigantic undertakings of the house of J. C. Banerjee.

**IN CALCUTTA.** Prince of Wales Hospital, Rs 9,38,000/-; Lady Dufferin Hospital, Rs 8,00,000/-; Baker's Laboratory, Presidency College, Rs 5,60,000/-; College of Science, Calcutta University, Rs 4,00,000/-; Royal Exchange Place Building, Rs 6,50,000/-; Calbazar Police Building, Rs 4,50,000/-; Hongkong and Shanghai Banking Corporation Building, Rs 5,50,000/-; Tropical School of Medicine, Rs 7,50,000/-; and Chetia Government Press Buildings, Rs 11,00,000/-.

**IN BOMBAY.** The University Extension, Rs 3,50,000/-; Magistrates Court, Rs 7,00,000/-; and Kirkee Munition Factories, Rs 32,00,000/-.

**IN ASANSOL, BENGAL.** India Iron & Steel Co., Rs 12,00,000/-.

**IN LUCKNOW.** Station Remoulding Works, O & R Railway, Rs 11,00,000/-.

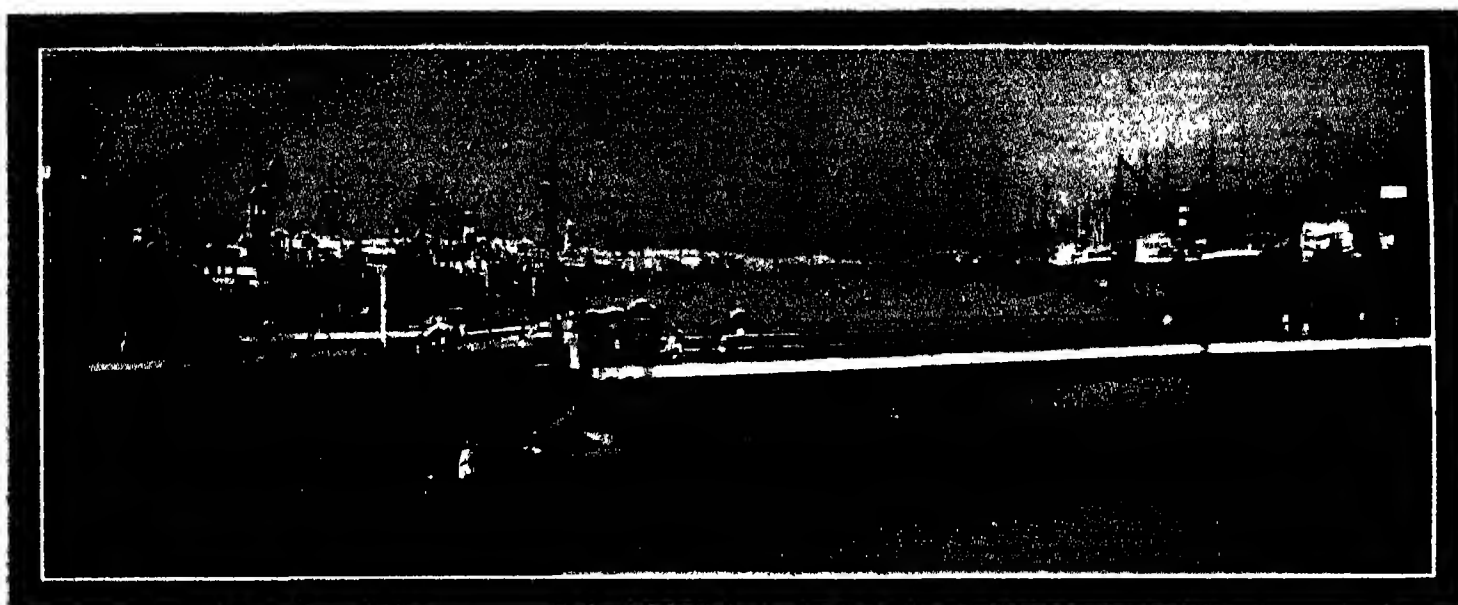
**IN PATNA.** Physics Laboratory, Rs 2,50,000/-; Training College, Rs 4,50,000/-; Patna Museum, Rs 4,70,000/-.

**Branches.**—Patna, Chunar, Lucknow, Burdwan.

**Head Office.**—20, Strand Road, Calcutta (cables "Boltnut," Calcutta, and "Builder" for above branches) Codes, A.B.C. 5th Edition, Bentley's and Private.

**Bankers.**—Imperial Bank of India, Lloyds Bank (Cox's Branch), Karwani Industrial Bank, National Bank of India, Ltd.





CALCUTTA PORT Kidderpore Docks: View from Dock No. 2

## PORT OF CALCUTTA

**C**ALCUTTA, situated in lat  $22^{\circ}33'N$  and long  $88^{\circ}24'E$ , on the left bank of the River Hooghly, some 80 miles from the sea, is the largest and most populous city of India, and owes its fame to the fact that it affords the only outlet to the markets of the world for an enormous area of country, in which are situated some of the most important industries of British India. From the time when the genius of Job Charnock saw the commercial possibilities of the situation the importance of Calcutta as a world port has steadily progressed, so that to-day it commands more than one-third of the whole commerce of India and must be counted among the greatest centres of shipping in the world. During the year 1925-26 no less than 1,194 vessels entered the port, with a gross tonnage of 6,453,982 tons.

**ADMINISTRATION.**—The limits of the Port proper extend from Konnagar, nine miles above, to Budge Budge, sixteen miles below Calcutta, and all affairs concerning it are in the hands of a Port Trust founded in 1870, which is at present composed of a Chairman, a Deputy Chairman, and fourteen Commissioners, nine of whom are elected and five nominated by the Local Government. Of the elected members the Bengal Chamber of Commerce appoints six, the Calcutta Trades Association one, the Commissioners of the City of Calcutta one, and another is nominated by such bodies or firms as the Government shall from time to time select as best representing the interests of the Indian mercantile community.

The powers and duties of the Commissioners are prescribed by the Calcutta Port Act 1890. Under Section 7 of the Indian Ports Act they are also appointed conservators of the Port of Calcutta, and, as such, have charge of the navigable channels of the river, but the Pilot Service is not under their control. The income of the Port Trust rose from Rs.1,51,28,435 in 1913-14 to Rs.3,21,27,748 in 1925-26.

**APPROACH TO THE PORT.**—The Hooghly is notoriously a dangerous and

difficult river, and the conservancy of the hundred and twenty odd miles between Calcutta and the Sandheads forms an important part of the activities of the Port Commissioners, who maintain a large and expert staff of River Surveyors, etc., for the purpose. There are numerous bars between Calcutta and the open sea, and vessels drawing thirty feet of water can be handled at the height of ordinary spring tides, but these conditions, of course, only occur for a limited number of days in each semi-lunation, so that very deep vessels are occasionally neaped, this, however, is a rare occurrence. Starting from seawards, there is a line of three lightships lying roughly from east to west some forty-one miles off-shore—the Mutlah, the Eastern Channel, and the Pilots' Ridge. The two last named burn blue lights at intervals of half an hour and one hour respectively between sunset and sunrise from March 15 to October 31, and the glare reflected on the clouds can be seen by a ship making her land-fall considerably before the light becomes visible. An in-coming ship picks up her pilot near the Eastern Channel light and follows a line of lightships and buoys shorewards, passing in turn the Intermediate, the Lower Gaspar, the Upper Gaspar and the Middleton light vessels, the last two being unattended. The Middleton light marks the inshore end of the first of the bars, which, though fairly stable, is sometimes the governing bar, having at present an average depth of between fifteen and sixteen feet below datum. After the Middleton Bar the channel leads shorewards, with Saugor Island and lighthouse close on the starboard hand, thence crossing the Gabtola Bar, at the head of which is the Gabtola light vessel, soon to be replaced by an unattended light. Some miles further up the estuary the Balari Bar forms a third obstacle. The channel is lighted as far up as Hospital Point, which marks the limit of night navigation and is approximately 80 miles from the Eastern Channel light.

The next bar, the Eastern Gut, frequently has the least water over it; the average low water depth throughout the year being 17 ft

The channel leads close in past Hooghly Point, with the Muckrapatti Shoal in the middle of the river. The whole of this stretch known as the James and Mary Reach is troublesome owing to the extremely strong eddies which have given it a world-wide reputation as a danger spot for shipping. Proceeding up the river past Iulta village, the Royapur Bar, 23 miles below Calcutta, and the Moyapur Bar five miles further up, are of considerable importance and sometimes shoal badly. Beyond these the bars are of small importance, so that outgoing vessels cross them at or near low water so as to be able to negotiate Moyapur as soon as the tide has risen sufficiently. All the bars in the river proper, as distinct from the estuary, suffer seasonal variations in depth, but some are more stable than others. The Eastern Gut, which is the worst in this respect, has been known to shoal  $2\frac{1}{2}$  ft. in 24 hours with a dredger working on it at the time. Besides buoys and lights, there are numerous leading marks and tidal semaphores as aids to navigation, while experiments in directional wireless telegraphy, to give bearings to ships in the Bay, are being carried out. Powerful dredgers are continually at work on the worst of the bars, so that during recent years the river, which for a long time was thought to be deteriorating, is now, if not actually improving, at least stable.

**COMMUNICATIONS.**—Three great railways converge on Calcutta. The East Indian Railway connects the city with Bombay, the United Provinces and the Punjab, and is the outlet for the rich traffic of the Ganges Valley. Its terminus is on the west bank of the river at Howrah, but a branch line crosses the Hooghly by a bridge at Naihati, 25 miles up the river, providing access to the docks at Kidderpore over the Eastern Bengal State Railway. The Bengal-Nagpur Railway runs through Orissa to Madras and westwards through the Central Provinces to Bombay, its terminus is also at Howrah, but a wagon ferry plies between Shalimar and the docks. The Eastern Bengal State Railway, the terminus for which is at Sealdah, connects

Calcutta with north and east Bengal and Assam, also with Diamond Harbour. The railways, however, by no means monopolise the traffic. Numerous native craft ply up and down the rivers, along the channels through the Sunderbans which connect Calcutta with Eastern Bengal and the Valley of the Brahmaputra, and on the Midnapore and Orissa coast canals. There are also several large steamer companies whose vessels navigate these inland waters and carry an extensive coasting trade to the Orissa ports, the most important of these are the India General, the Calcutta Steam and the Rivers Steam Navigation Companies.

**DOCKS AND JETTIES.**—All the facilities commonly found in a first-class port are provided, and communication between the various points is maintained by the Commissioners' Railway, which has over 100 miles of permanent way, and connects with all the main railway systems serving Calcutta.

**CALCUTTA JETTIES.**—The Calcutta Jetties are the oldest part of the Port, four of them having been handed over to the

It has five general produce berths, serving double-storeyed sheds, and eleven coal berths. Two of the latter are fitted with Beckett's Patent Mechanical loading gear, and experiments are also being made with the use of magnets for handling pig iron.

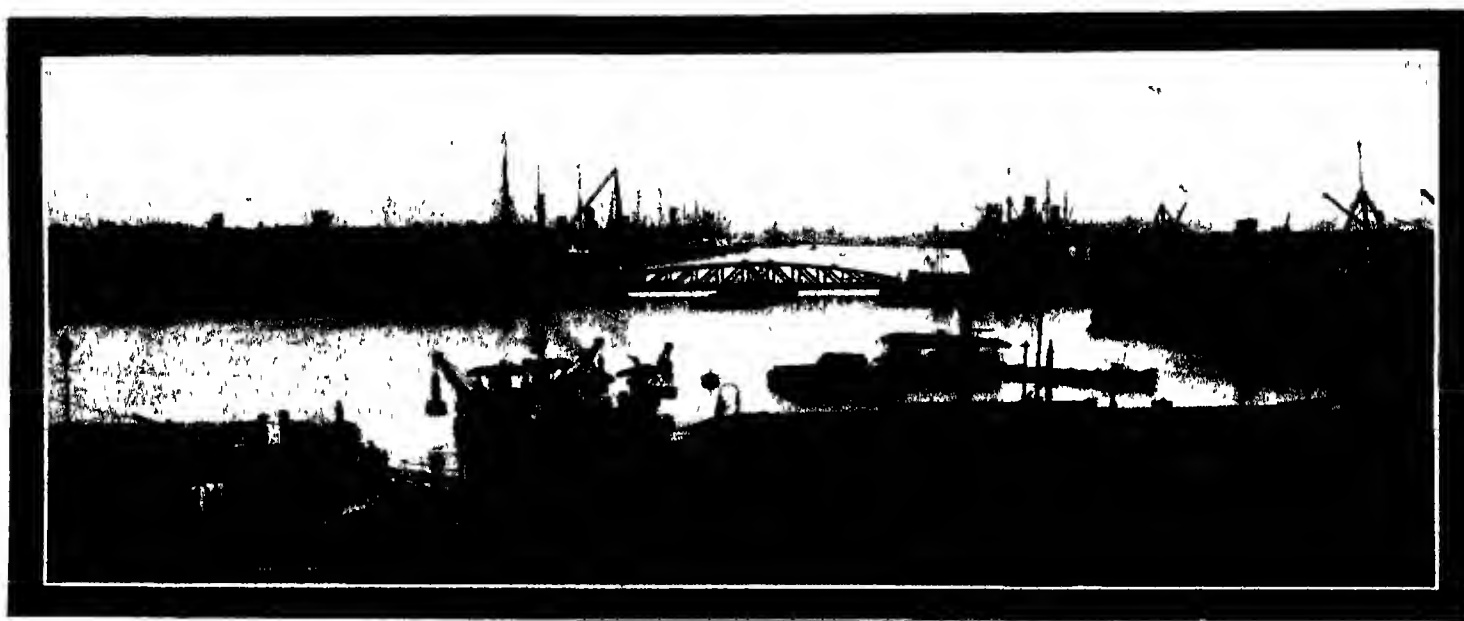
**DRY DOCKS.**—There are two Graving Docks, entered from the Tidal Basin—No 1, 538 ft 9 in., by 69 ft 6 in., with 25 ft of water on the sill, and No 2, 488 ft 6 in. by 69 ft 6 in., and having 27 ft on the sill. There is besides a third and smaller Graving Dock, but this is reserved for the Commissioners' own vessels.

**GARDEN REACH JETTIES.**—The Garden Reach Jetties, the latest addition to the Port and finished since the War, consist of a coaling jetty for ships up to 463 feet in length and four jetties for ships up to 600 feet, and they are built according to the most modern ideas. The transit sheds are double-storeyed, the largest having an area of 127,000 sq ft on each floor, and are very fully equipped with electric cranes, lifts

type and the export berth by a two-storeyed shed. The whole scheme when completed will comprise one of the most extensive dock systems extant.

**OIL DEPOT.**—Budge Budge, the oil depot for Calcutta, is situated 12 miles downstream. There are six pontoon jetties for unloading bulk or non-dangerous petroleum and its products, and one for dangerous petroleum. The storage installations, which have a total capacity of 50,000,000 gallons, are company-owned, the Commissioners merely owning the sites which are served by the Eastern Bengal Railway.

**WAREHOUSE ACCOMMODATION.**—The Commissioners provide extensive warehouse accommodation, consisting of two tea warehouses having a storage area of 304,000 sq ft, a hide depot having an area of 1,000,000 sq ft, a grain and seeds depot at Kantapukur of approximately the same area and consisting of 31 single-storeyed sheds, and various other warehouses situated close to the Calcutta jetties. Much of this accommodation is let out to firms, who then become entirely responsible for the custody and



CALCUTTA PORT. The Tidal Basin, with Kidderpore Docks in background

Commissioners, when the Port Trust was founded in 1870. To-day they are used entirely for imports, the whole of which, with the exception of relatively few bulk and bag cargoes, which are unloaded at Kidderpore Docks, is handled there. They suffer from the disadvantages of lack of space for expansion and congestion of traffic caused by unloading in the business quarter of the city. There are nine of these jetties, with a total length of 4,735 feet, but only eight are available for steamers, as the remaining one, 340 feet long, is used for the discharge of lighters and boats. Of the eight steamer jetties, three have two-storeyed and the remaining five single-storeyed sheds, all of which are equipped with the usual 35-cwt and 5-ton cranes.

**DOCK NO. 1.**—This dock is 2,700 ft. in length by 600 ft wide, gives 30 ft of water and has twelve berths serving single-storeyed cargo sheds, which are provided with hydraulic cranes to lift 35 cwt. and 5 tons. In addition, there is one general berth in the tidal basin.

**DOCK NO. 2.**—This has a length of 4,300 ft. by 400 ft., and also gives 30 ft. of water,

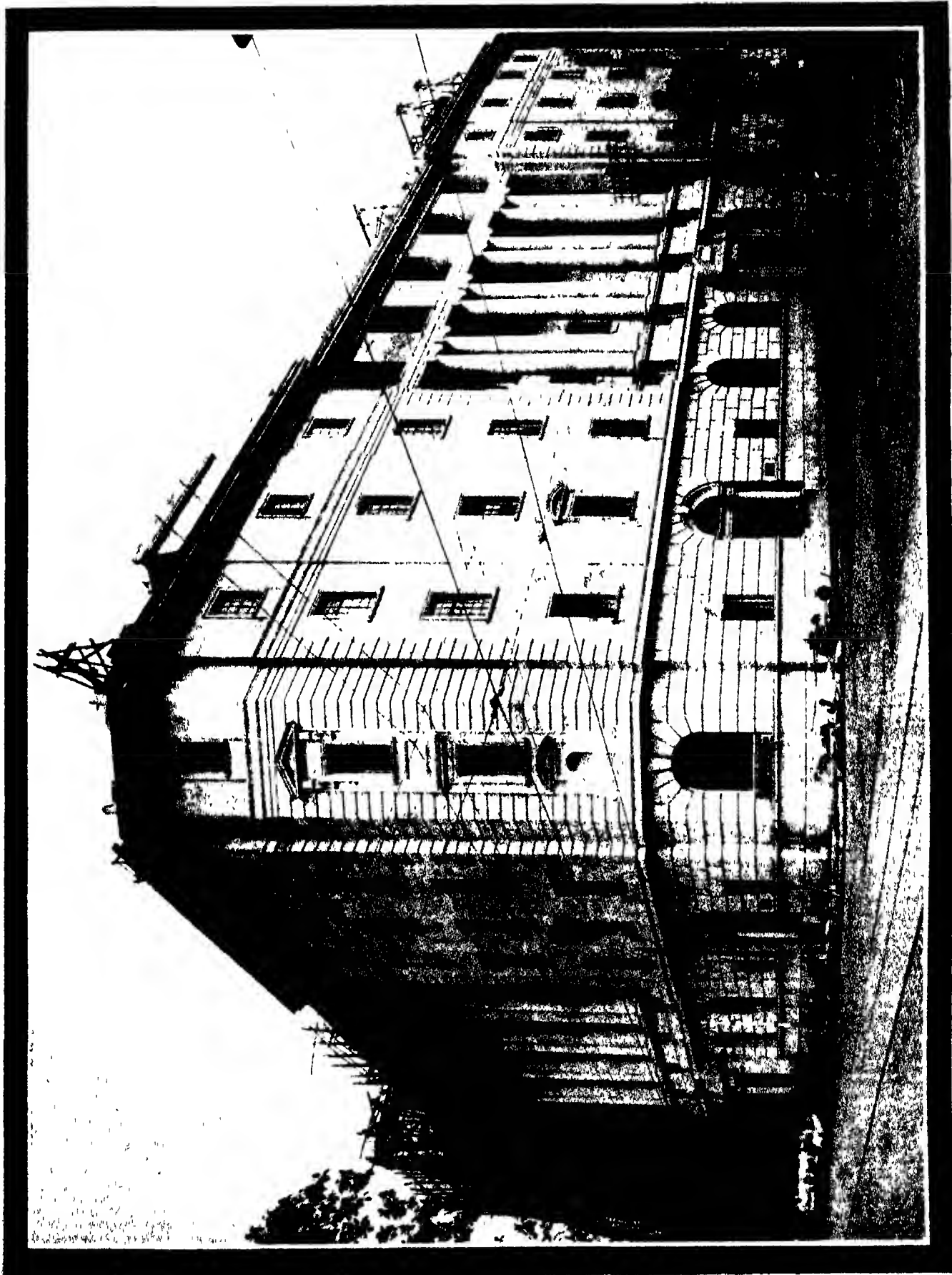
and trolley lines, while there are specially designed facilities for rail and lorry traffic.

**KIDDERPORE DOCKS.**—These, consisting of Nos 1 and 2 docks and a tidal basin, were completed in 1892. Although at first they were not used as freely as had been expected, they are now the centre of the export trade of Calcutta. There are two entrances from the river, one of 60 ft and the other of 80 ft, but as the latter entails using the whole basin as a lock and can only be used at certain states of the tide, a new 80 ft lock is under construction.

**KING GEORGE'S DOCK.**—This is at present under construction, and will eventually provide 33 berths, a heavy lift yard, and two Graving Docks. Only a portion of this work is in hand, and it is not proposed to complete the scheme until the trade of the port increases enough to justify so large an outlay. The portion under construction will comprise the lock entrance, two Graving Docks arranged tandem and entered either from the river or the docks, three import berths, one export berth, and a heavy lift yard. The import berths will be served by three-storeyed sheds of the most modern

handling of goods while they remain in the warehouse, but loading from or unloading into these warehouses is done by the Commissioners' contract labour. The remaining part is utilized as public sheds, and the liability as of a bailee remains with the Commissioners.

**EXPORTS.**—The Kidderpore Docks and Garden Reach Jetties are the centre of the export trade, although a considerable amount of loading is done from lighters, owned by private firms, directly into ships lying in the river. The chief commodities exported in 1925-26 were: coal, 1,796,415 tons, pig iron, 376,313 tons, wheat and seeds, 222,402 tons, manganese ore, 277,221 tons, jute, 198,838 tons, rice, 82,426 tons, tea 97,887 tons, hides and skins, 33,150 tons, gunnies, 32,716 tons, and shellac, 33,903 tons. The total amount loaded over the Commissioners' wharves was 3,290,857 tons. The amount of coal exported, although still the largest item, has fallen very much from the total of ten years ago, when it amounted to about 3 million tons; on the other hand the exports of manganese ore and particularly pig iron have increased very considerably during the last few years.



MACKINNON MACKENZIE & CO., Calcutta  
Fine new office building at that city nearing completion.  
(N. 10/17/77 p. 33 page 194)

**IMPORTS.**—A great part of the imports, totalling in 1925-26 951,442 tons, is handled at the Calcutta jetties, where all miscellaneous cargo is unloaded. The chief items are cotton piece goods, galvanised iron sheets, wrought iron, and machinery. All the bag cargoes, consisting almost entirely of sugar and rice, are discharged at the Kidderpore Docks, or sometimes at the Garden Reach Jetties, but these constitute only a small part of the whole. During 1925-26, out of a total of 352,714 tons handled at the Docks 306,739 tons consisted of sugar and 7,651 tons of rice, the latter figure being purely nominal compared with some years when the Indian crop has failed. All the oil imports are, of course, handled at Budge Budge. During 1925-26, 123 vessels arrived and 116,899,554 gallons were discharged. Besides these imports, a considerable number of ships discharge into privately owned lighters when lying in the stream, the chief items treated in this way being timber and salt, 436,837 tons of the latter being unloaded in 1925-26.

**LABOUR.**—There is always a fairly constant supply of labour to be obtained in Calcutta. The Commissioners keep a small permanent labour force, but rely on contract labour for by far the greatest proportion of their supply.

**PILOTAGE.**—Pilotage is compulsory between Garden Reach and Sandheads, and an extra fee is charged for night navigation. The charges vary with the draught of the vessel, and the river is divided into twelfths for the purpose of reckoning broken pilotage. The Commissioners' Harbour Master takes charge of vessels when they arrive at Garden Reach.

**PORT CHARGES.**—Port dues are charged at the following rates on net registered tonnage—

	ANNAS PER TON
Dhoomies and country vessels employed in the coasting trade, payable not more than once in sixty days	2
Vessels entering in ballast and not carrying passengers	3
Other sea-going vessels of 20 tons and upwards, payable by mail steamers and coasting vessels not more than once in sixty days	4
Tug steamers and river steamers, payable once between January 1 and June 30, and once between July 1 and December 30 in each year	4

**DIFFERENTIAL TOLL.**—In addition to landing charges levied on all goods handled at the jetties or docks, a differential toll is levied on all goods landed at the Calcutta Jetties. Differential toll is also levied on all goods landed at the Docks or Garden Reach Jetties which are removed from the transit sheds or yards by foreign railway wagons or in Port Commissioners' wagons in through booking to destinations beyond the Commissioners' system, except sugar, rice, wheat and other grain traffic, copper matte, iron ore and any other commodity which may hereafter be specially exempted under the orders of the Commissioners in Meeting. The toll is 12 annas per ton or part of a ton on all goods for which the landing charge is levied by weight, and three-fifths of the landing charge in all other cases.

**HOSPITAL DUES.**—These dues, which, like those for pilotage, are recovered by the Commissioners on behalf of Government, are at the rate of 4 pies per ton on net registered tonnage on all sea-going vessels entering the port.

**JETTY OR BERTH HIRE.**—This is Rs. 70 per day, except coal berths, which are charged Rs. 30 per day. There are various other charges for night work, hire of hawser boats, etc.

**LANDING CHARGES.**—These are levied on all goods landed at the jetties and docks. For goods on which freight is charged by weight by the steamer companies the landing charge ranges from Rs. 1 a 4 per ton on packages not exceeding 35 cwt. to Rs. 3 a 12 on packages from 35 cwt. to 30 tons, and Rs. 10 on packages over 30 but not exceeding 100 tons. For goods on which freight is charged by measurement the charge is from Rs. 1 to Rs. 3 a 12 per 40 cubic feet.

Goods are rent free for two clear working days from the date of landing, after which they incur rent, which is doubled after a further period of three days.

At the petroleum wharf a uniform wharfage charge of 10 annas per ton of 280 gallons is levied on all non-dangerous petroleum and its product. Petrol is charged 1½ pice per gallon.

There are, in addition, various miscellaneous charges for loading into wagons, weighing-in, etc.

**MOORING FEES.**—Mooring time is charged per day and varies with the size of the ship.

**RIVER DUE ON EXPORTS.**—On all goods loaded into any sea-going vessel within the limits of the port, whether the loading is done by the Commissioners or not, river due is charged at the following rates:

Manganese ore 10 annas per ton or part of a ton.

Bunker coal loaded into vessels bunkers for consumption on board that vessel 6 annas per ton or part of a ton.

All other export coal 8 annas per ton or part of a ton.

Pig iron and scrap iron Rs. 1 per ton or part of a ton.

All other goods on which freight is charged by weight by the steamer companies Rs. 1-4-0 per ton or part of a ton.

All other goods on which freight is charged by measurement by the steamer companies. Equal to the shipping charge chargeable for such or similar goods.

Motor cars not in cases Rs. 20 per car.

Where no basis for freight charge is laid down, the river due, shipping charge and all other charges payable to the Commissioners will be recovered on the weight or measurement basis at the Commissioners' option.

**RIVER DUE.**—River due on imports is charged at the following rates—

(a) On all goods discharged directly from any sea-going vessels into a Commissioners' lighter, on to the quay in the Docks, or on to the Calcutta or Garden Reach Jetties—12 annas per ton or part of a ton when the landing-charge is levied by weight, and in other cases at a rate equal to three-fifths of the landing-charge.

(b) On all other goods discharged from any sea-going vessel.

(i) when freight is charged by weight by the steamer companies at the rate of Rs. 1-4-0 per ton or part of a ton,

(ii) when freight is charged by measurement by the steamer companies at a rate equal to the landing-charge which would have been levied had the same goods been landed by the Commissioners.

**TOWING CHARGES.**—These vary according to the service required.

**TIME SIGNALS.**—Chronometers can be checked. Three balls, situated on the semaphore tower at Fort William, at the Port

Commissioners' office, and at the Kidderpore Docks Tower respectively, are hoisted close up as preparatory about five minutes before the signal, and are dropped every day at 1 p.m. Calcutta (Fort William) meantime, equal to 19 h 6 m 39 s 2 s (Greenwich mean-time). A flag is also hoisted on the semaphore tower 20 minutes before the signal as preparatory.

**TRADE AND SHIPPING.** The following table shows the aggregate trade of Calcutta with foreign countries and with Indian ports in the years named.

	1924-5 RS LAKHS	1925-26 RS LAKHS
FOREIGN TRADE		
Imports	91,50 85	86,54 94
Exports	1,42,91 91	1,47,22 77
Total	2,34,42 76	2,33,77 71
COASTING TRADE		
Imports	21,11 55	16,05 52
Exports	16,58 12	15,59 02
Total	37,69 67	32,25 14

**SHIPPING.**—Following are the figures of tonnage passing through the hands of the Port Commissioners for the years named.

	1924-25	1925-26
Net tonnage of vessels entering Port	3,845,788	3,887,544
Jetty imports	874,714	951,460
Dock imports	290,412	352,712
Dock exports (general)	1,770,054	1,494,442
Dock exports (coal)	1,495,913	1,796,406

## SHIPOWNERS, AGENTS, ETC.

### MACKINNON MACKENZIE AND COMPANY.

**Inception.**—As managing agents for the British India Steam Navigation Co., Ltd., Messrs Mackinnon Mackenzie & Co. are known throughout the East for all that is best in British commercial integrity and enterprise, and their name is synonymous with shipping over more than half the globe. Founded in 1847 by William Mackinnon and Robert Mackenzie, two young Scotsmen, with one small coasting steamer, the history of the firm's development is a shipping romance.

Two names stand out prominently in its long years of activity: those of William Mackinnon, the co-founder, and James Lyle Mackay, the present Lord Inchcape, who joined the firm in 1874. To the wisdom, pluck, endurance and adventurous enterprise of these men the present position of the Company is primarily due.

**Development.**—The first important step forward was the securing of the mail contract between Calcutta and Burmese ports for which purpose the Calcutta and Burmah Steam Navigation Company was formed in 1856. The success of the venture was early assured, and the partners then looked ahead for further expansion. This was a stupendous undertaking, involving a general system of steam communication over the whole Indian littoral, with extensions to the Persian Gulf and Singapore. The new contract provided for the conveyance of troops and Government stores, a fortnightly service between Calcutta and Burma, monthly services to Chittagong and Akyab, to Singapore, from Rangoon to Andaman Islands, and from Madras to Rangoon, a fortnightly service between Bombay and Karachi, and a service every six weeks to the Persian Gulf. In 1863 the name of the Calcutta & Burmah Steam Navigation Co. was changed to the British India Steam Navigation Co., Ltd., in consonance with the increased activities. The fleet then numbered 17 steamers in commission and four building. This wonderful growth was accomplished in the face of adversity and competition. In the cyclone



of 1863 the Company lost five ships, and was assailed for a few years by two companies formed in 1864, each with a large capital.

In 1866 the British India Steam Navigation Co., Ltd., entered into a 10 years' contract with the Dutch East India Co. to run the mail service of the East Indies, and the Netherland Steam Navigation Co. was formed with practically the same board of directors. Twenty years later this company owned 33 steamers of 41,000 tons trading in the Eastern Archipelago, but the more exclusive Dutch colonial policy ended its activities a few years later.

**Further Expansion.**—The opening of the Suez Canal in 1869 and the universal adoption of the compound marine engine led to further great expansions. The following new routes were thus opened: London, Red Sea ports and the Persian Gulf, Aden, Mombasa, London, Mombasa and Zanzibar, London, Bombay and Karachi every two weeks, London, Colombo, Madras and Calcutta, etc. In 1873, under a fresh 10 years' contract with the Indian Government, nearly all the existing services were doubled. In 1881, under contract with the Queensland Government, steamers were run from London to Brisbane via the Torres Straits, then the longest mail service in the world, while, five years later the Australian United Steam Navigation Co., one of the foremost shipping corporations in the Southern Pacific, was formed. Finally in 1914-15 the P. & O. and B.I. Companies, which for 45 years had worked harmoniously together, were fused under Lord Inchcape's chairmanship.

**Agencies.**—In addition to being managing agents of the B.I.S.N. Co. Ltd., Messrs Mackinnon Mackenzie & Co. are managing agents of Eastern Coal Co. Ltd., Madura Co. Ltd., Coromandel Co. Ltd., India Jute Co. Ltd., Megna Mills Co. Ltd., and British Arc Welding Co. (India) Ltd., also agents for the P. & O. S.N. Co., James Nourse Ltd., Union Steamship Co. of New Zealand Ltd., Canadian Government Merchant Marine Ltd., Canadian Pacific Steamships Ltd., Atlas Assurance Co. Ltd., London and Lancashire Insurance Co. Ltd., British and Foreign Marine Insurance Co. Ltd., Marine and General Mutual Life Assurance Society, Marine Insurance Co. Ltd., and Salomah Tea Co. Ltd.

**Head Office.**—16, Strand Road, Calcutta (cables "Mackinnons," Calcutta) Codes Bentley's, A B C and Scott's.

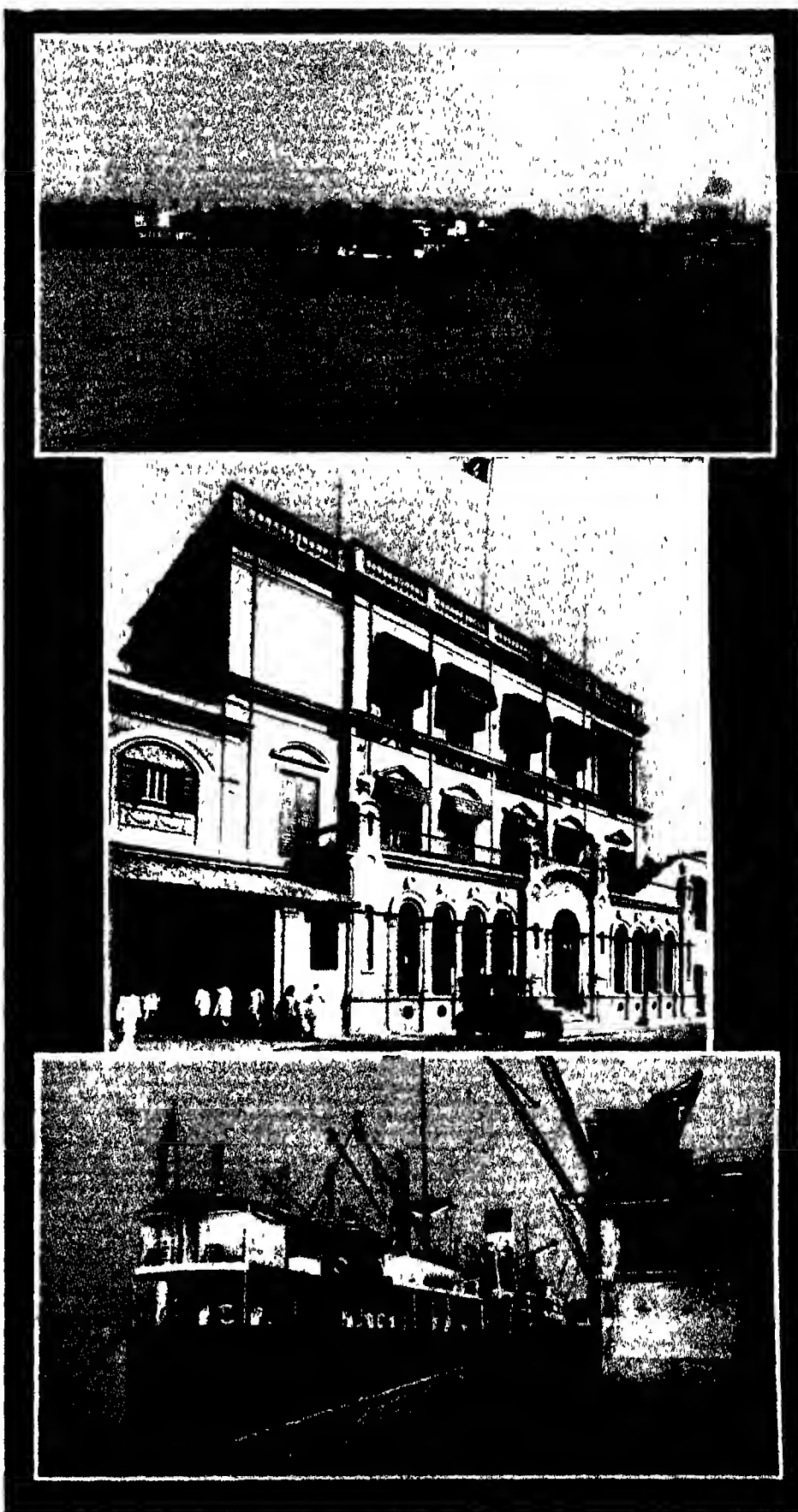
**Bankers.**—The P. & O. Banking Corporation, Ltd., The Chartered Bank of India, Australia and China, The National Bank of India, Ltd.

#### **GLADSTONE, WYLLIE AND COMPANY.**

**Inception.**—In the year 1839 Sir John Gladstone, father of the famous statesman of that name and head of the old well-known West Indian firm of Gladstone & Co., Liverpool, sent out from England a Mr. James Wyllie and a Mr. Andrew Hay to found an Eastern branch of his business in Calcutta. The house has developed steadily in influence and prestige during its 87 years' existence, and is to-day one of the best-known in that city.

**Activities.**—Operations are confined chiefly to the business of general East Indian merchants, shipping and insurance agents, and managing agents for two important concerns, The Calcutta Landing & Shipping Co., Ltd., and The Sutna Stone & Lime Co., Ltd.

**Shipping.**—The firm acts as agents for the Ellerman City Line, which has maintained since 1840 a regular and frequent service of passenger and cargo steamers between Calcutta and the United Kingdom, and for the Ellerman & Bucknall Steamship Co., managers, American & Indian Line, running



GLADSTONE, WYLLIE & CO., Calcutta.

1. Launch towing some of the Company's Fleet of 200 Barges.
2. Calcutta Offices.
3. S.S. "City of Nagpur," loading at Kidderpore Docks.





CORY BROTHERS &amp; CO., LTD., Calcutta

1 &amp; 2. Bunkering facilities at Calcutta

Centre. The Bombay general Coal Depôt, where the Company maintains heavy stocks

4. Office at Aden.

5. Coal stocks at Aden.

between Calcutta and North American ports. Messrs Gladstone, Wyllie & Co became connected with the Corporation of Lloyds in 1862, and have acted as its agents in Calcutta ever since.

**Insurance.**—In addition to Lloyds, they are agents also for the Salvage Associations of London and New York, and represent many of the leading insurance companies of the world, either as underwriting or claim settling agents.

**Imports and Exports.**—A large business is done in the importation of timber from Burma and California, of cotton piece goods from Lancashire and sugar from Java, etc. Metals, paints and varnishes are imported for supply to the railways and engineering organisations of India. The export side includes gunnies, hessians, jute, shellac, rice, carpets, and other Indian products.

**Managing Agents.**—The Calcutta Landing & Shipping Co., Ltd., which is managed by

the organisation under notice, maintains a fleet of 114 boats and launches, with a carrying capacity of 7,900 tons, for the transport of merchandise to and from ships, jetties, docks and mills on the river, and a fleet of motor lorries for similar work on shore. The Sutna Stone & Lime Co., Ltd., another concern under the management of Gladstone, Wyllie & Co., was started 32 years ago to operate the stone quarries at Sutna in the Rewa State of Central India, with which State and Nepal the firm is closely connected.

**London Office.**—36, Lime Street, E C 3

**Head Offices.**—5, Council House Street, Calcutta (cables "Gladswyll," Calcutta) Codes A B C 5th and 6th Editions, A. I. Watkin's, Scott's 9th and 10th Editions, Premier, Bentley's, Western Union and Lieber's Standard.

**Bankers.**—London: The Westminster Bank, Ltd.; Calcutta: Chartered Bank of India, Australia and China.

#### CORY BROTHERS AND COMPANY, LTD.

**Inception.**—There are few bunkering businesses so widely established and represented as that of this Cardiff firm of coalowners, founded almost a century ago. A private limited company having no connection with any other concern of the name of Cory, its ramifications are world-wide, and its name is on the list of contractors to the principal Governments and Admiralties.

**Activities.**—Cory Bros are large colliery and coaling depôt proprietors, coal exporters and fuel oil contractors, and sole shippers of Cory's Merthyr steam coal and Penrhyber Navigation steam coal. They are suppliers to the Governments of Great Britain, United States, France, Italy, Japan, Holland, Denmark, Greece, Brazil, etc., and to the principal railways, steamship lines, etc.

**Depôts and Branches.**—The network of depôts, branches and agencies, embracing practically all the great ports of the world, is

extremely efficient for the purpose of meeting the demands of a world trade, and is at least equal to the organisation of any similar business. The European branches are at London, Liverpool, Newport, Swansea, Glasgow, Newcastle, Paris, Marseilles, Genoa, Rome, Leghorn, Trieste, Fiume, Messina, Catania, Bilbao, Vigo, Huelva, Barcelona, Tarragona, Alicante, Malaga, Valencia, Cartagena, Rotterdam, Amsterdam, Antwerp, Berlin, Hamburg, Bremen, Copenhagen, Oslo, Trondhjem, Reykjavik, Gothenburg, Bergen, Haugesund, Abo, Stockholm, Gibraltar, and the United States branch is in New York. The firm has established coaling depôts at Aden, Algiers, Bahia, Bahia Blanca, Barbados, Bombay, Buenos Aires, Cardiff, Colombo, La Plata, Las Palmas, Liverpool, London, Madeira,

Malta, Marseilles, Mombasa, Monte Video, Newport (Mon.), Pernambuco, Port Said, Rio de Janeiro, Rosario, Santos, St Vincent (Cape Verde), Seychelles (Mahé), Suez, Swansea, Tenerife and Zanzibar. In addition to these, the Company is represented by agents in ports throughout the world, and has its own oil fuel installations at Port Said and St Vincent (Cape Verde).

**Calcutta.**—This branch was opened in November, 1924, by Mr. William Meek, who is well known to the merchant marine as the manager for 20 years of the firm's depôt at Aden, but for many years previously Messrs. Cory had been represented here. The coal depôt at Kidderpore carries the usual adequate stocks, never less than 3,000 tons, and

a further depot is maintained at Shalimar for jetty bunkering, offering the only facilities of the kind at the docks.

**Bombay and Karachi Branches.**—The Bombay office and depôt have been in existence more than 30 years, and are now under the charge of Capt G. J. Davies. The firm is represented at Karachi by Eduljee Dinshaw, C.I.E.

**Offices.**—Head office Cardiff. London office 59, St. Mary Axe, E.C.3, Calcutta office 8, Clive Street (cables, "Coribro," Calcutta) Codes Scott's 10th Edition and Bentley's.

**Bankers.**—Cardiff and London. The National Provincial Bank, Ltd., Calcutta, The National Bank of India Ltd.

## ADDITIONAL ENTERPRISES PROMINENT IN THE VARIOUS BRANCHES OF THE COMMERCE OF INDIA.

**AHMUTY & CO. LTD.** (Managing Agents Messrs. E. D. Sassoon & Co., Ltd.)—100 Clive Street Calcutta. Originally founded in 1815, this firm has undergone many changes. The business being reorganised by the present managing agents in 1925 is now carried on in two sections: (1) Metal machinery and engineering and (2) sundries. In the former department (cables, "Drill-steel" Calcutta) regular shipments of tin, copper, brass rods and sheets, etc., are received, while the latter section is interested in cotton and woollen piece-goods, continental sundries, wines and spirits, etc (cables "Rebassico," Calcutta).

**ALLEN BERRY & CO. LTD.**—Head office and works 62 Hazra Road, Ballygunge Showrooms 24 Park Street, Calcutta. Branch office Queen's Road, Delhi. Automobile engineers, oxy-acetylene and electric welders and motor car importers. Managing agents for The Oxy-Acetylene Welding and Metal Cutting Co. Ltd. Cables "Repairs" Codes Western Union and General Code of America.

**ALLEN BROS. & CO. (INDIA), LTD.** Registered office, Allen House, 7, Hart Street, Calcutta. Branches Bombay and Cawnpore. Export and import merchants, manufacturers, shippers, insurance agents, piece-goods merchants and agents. Agents in Europe. Allen Bros. & Co. Ltd., 1, Devonshire Square, Bishopsgate, London. Besides being the managing agents for a number of important firms, the company is the proprietor of Dum Dum Canvas Proofing Works, Dum Dum Paulin Factory, Calcutta. Fertiliser Works and Cawnpore Bone Mills. Cables, "Capricorn." Codes: Bentley's, A B C 5th and 6th Editions and Western Union.

**ALLEN & HANBURY'S, LTD.**—Block E-2, Clive Buildings, Calcutta. Wholesale druggists and surgical instrument makers. Head office: 37, Lombard Street, London. Cables, "Hynogen."

**ANDERSON, WRIGHT & CO.**—22, Strand Road, Calcutta. Founded in 1872, this firm for upwards of twenty years confined itself almost entirely to importing Manchester piece-goods and exporting Indian produce. In 1895, however, the Khardah Co. Ltd. (Jute Mill) was floated, with the firm as managing agents. The company has acted as agents of the Natal Line of steamers for many years. London correspondents: Clark, Wilson & Co., 93, Gracechurch Street, E.C.3.

**ANDREW YULE & CO. LTD.**—8, Clive Row, Calcutta. Merchants and agents. This well-known firm acts as managing agents for the under-named jute mills and tea gardens: Albion Jute Mills Co. Ltd., Belvedere Jute Mills Co. Ltd., Budget Budget Jute Mills Co. Ltd., Cheviot Mills Co. Ltd., Delta Jute Mills Co. Ltd., Lothian Jute Mills Co. Ltd., National Co. Ltd., New Central Jute Mills Co. Ltd., Orient Jute Mills Co. Ltd., Midnapore Zemindary Co. Ltd., Assam Consolidated Tea Estates, Ltd., Banarhat Tea Co. Ltd., Choonabhatti Tea Co. Ltd., Dilaram Tea Co. Ltd., Engo Tea Co. Ltd., Hoograjuli Tea Co. Ltd., Jaybirpara (Dooars) Tea Co. Ltd., Mun Tea Co. Ltd., Murphulani (Assam) Tea Co. Ltd., New Dooars Tea Co. Ltd., Rajgarh Tea Co. Ltd., Red Bank (Dooars) Tea Co. Ltd., and the Singtom Tea Co. Ltd. It also acts as secretaries and agents for the Basmatia Tea Co. Ltd.; Gillapukri Tea and Seed Co., Ltd., and as secretaries for the Hoolungoree Tea Co. Ltd., and the Sarugaon Tea Co. Ltd. In shipping Andrew Yule & Co., Ltd., are managing agents for the Bengal Assam Steamship Co. Ltd., Port Shipping Co. Ltd., Yule Line, Ltd., and the India Cuba Line, Ltd., managers for the Anglo-Oriental Navigation Co. Ltd., and general agents for the Kerr Steamship Co. Inc., New York and the Roosevelt Steamship Co. Inc., New York. They act also as managing agents for the following industrial concerns: Adjai Coal Co. Ltd., Adjai Second Coal Co. Ltd., Adjai Valley Coal Co. Ltd., Bengal Bhatdee Coal Co. Ltd., Bengal Coal Co. Ltd., Bengal Giridih Coal Co. Ltd., Bengal Karanpura Coal Co. Ltd., Bengal Nagpur Coal Co. Ltd., Bengal Talcher Coal Co. Ltd., Bihar Karanpura Coal Co. Ltd.; Burra Dhemo Coal Co. Ltd., Deoh Coal Co. Ltd., Girimint Coal Co. Ltd., Industry Coal Co. Ltd.; Kalapahari Coal Co. Ltd., Katras Jheriah Coal Co. Ltd., Khankoya Coal Co. Ltd., Minto Coal Co. Ltd., North West Coal Co. Ltd.; Seebpore Coal Co. Ltd., Sudamih Coal Co. Ltd.; Tori, Ltd.; Western Coal Co. Ltd.; Calcutta City Flour Mills Co. Ltd., Howrah Oil Mills Co. Ltd., Eastern Oil Products, Ltd., Central Hydraulic Press Co. Ltd.; Chutpore Golabari Co. Ltd., Bengal Aerating Gas Factory, Ltd.; Hooghly Printing Co. Ltd.; Port Engineering Works, Ltd.; Reliance Firebrick & Pottery Co. Ltd.; Associated Power Co. Ltd., Dishergarh Power Supply Co. Ltd.; Digwarrah Rubber Co. Ltd., and New Savan Sugar and Gui Refining Co.

Ltd., as secretaries to Anglo-Bengal Co. Ltd., Argent Co. Ltd., Barony Co. Ltd., Bond Co. Ltd., Calcutta Discount Co. Ltd., City Co. Ltd., Clive Investment Co. Ltd., Easterly Co. Ltd., Fleet Co. Ltd., Garden Co. Ltd.; Herald Co. Ltd., Index Co. Ltd., Leader Co. Ltd.; Plough Co. Ltd., Mond Co. Ltd., Paris Co. Ltd., Nonesuch Co. Ltd., Praise Co. Ltd., Russell Co. Ltd., Regent Co. Ltd., Rock Co. Ltd., Signet Co. Ltd., Textile and General Investment Co. Ltd., and India Paper Pulp Co. Ltd. They are interested also in insurance business, being local managers for the Guardian Assurance Co. Ltd., Gresham Fire and Accident Insurance Society, Ltd., and the Jupiter General Insurance Co. Ltd., branch managers for the British Equitable Assurance Co. Ltd., and Calcutta representatives for the Royal Exchange Assurance Corporation. In addition they are agents for Batavia Sea and Fire Insurance Co. Ltd., New Zealand Insurance Co. Ltd., and Triton Insurance Co. Ltd., chief agents for the Continental Insurance Co. Ltd., and chief representatives for the Union Insurance Society of Canton, Ltd. The London agents of Andrew Yule & Co. Ltd. are Yule, Catto & Co. Ltd., Finsbury House, Bloomfield Street, E.C. Cables "Unicorn" and "Yuletide."

**ARMY AND NAVY CO-OPERATIVE SOCIETY, LTD.**—Chowringhee Road, Calcutta. Up-to-date and comprehensive stock is kept in all departments common to a modern departmental store. Exploring, shooting and other parties fitted out, including Mount Everest Expeditions of 1921-1923 and 1924. Cables: "Armistice" Codes A B C 5th edition, A 1 and Bentley's.

**ATLAS ASSURANCE CO., LTD.**—Eastern branch office, 4, Clive Row, Calcutta. Agents Mackinnon, Mackenzie & Co. and Macneill & Co. Cables, "Orion." Codes A B C 5th Edition and Bentley's.

**BARLOW & CO.**—37, Strand Road, Calcutta. Established soon after 1860. Is a branch of Messrs. Thomas Barlow & Bro., Manchester and London. Connected with development of the Indian tea industry for many years, now act as agents for tea estates controlled by the partners in the parent firm. Correspondents Messrs. Thomas Barlow & Bro., P.O. Box No. 15, Manchester, and "Ceylon House," 49-51 Eastcheap, London, also Barlow & Co., Shanghai, Singapore and Kuala Lumpur. Cables: "Cephusus," Calcutta.

**BECKER, GRAY & CO. (CALCUTTA), LTD.**—Hongkong House, Calcutta. This firm of merchants organises the following departments: Gunny and shellac, jute shipping, grain, seed and sugar. Correspondents in Europe: Becker, Gray & Co., 24, Fenchurch Street, London. Cables: "Volleyed."

**BEGG, DUNLOP & CO., LTD.**—2, Hare Street, Calcutta. Merchants and agents. Secretaries for Tea Districts Labour Association. Managing agents for the following companies: Alliance Jute Mills Co. Ltd., Alexandra Jute Mills, Ltd., Waverley Jute Mills Co. Ltd., etc. Agents and secretaries for: Sungma Tea Co. Ltd. Agents: Begg, Sutherland & Co. Ltd., Cawnpore. Agents for: Trustees of the Jaintpore Debenture Loan. London agents: Begg, Roberts & Co., 138, Leadenhall Street, E.C. Cables: "Dunbegg." Codes: Western Union, A.B.C. 5th Edition and Bentley's Complete Phrase.

**BELISS & MORCOM, LTD.**—B-5, Clive Buildings, Calcutta. Engineers, manufacturers of engines for mill driving, electric light power traction, condensing plants, air compressors, turbines, crude oil engines (Diesel type), paraffin engines, pneumatic hose couplings, etc. Cables: "Beliss." Codes: Bentley's and A.B.C. 5th Edition.

**BIRD & CO.**—Chartered Bank Buildings, Clive Street, Calcutta. Merchants and agents. This company acts as managing agents for the Burrakur Coal Co. Ltd., Budroochuck Coal Mining Co. Ltd., Karanpura Development Co. Ltd., South Karanpura Coal Co. Ltd., Auckland Jute Co. Ltd., Clive Mills Co. Ltd., Dalhousie Jute Co. Ltd., Lansdowne Jute Co. Ltd., Lawrence Jute Co. Ltd., Northbrook Jute Co. Ltd., Standard Jute Co. Ltd., Union Jute Co. Ltd., Sonakunda Baling Co. Ltd., Crown Woollen Mills, R. Steel & Co. Ltd., Steel Baling Co. Ltd., Indian Patent Stone Co. Ltd., Chota Nagpur Mica Syndicate, Ltd., Kumardihubi Engineering Works, Ltd., as agents for the Warrington Wire-ropes Works, Ltd., Frank Pearn & Co. Ltd., Ropeway's, Ltd., Escher Wyss & Co. (Zurich), Browett, Lindley & Co. Ltd., Kumardihubi Fireclay & Silica Works, Ltd., Sijua (Jherriah) Electric Supply Co. Ltd., Orissa Cement Co. Ltd., Bisra Stone Lime Co. Ltd., Indian Graphite Co. Ltd., Assam Saw Mills and Timber Co. Ltd., Orissa Mineral Development Co. Ltd., United Steel Corporation of Asia, Ltd., Fairbairn Lawson, Combe, Barbour (India), Ltd., and as secretaries to General Investment and Trust Co. Ltd., Investment and Finance Co. Ltd., and Doornah, Ltd. The company transacts all kinds of insurance business and acts as agents for British American Assurance Co. Ltd., South British Insurance Co. Ltd., New Zealand Insurance Co. Ltd., Scottish Metropolitan Assurance Co. Ltd., and Sea Insurance Co. Ltd., as general agents for the Western Assurance Co. and the National Mutual Life Association of Australasia, Ltd., and as chief representatives for the State Assurance Co. Ltd. Messrs. Bird & Co. have separate departments under European supervision for each section of their many activities: jute and gunny export, accounts and finance, insurance, jute mills, piece goods, coal, stores and imports, engineering, timber, lime, labour, research, construction and Indian patent stone. The company has the following agencies throughout the country, each under the direction of Europeans: jute agencies at Naranganj, Chandpur and Madaripur; labour agencies at Kidderpore Main Docks, Kidderpore Coal Dock, Chandpore, Nimtala, Juggernath Ghat, Armenian Ghat, Salt Gollahs, Howrah, Rangoon agency, F. W. Heilgers &

Co., Bombay agency, agents, Messrs. Killick, Nixon & Co., also at Cawnpore, Lahore, Delhi, Goalundo, Dacca and Khulna. The London agents are Bird & Co., 7, Gracechurch Street, E.C.3. Cables: "Popinjay."

**BLACKWOOD, BLACKWOOD & CO.**—101, Clive Street, Calcutta. Merchants, importers and exporters and general agents. London firm: Blackwood, Bryson & Co., 20, Water Lane, E.C.3. Cables: "Blackwoods." Codes: A.I., A.B.C. 5th Edition, Western Union, Bentley's, Scott's, Kendall's and Private.

**BROOKE BOND INDIA, LTD.**—2, Metcalfe Street, Calcutta. In addition to owning tea estates in Assam and S. India, this firm is the largest buyer and shipper of tea sold on the Calcutta market. Factory at Kidderpore is the most up-to-date of its class in the East. Special plant installed for packing tea in tins under vacuum as protection against humid climate. Original and blended teas are shipped to almost every corner of the globe. Cables: "Blenders." Codes: Bentley's, A.B.C. 5th and 6th Eds.

**BRUNNER MOND & CO. (INDIA), LTD.**—Norton Buildings, 2, Old Court House Corner, Calcutta. Sole distributors in India, Burma and Ceylon of products of Brunner Mond & Co., Ltd., of Northwich, England. Bombay branch: Cook's Building, Hornby Road. Agents: Parry & Co., Madras; Bulloch Bros. & Co., Ltd., Rangoon; Katrak & Co. Karachi; Hayley & Kenny, Colombo. Cables: "Alkali." Calcutta Codes: A.B.C. 5th Ed. and Schofield's.

**BURMAH OIL CO. LTD.**—Calcutta. The Burmah Oil Co. is the pioneer in developing by modern methods of drilling and production, having much the biggest interest in the Burma field. The company is self-contained and handles the oil it wins until it reaches the market as a finished product. Crude oil is collected in storage tanks at the fields and pumped through the company's main pipeline, some 270 miles, to the tank farm at Syrian Refinery, near Rangoon. This refinery has just been reconstructed to handle in the most modern plant what, with old methods, furnished "throughout" for three refineries. Burma petroleum yields a complete range of petroleum products, the chief of which are petrol and kerosene of varying grades, and a mixture of heavier oils and paraffin. This mixture is separated into (1) hard and "soft scales" or paraffins, and (2) heavy oil, by being refrigerated and then filtered through specially prepared cloth under pressure. The scale is further refined by being "sweated" at a fairly high temperature which removes the remaining oil from it. Purified through a special filtering medium, it becomes white wax, a solid white substance chiefly familiar in the shape of the paraffin wax candle. The heavy oil separated from the wax yields a wide variety of products, as a result of complicated processes of distillation and chemical treatment, the most interesting being a complete range of lubricating oils. The refinery contains its own foundry and workshops, and plant for making steel casks and other containers. The bulk of the Burma Oil Company's production of petrol and kerosene is shipped to the other provinces of India. Petrol is also distributed in bulk for sale from kerbside pumps, and in 2-gallon cans. Trade in this commodity is very large and steadily expanding. Apart from developing its proved properties, the company is naturally interested in prospecting for new petroliferous areas in India, and part of its geological staff is regularly engaged in this work. Cables: "Rigs." Code: Bentley's.

**CHILEAN NITRATE COMMITTEE (Indian Delegation).**—7, Hare Street, Calcutta. Interested in propaganda for nitrate of soda as a fertilizer. Head office: Chilean Nitrate Committee, Friars House, New Broad Street, London, E.C.2. Cables: "Salitros." Code: Bentley's.

**COX & KING'S SHIPPING AGENCY, LTD.**—5, Bankshall Street, Calcutta. This branch was opened in 1911, and is now the largest clearing, forwarding and transport agency in the city. Cables: "Coxship." Codes: A.B.C. 5th Ed., Lieber's, Scott's, Bentley's and Private.

**CALCUTTA ELECTRIC SUPPLY CORPORATION, LTD.**—Temple Chambers, 6, Old Post Office Street, Calcutta. Registered offices in London: 3 and 4, Clement's Inn, Strand, W.C.2. In 1895 the Government of Bengal passed the Calcutta Electric Lighting Act, whereupon an application for a licence was made, and on January 7, 1897, the Indian Electric Company was formed to take over the licence granted. In February of that year the company's designation was changed to its present form. The English practice of the "three-wire" system of distribution was adopted. Underground cables were laid in main streets and overhead wires erected in the outskirts. The central station is at Jheel Road, Cossipore, with another in course of construction at Garden Beach Road, Kidderpore. There are 24 sub-stations and transformer houses, while a further two are projected.

**CALCUTTA TELEPHONE SYSTEM.**—This system is operated under licence from the Government of India, which receives as royalty 5 per cent of the company's gross revenue, by the Bengal Telephone Corporation, Ltd. Present capital consists of 600,000 ordinary shares of Rs. 10 each and 300,000 cumulative 7 per cent preference shares of the same nominal value. The four main exchanges, Calcutta, Burra Bazar, South and Howrah, are equipped on the Central Battery System. The equipment at the Calcutta exchange is partly American and partly British, while the apparatus in use at the other three is of Swedish origin. The operating staff consists of girls of the Anglo-Indian community. They are on duty for periods of five to six hours, during which time they are relieved for half an hour at intervals of not more than two hours. The European staff is not numerous, the electricians, linemen, etc., being in the main Indians. The control of the company is in the hands of six directors, of whom two are Indian. The Oriental Telephone and Electric Company, of Bishopsgate, London, which guaranteed a dividend to the Bengal Telephone Company's shareholders at the inception of the latter, has the right to nominate two directors to the board. The corporation serves approximately 8,000 exchange lines with 3,000 extensions, and there are in addition some 700 private lines.

**CUTLER PALMER & CO.**—30, Bondel Road, Ballygunge, and 10, Government Place East, Calcutta. Established in Calcutta 1815. Head office: 34, New London Street, London, E.C.3. Branches: Bombay, Madras, Lahore, Colombo, Karachi, Delhi, Simla, Srinagar. Agents in India for Messrs. John Walker & Sons, Ltd., Kulmarnock, James Hennessy & Co., Cognac; Gordon's Gin Co., London, etc. Cables: "Companion."

**DON, WATSON & CO.**—8, Lyons Range, Calcutta. Engineers, merchants and agents. Managing agents for Sasaram Lime, Ltd. Cables: "Donwatso." Codes: A.B.C. 6th Ed. and Bentley's.

**DUNCAN BROS. & CO., LTD.**—101, Clive Street Calcutta Managing agents for Anglo-India Jute Mills Co Ltd, Birpara Tea Co Ltd, Carron Tea Co Ltd, Clevedon Tea Co Ltd, Ellenbarrie Tea Co Ltd, Killcott Tea Co Ltd, Ledo Tea Co Ltd, Manabbarrie Tea Co Ltd, North-Western Cacha Tea Co Ltd, etc Agents Ally-nugger Tea Co Ltd; Amo Tea Co Ltd, Assam-Dooars Tea Co Ltd, Borokai Tea Co Ltd, Indian Tea Co of Cacha, Ltd, etc, also for some of the leading insurance companies Cables "Duncans" Codes A B C 5th and Bentley's 1st Ed A 1, and Imperial Combination and Kendall's

**FITZE, SAMUEL & CO. LTD.**—4, Government Place, North, Calcutta Also at Bombay and Karachi Merchants and agents London agents Samuel Fitze & Co, 91 and 93 Bishopsgate, E C Cables "Fitze" Codes A B C 4th and 5th Ed and Bentley's

**FORBES, A., & CO. LTD.**—12, Dalhousie Square, Calcutta General merchants and agents Correspondents in Europe A Forbes & Co, 3, New London Street, and Henry E Crowley, Boston Cables "Chevreau" Codes Broomhalls, Leviathan, Lieber's, A B C 4th and 5th Ed and Private

**FRENCH MOTOR CAR CO. LTD.**—Office, showroom, garage, repair works, motoring school 234-3, Lower Circular Road, Calcutta Depot 35-36, Rippon Street Motor car importers, automobile engineers, body builders Registered office 234-3, Lower Circular Road, Calcutta Branch New Queen's Road, Bombay Cables "Diamoto" Code Bentley's

**GARDEN REACH WORKSHOPS.**—Managing agents and head office, Macneill & Co, 2, Clive Ghat Street, Calcutta (See this firm's text on page 220)

**GILLANDERS, ARBUTHNOT & CO.**—8, Clive Street, Calcutta Merchants, bankers and agents In the jute industry they are managing agents and/or agents in Calcutta for the Hooghly Mills Co Ltd, and La Société Générale Industrielle de Chandernagore (Gondalpara Mills), in tea for the Anandabag Tea Co Ltd, Assam Proper Tea Co Ltd, Betjan Tea Co Ltd, Bonomali Tea Estate, Dildarpur Tea Co Ltd, Gosabari Tea Estate, Juthibari Tea Co Ltd, Karyacharra Tea Co Ltd, Manipur Tea Co Ltd, Rungneet Tea Estate, Singlo Tea Co Ltd, Tengpani Tea Co Ltd, and Timon Tea Co Ltd They are also managing agents and/or agents for a number of collieries, Bolompore Coal Co Ltd, Garo Hills Mining Corporation, Ltd; Khoodia Coal Co Ltd; Napur Coal Co Ltd, Searsole Coal Co Ltd, and Maharaja of Kassimbazar Khas Collieries, in railways, for the Darjeeling Himalayan Railway Co Ltd, Darjeeling Himalayan Railway Extension Co Ltd, Hardwar Dehra Branch Railways Co Ltd, Hoshiarpur-Doab Branch Railway Co Ltd, Mymensingh Bhairab Bazar Railway Co Ltd, Raipur Forest Steam Tramway and Sara-Serajganj Railway Co Ltd. The company transacts all kinds of insurance business and has the following agencies. Atlantic Mutual Insurance Co of New York; British and Foreign Marine Insurance Co Ltd, British India General Insurance Co Ltd, Caledonian Insurance Co Ltd; Century Insurance Co Ltd, Clive Insurance Co Ltd; Employers' Liability Assurance Corporation, Ltd; Europa Società Anonima Levant Marine and Re-insurance Co; London Assurance Corporation; London Associated Re-insurance Corporation, Ltd, London Guarantee & Accident Co Ltd;

Mercantile Mutual Fire Insurance Co Ltd, Merchants Marine Insurance Co Ltd, National Guarantee & Suretyship Association, Ltd, Ocean Accident & Guarantee Corporation, Ltd; Phoenix Assurance Co Ltd, Prudential Assurance Co Ltd, Royal Insurance Co Ltd; South British Insurance Co Ltd, and Union Marine Insurance Co Ltd Messrs Gillanders, Arbuthnot & Co are managing agents and/or agents for a number of important industrial concerns, including lumber—H Dear & Co Ltd, and Millar's Timber & Trading Co Ltd Building and Engineering—British Ropeway Engineering Co Ltd, Ekra Engineering Works, Mackintosh Burn, Ltd, and Rajgaon Stone Co Ltd Cutch and Katha—Indian Wood Products Co Ltd Explosives—Nobel's Explosives Co Ltd, and Curtis's & Harvey, Ltd Cement—White Bros Portland Cement and Sone Valley Portland Cement Co Ltd (Rohtas Brand) Belting—The Pioneer Rubber Mills Co Ltd Sterling Loans Services—Bethiah Raj Sterling Loan and Kassimbazar Raj Sterling Loan Buying Agents—for H M Ceylon Government and the British North Borneo Government Paints—Punchin Johnston & Co Ltd Steel Shaking—Steel Products Co Ltd Branches, under European supervision, have been established at Rangoon, Bombay, Madras, Karachi, Lahore, Delhi and Cawnpore London representatives Ogilvy, Gillanders & Co 67 Cornhill, E C Liverpool House Ogilvy, Gillanders & Co 13, Union Court, Castle Street Cables "Gillanders," Calcutta

**GRAHAMS TRADING CO. LTD.**—9, Clive Street, Calcutta Interested in the import of cotton, woollen and artificial silk piece-goods and yarns, metals, sundry goods, vegetable products Exporters of wool, shellac, jute, fabrics, and bone products Manufacturers of bone products (Ganges Valley Bone Mill Co Ltd) Acts as agents for Reckitts & Sons, Ltd, Aden Salt Works, Union Salamera d'Espana Torrevieja, and also many well-known insurance and shipping companies Cables "Grahams"

**HENDERSON, GEORGE & CO. LTD.**—101, Clive Street, Calcutta Merchants and agents In its insurance department the company represents the North British and Mercantile Insurance Co Ltd, London Assurance Corporation, Assurance Office of Australia, Union Assurance Society of Canton, Ltd, Scottish Insurance Corporation, Ltd, Royal Exchange Assurance, and M David & Co Messrs Henderson, George & Co Ltd, have agencies at Narianganj, Serajganj, Chandpur, Madaripur, Akhaura, Sonatola, Gourepore, Elashin, Lohagara, Nikh and Nakaha, and act as agents for the Barnagore Jute Factory Co Ltd, Bally Jute Co Ltd, Dessai and Parbutia Tea Co Ltd, Hunwal Tea Co Ltd, Iringmara Tea Co Ltd; Nahorjan Tea Co Ltd, Dolaguri Tea Co Ltd, Kathoni Tea Co Ltd, and the Shampore Coal Co Ltd The London correspondents are Messrs George Henderson & Sons, 7, Mining Lane, E C Cables "Scotswood" Codes used A B C, Bentley's and Scott's

**HENRY WILLIAMS (INDIA), LTD.**—7, Church Lane, Calcutta Works 97, Andul Road and Bharpura Road, Howrah Suppliers of railway appliances and engineers Cables "Pointsmen" Code A B C, 6th Ed

**HERBERT WHITWORTH, LTD.**—26, Strand Road, Calcutta Incorporated in England. Cotton manufacturers and general merchants. Head office: Whitworth House, Princess Street, Manchester. Mull; Pioneer

Mill, Radcliffe, Lancs Cables "Herwhit," Calcutta Codes Private, A B C 5th Ed and Bentley's

**JAMES TAYLOR & CO. (Merchants), LTD.**—38, Strand Road, Calcutta Founded as a private company in Manchester about 60 years ago by James Taylor, this was the first English firm to export cotton piece-goods direct to Indian importers The Calcutta branch was opened in 1899 by James Taylor, a son of the founder Business gradually expanded until in 1920 the English firm was floated as a private limited company under its present style Cables "Trice"

**JAPAN COTTON TRADING CO. LTD.**—D-3, Clive Buildings, Clive Street, Calcutta Incorporated in Japan General merchants, importers of cotton yarn, cotton piece-goods, silk yarn, Burma rice, cement, beer, etc, exporters of cotton, jute, fabrics, manures, tobacco seeds, etc Cables "Menkwa"

**JAVA BENGAL LINE.** E-3 Clive Buildings, Clive Street, Calcutta This shipping firm, whose head office is at Amsterdam, act as agents for Nedeland Royal Mail Line of Amsterdam, Rotterdam Lloyd of Rotterdam, Royal Packet Steam Navigation Co of Batavia, Java, China, Japan Line of Amsterdam, Sabang Bay Harbour Coal Co of Sabang Cables "Bengalline" Codes A B C 5th and Scott's 10th Eds

**JONES, J. D., & CO., LTD.**—B-5, Clive Buildings, 8, Clive Street, Calcutta Also at Shadi Lall's Buildings, The Mall, Lahore Manufacturers and manufacturers' representatives, etc Cables "Grayite" Codes A B C 5th Ed, Bentley's and Private

**KALAMAZOO (SALES), LTD.**—Fairlie House, 4, Fairlie Place, Calcutta Proprietors Morland & Impey, Ltd Manufacturers and distributors of Kalamazoo and Noretta loose leaf books Agents in India for Power's automatic accounting and tabulating machine Cables "Kalamazett," Calcutta

**KETTLEWELL, BULLEN & CO. LTD.**—21, Strand Road, Calcutta Managing agents for Fort Gloster Jute Manufacturing Co Ltd, Fort William Jute Co Ltd, Bowraha Cotton Mills Co Ltd, New Ring Mill Co Ltd, Dunbar Mills, Ltd, The Mothola Co Ltd, and Joonktollee Tea Co Ltd Agents for Indemnity Mutual Marine Assurance Co Ltd, and Eagle Star and British Dominions Insurance Co Ltd London agents Kettlewell, Bullen & Co Ltd, 16 St Helen's Place, E C 3 Cables "Kethullen" Codes A B C 5th Ed and Bentley's

**LARDNER, NORTH & CO.**—6, Commercial Buildings, Calcutta Naval architects and marine surveyors By appointment surveyors to the P & O Steam Navigation Co Ltd, The British India Steam Navigation Co Ltd, The Java Bengal and other prominent Lines Cables "Rendrale," Calcutta

**LEVER BROS. (INDIA), LTD.**—Head office 63, Garden Reach, Calcutta London correspondents Lever Bros 'Phone No 753 South (two lines) Cables "Levers" Codes A B C 5th Ed, A 1 and Bentley's

**LIONEL EDWARDS, LTD.**—Registered office D-1, Clive Buildings, Clive Street, Calcutta. Also at Bombay, Karachi and Rangoon Freight and steamship agents European representatives Stelp and Leighton, Ltd., 180, Piccadilly, London, W 1, and at Newcastle-on-Tyne, Hull, Cardiff and Glasgow Cables "Lionwards" Codes Scott's 10th Ed., A B C 6th Ed, Bentley's and Private.



**LIPTON, LTD.**—9, Weston Street, Calcutta. Wholesale tea, coffee, provision and general export merchants. Branch offices in India, Bombay, Karachi and Madras. Cables "Lipton" Codes A B C, Western Union, Universal, Western Union 5 letters, Bentley's and Private.

**LONDON & LANCASHIRE INSURANCE CO. LTD.**—Fairlie Place, Calcutta. Established in Calcutta for nearly 40 years. Whole of the North of India and the Madras Presidency is under its control. Transacts practically every class of insurance except life. Besides Messrs Barry & Co., their oldest local agents, the company is represented, through various companies controlled by them, by Messrs McLeod & Co., Mackinnon Mackenzie & Co., Duncan Bros. & Co. Ltd., and F. W. Heilgers & Co.

**LOUIS DREYFUS & CO.**—E. 1, Clive Buildings, Clive Street, Calcutta. Merchants, exporters and importers. Correspondents in Europe. Louis Dreyfus & Co., Paris and London. Cables "Dreyfus" Codes Bentley's and Private.

**MACKINTOSH BURN, LTD.**—8, Esplanade Road East, Calcutta. Managing agents. Gillanders Arbuthnot & Co., architects, surveyors, valuers, builders and contractors, constructional and sanitary engineers, iron-founders, etc. Cables "Buildane" Codes A B C 5th and 6th Eds, Bentley's and Private.

**MCGAVIN & CO.**—30, Strand Road, Calcutta. Sole agents for Bengal, Assam, Bihar and Orissa, C. P. (except Delhi and Agra), for Messrs T. Reddaway & Co. Ltd., patentees and sole makers of "Camel Hair" belting, etc. The firm also acts as importers and selling agents. Cables "Gavinco" Code Bentley's Complete Phrase.

**MCGREGOR & BALFOUR, LTD.**—11, Clive Street, Calcutta. Incorporated in Scotland. Manufacturers of bobbins, shuttles, reeds and combs, etc. Head office North Tay Works, Dundee. Cables "Warp-bobbin," Calcutta, and "Shuttle," Dundee. Codes A B C 4th and 5th Eds.

**NESTLE AND ANGLO-SWISS CONDENSED MILK CO.**—4, Garstin Place, Calcutta. Manufacturers and importers of sweetened and unsweetened condensed milk, sterilised natural milk, rich thick cream, etc. Cables "Nestanglo." Codes A B C, 5th Ed., Western Union, Bentley's and Private.

**NORTH BRITISH RUBBER CO. LTD.**—North British House, 40a, Free School Street, Calcutta. Incorporated in Scotland. Head office, Castle Mills, Edinburgh. Manufacturers of the famous Clincher brand tyres, solid band tyres, North British "Airsprung" low pressure tyres, North British "Rapson" double tread tyres and deflector tubes, etc. Cables "Webra," Calcutta. Code Bentley's.

**PLANTERS' STORES AND AGENCY CO. LTD.**—11, Clive Street, Calcutta. Merchants, agents and bankers. London office: 17, St. Helen's Place, E.C. Cables "Planters," Calcutta. Codes A.B.C. 5th Ed., A.I., Engineering 2nd Ed, Bentley's and Private.

**QUEENSLAND INSURANCE CO., LTD.**—6, Council House Street, Calcutta. This branch was opened in 1922. The head office is at Sydney, while the company has other branches throughout Australia, New Zealand and South Seas. The London office at 22, Birch Lane, E.C.3, caters for business in the United Kingdom and the Continent of Europe. Branches have also been opened in the United States and Canada. The "Queens-

land" is the largest Australian company doing general business, and although rather late in the field with branch representation in India it is making its presence felt. The company is transacting fire, marine and accident business, and is steadily winning the confidence of the insuring public. The Bombay Presidency is controlled by Messrs Breul & Co. of Home Street, whilst Madras Presidency is under the guidance of Messrs Shaw Wallace & Co. Chief agents of the company in Calcutta include Messrs James Finlay & Co. Ltd., Shaw Wallace & Co., Mackenzie, Lyall & Co., Barlow & Co. and S. Manasseh & Sons. Messrs Gill & Co. are agents at Karachi. In Burma the company is represented by Messrs Steel Bros. & Co. Ltd., Wightman & Co. (of Rangoon), Ltd., and Ford Motors (Burma), Ltd. The Ceylon representatives are Messrs Aitken Spence & Co., Darley Butler & Co., Ltd., Henderson & Co., and Lewis Brown & Co., Ltd., and at Galle, Messrs Clark, Spence & Co.

**RALLI BROS.**—1 and 2, Church Lane, Calcutta. This firm of merchants has agencies at Narainjunge, Myensinghi, Kisingunge, Seraganj, Sheoraphuh, Sharnabari, and Chittagong. Cables "Ralli."

**REMINGTON TYPEWRITER CO. (INDIA), LTD.**—Remington Building 3, Council House Street, Calcutta. Branches at Allahabad, Lahore, Rangoon, Delhi, Simla, Lucknow, Peshawar, Cantonment, Rawalpindi, Cawnpore, Patna, Dacca, Chittagong, Srinagar, (Kashmir). Cables "Remingtons," for all offices. Codes Bentley's Complete Phrase and Western Union and A B C 5th Ed.

**ROGERS-PYATT SHELLAC CO. INC.**—5 Clive Row, Calcutta. Gum shellac, mica and other Indian products. Since the establishment of the Calcutta office the company has acquired the ownership of Rookhnr Ghat Co. Ltd., Mirzapore, famous for the well-known proprietary marks DC, VSO and Diamond 1. Cables "Richib," Calcutta.

**ROYAL EXCHANGE.** Calcutta. The Bengal Chamber of Commerce was founded in 1834. The premises of the New Oriental Bank Corporation were subsequently acquired by the Chamber. A Mercantile Exchange was established as part of the organisation, and by special permission of Queen Victoria was designated the Royal Exchange. The edifice has since been rebuilt, the present structure being completed and opened by Lord Ronaldsday in February, 1918.

**SKEFKO BALL BEARING CO. LTD.**—Head office in India 12/E, Park Street, Calcutta. Incorporated in England. Branches at Bombay and Rangoon. Large stocks of the firm's products are carried at Bombay and Calcutta. Advice furnished for any particular machine or application as to the best type of bearing for the purpose. Cables "Skefko," Calcutta. Codes Bentley's and Private.

**STEEL, OCTAVIUS, & CO. LTD.**—14, Old Court House Street, Calcutta. Agents Endogram Tea Co. Ltd., Budderpore Tea Co. Ltd., Derby Tea Co. Ltd., Longai Valley Tea Co. Ltd., Looksan Tea Co. Ltd., Bamgaon Tea Co. Ltd.; Dhoolie Tea Estate. Managing agents: Eastern Cacha Tea Co. Ltd., Tilkah Tea Co. Ltd., Kaliti Tea Co. Ltd., Methoni Tea Estate, Panbarry Tea Estate, Dyang Tea Co. Ltd., etc. London correspondents: Octavius Steel & Co. 4, Fenchurch Avenue, E.C.3. Cables "Lapi-zando."

**THACKER, SPINK & CO.**—3, Esplanade East, Calcutta. Branch: "Regent House," Simla. Bankers and agents, booksellers,

publishers, lithographers, bookbinders, print-sellers, picture framers, newsagents, stationers, etc. Managing agents of Thacker's Directories, Ltd., and "The Indian Medical Gazette." Cables "Bookshelf," Calcutta. Codes Western Union and A B C 5th Ed.

**THOMPSON, JOHN, LTD.**—Fairlie House, 4, Fairlie Place, Calcutta. Boiler house plant manufacturers and engineers. Represent a number of leading firms dealing in the aforementioned types of business. Cables "Watertube" Codes A B C 6th Ed. Private and Bentley's.

**THORNYCROFT (INDIA), LTD.**—Registered office 6 Lyons Range Calcutta. In association with John I. Thornycroft & Co., Ltd. engineers and shipbuilders, London. Basingstoke, Reading and Southampton. Sole agents in India, Burma and Ceylon for Thornycroft commercial vehicles, 1½, 2½, 4, 5 and 6 ton marine and stationary engines, 7½ to 120 b.h.p. motor launches, specialists in repairs to motor lorries, cars and launches. Cables "Thornys" Codes Bentley's and Motor.

**TURNER, MORRISON & CO., LTD.**—Registered office 6 Lyons Range. Merchants and agents. This well-known concern acts as managing agents for the Asiatic Steam Navigation Co. Ltd., Lodna Colliery Co. (1920), Ltd., The Shalimar Rope Works, Ltd., Retriever Flotilla Co. Ltd., Thornycroft (India) Ltd., The Globe Manufacturing Co. Ltd., Bombay. The New Union Flour Mills, Ltd., Bombay. The Bombay and Persia S.N. Co. Ltd., etc., as joint agents for the Anchor-Brookbank and Well Line and as agents for Andrew Weir & Co.'s North and South America Lines, Società Veneziana di Navigazione a Vapore, and Bombay American Line, Bombay. In insurance the following companies are represented: Thames and Mersey Marine Insurance Co. Ltd., Maritime Insurance Co. Ltd., Union Insurance Society of Canton, Ltd., Scottish Union and National Insurance Co., Liverpool Marine and General Insurance Co. Ltd., and the Royal Exchange Assurance Corporation, Bombay. In industry the company represents The Salt Union, Ltd. (Liverpool), Società Italiana per le Saline Eritree, Quasi-Arc Co. Ltd., Bombay and Calcutta, R. H. Newall & Co., British and Foreign Minerals Syndicate, Ltd., Barclay, Perkins & Co. Ltd., and Slater, Roger & Co. The firm is also established at Bombay and Chittagong. Cables "Turners," Calcutta and Chittagong, "Morrison's," Bombay, "Cossipore," London. Codes A B C, 5th and 6th Eds, Scott's 1906 Ed., Watson's Standard Shipping, Globe Standard, Engineering Telegraph 2nd Ed., Bentley's Complete Phrase Code 1909, and A 1.

**WHITEAWAY, LAIDLAW & CO., LTD.**—7, Chowringhee Road, Calcutta. Branches all over India and the Far East. Drapers, complete house furnishers, china, glassware, and hardware merchants, ladies', gentlemen's and juvenile outfitters, tailors, dressmakers, milliners, etc. Cables "Whiteaways." Codes A B C, 5th Ed. and Bentley's.

**WILLIAMSON, MAGOR & CO.**—4, Mangoe Lane, Calcutta. Merchants and agents. Among the many agencies held by the firm are a number of well-known tea companies, while the following insurance companies are also represented: South British Insurance Co. Ltd., and North British and Mercantile Insurance Co. Ltd. London firm: George Williamson & Co., Rochester Buildings, 138, Leadenhall Street, E.C. Cables "Rogam," London and Calcutta. Codes A.B.C. 5th Ed., Broomhall's and Bentley's.



## OTHER CITIES AND PORTS IN BENGAL

### CHITTAGONG

The port of Chittagong, the chief town of the district and an important tea-growing centre, is the natural outlet for the large trade of Assam and North-Eastern Bengal. It is situated on the River Karnaphub, nine miles from the Bay of Bengal, and the two bars at the entrance make great caution necessary when entering during south-west monsoons. The present facilities of the harbour consist of four jetties, which are fitted for 4 ten-ton and 17 other cranes. There are also provided fixed moorings for seven cargo steamers and swinging buoys for three more, besides berths for two tank steamers for the oil trade.

**DEVELOPMENT SCHEME.**—An important scheme is now in hand by the Government of Bengal for the further development of the port in order to provide facilities to cope with the steadily growing trade of the district. The plan of improvement, which involves an expenditure of 5,000,000 rupees, will open up immense possibilities for Chittagong. By dredging the bars ocean-going steamers of considerable depth, which can now enter the port at special tides only, will be able to pass over the bars and into the mouth of the river without regard to special conditions. In addition to the dredging, a large amount of money is to be spent on revetments, the building of a new shipway and the extension on a larger scale of the present system of lighting the approaches to the port. The entire project will take from five to six years to complete.

### DACCA

Chief town in the division of the same name, Dacca was the capital of Eastern Bengal in the 17th century, and at that time was a great trading centre, the principal commodity being its muslins, which were then famous throughout the civilised world. To-day this trade has succumbed to the competition with machine-made goods, but the city is still famous for its shell brackets, for its fine filigree work, and for the making of buttons. The bazars are good and interesting, and the town, which is the largest civil station in Bengal outside Calcutta, having 120,000 inhabitants, possesses a fine promenade along the Buriganga River, many public and commercial buildings, a handsome Roman Catholic Cathedral and an Anglican Church, a hospital, museum and many interesting monuments. In the neighbouring forest fine tiger and leopard hunting may be obtained.

### MURSHIDABAD

Standing on the left bank of the Bhagirathi River, 123 miles north of Calcutta, Murshidabad was, before the British occupation, a city of great commercial importance. The district and town are noted for their silk manufactures, and the latter is also interesting for its many ancient temples, tombs, ruins, etc. Among these may be mentioned the remains of the different Nawabs' palaces, an old gun brought from Dacca, the Imambara, which dates from 1847, and the Khushbagh

("Garden of Happiness") or old cemetery of the Nawabs. Murshidabad has a population of about 12,000.

### NARAYANGANJ

On the Lakhya river, Narayanganj is the port of Dacca and has a large trade, particularly in jute for which it is the great mofussil centre. Near it there are some old forts of Mir Jumla, and opposite the town, on the east bank of the Lakhya, the celebrated shrine of Kadam Rasul. Population about 31,000.

### PLASSEY

So called from the Palas tree, Plassey is famous as the scene of Clive's great victory in 1757 over Suraj ud-Dowlah, the Nawab of Bengal. The position of the British forces in that battle is marked by a mound near the river bank and the old monument, it has also been more recently fully indicated by a memorial erected by Lord Curzon.

### RANIGANJ

The town of Raniganj (population 15,000) is situated on the eastern edge of the great coal fields of Bengal, and was formerly the property of the Rajah of Burdwan. It was here that practically the first discovery of coal in India was made, the three most important fields being named Raniganj, Jherria and Giridih. At Raniganj are also large potteries and paper mills.

## MADRAS PRESIDENCY

**T**HE Madras Presidency comprises the whole of the southern portion of the Indian Peninsula, and, excluding the Native States, the majority of which have now come under the direct control of the Government of India, has an area of 141,075 square miles, with a total population of 42,794,155. With a coast line on the east and west of about 1,650 miles, the Presidency has, with the exception of Madras, and perhaps of Cochin, no really good harbours, though a great future is anticipated for the port of Vizagapatam, while important extensions and improvements are projected at Cochin. The capital and chief city of the Presidency is Madras.

**ADMINISTRATION.**—The Madras Presidency is governed on a system generally similar to those operating in Bombay and Bengal. There are associated with the Governor four members of the Executive Council in charge of the Reserved Subjects and three Ministers in charge of the Transferred Subjects. Madras administration differs, however, in some respects from that of the other major provinces. There is no intermediate local authority between the Collector of the District and the authorities at headquarters, Commissioners of Divisions being unknown in Madras.

The present Governor is His Excellency the Rt. Hon. Viscount Goschen of Hawkhurst, G.C.I.E., C.B.E., who was appointed in 1924.

**COMMERCE.**—The total sea-borne trade of the Madras Presidency (including Government transactions) during 1925-26 was Rs 97,53,65,851, as against Rs 95,30,37,386 in 1924-25, an increase of Rs 2,14,28,465 or 2.24 per cent. Excluding Government transactions, the total value of the trade was Rs 95,36 crores, a figure Rs 64 lakhs higher than that of the previous year. The value of the foreign trade in private merchandise increased by Rs 2.16 crores as compared with 1924-25, and by Rs.20.59 crores (or nearly 50 per cent) compared with 1913-14. Imports, valued at Rs.18.84 crores, were Rs.1.10 crores below those of 1924-25, the decrease being due to smaller arrivals of cotton manufactures, sugar, cotton twist and yarn, metals, tobacco, etc., the chief items showing increases being motor vehicles, mineral oils, railway materials and woollen manufactures. Exports amounted to Rs 44.01 crores, as compared with Rs 40.66 crores in the previous year, the increase being the net result of heavier shipments of raw cotton, seeds, raw rubber, tea, spices, cotton manufactures, rice and paddy, and raw jute and leather.

Coasting trade in private merchandise declined from Rs 32.83 crores in 1924-25 to Rs 32.39 crores in 1925-26.

**INDUSTRIES.**—The principal industry of the province is agriculture, in which 68 per cent of the population is engaged. The chief food crops are rice, cholam, ragi and kambu. The leading industrial crops are cotton, sugarcane and ground-nuts. A special feature of the agricultural activities in the Presidency is the large industry which the planting community have built up, contributing substantially to the economic development of the province. They have organised themselves as a registered body under the title of "The United Planters' Association of South India," on which are represented the coffee, tea, rubber and a few other minor planting products. There are some 22 cotton mills in the Presidency, and they employ 35,000 operatives. Minor industrial concerns number over 120, and consist of oil mills, rope, rubber and tile works. As in other provinces, the forest resources are exploited by Government. There are close upon 19,000 square miles of reserved forests.

**IRRIGATION.**—See "Irrigation" in the article devoted to "Agriculture."



MADRAS. Showing Fort and General Hospital on left, Gymkhana Club grounds in centre, and Government House on the extreme right.

## CITY AND PORT OF MADRAS.

### CITY

**M**ADRAS, capital of the Madras Presidency and the third largest city in the Indian Empire, is built in a straggling manner on a strip of land 9 miles long, from 2 to 4 miles wide and 27 square miles in extent, on the shore of the Bay of Bengal, in latitude  $13^{\circ} 4' N$  and longitude  $80^{\circ} 15' E$ . The site is low-lying and almost dead level, its highest point being only 22 ft above the sea, it is intersected by two languid streams, the Cooum and the Adyar, of which the former enters the sea immediately south of Fort St George, in the centre of the city, and the latter near the southern boundary. Neither of them carries enough water to maintain a clear channel, and except in the rains they both form salt lagoons separated from the sea by narrow ridges of sand.

If Madras is not exactly a beautiful place, it is at all events the least urban in appearance of the large Indian cities, its population being spread over an area five square miles larger than that occupied by Bombay and only three square miles less than that covered by Calcutta. Most of the roads in the European Quarter run between avenues, being flanked by groves of palms and other trees, both shops and houses are often fronted with large gardens and rice fields are seen winding among extensive and beautifully kept compounds, so that Madras, in addition to being a busy commercial city, is also one of wide and shady spaces, and as such has a distinct charm of its own.

Founded in 1639, the history of Madras, then the headquarters of the East India Company on the Coromandel coast, has been a sufficiently varied one. It was abandoned to the French under Bourdonnais in 1746, but was restored to England three years later. In 1758-59 occurred the two months' bitter siege of Fort St George, but, with the exception of Hyder Ali's threatening approach in 1769, and again in 1780, on which last occasion he ravaged the country up to the very gates of the Fort, Madras has been free from outside attack since Lally's siege.

**ADMINISTRATION.** The internal administration of the city is in the hands of the Municipal Corporation, which consists of a President (paid from municipal funds and appointed by the Government) and 50 councillors, of whom 41 are elected by the ratepayers and certain public bodies, nine being nominated by the Government. The Corporation has been active in the prosecution of schemes devised for the public welfare, such as street sanitation and the improvement of the water supply of the city.

**BUILDINGS.**—Government House is situated on the Mount Road about one mile inland from the Fort, and stands in an extensive park. It is usually occupied by His Excellency during some part of the cold weather of each year. Near the house, in a separate building, is the "Banqueting Hall," containing portraits of many Governors of the province and other celebrities who helped to make Madras history.

At the south end of George Town the High Court and Law College form a handsome group of buildings, while along the South Beach, or Marina, are several fine public structures, these including the Senate House of the University, Chepauk Palace used by the Board of Revenue and the Engineering College, and the Presidency College. Other important buildings, apart from the churches, colleges and museums, which are dealt with elsewhere, are the General Hospital, the School of Arts near Egmore Station, the Victoria Public Hall and the Mutiny Memorial Hall near Central Station, and Pachayappa's Hall on the Esplanade Road, George Town. Most of the European shops, some of which are housed in handsome buildings, are in Mount Road.

**CHAMBER OF COMMERCE.**—See under "Commerce."

**CHURCHES.**—The Cathedral of St. George, which stands in an enclosure on the east side of the Horticultural Gardens, dates from 1816, and became the Cathedral Church when the diocese of Madras was constituted in 1835. It is largely built of *channam*, the dazzling

white stucco for which Madras is famous, and has several fine monuments. The Roman Catholic Cathedral of San Thome, built by the Portuguese in 1504, has the reputation of standing over the earthly remains of St. Thomas. His tomb is pointed out in a subterranean recess covered by an altar. St. Mary's Church, built about 1678, was the first English church in India, and contains many interesting memorials, the most remarkable being one erected by the East India Company to the famous missionary, Schwartz, at one time the intermediary between the British and Hyder Ali. A very fine building, St. Andrew's Church, built in 1828 at a cost of £20,000, with a steeple rising to a height of 166 ft., is one of the principal landmarks in Madras. The church on Little Mount, where, according to tradition, St. Thomas was mortally wounded, is interesting, as are the cross, fountain and other relics associated with the Saint's martyrdom outside the church. The larger church on St. Thomas' Mount, some eight miles south of Madras, is one of the most ancient on the Coromandel Coast.

**CLIMATE.**—Madras is a healthy town, both for Europeans and Indians, its dry soil and the sea breeze making up for the lowness of the site. The mean temperature in the shade ranges from  $74^{\circ}$  to  $87^{\circ} F$ , the extremes being  $67^{\circ}$  in January and  $110^{\circ}$  in June. The temperature is high all the year round, but there are fewer sudden alternations of heat and cold than in most places in India. The average rainfall over the town area, from observations taken over a period of 85 years, is 49 inches.

**CLUBS.**—The Madras Club, one of the finest in India, was established in 1831. It is situated in the Mount Road,  $2\frac{1}{2}$  miles from Fort St George. The Adyar Club is a very handsome building, beautifully situated on the left bank of the Adyar River. It occupies one of the famous Garden Houses, known as Mowbray's Garden. There are also the Gymkhana Club, a boat club and cricket club.

**EDUCATIONAL FACILITIES.**—Madras is the educational centre of the Presidency. Apart from the University (see "University," later), there are numerous colleges, secondary and primary schools, technical and training colleges. Of these, the Presidency College (managed and financed by Government), the Madras Christian College and Pachaiyappa's College are first-grade institutions giving instruction up to the B A degree. There are three excellent professional colleges—the Law College, the Medical College and the College of Engineering. At Saidapet, just outside the city, is the important Teachers' College. A noticeable point in connection with all these special colleges is the high proportion of Brahmmins among the students. Games and athletics are greatly encouraged at all the colleges and larger schools.

**FORT ST. GEORGE.**—Fort St. George, commenced in 1639 by Mr. Francis Day, originally consisted of a factory and other buildings surrounded by a wall, with four light bastions and batteries, the whole being about 400 yards long by 100 deep. It was gradually strengthened and extended until in 1787, after Lally's siege, it stood much as it stands now. Here, in Writers' Buildings, history records that Clive twice snapped a pistol at his own head. From this Fort he marched to his first victories, and from it went the army which, on May 4, 1799, killed Tipu Sultan and captured Seringapatam.

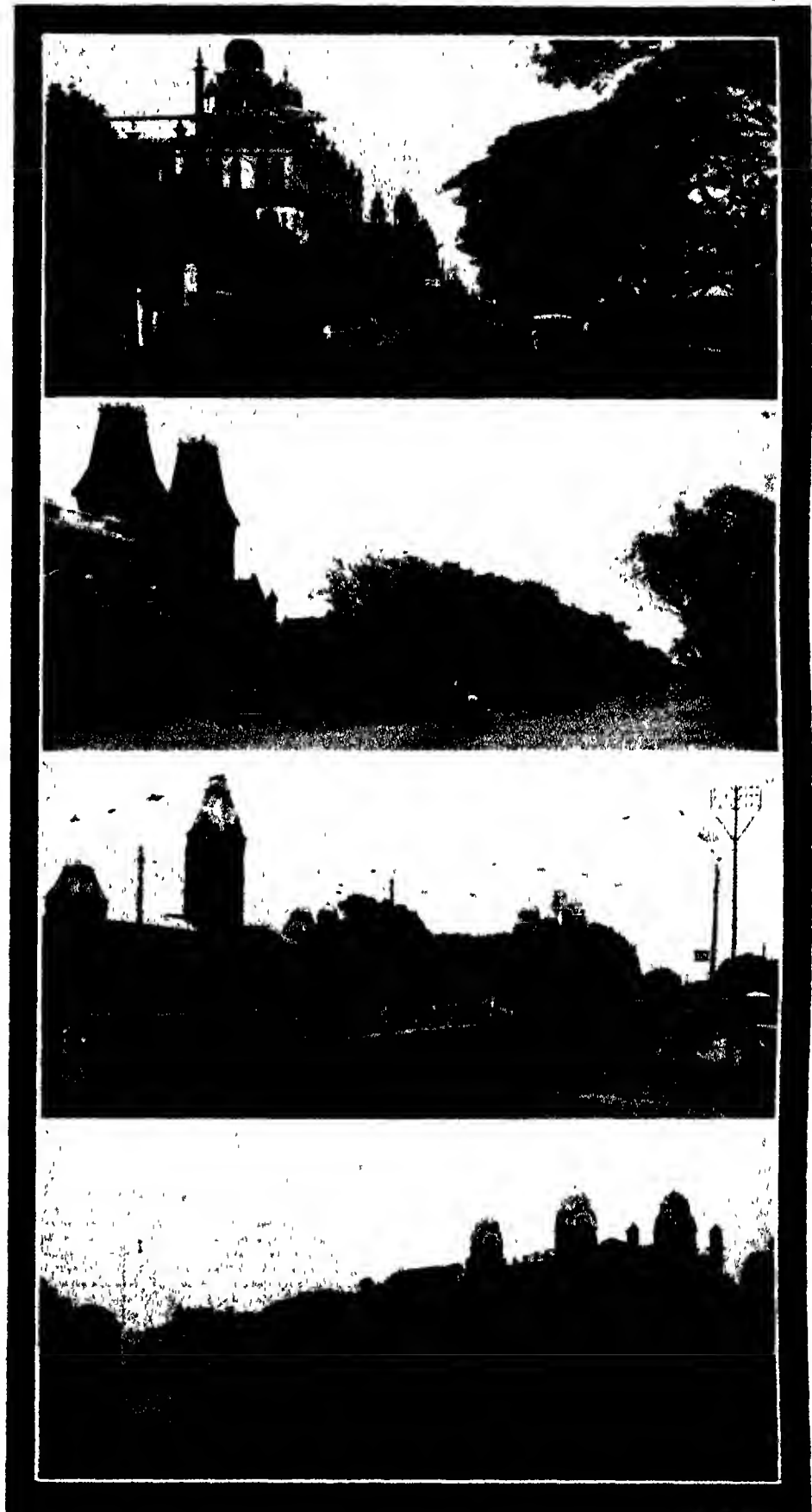
Within the Fort are nearly all the principal Government offices—the Secretariat and fine Council Chamber, the Military Headquarters, Arsenal and Barracks. Unlike the houses in the city generally, the fort residences have no "compounds" or enclosures. The arsenal contains many curious trophies of the wars in which the armies of Madras have been engaged. St. Mary's Church has already been mentioned.

**INDUSTRIES.**—The chief indigenous arts of Madras are silk and cotton-weaving, silver-work and embroidery. Raw silk is obtained from Bangalore, Calcutta and Bombay, mixed with cotton and woven into native cloths which are sold locally and also exported to Ceylon, Burma, the west coast of the Presidency, and even to Natal and East Africa. The cotton cloths made are of the ordinary coarse variety. The hand-made silver-work and embroidery employ now only comparatively few hands, but the former is less known than it deserves to be, while the latter is usually in excellent taste, consisting of silk, gold or silver thread, and green beetle wings procured from Cuddapah and worked on satin or muslin. The School of Arts gives instruction in a number of other directions, such as wood carving in the Dravidian style, brass and copper repousse work, lacquer work and carpet weaving.

Tanning is an important industry, while several large cotton mills spin yarn and weave cotton cloths of various descriptions. There are also oil mills, rope, rubber and tile works.

**MUSEUM.**—The Government museum in the Pantheon Road is a fine block of buildings containing a technical institute, a library, and a theatre for lectures, dramatic performances and other purposes. The museum, which is ranked high by scientists in all parts of the world, houses a large and interesting collection of natural history objects, gold and other coins, also numerous specimens illustrating the resources and manufactures of British India. It also contains a collection of carved marbles and stones from ancient temples.

**OBSERVATORY.**—The first observatory at Madras was a small private one started in 1787 by Mr. W. Petrie, a scientific member of Council. The present building was erected in 1793 by order of the East India Company. At one period it gave the railway time for all



1. First Line Beach, the principal thoroughfare in Madras.
2. Mount Road, showing Spencer & Co. Ltd.'s Head Offices on left.
3. General Hospital Road, with Central Station on left.
4. The Marina, with the Senate House on right.

India, but is now used only as a meteorological station, the actual observatory having been moved to Kodaikanal.

**PARKS AND GARDENS.**—In Madras itself the Marina Promenade and the People's Park, which contains a small zoological collection, are the principal recreation grounds. The People's Park, which owes its inception to Sir Charles Trevelyan, a Governor of Madras, has an area of 116 acres and is dotted with artificial lakes of various sizes. On the Marina, along which there are a fine esplanade and riding track, is an aquarium which is very popular.

The Horticultural Gardens, at the end of Mount Road, occupy 22 acres, and are most tastefully laid out. Many rare trees, shrubs and plants are to be seen there, one of the great attractions being the splendid *Victoria Regia*, in a couple of small ponds.

**POPULATION.**—The population of Madras in 1921 comprised 525,021 persons, made up of 427,722 Hindus, 53,163 Mohammedans and 44,136 Christians. During the previous 20 years it increased by rather more than 15,000.

**STATUES.**—The principal statues of Madras are those of Lord Cornwallis, in the Connemara Library, Sir Thomas Munro (by Chantry), in the centre of the island, Queen Victoria, by the Senate House, King Edward VII, outside the main entrance to Government House; His Majesty King George V, opposite the Pachaiyappa College, China Bazar Road, General Neill, in Mount Road, and Sir T. Muthuswami Iyer, in the High Court Buildings.

**STREETS, ETC.**—The Mount Road, Poonamalle Road and the Beach Road, the three main thoroughfares of Madras, divide the city into roughly three areas. In Mount Road, which was once the fashionable riding and driving resort of Madras, are many of the finest shops and larger houses of business. The road is beautifully shaded by coconut, banyan and other trees, but is now so busy and active that, as a resort for leisure hours, it has given way to Beach Road, which runs parallel to the seashore, and the southern half of which is known as the Marina. Other leading thoroughfares are the Nungumbaukam High Road, which connects Poonamalle Road with Mount Road, and Cathedral Road, leading from Mount Road into the beautifully shaded Mowbray Road.

**UNIVERSITY.**—The University of Madras is one of the older universities of India, having been constituted in 1857. The reconstituted University, while functioning as a teaching and residential university in so far as the City of Madras is concerned, continues to exercise jurisdiction over the mofussil (provincial) colleges which remain affiliated to it. The administration of the University is in the hands of a Senate which has been so constituted as to include both those who are educationalists and those who are connected with the actual business and commercial life of the city, and a large elective element has been introduced into its constitution.

**WATER SUPPLY.**—Madras is supplied with water from a reservoir called the Red Hills Lake, which is fed from another reservoir called the Cholavaram Tank, and this in turn is filled by a channel from the Korttalaiyar River. The Red Hills Lake is 7 miles distant from the city, and the water is brought from it by an open channel, being eventually led into pipes and distributed throughout the city. The scheme was begun in 1868 and finished in 1872. The Red Hills Lake has a capacity of 100 million cubic yards, but as it lies low, the head of the supply channel being not quite 36 ft. above sea-level,

only a portion of the water can be drawn off at a level which will command the city, when the water in the lake falls below a certain height the supply has to be maintained by pumping. The annual quantity of water supplied exceeds 425 million cubic feet.

## PORT OF MADRAS

Although Madras (Fort St. George) has no natural harbour, it ranks fifth among the ports of India in the value of its trade and in the tonnage of vessels which enter and clear from it. A quarter of a century ago the foreign movement of the port was greater than that of Karachi and frequently in excess of that of Rangoon, but these ports have, during the last 20 years and especially since the War, exceeded it in respect of both trade and tonnage.

Great care has been taken at heavy expense in the construction and later improvements of the harbour, which has been described as "a challenge flaunted in the face of Nature." The foundation-stone of the harbour works was laid by King Edward VII (when Prince of Wales) in 1875, but one of the many violent cyclones which have visited Madras did much damage in 1881, and the harbour was not completed till several years later. A number of improvements have since been added, and the further extensions projected will, it is hoped, do much to increase its importance as a commercial port.

**ACCOMMODATION.**—The harbour is entirely an artificial one, practically square, with the entrance on the north side, and protected by an outer sheltering arm 1,719 ft in length. The enclosed area is 200 acres in extent, and in all weathers vessels lie in smooth water. There are seven quay berths, four at the West Quay, which is 3,000 ft long, having depths alongside at low water of 26 ft, 28 ft, 30 ft and 30 ft respectively, one on the south side having a depth of 28 ft and one on the east side a depth of 26 ft. In addition, three new deep water quays are now under construction on the north side which will have a depth alongside at low water of 33 ft.

Apart from the seven quay berths, there are ten moorings in the harbour, at which vessels drawing 30 ft can lie and handle import and export cargo by means of lighters. Two of these berths are equipped for pumping oil or kerosene ashore, and a special pier outside the harbour is provided for pumping petrol ashore in bulk.

**WAREHOUSE ACCOMMODATION.**—The warehouse accommodation of the port covers over ten acres, and includes four transit sheds for the storage of goods in movement between ship and shore and three warehouses with flat roofs for the convenience of shippers dealing in ground nuts or other staples which ordinarily need to be cleaned, dried and graded before shipment from Madras.

**ADMINISTRATION.**—The affairs of the port are administered under the Madras Port Trust Act of 1905 (as amended up to 1919) by the Madras Port Trust Board, consisting of 14 members (six nominated by Government, four elected by the Madras Chamber of Commerce, two by the South India Chamber of Commerce and two by the Trades Association) and a Chairman. Normally the Government nominees include the Collector of Customs, the Presidency Port Officer, and the Agents of the Railways running into Madras. The Board also are Conservators of the Port under the Indian Ports Act, with a Royal Indian Marine officer as Deputy Port Conservator. During the year 1924-25 the receipts of the Port Trust on revenue account from all sources were Rs.33,93,121, as against

Rs.29,84,285 in 1923-24, and the gross expenditure out of revenue was Rs.25,83,879. The outstanding debt of the port amounted in June 1926 to £1,450,000 and the capital valuation to £3,350,000.

**BUNKERING.**—Bunker coal and oil are always available. Coal vessels discharge about 1,200 tons per day at each of the three quays direct into railway wagons. There is an oil fuel pipe line for bunkering vessels lying at the West Quay berths, and this will be extended to the New North Quay berths.

**COMMUNICATIONS.**—The harbour is connected with the broad gauge system of the Madras and Southern Mahratta Railway on one side and with the metre gauge system of the South Indian Railway on the other, and via these two trunk lines goods are booked direct over the entire railway system of India. All quay berths are served by railway tracks of mixed gauge to accommodate both 5 ft 6 in and metre gauge rolling stock. There are 30 miles of such track within the harbour.

**CRANES.**—Two of the West Quay berths are equipped with hydraulic luffing cranes of from 35 cwt to 5 ton capacity, and the remaining two West Quay berths are now being equipped with electric luffing cranes of 3 to 5 ton capacity and 60 ft. radius. There are also one 40-ton, one 33-ton and one 15-ton steam cranes for heavy lifts, as well as several smaller steam cranes of 2 to 5 tons capacity.

**EXTENSION SCHEMES.**—Proposals for further improvements to cost £330,000 are now before Government, and include a large increase in the shed space, the provision of modern electric portal cranes to work direct from ships' holds, and the construction of an additional ship quay, besides many minor amenities.

**LIGHTERAGE.**—The lighter fleet of the port consists of from 40 to 180 tons capacity, so that some 4,000 tons of cargo can lie afloat at one time. Four tugs are available for towing this fleet. Lightered cargo is landed or shipped at extensive quays provided for the purpose, which are equipped with 48 hydraulic cranes of from 1 to 2 tons capacity.

**PASSENGER TRAFFIC.**—On the South Quay an extensive passenger station with Customs examination hall has been provided, mainly for the emigrant and immigrant traffic between Madras, Rangoon and Singapore. The total of this traffic reaches 150,000 persons a year.

**PILOTAGE.**—Pilotage in and out of the port is compulsory. The fees, which include both inward and outward, amount to 1 anna per registered ton. For shifting the berth of a vessel the charge is Rs.10; for re-mooring, Rs.10; and for mooring a craft outside the harbour when she does not enter or leave it, Rs.20. Vessels re-entering the artificial harbour after discharging timber are exempt from pilotage fees. There is a fee of Rs.3 levied on each steamer for a stern fast.

**POLICE.**—The watch and ward of the harbour and its premises are performed by the Harbour Police, consisting of one European inspector, 3 sub-inspectors, 11 sergeants, 25 head constables and 125 constables, who are under the direct control of the Deputy Commissioner of Police. Two-thirds of the maintenance charges of this force are borne by the Port Trust and one-third by Government.

**PORT CHARGES.**—The following port dues are payable by all foreign vessels of 15 tons and upwards entering Madras ports:—

- (a) A foreign ship or steamer engaged in trade with the Straits Settlements, calling at any one port in the eastern or western group—2½ annas.

- (b) Any other foreign ship or steamer calling at any one port—2½ annas.
- (c) A foreign ship or steamer engaged in trade with the Straits Settlements, calling at more than one port—3½ a
- (d) Any other foreign ship or steamer calling at more than one port—3½ a

With regard to (a) and (c), payment of the due at the port will exempt the vessel for a period of 60 days from liability to pay the due again at that port. In the case of (b), the due is payable on each entry into the port, and in the case of (d) once for the whole voyage.

**LIGHT DUES.** Coast light dues are levied at rates specified per schedule, which range from 5 pies to 9 pies per registered ton.

**WATER.** Supplied by water boat inside harbour, 8 annas; outside harbour, Rs 1 per 100 gallons, not including the cost of the water. From alongside quays, Rs 2 per 500 gallons, as indicated by the Port Trust meter.

**SHIPPING AND TRADE.**—The total number of vessels entered at the port during 1924-25 was 275 of 1,032,990 tons, compared with 248 of 923,267 tons in the preceding year. Of the former total, 269 of a total tonnage of 1,032,493 were steam-vessels.

The total trade of the port in 1924-25 was valued at Rs 32,51,14,412, compared with Rs 30,30,40,487 in 1923-24. Exports increased from Rs 14 crores to Rs 16 crores and imports from Rs 15.96 lakhs to Rs 16.27 lakhs. Leather exports rose from Rs 4.90 lakhs to Rs 5.93 lakhs, and tea from Rs 14 lakhs to Rs 24 lakhs, while raw hides and skins declined from Rs 68 lakhs to Rs 49 lakhs and textiles from Rs 4.43 lakhs to Rs 4.10 lakhs.

### IMPORTANT BUSINESS ENTERPRISES IN MADRAS

#### SPENCER & CO., LTD.

**Inception.** This company was formed in 1897 to continue the old-established business of the same name founded in 1863.

**Capital.** The authorised capital is Rs 70,00,000, of which Rs 65,00,000 have been subscribed and paid up.

**Activities.** The firm carries on the business of wholesale and retail merchants, chemists and druggists, importing general store supplies, wines and spirits, hardware, sporting requisites, piecegoods, etc., and acting as advertising contractors to the South Indian, the Madras and Southern Mahratta, and the Mysore State Railways. The company manufactures cigars at Dindigul and aerated waters at Madras.

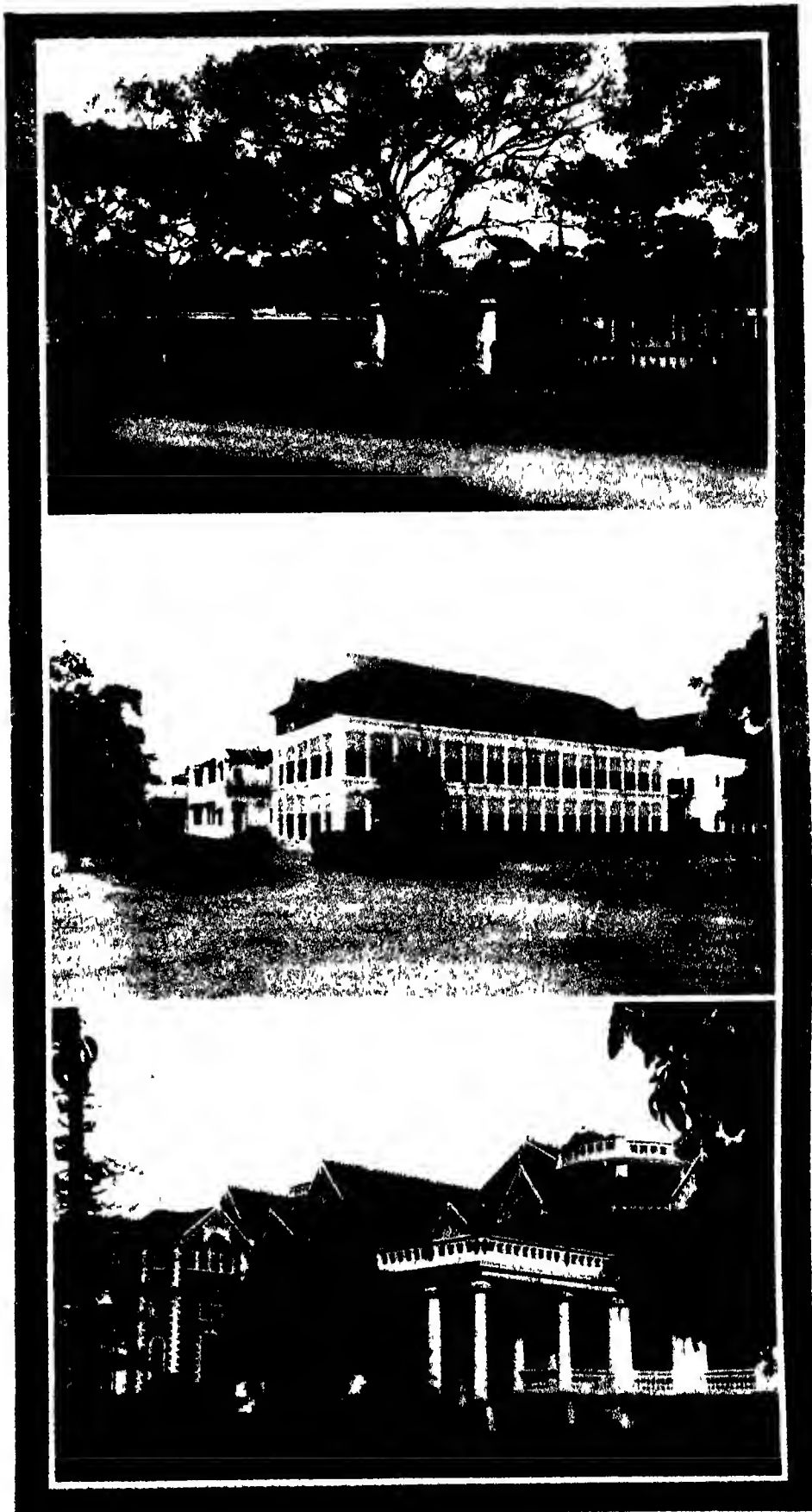
**Retail.**—The large departmental stores in Madras supply everything for personal or home use. The main showroom, over 400 feet long, is one of the finest in the East.

**Catering.**—Through this department the company's name is possibly one of the best known in India, as they are refreshment room contractors to the South Indian, Madras and Southern Mahratta, North Western, and Mysore State Railways.

**Hotels.**—The Hotel Spencer and Connemara Hotel at Madras and the West End Hotel at Bangalore, which are more fully dealt with later, are owned and managed by the company, and can be recommended to all those visiting Southern India, as they are considered the best in this part of the country.

**Cigar Factory.**—Here are manufactured the company's well-known brands of cigars, which are sold in India and also exported in large numbers.

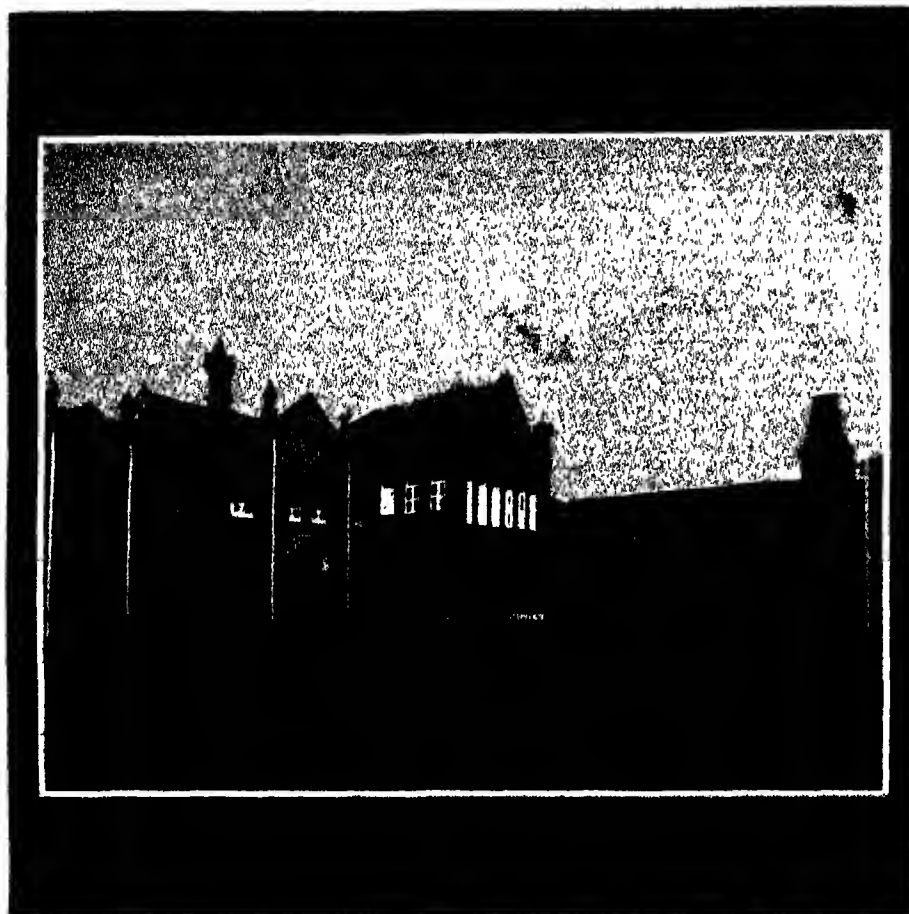
**Aerated Waters Factory.**—Adjoining the head offices, this factory manufactures many special varieties of aerated drinks.



SPENCER & CO. LTD., Madras.

1. Hotel Spencer (from Mount Road, showing ideal situation amongst trees and palms).
2. An aspect of the Connemara Hotel.
3. West End Hotel, Bangalore.





**SPENCER & CO. LTD**  
Head Office Premises, Madras.

**Branches.**—Branches are established at Bombay, Karachi, Lahore, Bangalore, Secunderabad, Ootacamund, Coonoor, Kolar Gold Fields, Coimbatore, Waltair, Kodakanal, Madura, Trichinopoly, Calicut, Cochin, Quilon, Cocanada, Kotagiri, Pollibetta, Mer-

cara, Trivandrum, George Town, and Vepery. These are worked in conjunction with Kellner & Co., Ltd., Calcutta, and Jamsjee & Son, Ltd., Rawalpindi.

**Head Office.** Mount Road, Madras (cables "Torpedos," Madras)

**London Office.**—57-58 Broad Street Avenue, E C 2 (cables "Nemophily," London) Codes A B C 5th Edition and Bentley's

**Bankers.**—Imperial Bank of India, National Bank of India, Ltd., Chartered Bank of India, Australia and China, Mercantile Bank of India, Ltd.

#### **SPENCER, CONNEMARA, AND WEST END HOTELS.**

**Situations.**—Owned and managed by Messrs. Spencer & Co., Ltd., of Madras, these hotels are strongly recommended to all visitors to Southern India. The two first named are situated in the city of Madras, while the third is at Bangalore.

**Hotel Spencer.** Standing in its own extensive grounds in Mount Road, this select hotel is within easy distance of all parts of Madras.

**ACCOMMODATION.**—There are 35 large airy rooms, each having a separate bath and dressing room. All are well furnished and fitted with electric lights and fans, while each bedroom contains several lounge chairs and a writing table. There is a comfortable lounge in the main building.

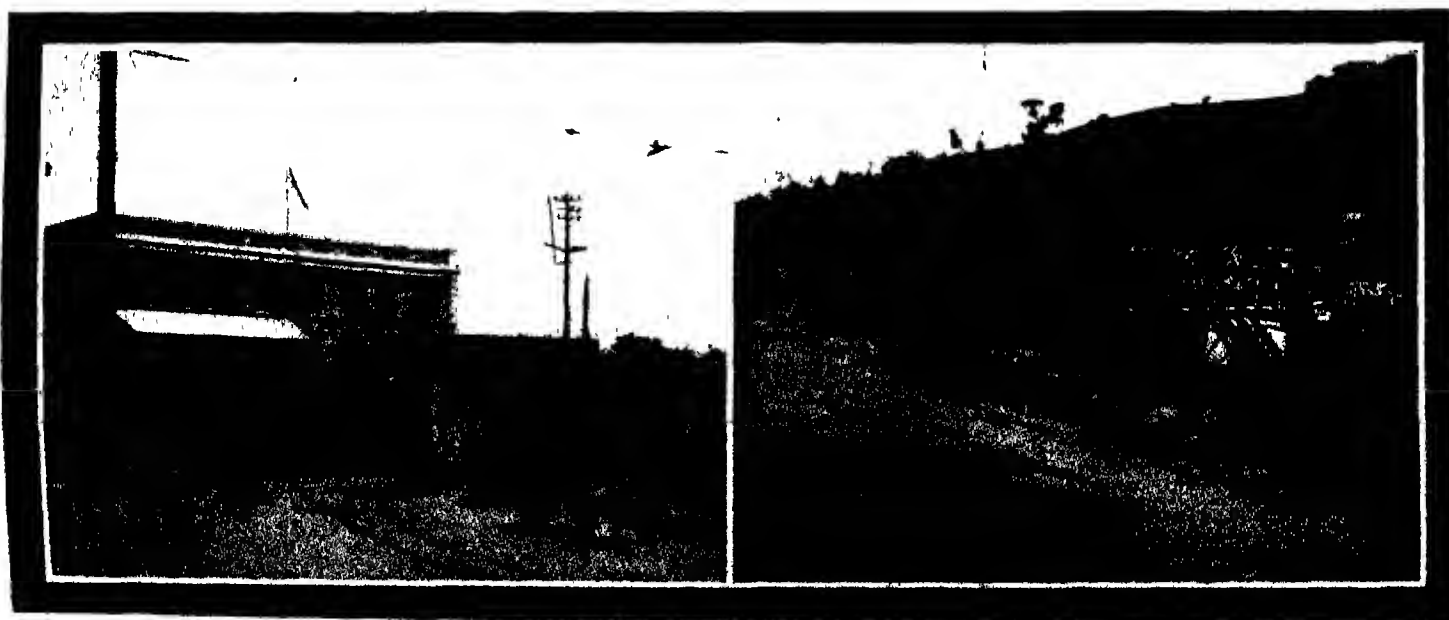
**FACILITIES.** Hotel guides meet all boats and trains, and cars and carriages for hire are always available at the establishment.

**CUISINE.**—The fullest care and attention are given to the preparation and service of meals.

**Connemara Hotel.**—This hotel stands in its own grounds in Binny's Road, between the residential and business quarters of Madras.

**ACCOMMODATION.**—This comprises 40 large rooms, each with its own bath and dressing room, and the usual public rooms in the main building. Covered ways lead to the various blocks, and two full-sized tennis courts are at the service of visitors. The dining room has windows on all sides, overlooking the gardens and securing the maximum of fresh air, while an open-air verandah lounge runs along its entire length. The facilities, furnishing and cuisine are on a par with those of the Hotel Spencer.

**West End Hotel.**—This hotel stands in the best part of Bangalore, 3,000 ft. above sea-level, and within easy reach of both railway stations.



Head Office, Royapuram, Madras.

**MASSEY & CO. LTD.**

2. Bridge constructed by the Company.

**ACCOMMODATION.**—The main block and villas comprising the hotel accommodate 50 guests. The rooms are comfortably furnished, the majority having private verandahs. There are two tennis courts in the grounds, while a golf links and racecourse are immediately adjacent.

**CUISINE.**—The catering is comprehensive and excellent, the daily supply of fresh meat, vegetables and fruit being especially tempting to the tired visitor from the plains.

**CABLES.**—"Westend," Bangalore

#### **MASSEY & CO., LTD.**

**Inception.**—The engineering works of Messrs Massey & Co., Ltd., were started by Mr. A. S. Massey at Calcutta in about 1856 under the name of the Kalki Works, but were transferred, after a successful period of over twenty years, to the Napier Works, Madras, formerly belonging to Messrs Arbutnot & Co.

**Development.**—Steady expansion marked the occupation of the Napier Works until in 1923 the firm absorbed the Madras Engineering Works, Ltd., and moved into the present commodious buildings at Royapuram.

**Activities.**—Massey & Co., Ltd., are recognised to be the leading firm of structural and mechanical engineers in the Madras Presidency, to which their operations are chiefly confined and for which territory they hold valuable agencies.

**Agencies.**—Such representations comprise Ruston & Hornsby's oil and gas engines, excavators, etc., Douglas & Grant's rice machinery, Atlas & Co. (Copenhagen), refrigerating machinery, Gandy Belt Co., Ltd., belting, Paraffin Co. (Inc.), Pabco paints and Malthoid roofing; Shanks & Co., Ltd., sanitary fittings, Stephenson Blake & Co., Ltd., printing type, and Harrild & Sons, Ltd., printing machinery.

**Branch.**—The firm has established numerous agencies throughout Southern India, and has opened a branch at Coonoor under the management of Messrs E. Vincent & Co.

**Managing Directors.**—Messrs J. O. Robinson, L. C. Nicholson, W. Simmons, H. Robinson, and M. E. S. Thompson.

**Offices and Works.**—Main Road, Royapuram, Madras (cables: "Massey," Madras). Codes: A B C 5th and 6th Editions and Bentley's.

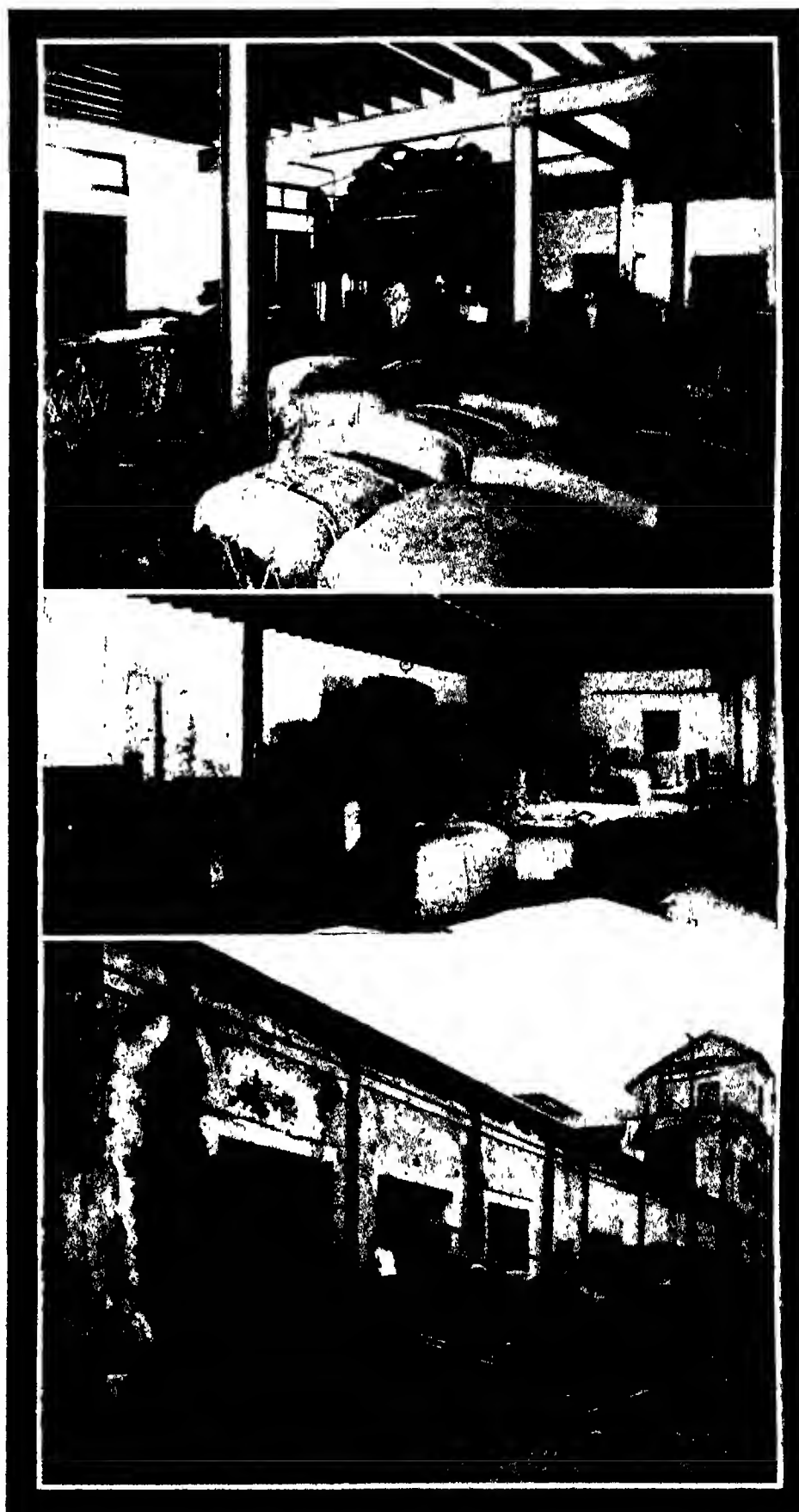
**Bankers.**—The Imperial Bank of India, The National Bank of India, Ltd.

#### **THE SOUTH INDIAN EXPORT CO., LTD.**

**Inception.**—This well-known company was formed in 1891 to carry on the old-established Madras export business of De Clermont & Donner, hides and leather merchants, of 27 St. Thomas Street, London, S.E.1.

**Activities.**—The firm handles a large and varied export and import business, specialises in waterworks and electrical engineering, and holds important mercantile and insurance agencies for Southern India.

**Exports.**—For many years the South Indian Export Company have been among the largest shippers in Southern India, both as buyers and consignors, of East India tanned kips, tanned and raw goat and sheep skins. In one of their spacious godowns is a 200-ton electric baling press, where the bales are pressed for shipment by almost every steamer leaving Madras for Great Britain and the Continent. In 1925 the company exported tanned and dry skins and tanned hides to the value of approximately a million sterling, and their marks are recognised at the London Sales to represent a high standard of quality. They are the largest shippers from Madras of mica, mined in the Presidency by the Madras Mica Co., Ltd., for which they act as managing agents, and in 1925 their exports of mica



THE SOUTH INDIAN EXPORT CO. LTD., Madras.

1. Two hundred ton Electric Baling Press in one of the Skin Godowns
2. A Hide Godown.
3. Coolies ready to take a load of baled Hides from the Company's Godown to the Wharf for export.

exceeded half a million pounds. Other exports include manganese ore and sarongs.

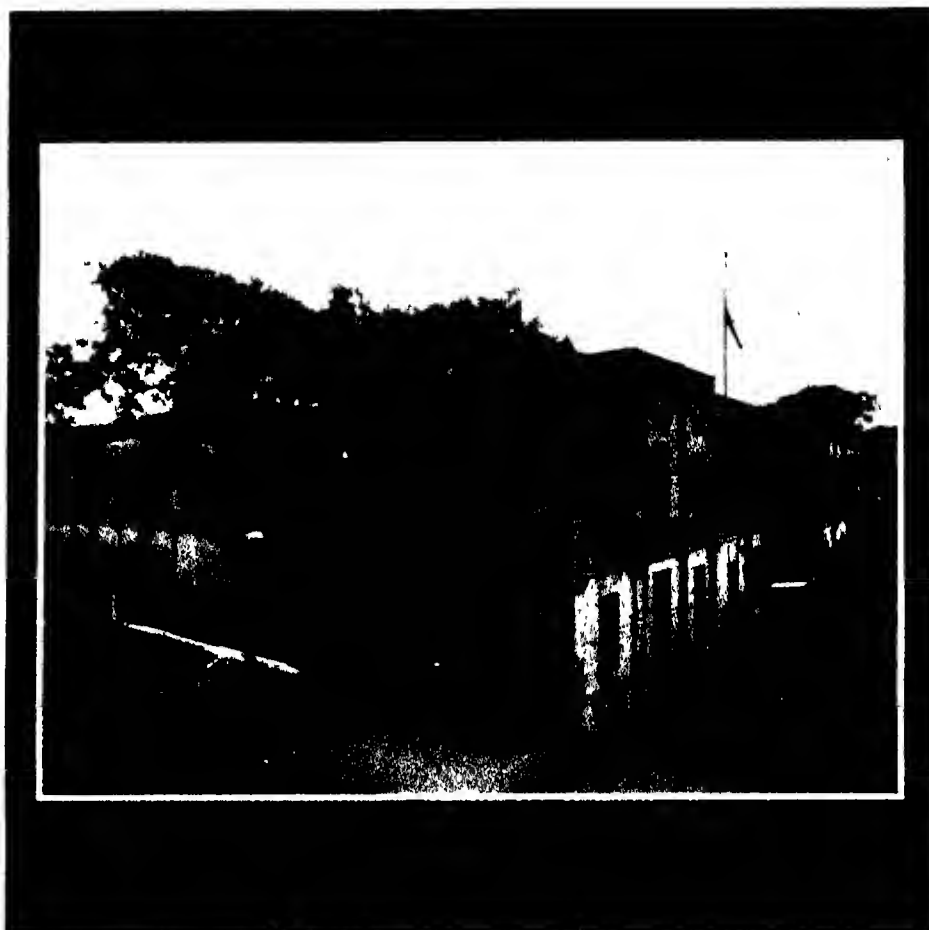
**Imports and Agencies.**—The company under notice acts as a confirming merchant house for approved indentors of hardware, cement and general miscellaneous imports, and as wholesale agents in Southern India for Horlick's Malted Milk Co., Slough, A. Johnson & Co., Ltd., London, paper manufacturers and exporters, The Pyrene Co., Ltd., London, fire-lighting appliance manufacturers, and The Hoase Spinning Co., Ltd., Dundee, jute and canvas manufacturers. Among notable industrialists in India the firm represents F. W. Heilgers & Co., Calcutta, colliery owners and managers, paper manufacturers and agents, for coal (in which line it acts as steamer bunkering contractors at the port of Madras), for Indian-made paper of all kinds, and for imported mineral oils.

**Engineering.**—In this department the company specialises in waterworks and electrical engineering, and has a resident engineer in charge of each section. It also imports hydraulic machinery and waterworks materials from Glenfield & Kennedy, Ltd., Kilmarnock, and electrical machinery and apparatus of all kinds from the well-known firm of Siemens-Schuckert, while for both these firms it is the accredited representative in Southern India. The firm is also agents for the Bengal Iron Co., Ltd., Kulti Iron Works, Bengal, ironfounders and manufacturers of cast iron pipes and general castings, and for manufacturers of rock drills, air and electrical coal cutters, steel wire ropes, light railway materials, etc.

The South Indian Export Co. is a regular contractor on a large scale to the Madras Government Public Works Department and to the Governments of Mysore, Travancore and Cochin, the Madras Port Trust, the Madras and Southern Mahratta Railway, the South Indian Railway, and various prominent municipalities and municipalities.

**Insurance.**—The insurance department represents the Caledonian Insurance Co., the London & Lancashire Insurance Co., Ltd., the British General Insurance Co., Ltd., the North China Insurance Co., Ltd., and the Law Union and Rock Insurance Co., Ltd.

**Agents.**—Besides their office in London, the South Indian Export Co., Ltd., are represented in Glasgow and Leeds by Wood Malvenan & Co., in Paris by Gangnat Ewald & Cie (formerly De Clermont & Cie), and in America by A. Helmrath Inc., New York. Among hides and leather correspondents in other parts of the world are the Arabian Trading Co., Ltd., of Aden and Mombasa (a sister concern, also under the control of De



THE SOUTH INDIAN EXPORT CO. LTD.

Premises at Madras.

Clermont & Donner), and firms in Sydney and Melbourne, Australia.

**Head Offices.**—4, McLean Street, Georgetown, Madras (cables: "Xebec," Madras).

**Registered Office.**—27, St. Thomas Street, London, S.E. 1.

**Bankers.**—The National Bank of India, Ltd.

### VISITORS' GUIDE

**CLUBS.**—Adyar, Madras—Mount Road, Madras Gymkhana—"The Island," Mount

Road, Madras Race—Gumdy, Saidapet, Madras United.

**CONSULATES.**—Belgium—2nd Line Beach (Messrs Walker & Co.), Denmark—8-9, Thumbuchetty Street, France—2nd Line Beach (Messrs Walker & Co.), Norway—21-22, North Beach Road (Messrs Gordon Woodroffe & Co.).

**HOTELS.**—Brind's—Mount Road, Connemara—Binny's Road, D'Angelis—178 Mount Road, Spencer's—Mount Road.

## OTHER CITIES AND PORTS

### CALICUT

On May 11, 1498, Vasco da Gama arrived at Calicut, after a voyage of ten months and two days from Lisbon. It was then an important city, containing many noble buildings, especially a Brahman temple. Long known as the "Fortunate City," it was the site of one of the earliest English settlements, was ravaged by Tipu Sultan, and was finally ceded to the British Government in 1792. From Calicut the cotton cloth originally exported obtained its name of calico, there is a large textile factory there, as well as a college, a hospital and several fine European buildings.

**PORT.**—The port is guarded by a light-house, 52 ft. high, which serves to guide

vessels to the anchorage, clear of the reef. The harbour is an open roadstead, and easy of access except during the south-west monsoon. There are two good piers, and loading is carried out by means of lighters. The port is in rail communication with the other commercial centres of India by means of the South Indian Railway. Supplies and provisions can be procured, but no coal for steamers. Exports include coffee, tea, oils, copra, coir, timber, ginger, pepper, sandalwood, cardamoms and rubber.

### COCANADA.

Situated about 120 miles to the north of Masulipatam on the Godavari delta, Cocanada, in spite of certain disabilities, ranks fourth in importance among the ports of the

Madras Presidency. Large steamers anchor about seven miles from the shore, service with them being maintained by lighters ranging from 16 to 86 tons, which land their cargo at the numerous small wharves situated near the mouth of the Cocanada Canal. Smaller craft can come within three miles and (if not drawing more than five feet) at certain tides even reach Cocanada itself. There are 28 jetties and wharves from which goods can be shipped. The export trade of the port is chiefly in raw cotton to the United Kingdom and France, while rice and paddy are despatched in large quantities to Ceylon and Mauritius. The town has a population of some 53,000, and there are a European and an Indian Chamber of Commerce.

**COCHIN.**

The town and port of Cochin are of special interest as being the site of the earliest European settlement in India, the Portuguese adventurer Cabral having landed there in 1500. With a population of some 20,000, the place has an interesting Jewish quarter and a picturesque main street. The harbour affords shelter to a large number of coasting craft, and has good anchorage some 1½ miles off shore for oversea steamers. These vessels, however, load and discharge at Cochin only during the north-east monsoon, using the auxiliary port of Malhipuram for the rest of the year. Coasting steamers between Bombay and Calcutta call once, and sometimes twice, a week. Coal and oil are obtainable.

**MADURA.**

With a population of 139,000, Madura is the centre of considerable silk and cotton weaving and dyeing industries, and is the second town of importance in the Madras Presidency. It was originally the capital of the Pandya kings, the chief of whom, Tirumala Nayak, built the Great Temple to Siva and his consort. This famous building is perhaps the most interesting to visit of all the Hindu shrines in India, as it contains many notable and beautiful features, and affords the most complete idea of Hindu ritual. The Hall of a Thousand Pillars is a wonderful sight, its sculptures surpassing those of any other hall of its class, while Tirumala's Choultry is also distinguished by many beautiful carvings and paintings. Seven miles distant from Madura is the no less famous Temple of Rameswaram, one of the most venerated Hindu shrines in India.

**MASULIPATAM.**

A port of the Madras Presidency, Masulipatam is situated in the delta of the Kistna River, and is connected by a branch line from Bezvada with the main line from Madras to Calcutta. As a port it has few natural advantages, and large vessels cannot anchor within five miles from the shore, while the harbour wharves (five in number) are distant another three miles up a tortuous tidal creek, with a lighthouse near the entrance. Steamers touch here only occasionally, foreign trade in paddy, rice, gingelly and cotton seeds being chiefly by native craft with Ceylon. The prosperity of the port has never recovered from the cyclone of 1864, when a tidal wave caused a disastrous inundation involving the loss of 30,000 lives. Population, about 44,000.

**NEGAPATAM.**

Some 48 miles east from Tanjore, Negapatam is a flourishing port on the east coast of the Madras Presidency. It does a brisk trade with the Straits Settlements and coast ports and contains the large workshops of the South Indian Railway. There is a harbour bar, which frequently shifts, and the depth on it varies. The quays amount to 800 ft., but there is only 2 ft. of water alongside at low water, with 4 ft. at high. Passengers and cargo are landed at a jetty in the River Cuddavayar, and most of the country vessels use their own boats the greater part of the year. A port improvement scheme is in hand with the object of affording cargo lighters a free channel out to sea at any state of the tide throughout the year. The principal export trade of Negapatam is in ground nuts, cotton piecegoods, tobacco and vegetables. The population of the town and port is about 60,000.

**TANJORE.**

On the Canvey, in the Garden of Southern India, Tanjore was the last capital of the Chola dynasty and contains two forts, much dismantled, enclosing the chief part of the native city. The principal sights are the Great Pagoda in the Little Fort, the Palace of the Rajah in the Great Fort, and Schwartz' Church. The Great Pagoda is considered the most remarkable of all the temples of Southern India, and, having been preserved with little alteration, is the best specimen of the style of architecture peculiar to India south of Madras. At the north-west corner of the outer enclosure is the wonderful shrine of Karttikeya, the son of Siva, an exquisite piece of decorative building. The Rajah's Palace is a vast edifice of masonry of no architectural merit containing statues and pictures, also a library of some 18,000 Sanscrit MSS., of which 8,000 are written on palm leaves. Schwartz' Church contains a very fine group of figures in white marble by Flaxman, representing the death of the aged missionary Schwartz. Tanjore is famed for its artistic manufactures, such as jewellery, copperware, pith models, carpets, silk, etc. For ages the city has been noted as one of the chief political, literary and religious centres of the South. Population, 59,913.

**TELLICHERRY.**

The importance of Tellicherry as a port lies in the fact that steamers, which anchor about two miles off the shore, can work even during the monsoon (when all the other ports on the coast are closed), owing to the natural back-water provided by the rocky approaches to the port. A fine sea-wall 1,195 ft. in length, has been built to afford protection against erosion and also a pier, 500 ft. in length, with good craning facilities. There is railway communication with Madras and Mangalore, and the construction of a line to Mysore through the coffee-growing districts is under consideration. Coffee and pepper are the principal exports. Population, about 28,000.

**TRICHINOPOLY.**

Trichinopoly (properly Tirunirupathi, or the 'City of the Three-headed Demon') is a city famous for much fighting during the wars with the French. It now contains several fine buildings, the many colleges and schools, for which as an educational centre it is renowned, being the most prominent. Weaving, tobacco and cigar making are the most important local industries, the cigars being well-known, though the so-called Trichinopoly cheroots come for the most part from Dindigul. The local silver and gold manufactures are also famous. Population, 120,422.

**TUTICORIN.**

The terminus of the South Indian Railway and an important sea-port on the Gulf of Manaar, Tuticorin was originally a Portuguese settlement, which was thence afterwards occupied by the Dutch, whose cemetery with many interesting memorials is worth a visit. It has a population of 45,000.

**PORT**—Steamers leave Tuticorin regularly for Colombo, the passage occupying 10 hours. There is a large coalse traffic from this port, also a busy export trade in cotton, coffee, chillies, tea and cattle. The port possesses good anchorage in front of the town, about five miles distant and outside Hare Island, in 5 to 6 fathoms of water. There are two Government piers 600 and 500 ft. long respectively, with 3½ ft. alongside at low water, and with cranes to lift up to 5 tons. There is no dry-dock accommodation.

**VIZAGAPATAM.**

Chief town of the district of that name, on the Coromandel coast of Madras, Vizagapatam is principally notable as being one of the best sheltered and most important ports on the India sea-board. Geographically, it is the natural outlet of one of the richest tracts of India, and one which at present is the largest land-locked area in the peninsula. There is a stretch of country without railways extending some 400 miles from north to south and 300 miles or more from east to west, even when allowance is made for lines sanctioned or under construction. Vizagapatam lies in front of the only practicable gap in the barrier of the Eastern Ghats. From the Central Provinces a considerable amount of trade has taken this route in the past, even with the imperfect communications hitherto available. The port serves rich coal and manganese fields, the great agricultural and forest areas forming the south-east of the Central Provinces, nearly all Orissa, and all the north-easterly portion of the Nizam's dominions. Its natural hinterland includes more than half the length of the great valley of the Godavari, the entire valley of the Mahanadi down to its delta, and the valley of the Indravati.

In 1925 it was notified by the Government of India that Vizagapatam would henceforward rank as a major port, thus coming under the control of the Central Government, a fact which cannot fail to aid its development.

**ACCOMMODATION**—Vizagapatam, like Bombay, has the natural makings of a port. A high promontory protects it from the south-westerly gales that prevail during a part of the year, under the lee of this lies a deep swamp and estuary stretching a considerable distance inland and having a stream running through. Across the mouth is a sandy bar. The project for creating a port consists primarily of dredging a passage through this bar and as much of the swamp as is necessary to provide room for shipping. A small portion will be dredged to start with, and extensions made as trade requires, wharves and other facilities being constructed simultaneously. At present vessels can load and discharge all the year round, the port possessing a fleet of Masulahi boats which carry 2½ tons each, while a private firm has a fleet of big boats built to land large and awkward materials. Slight repairs can be executed at the railway workshops.

**PILOTAGE AND TOWAGE**—There are no pilotage or towage charges.

**RAILWAY COMMUNICATION**—A necessary complement of the scheme to provide the great area mentioned previously with adequate port facilities is the construction of a railway north and west by Parvatipuram to Rupur (160 miles east of Nagpur), which will go through the gap in the hills to the centre of the country, the total length being about 300 miles. The southern end of this line has been built, and provision made for the construction of the remaining portion.

The prospects of this railway and those of the port of Vizagapatam are interdependent, since the additional traffic which the railway will bring to the seaport could not be handled by Vizagapatam with its existing facilities; on the other hand, any considerable development of the port would be unnecessary in the absence of the new line. It is, therefore, the intention of the Government that the further building of the railway and the construction of the new harbour shall be undertaken simultaneously. (See also article on "Railways.")



Borl Bunder, Bombay, with Victoria Terminus, the Head Office and main Station of the G.I.P. Railway, on the left

## BOMBAY PRESIDENCY

**T**HE Bombay Presidency stretches along the West Coast of India from Sind in the north to Kanara in the south. It embraces, with its feudatories and Aden, an area of 187,074 square miles and a population of 26,757,048. Of these totals, 63,453 square miles are in the Native States, with a population of 7,412,341. Geographically included in the Presidency, but under the Government of India, is the first-class Native State of Baroda, with an area of 8,182 square miles and a population of 2,032,798. The States in the Cutch, Kathiawar and Palanpur Agencies have since 1924 been in direct political relations with the Government of India. The territories under the rule of Indian Princes and Chiefs which are in direct political relations with the Government of Bombay extend now only to an area of about 28,562 square miles, their population totalling approximately 4,000,000.

The Presidency embraces a wide diversity of soil, climate and peoples. In the Division proper are the rich plains of Gujarat, watered by the Nerbudda and the Tapto, whose fertility is so marked that this district has long been known as the Garden of India. South of Bombay City the Province is divided into two sections by the Western Ghats, above which are the Deccan districts, while south of them are the Karnatic districts. On the sea-side of the Ghats is the Konkan, a rice-growing tract, intercepted by creeks which make communication difficult. In the far north is Sind, totally different from the Presidency proper, a land of wide and monotonous desert, except where irrigation from the Indus has brought abounding fertility.

**ADMINISTRATION.**—The Presidency is administered by a Governor and an Executive Council of four (of whom two are Indians) for the "reserved" subjects, and of the Governor and three Indian Ministers for the "transferred" subjects. The Legislative Council consists of 111 members, including the four Members of Council. The Government frequently moves, it is in Bombay from November to the end of March, at Mahabaleswar from April to June, and in Poona from June to November, but the Secretariat is always in Bombay. There are, in addition to Bombay City, five administrative divisions—Northern, Central and Southern, Bombay, Suburban and Sind—under which are 27 districts, each under a Collector.

The present Governor of Bombay is H.E. Lieutenant-Colonel the Rt. Hon. Sir Leslie O. Wilson, P.C., G.C.I.E., C.M.G., D.S.O., who assumed office in 1923.

**COMMERCE.**—The situation of Bombay on the western sea-board, in touch at once with the principal markets of India and the markets of the West, has given the Presidency an immense sea-borne trade. The older ports, Surat, Broach, Cambay and Mandvie, were famous in early times, and their mariners carried Indian commerce to the Persian Gulf and the coasts of Africa. But the opening of the Suez Canal and the increasing size of ocean steamers have tended to concentrate foreign trade in modern harbours with deep water anchorages, with the result that the sea-borne trade of the Presidency is now centred at Bombay and Karachi, although attempts are being made to develop

Mormugao, in Portuguese territory into an outlet for the trade of the Southern Mahratta country.

The total sea-borne trade of the Presidency increased from Rs 2,54,38,88,256 in 1923-24 to Rs 2,95,29,69,210 in 1924-25. In the latter year the value of all imports aggregated Rs 1,82,47,21,784, against Rs 1,36,47,02,923, while that of exports declined slightly from Rs 1,17,91,86,033 to Rs 1,12,82,37,430. Cotton and cotton manufactures form the bulk of exports.

**FINANCE.**—The present contribution of the Government of Bombay to the Government of India is Rs 56 lakhs. For the financial year ended March 31, 1926, the estimated revenue of the Province amounted to Rs 16,10,40,000 and the expenditure to Rs 17,05,91,000.

**INDUSTRIES AND MANUFACTURES.**—After agriculture, which supports 64 per cent of the population, and the principal products of which are cotton, wheat, grain, millet, rice and sugar-cane, the cotton milling industry of Bombay and the surrounding district takes first place, Bombay City being the great centre in India of the textile trade. (See special article on "Cotton.") Other handicrafts are widely distributed, the handloom weavers of the Presidency produce bright-coloured *saris*, and to a diminishing extent the exquisite kincobs of Ahmedabad and Surat; Bombay silverware has a reputation of its own, as has also the brass-ware of Poona and Nasik. The mineral wealth of the Presidency is small, being confined to building stone, salt extracted from the sea, and a little manganese.



## CITY of BOMBAY

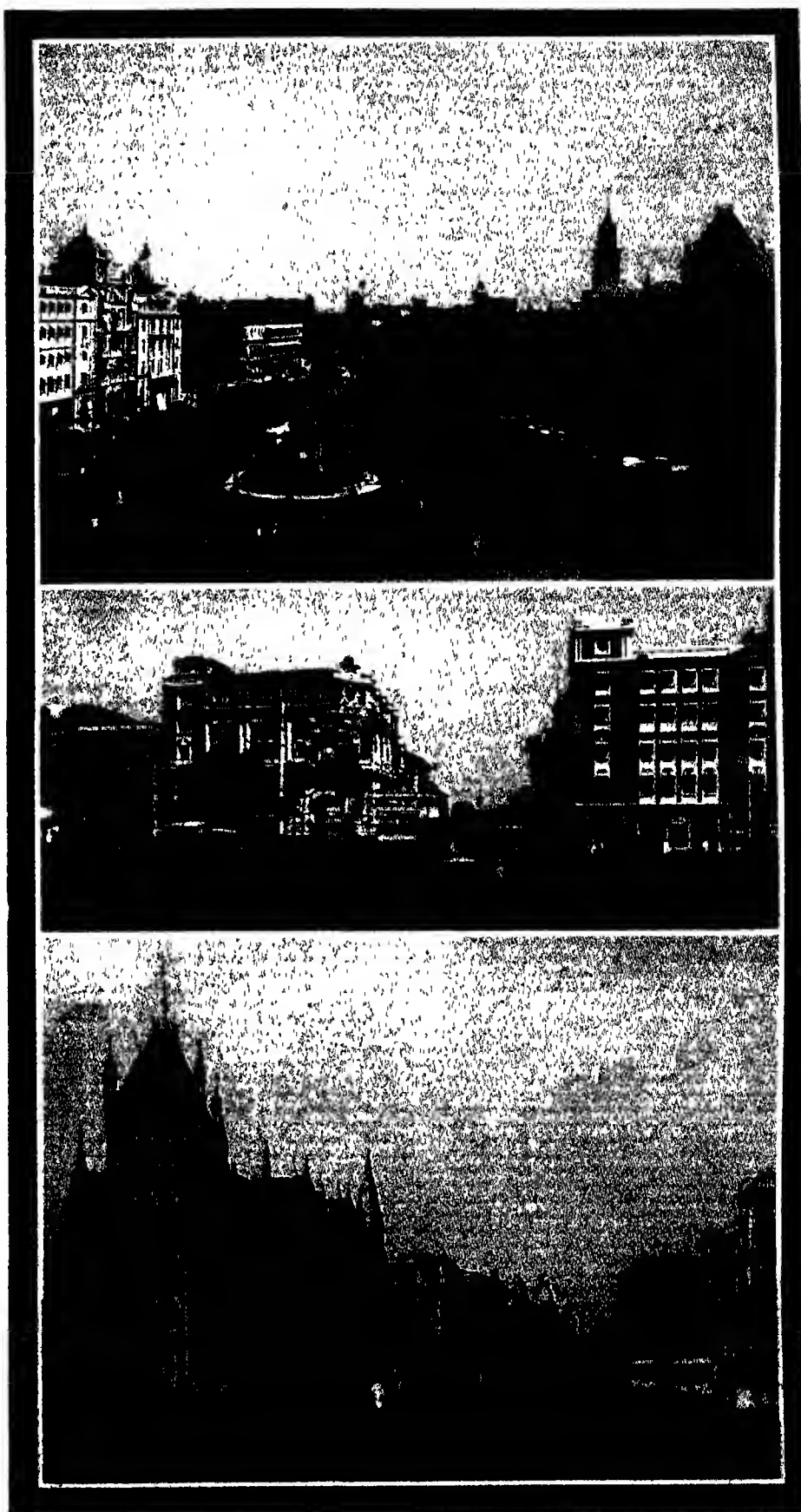
**B**OMBAY, capital of the Presidency of that name and the principal seaport of Western India, is situated on an island, one of a group lying off the coast of the Konkan, but by the construction of causeways and breakwaters it is now permanently united on the north end with the larger island of Salsette, and so continuously with the mainland. It constitutes a District by itself of 22½ sq miles.

In the beauty of its scenery, as well as in the commercial advantages of its position, Bombay is unsurpassed by any city in the East. The entrance to the harbour from the sea discloses a magnificent panorama, the background is shut in by the range of the Western Ghats, which provides an admirable setting for a city of well-built houses and broad streets ennobled by imposing public buildings, the lighting is good, and the health services have been much improved. Thanks to the labours of the City Improvement Trust, the Presidency capital under review is rapidly taking a place amongst the most beautiful and best managed cities of the world.

**BUILDINGS.** — Government House, the official residence of the Governor of the Presidency, is a picturesque building that has at different times been considerably enlarged, and stands in very beautiful grounds. The Old Government House, in Parel Road, once a Portuguese church, is now a laboratory for bacteriological research.

Many of the public and commercial buildings constructed during the last 50 years are of splendid dimensions and have no rival in any other Indian city, except perhaps Calcutta. The houses in the native bazar are also handsomely built, rising three, four, and even six storeys high, with elaborately carved pillars and front work. The most conspicuous line of public buildings is on the Esplanade, facing Back Bay. Here are the Secretariat, an enormous erection in the Venetian-Gothic style of architecture, the University Library, Senate Hall and Rajabai Clock-tower, the High Court, the Public Works, Post and Telegraph Offices. Along one side of Rampart Road is a colonnade of arches giving access to the Bombay Club, the French Bank and other buildings. Colaba Church is a fine and well-proportioned structure, conspicuous for some distance at sea. Near the Apollo Bunder is the Sailors' Home, erected at the expense of a former Gaekwar of Baroda, while opposite is the handsome Prince of Wales' Museum (see later). Behind the Sailors' Home is the Yacht Club, a favourite resort of Bombay society; adjoining it are the Club residential quarters and the imposing building of the Taj Mahal Hotel. The most important structures in the densely crowded space occupying the site of the Fort are the circular row of warehouses and offices known as the Elphinstone Circle, the Custom House, the Mint, the Town Hall and the Cathedral. The Victoria terminus of the Great Indian Peninsula Railway is a strikingly handsome building, which occupies the site of an old temple of Mambadevi. Opposite the station are the Municipal Offices, and beyond them the fine offices of the "Times of India."

To the north of Paydhuni are two interesting buildings, namely the City Jail in Umakhadi and the Jewish synagogue called the "Gate of Mercy." Other important structures, many of considerable beauty, are the Royal Institute of Science, on the Mayo Road, the Elphinstone College, the Sassoon



1. Looking down Esplanade Road, Bombay, from Flora Fountain.
2. Church Gate Street from the Fountain named.
3. Hornby Road from the same position.



1. Crawford Market Corner, Bombay; the entrance to the Bazar, looking down Abdur Rahman Street.
2. Hornby Road, with Messrs. John Roberts & Co., Ltd.'s showrooms on the right.
3. Esplanade Road, showing Messrs. Asquith & Lord's premises in the foreground.

Mechanics' Institute on Esplanade Road, and Wilson College.

**CASTLE.**—Hidden behind the Town Hall and Mint, the existence of Bombay's most historical building is unknown to many. Nevertheless, the old Castle, erected by the Portuguese, strengthened and further fortified by their English successors, still commands the eastern shore of the island. Despite time and many changes, it maintains its warlike traditions. Originally known as the Quinta or Manor House, it was the residence of Garcia da Orta, the celebrated physician and botanist, who in 1538 took over Bombay on lease at an annual quit rent of 185. From that time until the Portuguese ceded the islands it boasted the fairest garden in all India, but no traces of this now exist. Passing the sentry on guard at the gateway, a large courtyard is entered enclosed by formidable walls, east of which dashes the sea. On the northern side a passage leads through to an inner court wherein stands Bombay Castle, a square yellow building of small architectural pretensions. Winding stone stairs lead to the massive battlements, south-east of which is a flagstaff and a slender grey tower, the old Portuguese keep.

**CHAMBER OF COMMERCE.**—See under "Commerce."

**CHURCHES.**—The Anglican Cathedral of St. Thomas is one of the most interesting mementoes of the early English community in Bombay. Originally built as a garrison church in 1718, it was made a cathedral on the establishment of the See of Bombay in 1835, and to mark its new honours the present clock-tower was substituted for the old belfry. The edifice, which is a mixture of the classical and Gothic in style, contains many fine monuments and memorials. The Roman Catholic Cathedral, the seat of an archbishop, is a handsome modern building, and the Jesuits have ten other churches in the island. All Saints' is the Anglican Church of Malabar Hill and Christ Church of Byculla. The United Free Church of Scotland has a fine church in Waudby Road.

**CLIMATE.**—The average temperature of Bombay is 79 °F., and it is neither so hot in summer nor so cold in winter as some places in the interior. The coolest months are from November to March. The S.W. monsoon begins about the second week in June, and the rains continue until the end of September. The average rainfall is 70.30 in.

**CLUBS.**—Known all over the East and to travellers generally is the famous Byculla Club of Bombay, which offers all the amenities of a first-class institution of the kind, and has sleeping accommodation for its members. The Bombay Club on the Esplanade is noteworthy for its particularly excellent tilim. The Royal Bombay Yacht Club, on the Apollo Bunder, overlooking the Bay, has a large and influential membership, and extends a warm hospitality to strangers. In the beautiful grounds of this club a band plays on two evenings in the week. The Willingdon Sports Club, with its own golf-course, the Bombay Gymkhana and Golf Club, and the Ladies' Gymkhana on Malabar Hill are social and sporting clubs of the highest standard.

**CRAWFORD MARKET.**—The largest market in Bombay is the Crawford Market, on the Carnac Road. Founded by Mr. Arthur Crawford, C.I.S., Municipal Commissioner from 1865 to 1871, and costing 19 lakhs of rupees, it consists of a Central Hall, surmounted by a clock tower 128 ft. high. Two wings to the right and left serve for flowers and fruit, also for vegetables. The whole is covered with a double iron roof. On the south side is the poultry market.

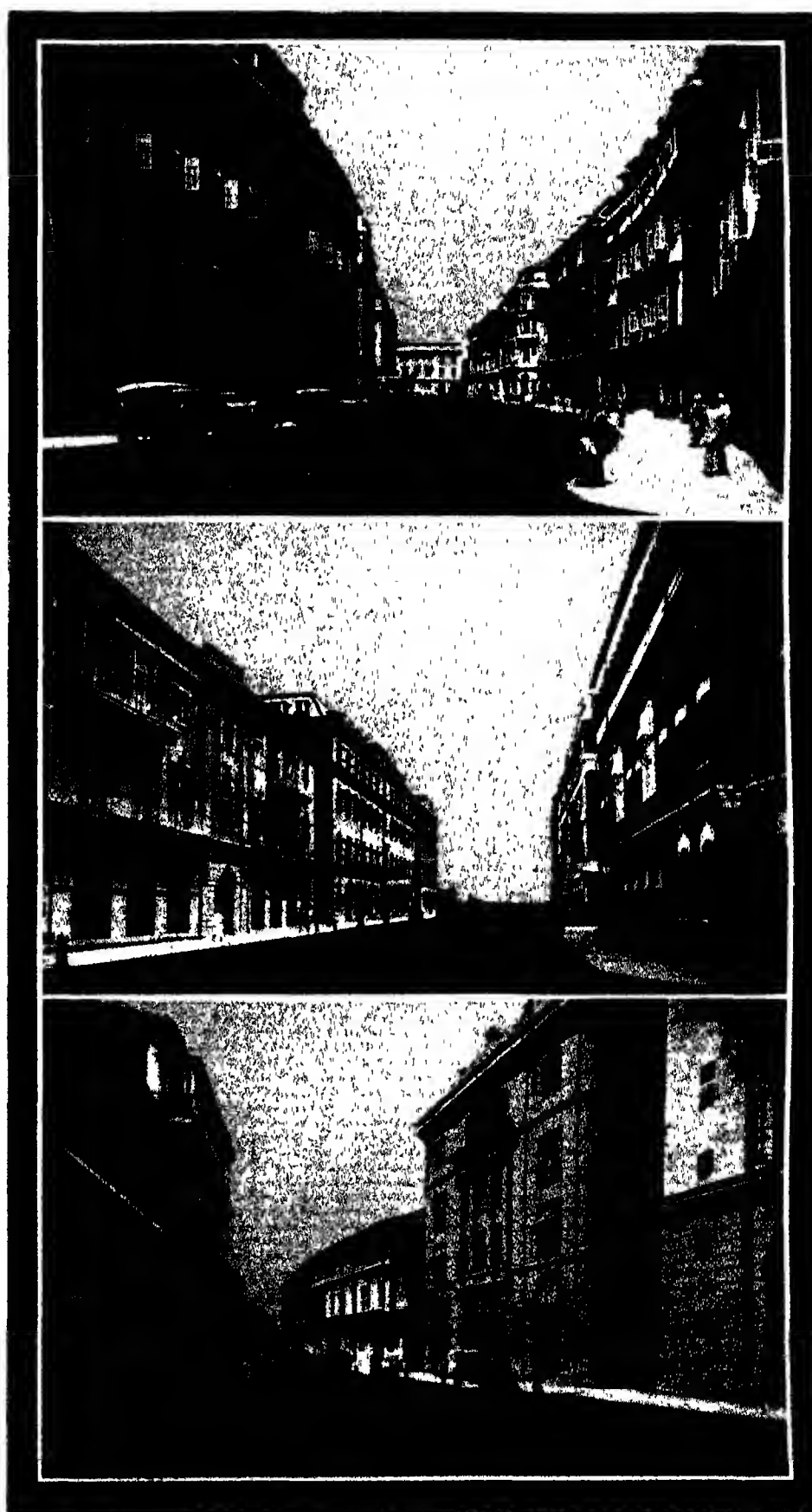
Crawford market is famous for its fine display of every kind of fruit and there is also a Fish Market, where turtles, oysters, and the noted bunmaloe, or Bombay Duck, can be purchased.

**DEVELOPMENT SCHEME.**—The Bombay Development Scheme in its widest sense represents concerted attempts by the three local bodies, the Municipality, the City Improvement Trust and the Port Trust, each working in its own sphere and with Government assistance, to secure the rapid and adequate development of the city. On the part of the two former organisations various areas are being developed for housing facilities, the want of which has been largely felt since the War. (See later, "Improvement Trust.")

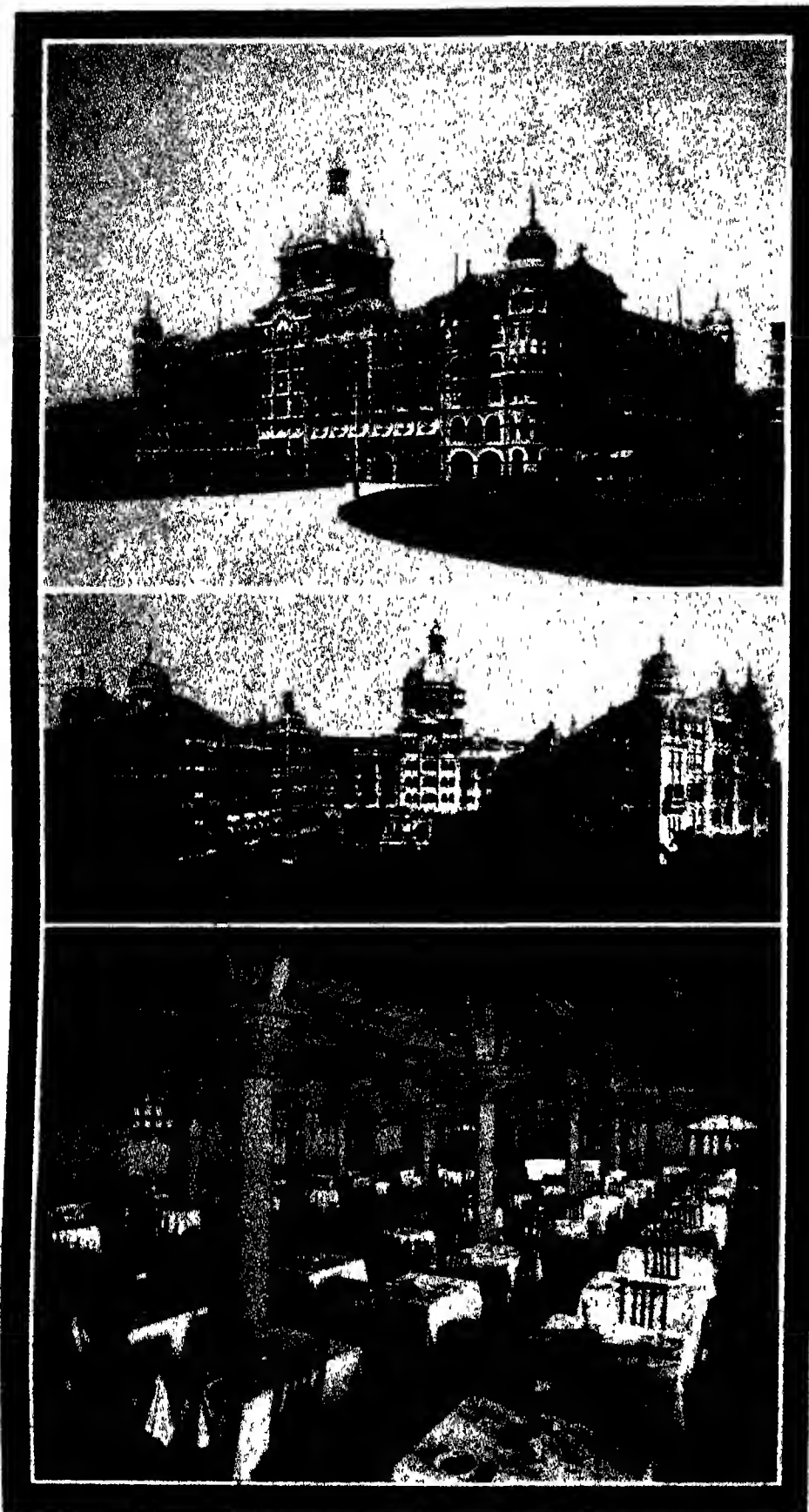
**BACK BAY RECLAMATION.**—The scheme undertaken by the Port Trust known as the Back Bay Reclamation has for its objects the reduction of congestion in the business area and the provision of residential accommodation and open spaces in the south of the city. This involves the reclamation of nearly 1,300 acres from the sea and the construction of a great enclosing wall four miles in length. The work was put in hand, but it became apparent as early as 1921 that all was not going well, and in 1924 the Bombay Government requested the Advisory Committee to the Department of Development, which was in charge of the undertaking, to make an investigation. A sub-committee appointed for this purpose reported early in 1926 that the scheme would cost £8,500,000—about three times the original estimate—and require about twenty years to complete. It was, therefore, recommended that only three out of eight sections of the work should be finished and that the remainder of the scheme should then be reviewed, the Advisory Committee, by a majority, adopting this recommendation. The Bombay Government sought the opinion of Sir Alexander Gibb, the well known consulting engineer, in the matter. Speaking in the Bombay Legislative Council on February 22, 1926, the Governor, Sir Leslie Wilson, said the Government would be unable to make use of Sir Alexander Gibb's report without further reference to him regarding the figures. His report, however, strengthened the Government in its intention to proceed with the southernmost block (No. 8) at Colaba Point and blocks 1 and 2 at the northern end of the reclamation. It is not considered likely that further developments on a large scale will be carried out for many years to come.

**ELEPHANTA.**—The famous caves of Elephanta are situated on Elephanta Island, in Bombay Harbour, about six miles from the Apollo Bunder. They can best be visited by the motor-launch which leaves the Apollo Bunder twice a day, the time occupied being about an hour in each direction.

The Caves date back to about the middle of the eighth century, and there are five in all. The most important is the Great Cave, situated in the western or the larger of the two hills of the island. The entrance is reached by a winding path about a quarter of a mile from the landing place. Travellers can be carried up the hill in chairs if desired. The Cave is entirely hewn out of solid rock, from the front entrance to the back it measures about 130 feet, and its length from east to west is nearly the same. It is a representation of Siva, who is the leading character in all the groups of the Cave. The front face is Siva in the character of Brahma the creator, the face on the left is Siva as Rudra the destroyer, and the face on the right is considered to be Siva in the form of Vishnu the preserver, holding a lotus flower in his hand.



1. Graham Road, Ballard Estate, Bombay, showing Volkart Building, the Indian Head Office of Messrs. Volkart Bros., in left foreground.
2. Dougall Road, Ballard Estate, with Sassoon Building, the Head Office of E. D. Sassoon & Co. Ltd., in left centre.
3. Bank Street, Fort, showing the entrance to Duncan Stratton & Co.'s Offices in left centre and Shale Buildings, the premises of Shalebhoj Tyebjee & Sons, in right foreground.



TAJ MAHAL HOTEL, Bombay.  
 1. Sea Front View from Apollo Bunder.  
 2. The Entrance.  
 3. Beautiful Dining Room.  
 (See *Interpress*, p. 255.)

It may be mentioned that the name of Elephanta was given to the place early in the 16th century by the Portuguese because of a large stone elephant that stood near the old landing stage on the south side. The figure measured 7 ft 4 in in height and 13 ft 2 in in length, in 1814 the head dropped off. Subsequently it was removed to its present position outside the Victoria and Albert Museum. Splendid views of the harbour and surrounding country can be obtained from the cleared space at the entrance to the Great Cave.

**ENVIRONS.** The environs of Bombay are gradually being opened up. The beach at Juhu provides splendid bathing, the monsoon jungles of the Lake District of Vihar and Pawan attract the naturalist, the Caves of Kanheri, Jogeswar, and Borivli draw their weekly quota of pilgrims and the old-world charm of the early Portuguese church of Bhayandar and the parochial village community of the island of Dharavi reveal an unexpected element in modern Indian life which is worthy of a leisurely inspection. A good motor road for a distance of 50 miles now encircles the whole island of Salsette, where much of the scenery is exceedingly beautiful.

**GARDENS.**—The beautiful Victoria Gardens constitute one of the many triumphs of art over nature which Bombay boasts. They occupy what was once a useless stretch of low-lying land, some 48 acres in extent, which was reclaimed and laid out in 1862 as the ground of the Agri-Horticultural Society. Eleven years later the Society was dissolved, since when the gardens have been managed by the Municipal Corporation.

The entrance is rendered imposing by a handsome gateway on Parel Road, the David Sassoon clock-tower and fountain, and a small Græco-Roman pavilion to the memory of Lady Frere. The grounds are charmingly arranged and abound in rare plants and flowers, amid which tiny lakes sparkle, while brightly plumaged birds perch on the tall palms and strangely tropical trees. The gardens also house a fine collection of wild animals.

**HEALTH.**—The general health of Bombay has greatly improved. For 1925 the death rate was 25.38 per 1,000, which was the lowest for 50 years, with the exception of 1915, when the average was untrustworthy, owing to the general exodus of population. This fall is considered to be due to the stamping out of plague and cholera and the disappearance of the influenza epidemic. Effective measures have been taken for killing rats, about 14,000,000 having been destroyed in 20 years. Other factors contributing to healthier conditions are a purer water supply, better housing, sanitation and slum clearance, general welfare work, and the spread of education. Infant mortality shows a marked decrease, which, it is thought, is partly due to the national "Baby Week" and to health propaganda.

**IMPROVEMENT TRUST.**—The City of Bombay Improvement Trust was formed after a terrible visitation of plague in 1896 had directed public attention to the insanitary conditions resulting from overcrowding, seventy-six per cent of the inhabitants occupying one-roomed tenements. The Trust consists of 14 members, of whom four are elected by the Municipality and one each by the Chamber of Commerce, the Millowners' Association and the Port Trust, the remaining seven being either nominated by Government or sitting ex-officio as officers of Government. The Trust has practically reconstructed large areas on sanitary lines, and enormous schemes for the expansion of housing in the city are now passing through



the final stages before being put into execution. At Worli, on the north-west of the island, at Dharavi on the north, and at Sewri and Wadala on the north-east the Trust has undertaken development schemes involving the acquisition and improvement of 1,558 acres, or 2.43 square miles, that is between 1/9th and 1/10th of the whole area of Bombay Island. A considerable amount of filling in of low-lying land is involved, and for this purpose material from the hills on the north-east and north-west of the island will be utilised, the hills being lowered in such manner as to level them into desirable building sites. Room will be provided for more than a quarter of a million new population, equal to nearly one fourth of the present total population of the city, in the three new estates when they are fully developed, and the recoupment which the Trust will derive from the disposal of building

49,000 acres of reclaimed ground. It was erected by the East India Company in 1820 at a cost of thirty-six lakhs of rupees. The building is a plain one, with an Ionic portico, seven and a half lakhs of silver can be turned out daily. The nickel mint can produce two lakhs of pieces per diem. The workmen are chiefly Indians, supervised by Europeans under the control of the Mint Master, an officer belonging to the Royal Engineers, who is directly responsible to the Indian Government.

**MUNICIPALITY.**—The City Corporation of Bombay consists of 100 members, of whom 70 are elected from the different wards, four by the Chamber of Commerce, the Indian Merchants' Chamber and Bureau, the Mill-owners' Association, and the University, 10 are nominated by the Government, and 10 are co-opted by the elected and nominated members. Inside the Corporation, which is

to commemorate Queen Victoria's assumption of the title "Empress of India." The building is a handsome one in the Italian renaissance style and the collection within, originally intended to represent the economic products and natural history of Western India, has since become more catholic in scope, now including a reference library and a number of statues.

The Prince of Wales' Museum of Western India, which occupies an island site at the southern end of Esplanade Road, is one of the finest structures in Bombay and dates from 1905, when the present King-Emperor laid the foundation-stone. Its contents cover Art, Archaeology and Natural History, the latter being especially well represented. A section devoted to forestry has been added, and a small local geological collection of rocks, minerals and fossils is also exhibited.

**POPULATION.**—According to the



• WESTERN INDIA TURF CLUB LTD.

Bombay Racecourse: Portion of the Members' Lawn and Paddock from the Members' Stand.

sites upon them should repay almost the whole of the enormous capital outlay.

The total capital expenditure of the Trust up to March 31, 1925, was Rs 1,644 lakhs.

**PROJECTED TRANSFER.**—It was announced in 1926 that the Government had decided to transfer the functions of the Trust to Bombay Municipality, and that the necessary formalities and legislation to effect the transfer were receiving attention.

**MAHIM.**—Now chiefly famous because of the tomb of Sheik Makhtum Ali Paru, which renders it one of the most celebrated places of Mohammedan pilgrimage in Western India, the ancient city of Mahim lies ten miles outside Bombay, whence it is quickly reached by train from either Colaba or Church Gate stations. Particular interest attaches to it as being the first capital of a dynasty to be established in the islands, having been founded in the 13th century by King Bhimdev. It was at Mahim that the Portuguese first landed on January 21, 1509. The once powerful capital is now chiefly visited by large numbers of Mussulman pilgrims, who come from near and far to pray at the shrine of Makhtum Fakih Ali Paru, a saint of Arab origin, born at Mahim in the 14th century, whose tomb is credited with the virtue of working miraculous cures in cases of spirit possession.

**MINT.**—The Bombay Mint stands behind the Town Hall and next to the Castle on

a deliberative body, are two statutory committees: (1) the standing committee of 16, of whom 12 are elected by the Corporation and 4 nominated by the Government, this being practically the finance committee of the Corporation; and (2) the Schools Committee, also consisting of 10 members, twelve elected by the Corporation from its own body and four, of whom two must be women, from outside. The Municipal Commissioner appointed by Government exercises supreme executive authority in all municipal matters except primary education, in respect of which the entire executive authority is vested in the Schools Committee.

**FINANCE.**—The municipality's budget estimates for the year ended March 31, 1926, indicated a surplus of Rs 700,000. Expenditure was placed at Rs 31,950,000, against an income of Rs 32,650,000. There has been an average increase of Rs 2,600,000 yearly in municipal expenditure during the past six years. For 1924-25 and 1925-26, 2,330,000 and 1,400,000 rupees respectively were set aside for road construction. Other new undertakings provided for in the budget were a memorial hospital and medical college, and also the chlorination of the city water supply.

**MUSEUMS.**—The older of the two large museums in Bombay is the Victoria and Albert Museum, which was founded in 1858

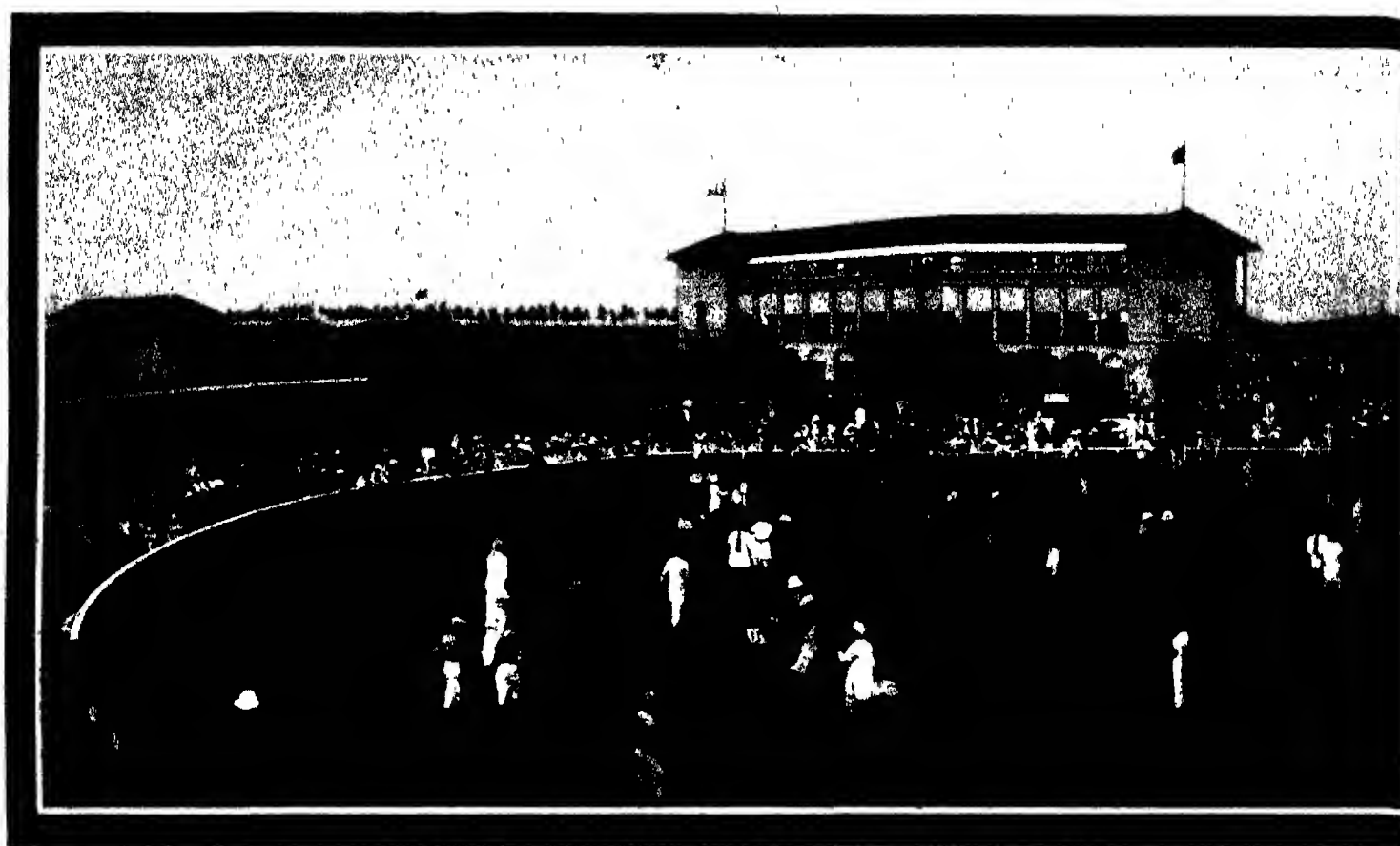
(See *Interpress*, p. 317.)

last census, the population of Bombay was 1,175,914. The inhabitants were then classed as follows: Hindus, 837,690; Mohammedans, 184,685; Parsis, 52,234; Jains, 23,884; Europeans, 14,726; Anglo-Indians, 4,724; Indian Christians, 48,719; Jews, 7,548. The growth of the inhabitants was from 150,000 at the beginning of the 19th century to 776,006 in 1901, and from 979,445 to 1,175,914 during the ten years 1911-1921.

**STREETS.**—The streets and roads of Bombay have by means of gradual improvement been brought to a high state of perfection. The main thoroughfares are broad, well-laid out and delightfully shaded, and if some of the smaller streets of the native quarters are narrow and tortuous, they are certainly not lacking in picturesqueness.

The business and shopping centre is clustered about the Fort, the nucleus around which the city grew up. From just above the ancient Castle, Mint Road leads north to the Victoria Station and onwards to the main part of the Indian city; Marine Street and Apollo Street lead south to Rampart Row along the south side of the Fort and the open space west of the Apollo Bunder, and Church Gate Street leads west to Esplanade Road, with its handsome buildings and offices, and to the Back Bay, beyond which the residences of the more wealthy classes are situated. Rampart Row and its continuation to the Apollo Bunder





WESTERN INDIA

form the main line of thoroughfare of the European quarter.

Two well-known and busy thoroughfares are the Kalbadevi Road and Abdur Rahman Street, both of which lead to the Paydhuni ("foot-wash") quarter, so called from the fact that in very ancient times a stream flowed there, in which passers-by used to wash the dust of travel from their feet. Princess Street, named after Her Majesty Queen Mary, who opened it when Princess of Wales, deserves mention as being the first arterial thoroughfare created by the City Improvement Trust.

**TEMPLES.**—At Malabar Point is the picturesque Hindu temple of the Sand God Walkeswar, which occupies the site of a still older sanctuary. The Great Banganga tank is the home of huge turtles, and there is a sunken well with deeply venerated properties. The Mombadevi Tank and Temple lie to the south-east of the bazar, and the place is supposed by some to have been the origin of the name Bombay. A little way off Warden Road are two Hindu sanctuaries of much repute, the Maha Lakshmi Temple, dedicated to the goddess of good fortune, and Dhakji's Temple, built by a former Prime Minister of Baroda. Zaoba's Mandar is famed for the images of its three principal deities, said to be the most beautiful in Bombay.

**TOWERS OF SILENCE.**—On Malabar Hill at the head of the bay stand the five Parsi Towers of Silence. Almost any day of the week processions of white-robed Parsis may be seen wending their way along Gibbs Road, each couple grasping a *parwand*, or handkerchief, between them in silent sympathy. The bier is carried up the eighty steps that lead into the Tower by four "Carriers of the Dead," but the two bearded men known as Nasr Salars are the only living beings who may enter the Tower.

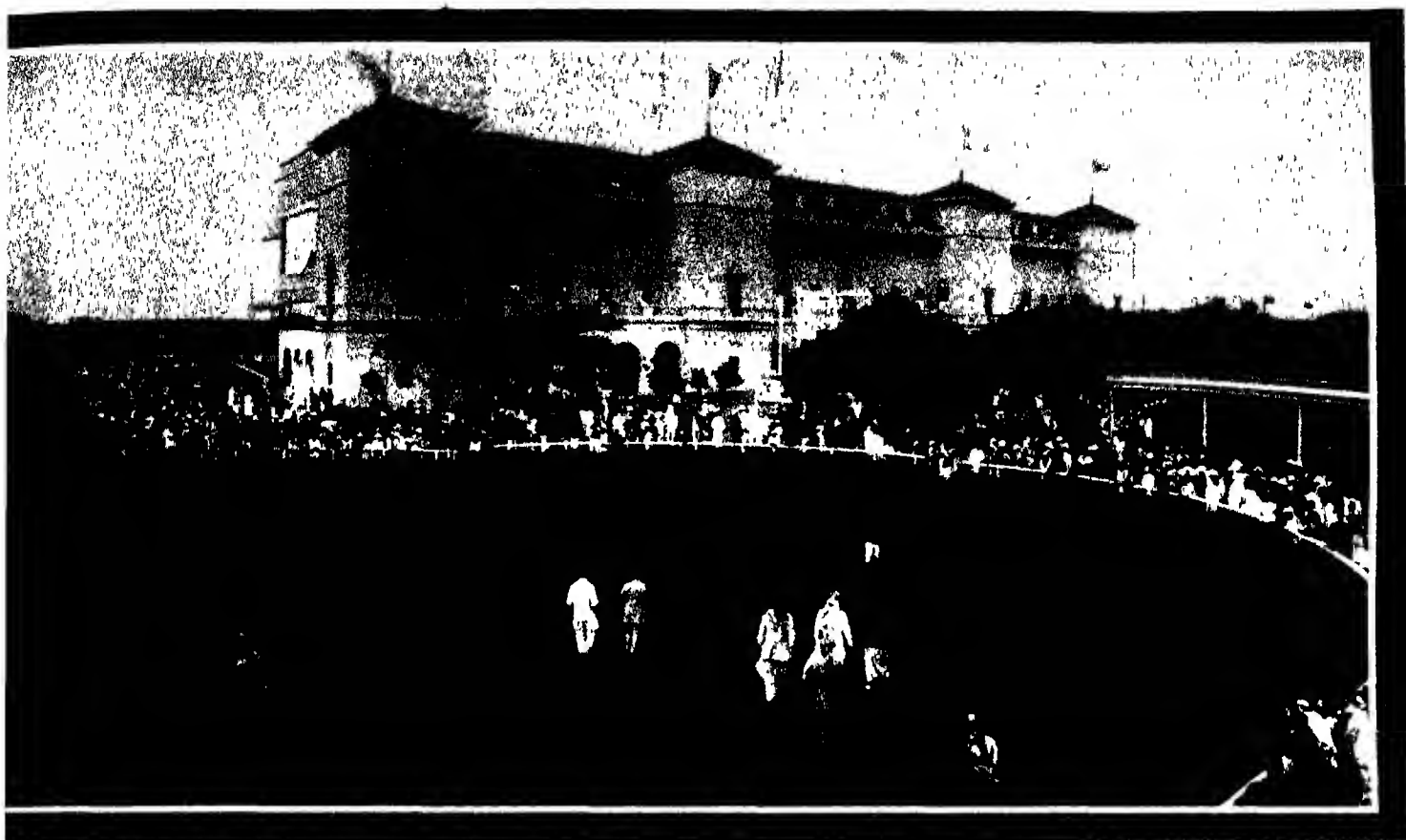
Within are receptacles for the bodies of men, women or children, and beyond is the big central well into which the bones are swept after having been stripped clean by the vultures. There they crumble into dust, and there, according to the precepts of Zarathustra, the rich and the poor meet in death. This unique method of interment originates from the veneration the Parsis pay to the elements, fire being too highly regarded by them to allow it to be polluted by burning the dead, and water and earth being almost equally respected.

**UNIVERSITY.**—The University of Bombay was founded in 1857 and is of the affiliated type, consisting of a group of colleges in the Presidency and Baroda State, the University acting not as a teaching body, but as the controlling organisation which determines the qualifications for admission, prescribes the courses of study, confers degrees, and exercises a mild form of control over the affiliated colleges. The University Library and Senate Hall are two Gothic buildings among the finest in Bombay, the former containing the famous Rajabai Clock with its peal of sixteen bells, and the latter being noted for its magnificent hall, which measures 104 ft by 44 ft and is 63 ft high.

**WATER POWER.**—The greatest water-power undertakings in India—and in some respects the greatest in the world—are the Tata hydro-electric schemes recently brought to fruition (and constantly undergoing expansion) for the supply of power in Bombay. The cotton mills and other factories of the city (the third largest in the British Empire and the biggest manufacturing town in Asia) use over 100,000 horse-power of mechanical energy, and until a few years ago this was almost entirely provided by steam generated by coal coming from a distance—mostly

from Bengal. The Tata Hydro-electric Power Scheme, devised by the late Mr D. Gostling, utilised the exceptional position of the Western Ghats, which rise 2,000 ft from ocean level within a very short distance of the Arabian Sea, to conserve the heavy rainfall produced by the south-west monsoon in the natural catchment area formed by the table lands behind them. After a great deal of preliminary investigation a syndicate secured the necessary licence from the Government, and an endeavour was made to enlist the support of financiers in England, who tried to impose terms which were not acceptable. Meanwhile the attention of Sir George Clarke (now Lord Sydenham), then Governor of Bombay and an engineer of distinction, was drawn to the scheme. The interest shown by him attracted the notice of Indian Chiefs in the Presidency of Bombay and outside to its possibilities, funds flowed in, and a company with an initial capital of Rs 1,75,00,000 was started.

The hydro-electric engineering works in connection with the project are situated at and about Lonavla above the Bhore Ghat, where the rainfall is often 500 inches and is stored in three lakes at Lonavla, Walwhan and Shirawta, whence it is conveyed in masonry canals to the forebay or receiving reservoir. The dams of these three lakes are approximately 90 ft., 70 ft. and 34 ft. in height, with areas of 3,000, 1,700 and 720 acres respectively, all at 2,000 ft. above sea-level. At the forebay near the Duke's Nose the water enters the pipe line, to take a plunge of 1,725 ft. down to the generating station at Khopoli, where 40,000 horse-power is generated by five big turbines. When the scheme is extended to its fullest capacity, with three more turbines, it may be possible to develop 80,000 h.p. The water which will thus be utilised and released at Khopoli,



**TURF CLUB, LTD.** Bombay Racecourse.

computed in cubic feet per second, will equal the River Thames in volume. The power generated is conveyed 43 miles to a receiving station at Parel, in the Island of Bombay, by aerial transmission cables at a pressure of 100,000 volts, crossing several navigable creeks on lofty steel towers. From the receiving station the first instalment of 40,000 h.p. is distributed, among other consumers, to 35 mills. The introduction of electric power from this and other hydro-electric undertakings instituted by the house of Tata has already done much to remove the smoke nuisance of Bombay.

**WATER SUPPLY.**—For many years Bombay had been content to depend upon a supply of unfiltered water from the Tansa Lake, which in 1924 was severely condemned in a report to the Municipal Corporation submitted by two English experts. Since that date a great deal has been done towards the proper filtration and purification of the water, and Bombay has now a supply of 90,000,000 gallons per day, capable of expansion to 160,000,000 gallons. The supply is obtained from four separate impounding reservoirs, viz. Tulsī, Powai, Velhar and Tansa lakes, each fed from its own catchment area and delivering water by gravitation to service reservoirs in Bombay. The Paterson System of purification is in use.

The water is conveyed from Tansa Lake to Bombay Island, a distance of 55 miles, in parallel lines of steel pipes, each 72 in. in diameter, which, as they near Bombay, branch into three smaller pipes. The pipe track along which the pipes are laid and the tramway for their transport were constructed at an estimated cost of Rs. 95 lakhs by the Tata Construction Company, while the total sum sanctioned for the completion of the Tansa works amounts to Rs. 5,48,02,511.

#### **WESTERN INDIA TURF CLUB.**

**Historical.**—The earliest record of horse-racing in the Bombay Presidency dates back to the end of the seventeenth century, but it was not until 1814 that control became vested in one body. In that year the Byculla Turf Club, the first known racing institution in Western India, assumed control of all racing in that region and upon it devolved the task of organising on proper lines the regular meetings in the Presidency. Subsequently the Byculla Turf Club became merged into the Western India Turf Club. The former Club, as the Byculla Club, however, still holds sway as one of the leading social institutions in Bombay. From its inception the Western India Turf Club has held regular meetings at Bombay and Poona, which are conducted in the best spirit of the sport and patronised by the leading owners in India. Other race meetings held under the rules of this Club take place twice annually at Quetta, Karachi, Rajkot and Kolhapur.

**Development.**—During recent years the growth of the Club has been beyond all expectations, and it can be truthfully said that the Bombay racecourse and enclosures compare favourably with the best in the world. The attendances are increasingly large, and the numbers of entries received each year for all races point to the popularity of the Western India Club fixtures with the public and racehorse owners. Both the Bombay and Poona courses are within easy reach of the railway terminus, the view from all parts of each enclosure enables the racing to be watched in comfort from start to finish, and the catering arrangements are excellent. The approximate cost of erecting the grand stands, totalisators, tea houses, stables, etc., at Bombay was £300,000.

**Control.**—The affairs of the Club are directed by a Committee of nine, of whom

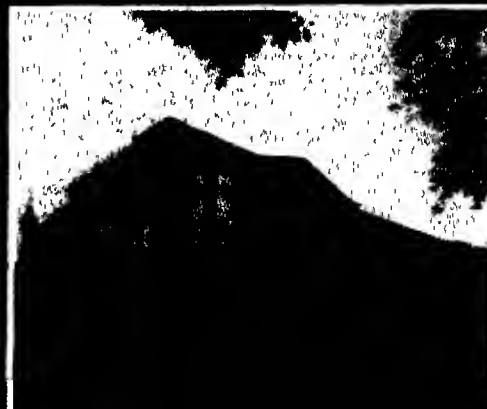
five are elected stewards, which has full authority over all racing matters. The secretary is Major J. E. Hughes, the handicapper Lt.-Col. S. Findlay and the stipendiary stewards Col. R. H. Collis, C.M.G., D.S.O., Col. F. D. Hunt and Mr. D. Manee. Mr. E. F. Lance and Capt. C. R. Chambers are also assistant secretaries and starter and judge respectively.

**Seasons.**—The racing season in Bombay extends from the middle of December until the middle of March, and comprises 20 days' racing, while at Poona the season commences at the end of July and finishes in the middle of October, providing 16 days' racing.

**Horses.**—The Western India Turf Club was founded to encourage especially the breeding of the Arab class of horse, and a large number of events are framed for this particular type. At the same time English and Australian horses are encouraged, and have been racing in the Presidency regularly during the past 40 years.

**Betting.**—All betting is carried out by means of the totalisator, bookmakers having been abolished in 1911. The Club's totalisators are the latest of their kind, driven by electricity and absolutely automatic in their workings.

**Stakes.**—A feature of the Club's policy in the division of its handsome stakes is the large proportion given for second and third places. The chief events at Bombay are the Eclipse Stakes of India, 1½ miles, the Rajpipla Gold Cup, 1 mile, The Grand Western Handicap, 1 mile, The Bombay City Plate, 1½ miles, The C. N. Wadia Gold Cup, 1 mile 5 furlongs, H. H. The Aga Khan's Cup, 1½ miles, The Bombay Derby, 1½ miles, and The Turf Club Cup, 1½ miles, while at Poona the Aga Khan's Cup, 1½ miles, The Western India Stakes, 1½ miles, The Poona



**MCKENZIES LIMITED, Bombay.**  
Examples of Work carried out by the Firm

1. \* Grand Stands, Totalisator, and Tea Houses of the Western India Turf Club.
2. Imperial Bank of India, Bombay; concrete structural work executed by McKenzies Limited.
3. Victoria Jubilee Technical Institute Workshops, Bombay.
4. National Bank Building, Bombay, largely rebuilt and increased in size by the firm.
5. Victoria Jubilee Institute, Matunga, near Bombay.
6. Allahabad Bank Building, Bombay; concrete structural and interior work carried out by the firm.

\* See Panoramic View on pp. 316-317.

Casarewitch, 2½ miles, The St. Leget Plate, about 1 mile 5 furlongs, The Atlantic Stakes, 1½ miles, and The Governor's Cup are among the valuable races which attract owners and trainers from all parts of India.

**Head Offices.**—Club Road, Byculla

**Cables.**—"Turf," Bombay

**Bankers.**—The Chartered Bank of India, Australia and China

#### **McKENZIES LIMITED.**

**Inception.**—Founded in Bombay some 40 years ago to conduct a private timber business, and now eminent among the foremost contracting firms of Western India, this concern was floated as a company in 1907. The many notable achievements to its credit include a large share in the reconstruction and development of the city of its origin.

**Activities.**—Besides specialising in concrete, timber, masonry and other structures, the firm holds a number of agencies for materials, the most important being Malthoid waterproof roof covering, Trinidad and Bermudez asphalt for roads, and the Truscon Steel Company's products, comprising Khan and rib bars, Hy-rib, steel sash and waterproofing products for concrete and masonry construction. It has also the agency for 160 tons road-making machinery and equipment, including the tandem rollers used on the Trinidad roads in Bombay.

**Trinidad Asphalt.**—The success of roads laid with this material, from the standpoints of cleanliness and durability, has led the Municipality and Bombay Improvement Trust to embark on an extensive programme for constructing permanent thoroughfares. Among the more important laid with Trinidad asphalt are Hornby Road, Kalbadevi, Mint Road, Colaba Causeway, Lamington Road, Parel Road, Kingsway, Grant Road, Worli Sea Front, etc., and they will compare favourably with the main roads of London, Paris and New York.

**Malthoid Roofing.**—This waterproof material has stood the trying conditions of the East for over 15 years, and is coming into universal use. Over 500 of Bombay's most important buildings and recently the Port Trust Cotton godowns have been covered with it, the latter contract being the largest for roofing (1,000,000 sq. ft.) ever

placed in the East. The whole work of laying is under expert European supervision.

**Trinidad Mastic.**—The problem of constructing durable floors in structures like docks, railroad terminals and platforms, etc., has been solved by the use of Trinidad Lake asphalt mastic, the first of that composition in Bombay being laid by McKenzies Ltd. This material, widely used in England has been adapted with extremely satisfactory results to the more severe conditions in India.

**Timber.**—The company's saw mills at Sewri are equipped with modern machinery, and include a commodious carpentry shop. Large stocks of hard and soft timbers are carried to meet all demands. The departments are under experienced supervision, and capable of undertaking all kinds of timber construction.

**Construction Department.**—This department is staffed by highly qualified engineers, many of whom have had years of experience on various works in India. McKenzies Ltd. specialise in concrete work, employing a modern concrete handling plant comprising Rex mixers, Insley concrete placing equipment and Blaw steel forms. Continuous supervision of constructions in hand, and exceptional facilities offered by the possession of the Sewri Saw Mills for obtaining first-class form work, assure the excellence of their undertakings. The following are the more important contracts on which they have recently been engaged: Victoria Jubilee Technical Institute, reinforced concrete chawls, piers and jetties, reservoirs and tanks, Imperial Bank of India, Allahabad Bank, National Bank of India, new offices for Mr. Mulji Haridas, Mackinnon Mackenzie & Co. and Turner Morrison & Co., Ahmedabad Power House, Barnes School, Deolali, the Bombay Racecourse (the largest contract ever let in Bombay, amounting to 22 lakhs of rupees, or approximately £150,000), and the Mahalaxmi Overbridge.

**Policy.**—The record of McKenzies Ltd. has been one of steady growth. Established on sound business principles, it is more than maintaining its high reputation for first class materials and workmanship, combined with the best technical experience and sound direction. The complete satisfaction of its clients and the fact that a large amount of

work is carried out on a cost plus percentage basis are valuable tributes to its excellent workmanship and business integrity.

**Managing Directors.**—Messrs H. L. McNeil and C. C. Sherwood

**Offices.**—Bombay (head office) St. Helen's Court, Currimbhoy Road, Ballard Estate (cables "Sawmills," Bombay), Calcutta Allahabad Bank Building, Codes Western Union, Bentley's, A B C 5th Ed.

**Bankers.**—National Bank of India and Chartered Bank of India, Australia and China.

#### **SHAPOORJEE N. CHANDABHOY & CO**

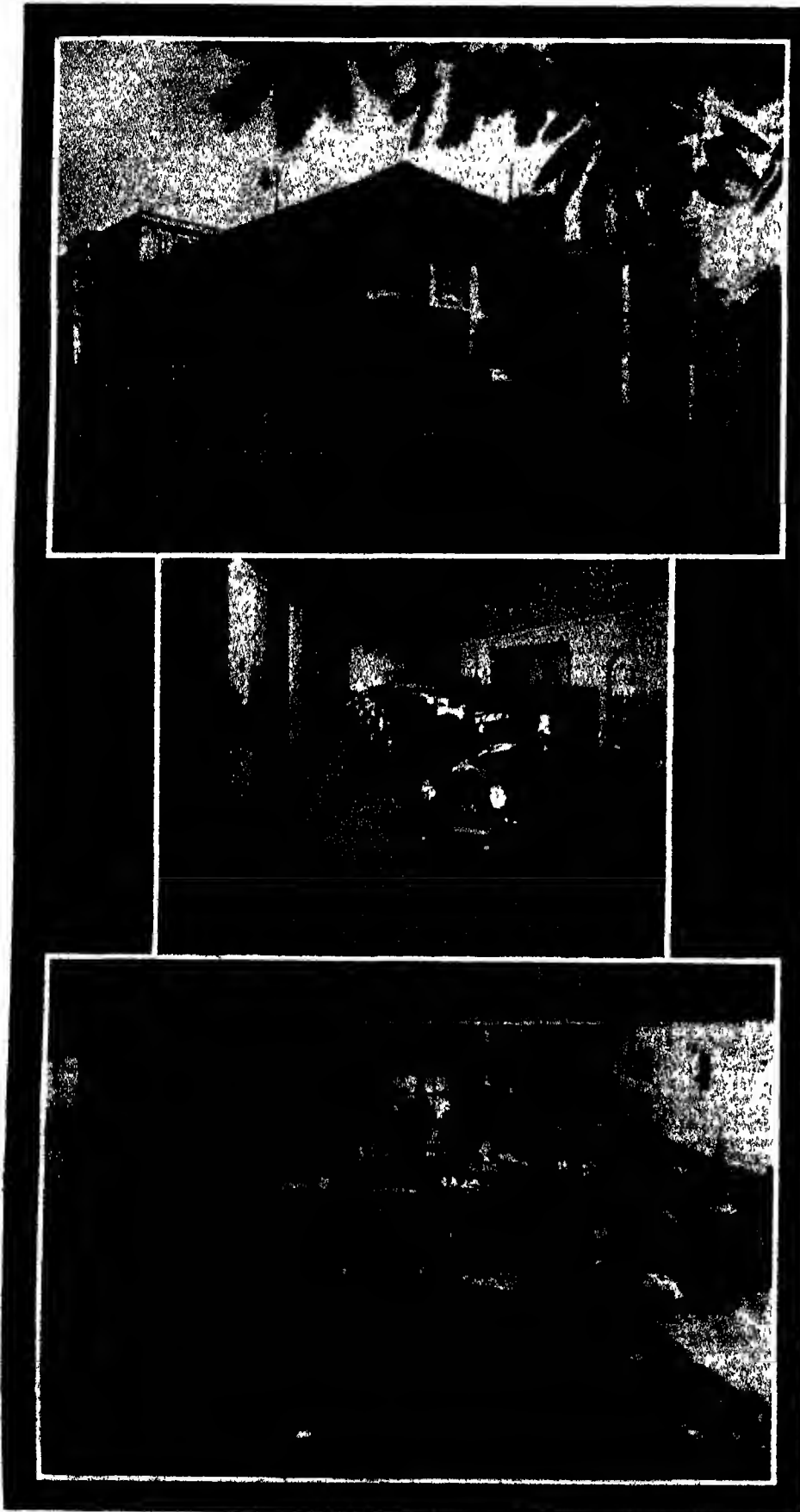
**Inception.**—This prominent firm of chartered architects, civil engineers, surveyors and fire loss assessors was established in 1868 by Mr. Nusservanjee Chandabhoi, C.E., the first Parsi civil engineer.

**Development.**—In 1880 the founder was joined by his son, Mr. Shapoorjee N. Chandabhoi, who was elected F.R.I.B.A., M.S.A. and M.S.E. (Lon.), receiving the first of those distinctions in 1904, when he was the only Parsi practising as an architect in Bombay to hold that honour. He designed and supervised the erection of various architectural and mill buildings, among his achievements being the Albee Building, Hornby Road, Framjee Petit Parsec Sanatorium at Cumballa Hill, new block of Great Western Hotel, Apollo Street, Chhatree at Wanowrie (Poona), and the Hospital at Rajppla.

**Present Principal.**—Mr. Burjor S. Jamshetji Aga, grandson of the late Mr. Nusservanjee Chandabhoi and nephew of the late Mr. Shapoorjee N. Chandabhoi, joined his uncle's firm as a partner in 1907, after having qualified as a Civil Engineer by passing the L.C.E. Examination of Bombay University in 1902. Mr. Shapoorjee died in 1920, and the business has been continued by the surviving partner, Mr. Burjor S. J. Aga, F.R.I.B.A., M.I. Struct. E. (Lon.), L.C.E., M.I.E. Mr. Burjor Aga was elected a Licentiate of the Royal Institute of British Architects (Lon.) and a Member of the Society of Architects (Lon.) in 1912. He was also made a Fellow of the Society of Architects (Lon.) in 1920, being the only Indian to bear that distinction from the time the Fellowship was founded to just a little before the Society's amalgamation with the Royal Institute of British Architects in 1925. He was the first



**SHAPOORJEE N. CHANDABHOY & CO., Bombay:** Structures designed and erected by the firm.  
1. Framjee Cowasjee Institute. 2. Memorial (Chhatree) at Shivapuri, Gwalior State, erected in memory of the late Maharajah Sir Madhavras Scindia's Mother.



H. M. MEHTA & CO, Bombay.

1. T. R. Pratt (Bombay) Ltd.'s fine Premises in Hughes Road.
2. Showrooms.
3. Garage and Workshop.

Parsi member of the Institute of Structural Engineers (Lon.)

**Designs and Erections.**—The firm have been acting as architects to several Indian Ruling Princes, notably Their Highnesses the Maharajasahibs of Gwalior, Rajpipla and Devgadhi-Baria. For H H the Maharajasahib of Gwalior Mr Burjor Aga has designed and erected a large building at Gwalior with a frontage of 400 feet for the Polytechnic Institute, and a Temple (Chhattree) at Shivapuri in Gwalior State, besides designing buildings for Secretariat, School, Hospital, bungalows, etc., for Gwalior State. For the purpose of the State works a branch office was maintained at Gwalior from 1917 to 1925. Designs for extensions to the Palace, the new School building and Guest Houses for H H the Maharajasahib of Rajpipla have been prepared by Mr Aga, and work on these buildings has just been started at Rajpipla. Mr Aga has in addition designed a Secretariat Building, Palace, etc., for H H the Maharajasahib of Devgadhi-Baria.

**Other Commissions.**—The firm have also been acting as architects to public bodies, charitable institutions and some of the leading private individuals—e.g., The Western India Turf Club, Ltd., The Indian Share & Stock Brokers' Association, Messrs Volkart Brothers, Messrs Courtaulds (India), Ltd., The Central Bank of India, Ltd., The Bai Avabai Framjee Petit Parsi Girls' Orphanage, The Bai Shrimbai Cama Convalescent Home, The Zoroastrian Building Society, Sir Sarupchand Hukumchand, Mr Sorabji N Pochkhanawalla, Mr Ramnarayan Hurnandrai, and others. Messrs Shapoorjee N Chandra Bhoj & Co have also been responsible for the erection of and extensive additions to several spinning and weaving mills. Mr Burjor Aga has designed and carried out the work of extensive additions to about 15 mills in Bombay. In 1925 almost all (about 50) mill-owners in Ahmedabad engaged the services of Mr Burjor Aga for inspecting and preparing reports on their mill buildings for submission to Government, and the reports so prepared by him carried much weight with the Government officials concerned.

Mr Burjor Aga has often been appointed arbitrator, umpire or commissioner by Courts of Law as well as by private individuals.

The following are a few of the other buildings designed and erected by the firm's present principal. The Polytechnic Institute Building at Lashkar, Gwalior, The Framjee Cawasjee Institute Building at Esplanade Road, Bombay, Sir Sarupchand Hukumchand's Building at Kalbadevi Road, Bombay, Secretariat Building and Palace at Devgadhi-Baria, Temple (Chhattree) at Shivapuri, Gwalior State, Mr Sorabji N Pochkhanawalla's Building on the Work Estate of the Bombay Improvement Trust (this being the first building to be erected on that Estate), Mr. Ramnarayan Hurnandrai's bungalow at Mount Pleasant Road, and H H the Maharajasahib of Rajpipla's bungalow at Nepean Sea Road, Bombay.

**Offices.**—Morarbhai Building, 43 Apollo Street, Fort, Bombay (cables: "Wisdom," Bombay)

#### MEHTA, H. M., & CO.

Mr. H. M. Mehta, one of the original partners in this firm (established in 1896, offices, 123, Esplanade Road, Fort, Bombay), extended its activities to the motor car business in 1918, when he founded the company of T. R. Pratt (Bombay), Ltd. The latter concern occupies fine corner premises in Hughes Road, Bombay, furnishing well appointed showrooms and a commodious garage fully equipped for every class of repair. In partnership with Sir Victor Sassoon, Mr Mehta in 1919 established the business of



M T Ltd, which has a head office in Bombay and an important branch in Calcutta. These two automobile engineering firms, conducting a large trade, hold sales concessions for the Buick car all over Bombay and Calcutta, and also represent the Lancia, Standard and Cadillac. (Further details regarding companies controlled or represented by H. M. Mehta & Co. will be found in the "Industry" and "Calcutta" sections.)

#### FORD AUTOMOBILES (INDIA) LTD.

**Inception.**—Beginning operations as a private concern in 1914, this well-known Western India Ford motor organisation made rapid headway, becoming in 1916 a private limited company with a capital of 6 lakhs of rupees and a public company in 1920 with a capital of 30 lakhs.

**Development.**—From 360 cars ordered in 1914 to 2,800 in 1926 is the measure of the firm's expansion in the course of twelve years.

**Capital.**—The authorised capital is 30,000 shares of Rs 75 each, the issued capital 28,000 shares and the subscribed capital 25,530 shares, all of Rs 75 each. The company has adopted the sound policy of building up a reserve fund and writing down assets whenever possible.

**Activities.**—Sole importers of Ford products manufactured by the Ford Motor Company of Canada for Western India, the company handles cars, trucks and tractors, and always carries its own stocks with all the necessary spare parts. Service is the key word of every organisation connected with the Ford Company, and in India this is as good as can be afforded in any other country of the world. The firm's executive has always worked along progressive and modern lines, and therefore has an organisation that can offer service in the true sense of the word. To do so entails modern equipment and full stocks of spare parts.

**Stocks.**—About six lakhs of rupees worth of spare parts, some 400 cars and the necessary trucks and tractors, according to their requirements, are regularly carried in stock. The truck business has developed enormously during the past few years, especially since its introduction as a passenger-carrying vehicle, and tractors are beginning to develop as industrial haulage vehicles.

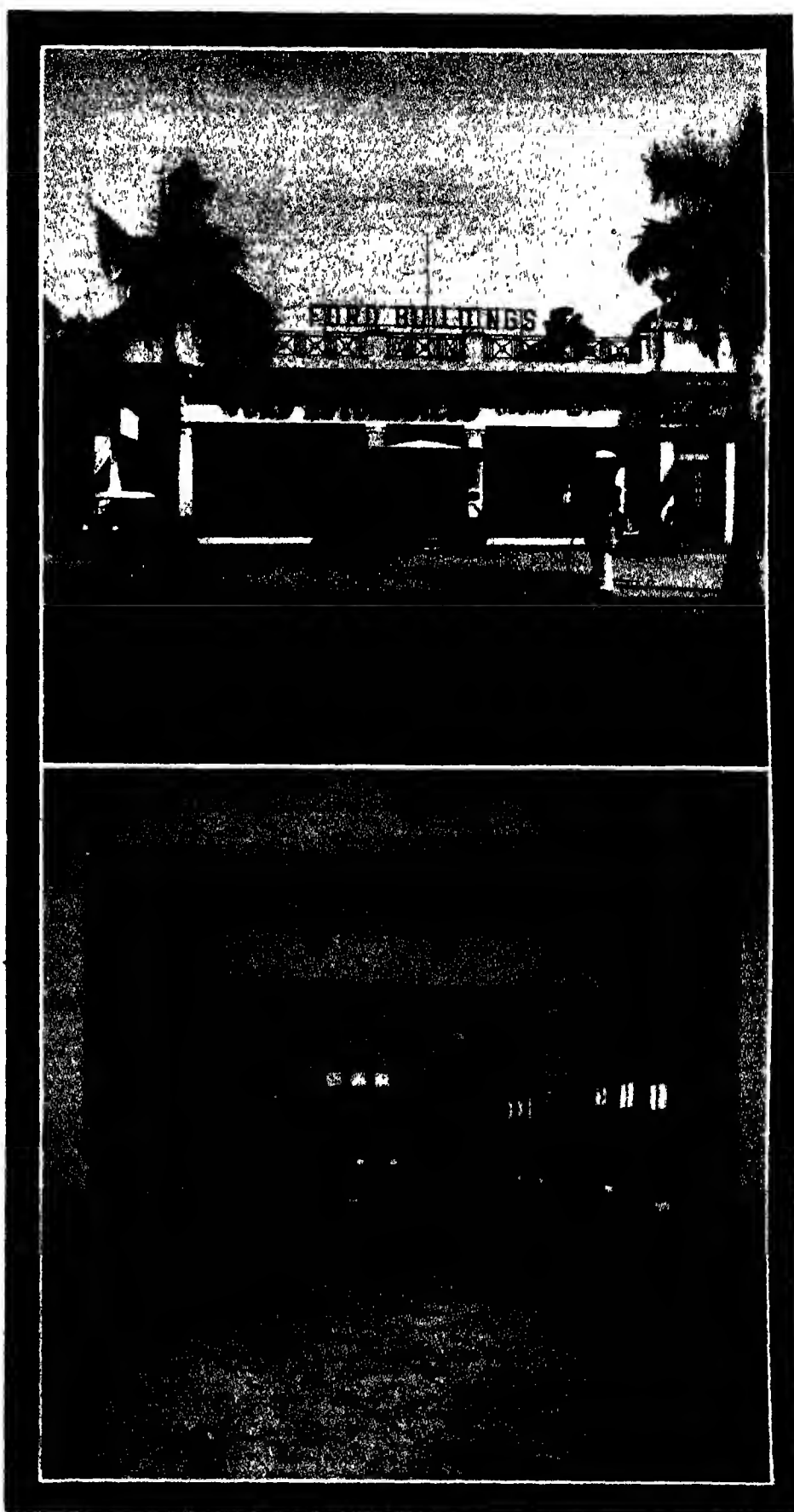
**Workshops and Assembly Plant.**—Situated at Ballas Road, Byculla, these cover an area of 60,000 sq ft and are fitted with all the latest labour-saving devices. Every branch of the firm is fully equipped and has its own workshop and assembly plant attached to the office.

**Branches.**—These are situated at Karachi, Delhi and Lahore, and each is under the personal supervision and control of a depot manager, thus keeping the company in close touch with all developments throughout Western India. In addition, the firm has over 100 agents in its territory, ensuring the full application of the Ford slogan of "Service".

**Management.**—The firm's operations are under the personal supervision of the chairman, managing director, and three depot managers. The present chairman and the late chairman, who has just retired, were the original founders of the business. The board now consists of Messrs. H. H. Lilley (chairman), H. E. Ormerod (managing director), A. S. Andrews, F. W. Willis, A. S. Chadwick and J. P. Bradshaw.

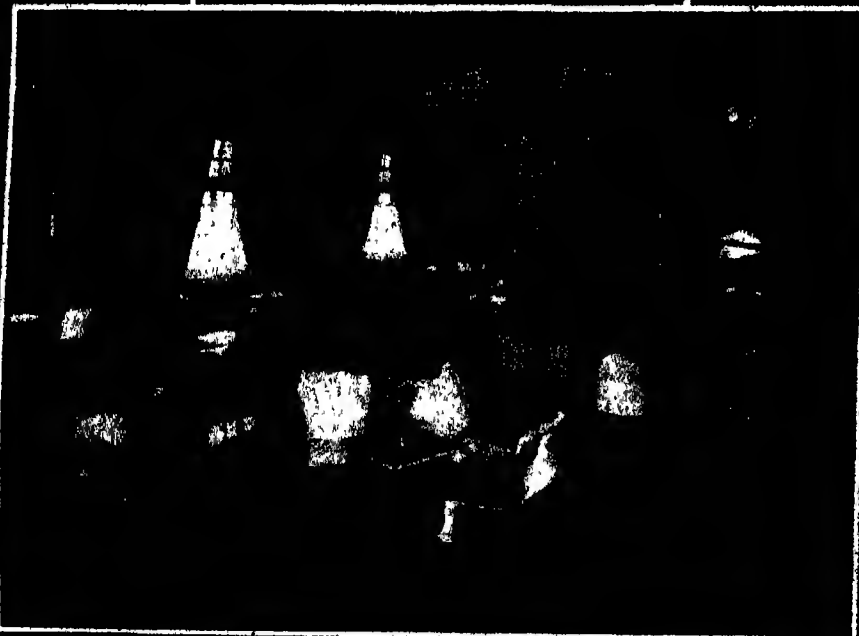
**Head Offices.**—"Ford Buildings," Hughes Road, Bombay. Cables: "Autoford," for Bombay, Karachi, Delhi and Lahore, code Bentley's Phrase Code.

**Bankers.**—Chartered Bank of India, Australia and China.



FORD AUTOMOBILES (INDIA) LIMITED, Bombay.

1. Head Office, Ford Buildings, Hughes Road.
2. Portion of the fine up-to-date Showrooms and Offices.



GRAND HOTEL, Bombay.

1. The Dining Room.
2. Fine Premises on Ballard Estate.
3. The Lounge.

#### GRAND HOTEL (BOMBAY), LTD.

**Situation.**—No better site could have been chosen on which to erect the imposing buildings of the Grand Hotel than the one in Spiroff and Wittet Roads on the Ballard Estate. The position is most convenient for visitors arriving or departing by the mail steamers, being within a few minutes' walk of the Ballard Pier, and only five minutes from Victoria Terminus, from which the most important mail and passenger trains depart. It is in the very centre of the new business quarters of the city, and is surrounded by the most up-to-date buildings.

**Premises.** The hotel buildings are the latest and most modern of their kind in India, having been built quite recently. They comprise all the up-to-date improvements that modern hotel construction can offer, and the establishment is one of the most popular and comfortable family hotels in Western India.

**Cuisine.**—This is excellent, and regarded by guests as equal to the best in the East. All food is carefully inspected before being prepared for the table, and the kitchens, fitted with the latest cooking devices, are scrupulously hygienic throughout. A good selection of wines is kept and served at reasonable rates.

**Music.**—The hotel's own orchestra plays every evening during dinner.

**Accommodation.**—The "Grand" offers every convenience and comfort, including English baths, the latest sanitary arrangements and hot and cold running water day and night in every room. Electric light and fans are installed in all apartments, while indirect electric light illuminates the public rooms.

**Departments.**—These include a first-class ladies' and gentlemen's hairdressing saloon, a bar and billiard room, and a most up-to-date English steam laundry.

**Services.** Porters and baggage clerks meet all incoming trains and steamers, and personally supervise the transportation of all guests' luggage to the hotel. There is a taxicab stand within the premises.

**Management.**—The Grand Hotel is under the personal supervision of an expert European manager, who gives personal attention to everything conducive to the comfort and convenience of patrons.

**Address.**—Grand Hotel, Ballard Estate, Bombay. Cables "Grandotel," Bombay. Code Bentley's.

#### HOUGHTON BUTCHER (EASTERN) LTD.

**Inception.**—To ensure adequate distribution of their well-known products in the East, Messrs Houghton Butcher (Great Britain) Ltd the largest manufacturers in the Empire of photographic goods, formed this subsidiary Eastern concern with headquarters in Calcutta and branches at Bombay and Singapore.

**Activities.**—The Bombay house is one of the first and last places at which visitors to India should call in order to secure cameras, photographic apparatus and materials and have their permanent records printed and developed. A large business is done in this way, and an expert staff is always in attendance to offer advice and assistance, ensuring the most prompt and efficient service in the East. In addition to photographic goods, the firm deals largely in wireless apparatus.

**Stocks.**—Large stocks of photographic sundries and of the famous Ensign, Carbine, Popular Pressman, Sanderson and other cameras manufactured by the British company are held.

**Agencies.**—The company under notice are sole distributing agents in India for Ilford's

Ltd., papers, plates, roll-films, etc., Johnson & Sons Ltd., photographic chemicals, Fordham & Co. Ltd., mounts, boards, etc., Ross Ltd., lenses, Williamson Kinema Co. Ltd., kinema machinery and cameras, Mullards Ltd., wireless valves, etc.

**Registered Offices.**—88-89, High Holborn, London

**Bombay Offices.**—4, Queen's Road, Appabagh Estate, cables "Ensignette," Bombay Codes A B C 5th Edition, Marconi International and Private

#### **HOTEL MAJESTIC.**

**Situation.**—Erected in the heart of the European quarter of Bombay, this magnificent hotel forms a block in the beautiful square of which Wellington Fountain is the centre. The exterior of the structure recalls in the beauty of its Oriental lines the world-renowned Taj Mahal at Agra. Directly in front of the hotel is the Prince of Wales Museum amid its picturesque gardens, and within a stone's throw is the Sir Cowasji Jehangir Hall, a meeting place for intellectuals. The Majestic also fronts the roads in which are situated Bombay's leading business establishments, banks, shipping companies, tourist agencies, post and telegraph offices, theatres, the railway terminus, and the Mole where travellers embark and disembark.

**Accommodation.**—There are 96 handsomely furnished suites and rooms, each fitted with hot and cold running water and private bath. The sanitary fittings, imported from England, are of the latest type.

**Ground Floor.**—The whole ground floor is given up to the dining and banqueting hall, ball room, reading room, lounges, bar, billiard and card rooms.

**Services.**—A trained, efficient and polite staff controls the departmental services, which include telephones, electric passenger lifts, hairdressing and laundry. A private European orchestra plays every evening during dinner and afterwards until 10 o'clock in the lounge, while a special band performs on dance evenings.

**Management.**—The lessee is Mr. H. D. Bihmorla, who is a co-director with Mr. F. D. Bihmorla.

**Address.**—Hotel Majestic, Wodehouse Road, Bombay (cables "Celestial," Bombay) Code A B C 5th Edition

**Bankers.** Allahabad Bank



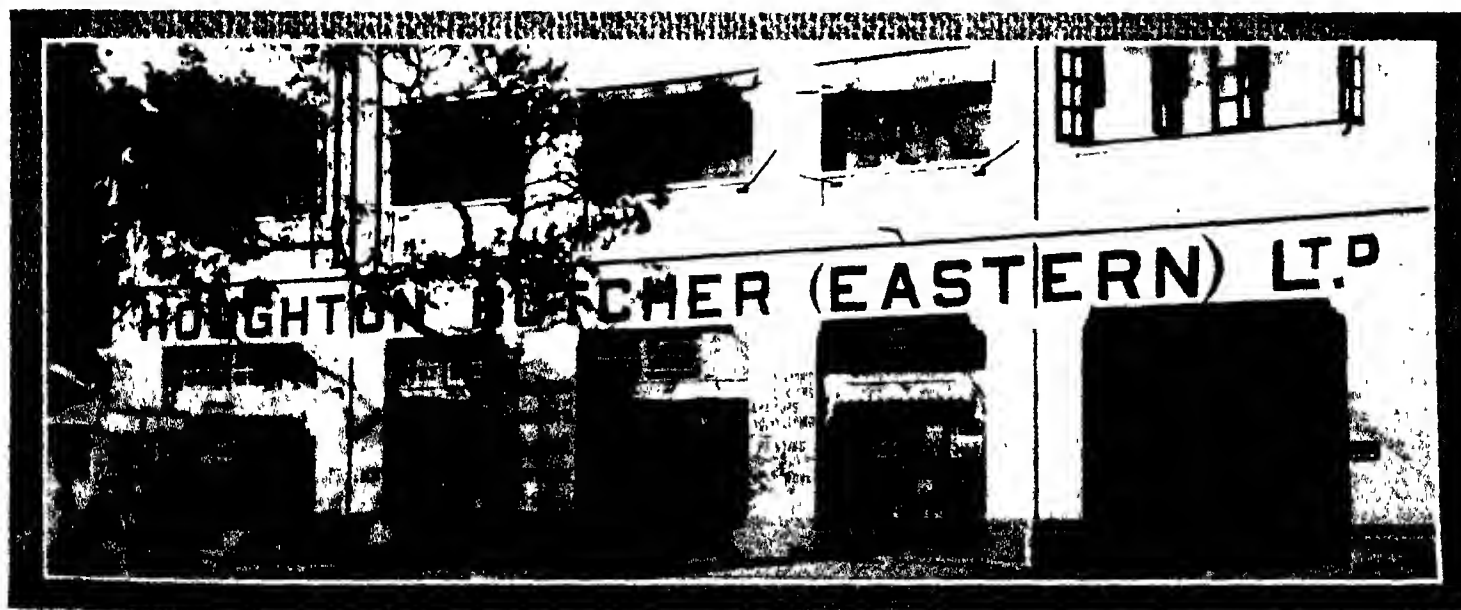
**HOTEL MAJESTIC, Bombay**  
The Building by Night

#### **THE INDIAN HOTELS COMPANY LTD.**

**The Taj Mahal Hotel.**—Fronting the harbour of Bombay, open to the sea breezes and commanding an unsurpassed view, stands the Taj Mahal Hotel, which The Indian Hotels Co. Ltd., its proprietors, claim to be the largest and best appointed establishment of its kind in the East.

Situated near-by are Green's Hotel and Restaurant and the Wellington Mews, also the Company's property.

**Amenities.**—The Taj Mahal Hotel is constructed on the through ventilation system, the sanitary arrangements are in accordance with Western principles, and the 30 private suites and 350 double and single rooms are



**HOUGHTON BUTCHER (EASTERN) LIMITED.**  
Wholesale and Retail Depot at 4, Queen's Road, Appabagh Estate, Bombay.

fitted with electric lights and fans, bells and clocks. The whole is under European management and offers every facility to the visitor. Four electric passenger lifts, an electric and steam laundry, refrigerators and an aerated water plant are installed, and post and telegraph offices on the premises, together with booking offices for the two railways serving Bombay, furnish the utmost convenience for travellers. The ground floor

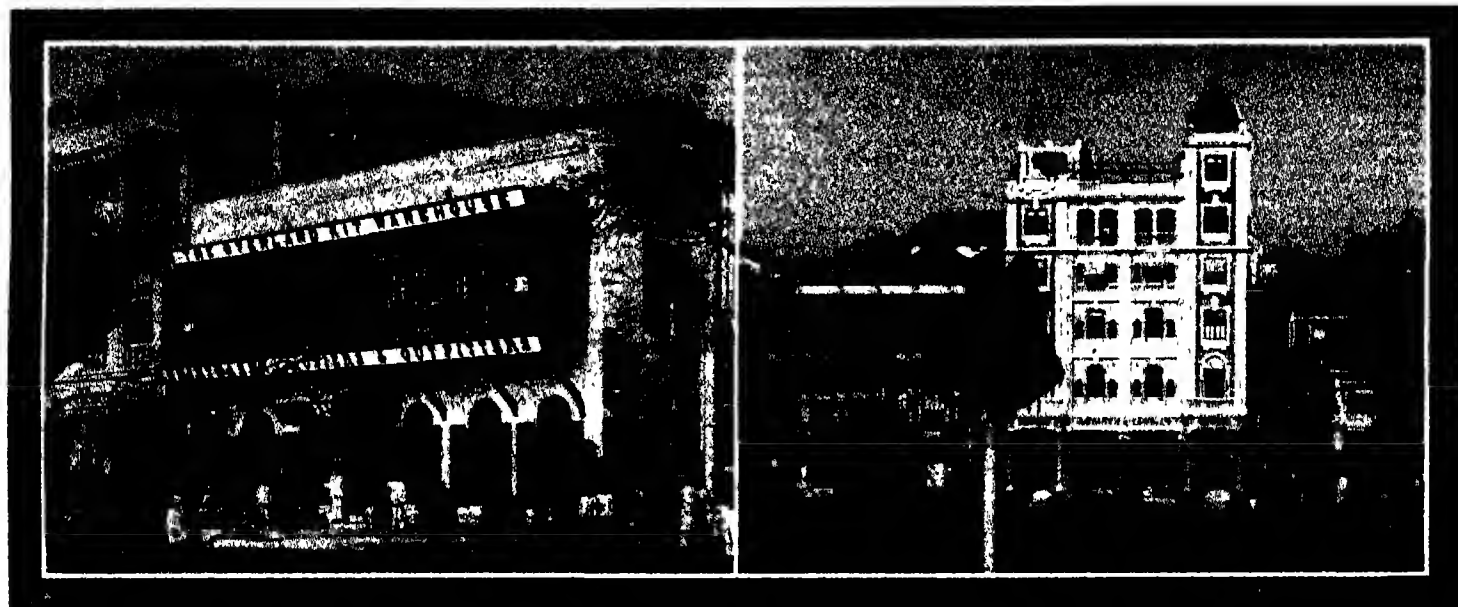
Anglo-Indian literature. The "Taj Mahal" dinner is served in the restaurant, and Green's band plays daily in the gardens overlooking the harbour.

**The Wellington Mews.**—The stables, situated in proximity to the Taj Mahal Hotel, are under the control of a highly qualified veterinary surgeon. The job department furnishes well-appointed turn-outs by the day or on longer contracts, while

#### ASQUITH & LORD LIMITED.

**Inception.**—The all-important problem of tropical clothing for men is best left to concerns of high repute like that of Asquith & Lord, Ltd., which has devoted itself exclusively to men's wear since its foundation in 1870, being the oldest established Bombay house to so operate.

**Premises.**—The steady expansion of business over a period of forty years led to



ASQUITH & LORD LIMITED, Bombay.

1. Contrast the Business Premises in 1870 and 2. Fine Retail Store of to-day.

comprises the confectionery, restaurant and café, the American bar, the billiard room (six tables) and the hairdressing saloon. A resident physician is in attendance, and a fully stocked pharmacy, tailors', jewellers' and tobacconists' establishments, also a bookstall with an efficient news service, complete the appointments. An orchestra performs daily in the lounge and weekly dances are held, while a speciality is that of catering for outside functions, such as banquets, balls and receptions.

**Green's Hotel and Restaurant.**—Close to the Taj Mahal, "Green's" is the recognised "Simpsons" of India for all that is best in old English fare. The merits of its grills and fish, oysters and pomfrets are featured in

the commodious garage attached is for the convenience of visitors.

**Directorate.**—The following gentlemen, the first two of whom are concerned with the control of the famous industrial firm of Messrs. Tata Sons Ltd., dealt with in the "Industry" section of this volume, are the directors of The Indian Hotels Co. Ltd.: Sir D. J. Tata, Kt. (chairman), R. D. Tata, J. D. Ghandy, N. B. Saklatvala, C.I.E., the Hon. Mr. Phiroze C. Sethna, O.B.E., J. H. Bhabha, N. M. Muzumdar, C. E. Randle and R. P. Ghandi (secretary).

**Head Office.**—24, Bruce Road, Fort, Bombay.

**Cables.**—"Palace," Bombay.  
(See illustration, page 314.)

the commencement of the present palatial building in 1914. Built on the site of the old premises - the firm being accommodated elsewhere in the interim - it took two years to complete. The first two floors, with an area of 1,600 square feet, are occupied by Messrs. Asquith & Lord, whose 12 departments cater for every branch of the men's wear trade.

**Tailoring.**—This is the main feature of the business, and is under the control of experienced European cutters, with a trained staff of tailors who work in sanitary well-aired rooms on the premises. Here customers from all parts of India and Burma are catered for by a simple means of self-measurement, with invariably satisfactory results. The finest quality materials are in stock, and particular attention is paid to the



View of Bombay from Malabar Hill.

purchase of those for tropical wear, whether cotton, silk or worsted

**Shirtwear.**—The business of shirt-making is carried on extensively and satisfactorily, the best goods only being produced and at moderate prices. This is the fixed policy of the house, and the results prove it a wise one. The range of cotton, woollen and silken materials is extensive, and the cotton fabrics are made exclusively for the company in special tropical weights unobtainable outside India, while an excellent range of ready-to-wear shirts ready for service in styles for sports, negligé and dress is always on hand.

**Outer Garments.**—A large stock of ready-for-service garments in all sizes is available, and includes Burberry weather proofs, overcoats, bath gowns, dressing gowns, flannel trousers, sports coats, blazers, washing suits and thin woollen suits.

**Hosiery, Underwear, etc.**—Every variety and texture of half-hose, tropical underwear, and "Jaeger" "Pesco" and "Hendawick" underwear for colder climates are stocked.

**Headwear.**—For the Tropics a thoroughly reliable sun hat for day-wear is absolutely essential, and the company supply only those that the management, with 30 years' experience in the country, can confidently recommend. There also is always available in this department a varied selection of afternoon and evening headwear, such as soft felts, panamas, tweed hats and caps, as well as silk or grey top hats, opera hats, etc.

**Footwear.**—All requirements in gentlemen's and ladies' high-class footwear for all occasions are obtainable.

**Haberdashery.**—This includes every article of small wear for men as gloves, belts, braces, handkerchiefs, neckwear, mufflers, scarves.

**Jewellery.**—This embraces studs, links, etc., also walking sticks and umbrellas.

**Linen.**—This section is in the main confined to the supply of household linen for the bachelor, but it also has a splendid variety of travelling rugs.

**Toilet and Fancy Leather.**—Every toilet requisite for a man is obtainable in the toilet section, while presentation fancy leather goods for ladies and gentlemen, fitted dressing and suit cases, and fitted lunch and tea cases are on view in other sections.

**Travel Goods.**—These include trunks, holdalls, suit and uniform cases, etc., in the best makes.

**Wardrobes.**—This department is confined to wardrobe trunks, fitted wardrobes, presses and stretchers and kindred appliances.

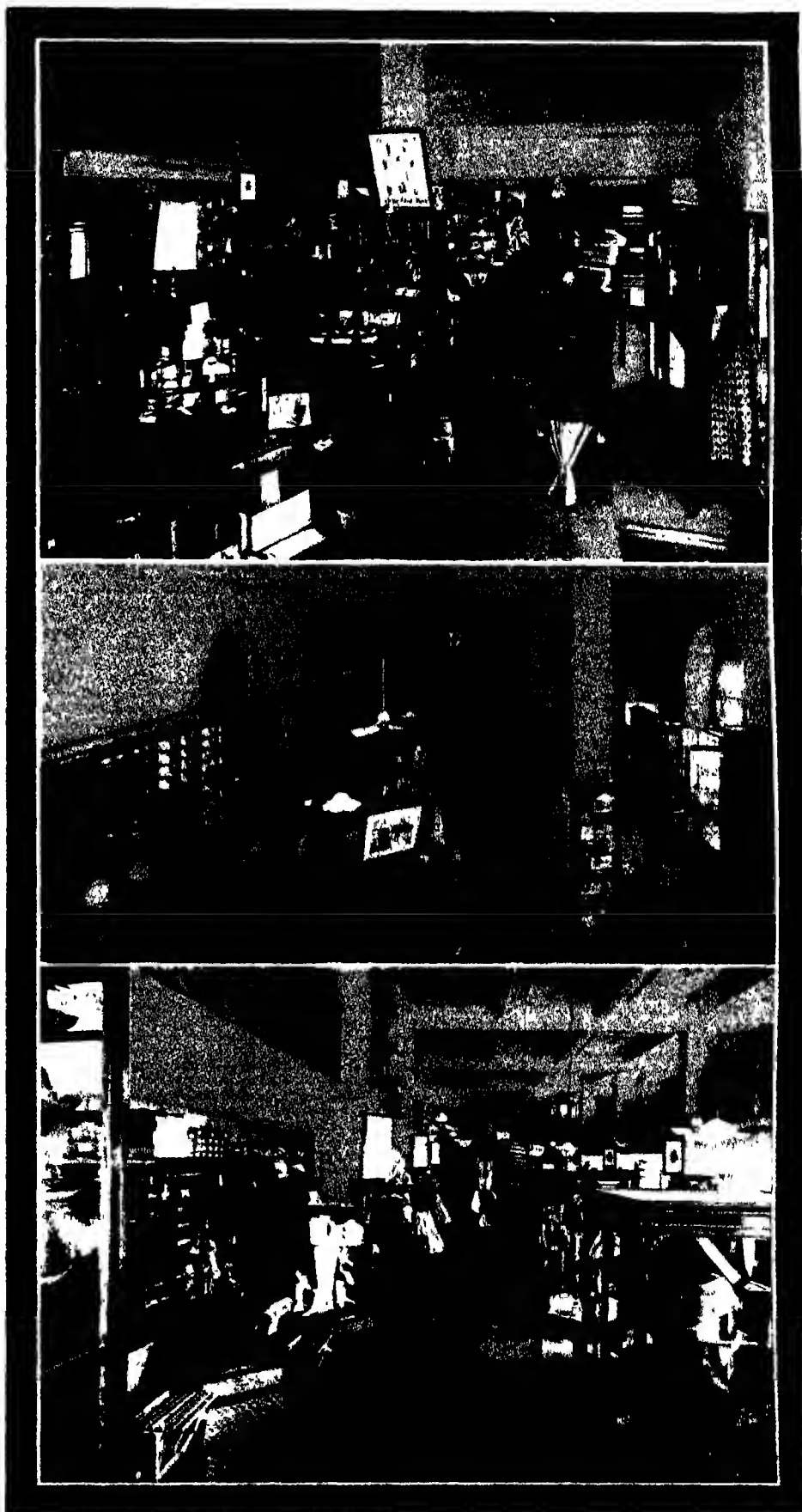
**Catalogue.**—The firm issues annually a fully illustrated catalogue covering the twelve departments, copies of which are obtainable at Bombay or from the shippers, Messrs Harman & Wilkes, 1 and 2, Maiden Lane, Queen Street, London, E.C.

Visitors to India are recommended to defer ordering tropical clothes until their arrival in Bombay, where they are assured of procuring the correct texture and build of clothes for the varying climates of the Tropics at shortest possible notice. The firm's constant aim is to provide a prompt service excellent fit and high-class goods at moderate prices.

**Branches.**—These are at Poona and Delhi, and are devoted more to the manufacturing side of the business, although a good selection of the firm's goods is also available. A branch at Madras is contemplated, and will shortly be in all probability an accomplished fact.

**Head Offices.**—Esplanade Road, Bombay. Cables: "Asquithco," Bombay. Codes: A.B.C. and Bentley's.

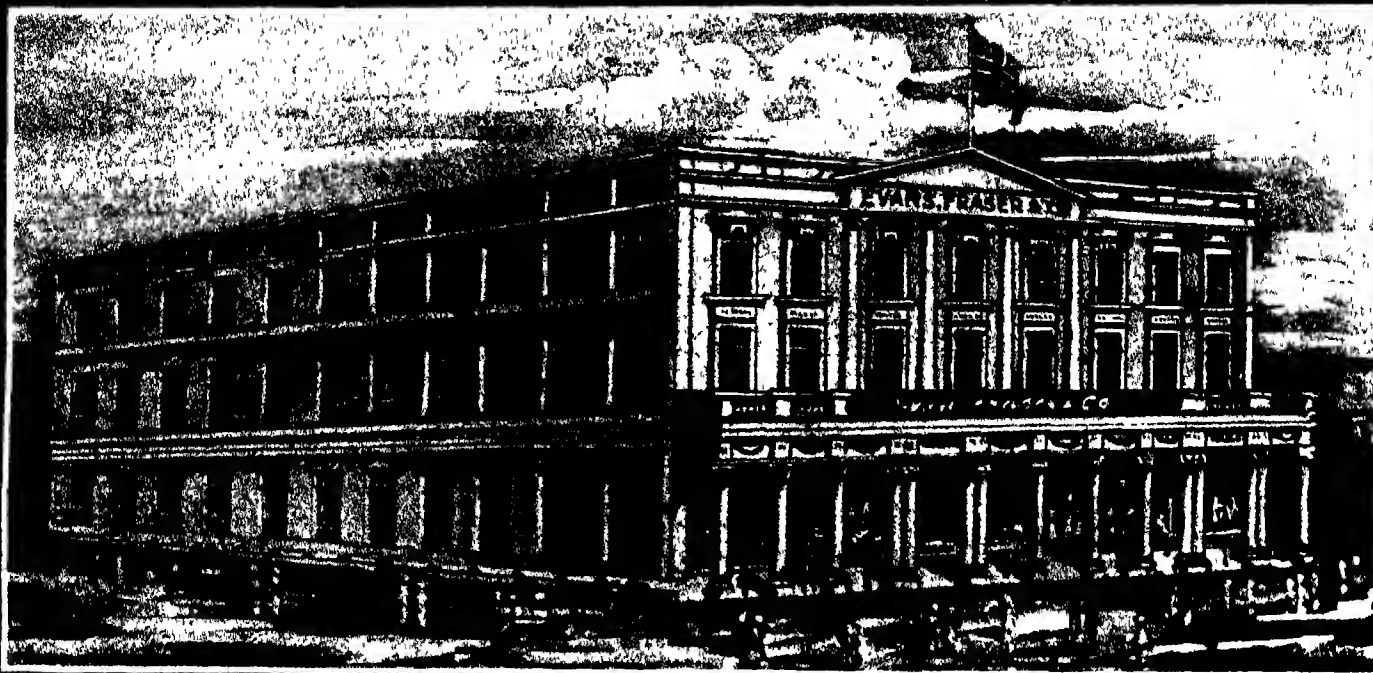
**Bankers.**—National Bank of India, Ltd.



ASQUITH & LORD LIMITED, Bombay.

Views in the Store showing the Excellent Appointments.





EVANS, FRASER & CO., Bombay  
Fine Premises in Hornby Road

#### EVANS, FRASER & CO.

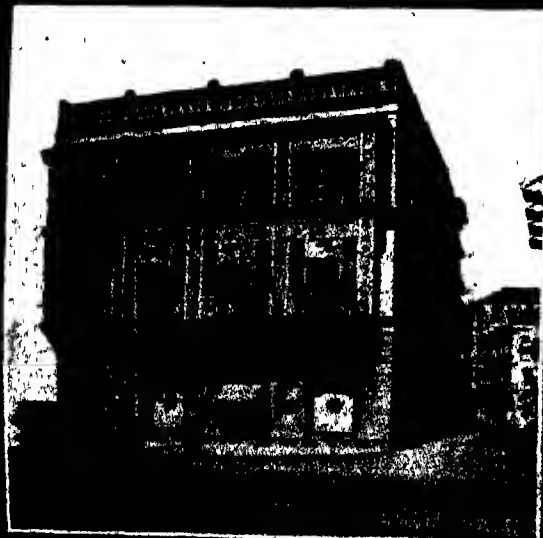
**Inception.**—This company was established in a modest way in small premises adjoining the Bombay Currency Office in October 1895. Within five years it had outgrown that accommodation, and a move was made to larger quarters opposite, on the ground floor of the building now occupied by the P. & O. Bank. Expansion thenceforward was rapid, and the historic "Fort House"—the scene of the initial movement towards the emanci-

pation of the Parsi woman—was taken over, to be converted into one of the largest and most up-to-date departmental stores in the East.

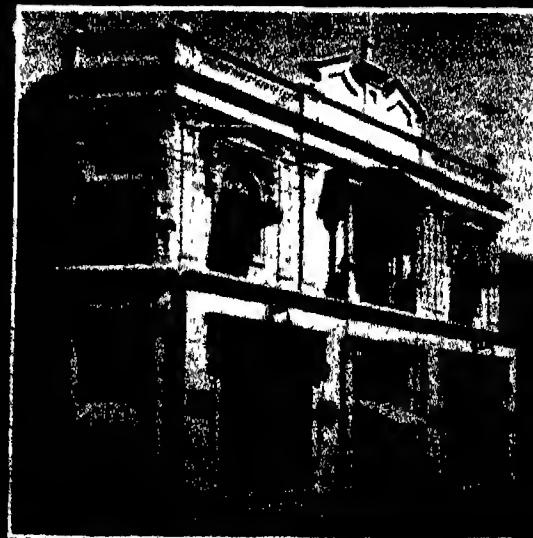
**Premises.**—Fort House is a splendid building of four floors, totalling over 65,000 sq. ft., and comprises offices, stockrooms, workrooms, factories, fitting and retiring rooms, all provided with electric lights and cooling fans. It is centrally situated in the principal business thoroughfare and forms

an ideal shopping centre where practically every want can be satisfied under one roof. The business is conducted on the "strictly cash" basis, the firm aiming always to supply high grade goods at the lowest prices.

**Departments.**—These are arranged as follows: *Ground Floor*—dress fabrics, silks and sunshades, laces, ribbons, hosiery and fancy goods, haberdashery, stationery, art needlework, jewellery, silver and presentation goods, toilet and perfumery.



1. Head Office Building in the City.



HOBAR & CO., Bombay.

2. Branch Office at Karachi

watches and clocks; *Men's Wear Department* (reached by a separate entrance) boots and shoes, travelling requisites

**First Floor** ladies' outfitting, millinery, corsets, lingerie, etc., infants' and children's complete outfitting, house furnishing, household linens and bedding, pictures

**Second Floor** China and glassware, household and kitchen utensils, ironmongery, brassware, electro-plated ware, bedsteads, baby carriages, etc

**Third Floor** warehouses and stockrooms

**Specialties.**—In art needlework probably the largest and most comprehensive stock in the East is carried, a big trade being done with convents, missions and other institutions. Furnishing is another specialty, and the firm has a large clientele amongst the ruling chiefs and nobility of India

**Branches.**—Two branches are established, one at Mussoorie and the other at Dehra Dun

**Offices.**—Bombay (head office) Hornby Road (cables "Smallwares," Bombay), London 61, Basinghall Street, E.C.2, Code A B C 5th Edition

**Bankers.**—The Mercantile Bank of India Ltd

#### HOAR & CO.

**Inception.**—Credit for the foundation of this soundly established business must be assigned to Mr. James Frederick Hoar, who some 50 years ago came from London to Bombay as an assistant to a tailoring firm, speedily saw the possibilities of trade in the Orient and started operations on his own. Soon after that commencement the original premises in Esplanade Road were exchanged for the present more commodious quarters, which have been occupied for the last 48 years

**Activities.**—The Company has an all-Indian reputation as specialists in every class of men's wear. In the tailoring department only the best English materials, produced by the leading firms, are utilised. English cutters are employed, working from the latest Bond Street and Savile Row models. Shirts and shirtings constitute a flourishing part of business, being in charge of an English tailor. Agencies for Lincoln Bennett & Co. and for Hawkes & Co., the famous sun-helmet manufacturers, are held by the hat and cap department, which stocks also the products of Scott, Herbert Johnston and Tress & Co. Ties, hosiery, collars, suit cases, wardrobe trunks, etc., are other goods in constant demand

**Karachi Branch.**—The firm's new premises here are considered the finest men's stores east of Suez, and, as at Bombay, every department is under English control

**Quetta Branch.**—Quetta is a large military station, and the branch is controlled by an English cutter, whose work is known at practically every military station in India

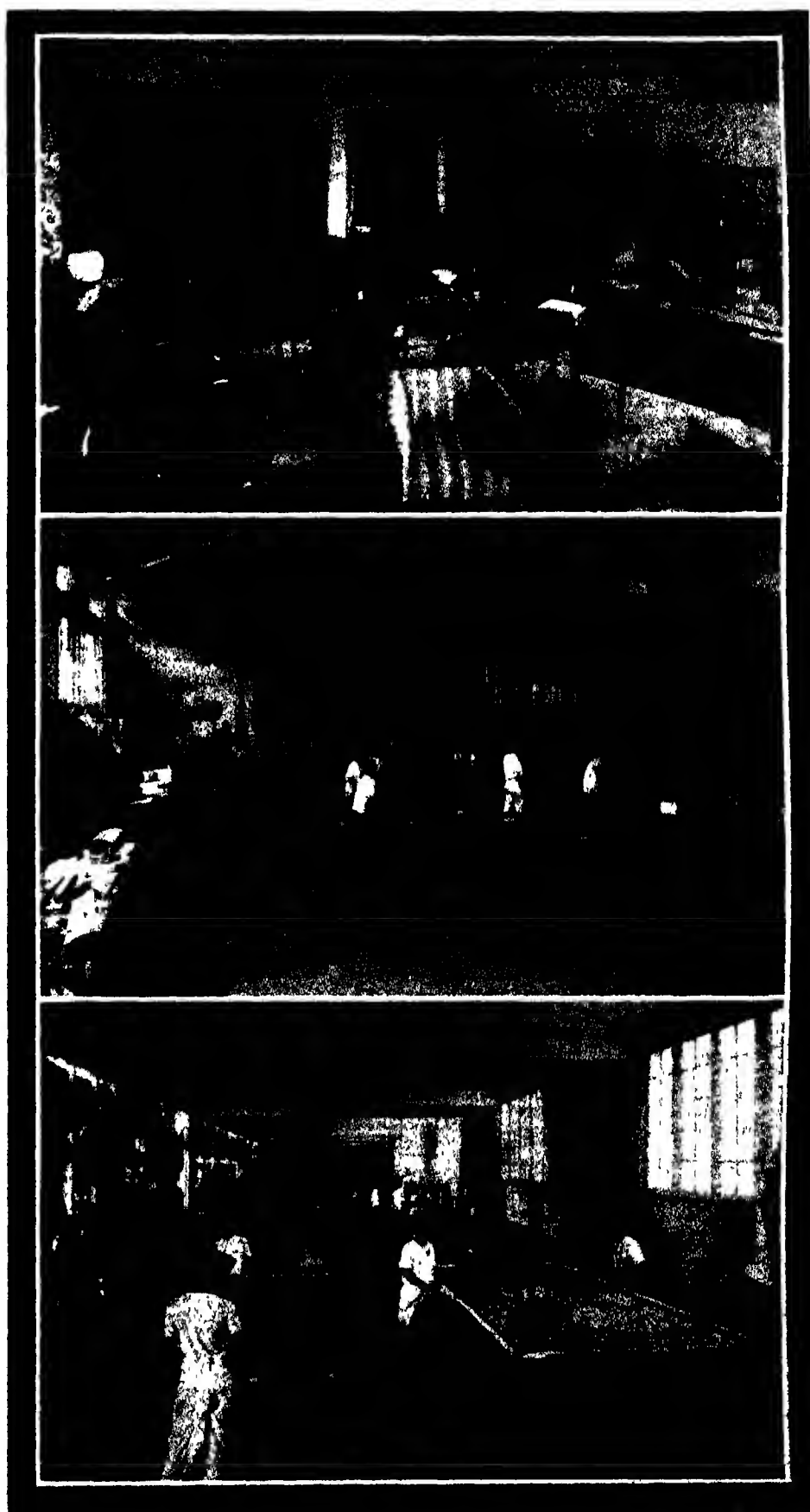
**Management.**—The company is British throughout, and all business is conducted under the personal supervision of Mr. R. E. Clarke, the proprietor.

**Head Offices.**—139, Esplanade Road, Bombay. Cables "Hoarco," Bombay, Karachi and Quetta. Code A B C 5th edition

**Bankers.**—The Chartered Bank of India Australia and China

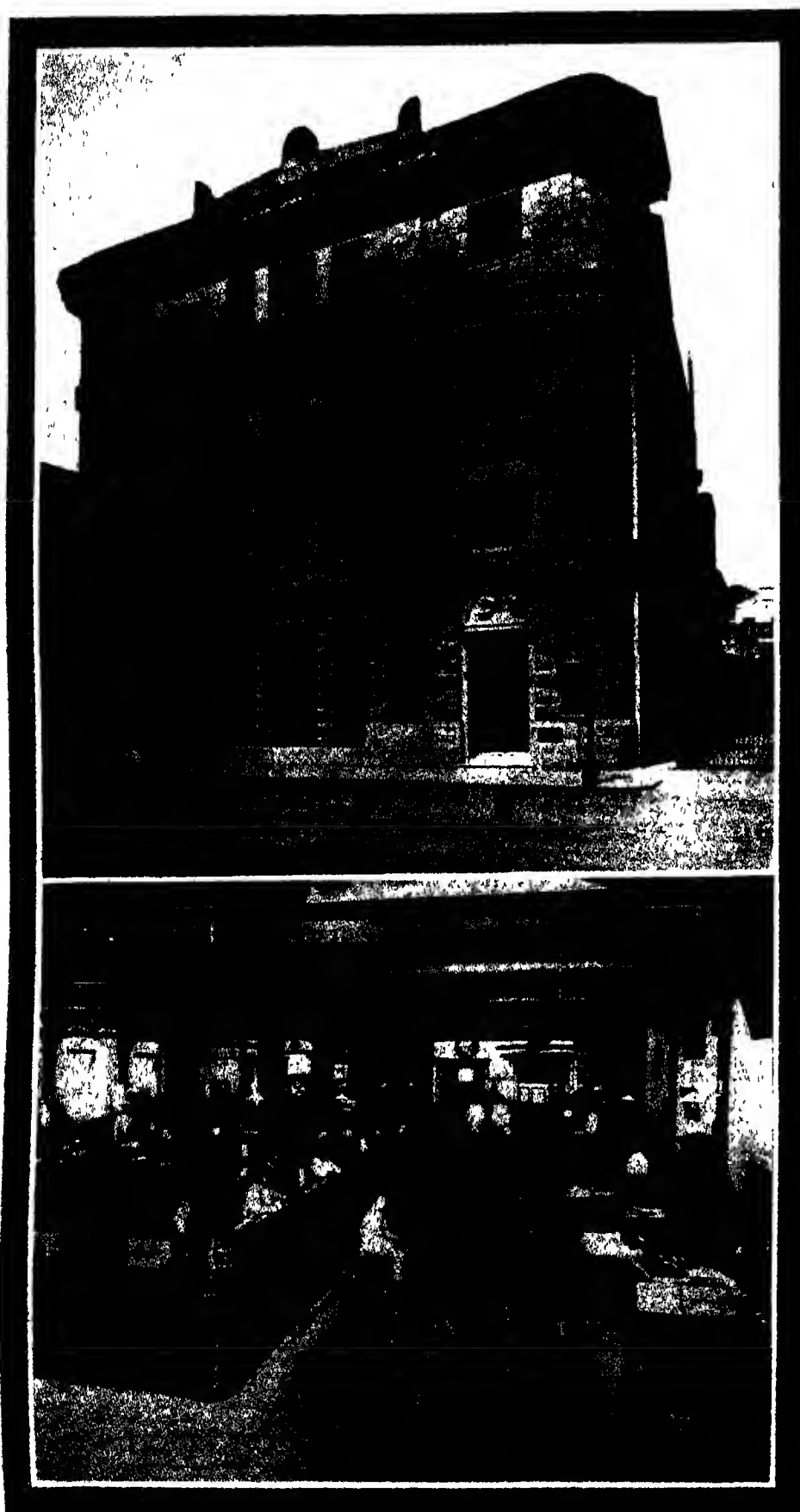
#### JOHN ROBERTS & CO. LTD.

**Inception.**—The late Mr. John Roberts, the world's champion billiard player, founded this well-known Bombay firm of billiard table manufacturers over half a century ago, since when it has grown into such a large industry that there are few clubs, messes or hotels in India to-day without a John Roberts' billiard table.



JOHN ROBERTS & CO., LIMITED, Bombay.

1. Section of Showroom, showing type of furniture manufactured by the Company at its own Factory.
2. Machine shop at the new Factory.
3. Billiard Table Manufacturing Department at same Factory, Sewri, near Bombay.



SHALEBHOY TYEBJEE & SONS.

1. "Shale Buildings," Bombay, the Firm's Head Office.
2. General Office, showing the modern and up-to-date planning.

**Development.**—In the early years the firm manufactured billiard tables only, but, as the business grew and larger factories became necessary, it was decided to produce high-class furniture in addition. For forty years the company's reputation in this line has been recognised throughout India and the East, numerous palaces and Government Houses having been furnished by it. Despite world-wide trade depression, everything points to the continued prosperity of this famous house.

**Factory.**—The recently opened factory in Bombay is a commodious structure, equipped with the latest machinery for furniture making and the manufacture of billiard tables. The factory staff is composed of highly skilled men, and each department is under the supervision of a fully qualified European manager.

**Billiards.** Believing always that "There is no cheap substitute for the best," and having a long experience of the special requirements of the Indian climate, the firm is able to supply tables which have been carefully tested by prominent players, world famous men like H. W. Stevenson, George Gray and Claude Falkner, the latter of whom broke all Indian records on tables fitted with John Roberts' "Climate Express" billiard cushions at Bombay in October 1925.

**Furniture.**—As cabinetmakers and upholsterers John Roberts & Co. Ltd. have an unequalled reputation for quality and workmanship, and have shown conclusively that furniture of distinction need not be prohibitive in price. The tone of their productions is appreciated by the auctioneers of Bombay, who, when holding sales of furniture, which usually contain several examples of various styles, always endeavour to include a few articles of Messrs. Roberts' make to lend distinction to the collection.

**Interior Woodwork.**—All styles of woodwork for interiors, such as panelling, counters and seating arrangements, are manufactured at the factory and many large banks and offices in Bombay have been fitted by the firm.

**Curtains and Covering Fabrics.**—A large selection of high class carpets, curtains and other rich fabrics of exclusive designs suited to the various styles of furnishing now in vogue is always carried.

**Head Office.**—Hornby Road, Bombay (only address), cables "Billiards," Bombay.

#### SHALEBHOY TYEBJEE & SONS.

**Inception.**—Probably the oldest and certainly at the present day one of the largest Government, railway and shipping contractors in Bombay, this firm was established by Mr. Tyebjee Dawoodkhan in 1840. On his death in 1881 the concern passed into the hands of his eldest son, Mr. Shalebhoy Tyebjee, who maintained the enviable reputation already achieved by it. After nearly 40 years Mr. Shalebhoy Tyebjee handed over the management to his son, the late Mr. Abdulcayum Shalebhoy Tyebjee, and subsequently to Mr. Amrudin Shalebhoy Tyebjee, the present director, who has largely contributed to the firm's prosperity to-day. Latterly the youngest son, Mr. Dawoodkhan Shalebhoy Tyebjee, also joined the business.

**Development.**—In 1907 the expansion of business necessitated the opening of a branch office in Bombay (Nagdevi Street), which is conducted under the name and style of Amir Bros. This off-shoot transacts all general matters, but technical business is referred to the head office. Since 1914 the greatest development of this organisation has taken place, due to the adoption of the most

up-to-date ideas in administration and operation

The head office in Bank Street, Bombay, is a fine modern building, possessing approximately 15,000 feet of floor space. The firm has its go-downs and premises in other parts of the city.

**Activities.**—Messrs Tyejee & Sons conduct a general hardware trade, specialising in railway and engineering tools and ship-chandlery stores.

**Hardware.**—This department handles both imported and locally manufactured tools used by municipalities and public works departments, such as pickaxes, jowrahs, chisels, hammers, etc.

**Engineering and Shipchandlery.**—The company supplies the Royal India Navy, leading steamship companies, port trusts and main railways with deck and engine room stores, rope, canvas, railway material, etc.

**Agencies.**—The following important agencies are held by the firm: "Locomotive" brand leather cloth, "Locomotive" canvas, "Locomotive" hosing, "Locomotive" roofing canvas, "Locomotive" beltings, Genuine Barrett jacks and rail lifters, Bruce's patent (spring) switch reversers, Prince's patent sure grip wagon pushers, Pierce's patent window catches, Vertex bronze bars and sheets, Brunton's wire ropes, Beldam Packing & Rubber Co. Ltd., Paripan brand enamels, Corass products and anti-corrosive compositions, Sheffield Twist Drill & Steel Co. Ltd., Agricultural Implements Co. Ltd., and Manila ropes, to Government and Board of Trade regulations.

**Partners.**—Mr. Shalebhoy Tyejee (Senior), Mr. Amirudin Shalebhoy and Mr. Dawoodkhan Shalebhoy Tyejee.

**Head Office.**—Shale Buildings, 28-32, Bank Street, Bombay. Cables: "Rotator," Bombay. Codes: A.B.C., 5th Edition, Bentley's and Private.

**Bankers.**—Hongkong and Shanghai Banking Corporation, P. & O. Banking Corporation and The Imperial Bank of India.

#### **S. ROSE & CO. LTD.**

**Inception.**—The oldest European firms in India dealing exclusively in music and musical instruments are S. Rose & Co. Ltd. of Bombay and Harold & Co. Ltd. of Calcutta. The latter establishment was founded in 1847 by Mr. Samuel Harraden, and a branch was opened in Bombay under the name of S. Rose & Co. Ltd.

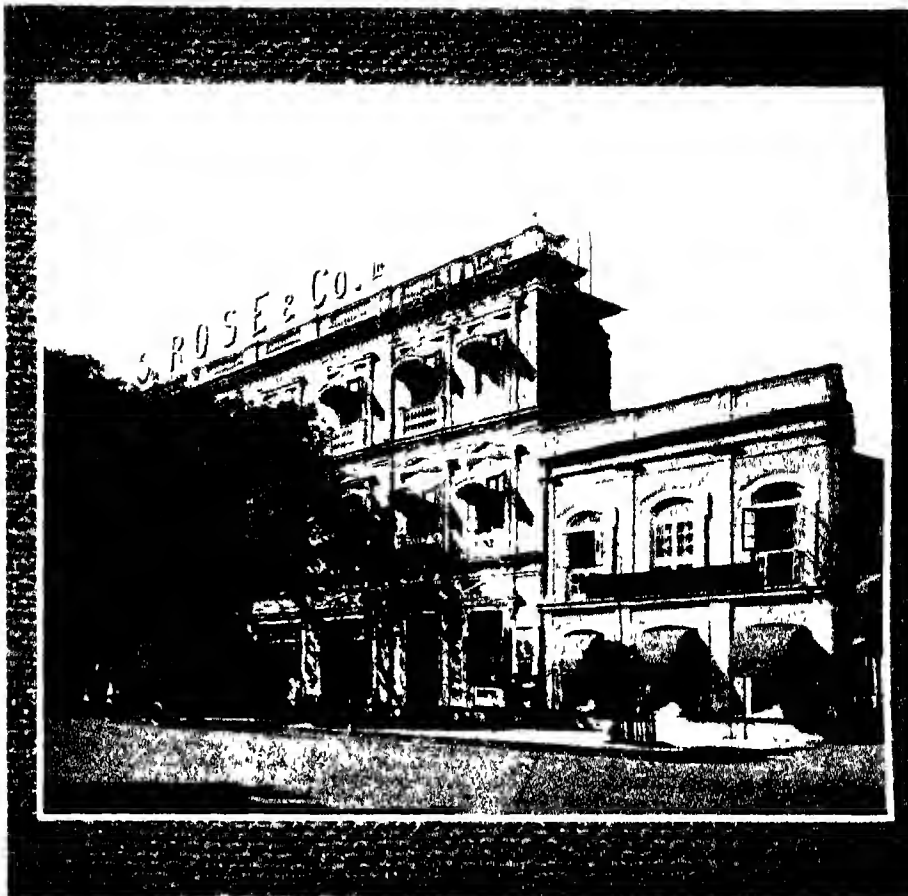
**Development.**—In the early eighties of last century the firm just mentioned became independent of the parent house, and in 1904 purchased the goodwill of the Calcutta house from the executors of the late Mr. Harraden, but business is still carried on there under the original name of Harold & Co. Ltd.

**Activities.**—The two firms are agents for the principal European and American manufacturers of high grade pianos, organs, band and other musical instruments, including Bluthner, Bechstein, Steinway, Collard, Allison, Chappell, Brasted, Strolimenger, Erard, Schiedmayer & Soehne, Cramer, Mason & Hamlin, and Rachal pianos, Estey Reed organs, Hawkes, Boosey's and Benson band instruments, "H.M.V." and "The Chitophone" gramophones. A large business is done in music, while the respective houses are the official booking offices for theatres and concerts in Bombay and Calcutta.

**Offices.**—Rampart Row, Fort, Bombay; Dalhousie Square, Calcutta. Cables: "Rosebud," Bombay and "Pianoforte," Calcutta. Code: Bentley's.

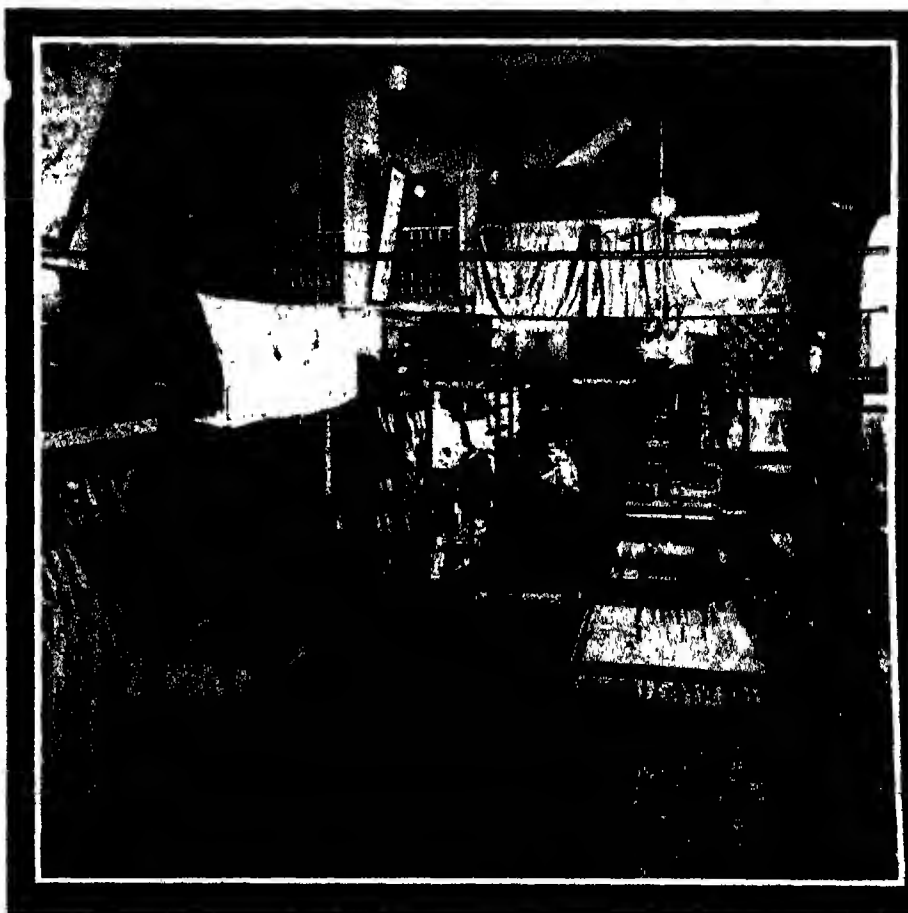
#### **MADHAVDAS RUGNATHDAS & CO.**

**Inception.**—Now under the management of the third generation, but still adhering to



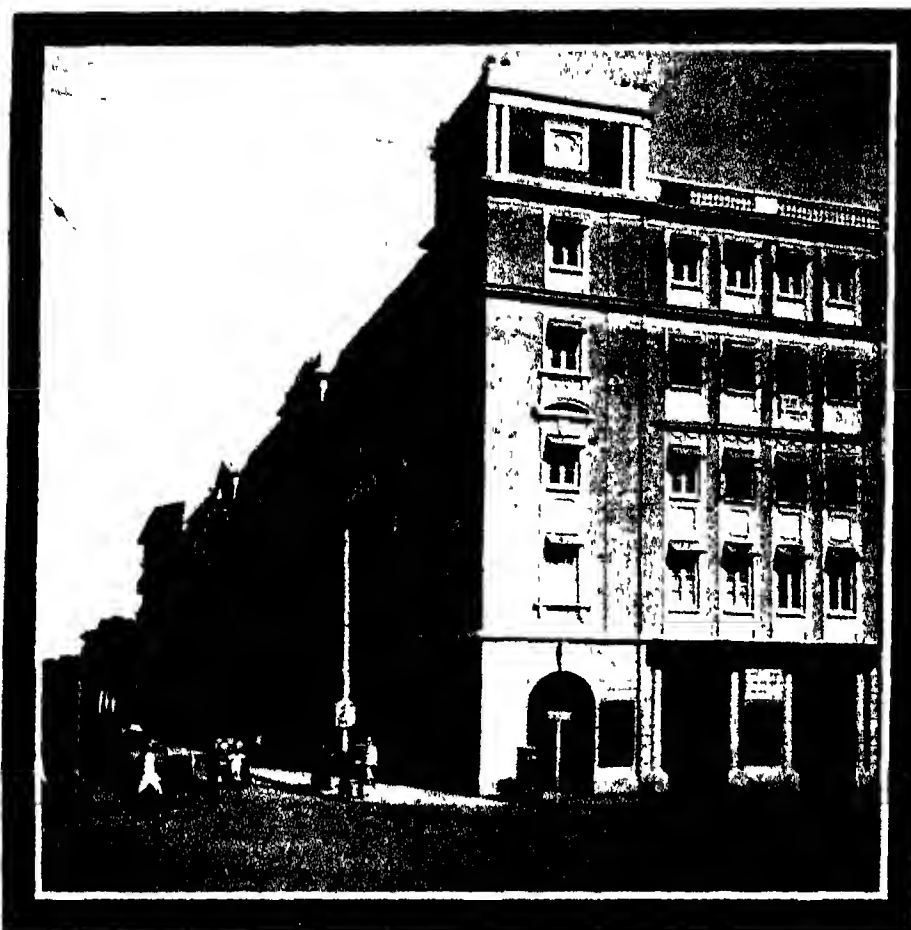
S. ROSE & CO., LIMITED, Bombay

The Company's Premises.



MADHAVDAS RUGNATHDAS & CO., Bombay.

Showroom, displaying some beautiful silks.



**JEWELLERS LIMITED Bombay**  
Building in which the Firm's showroom is situated, corner of Churchgate Street and Esplanade Road

the name, policy and traditions of its founder, this famous house of silk mercers was established by Mr. Madhavdas Ragnathdas some 65 years ago

**Development.**—The business has pursued a steadily progressive course, characterised by careful buying and an intimate knowledge of markets and quality, and to this more than anything is due its present favourable position

**Activities.**—It imports on a large scale the very best Chinese, Japanese, and French silks, all personally selected, besides carrying an extensive stock of assorted Indian silks, purchased up-country direct from the manufacturers. It also imports large quantities of high-class French perfumes, in which a growing business is being built up. The tailoring department specialises in all classes of ladies' apparel and executes orders to any design with accuracy and promptitude

**Premises.**—The offices and showrooms are centrally and conveniently situated in Hornby Road, close to the Victoria Terminus

**Management.**—The proprietors of the business are Mr. Bagvandas and his sons

**Head Offices.**—160, Hornby Road, Bombay  
Cables "Maruco," Bombay

**Bankers.**—Central Bank of India

#### **JEWELLERS LIMITED.**

**Inception.**—This trade name was adopted by the old established firm of Janson & Scowen when they absorbed the entire business of J. C. Bechtler, Son & Co. in 1920

**Development.**—The firm is well known, and, besides its head office at Bombay, has branches at Allahabad, Cawnpore and Mussoorie. Each branch has its own system of departments under the headings of "Jewellery," "Silver," "Watches and Clocks," "Silver Plate," "Cutlery," "Fancy Goods," "Cut Crystal" and "Manufacturing"

**Activities.**—The firm has the distinction of being the only manufacturing jewellers in the East with a directorate of practical goldsmiths, and is therefore in a position to design and execute any order. It also manufactures watches and clocks, including tower

clocks. The showrooms are fitted up in modern style, carrying large and varied stocks of gems, jewellery, watches, clocks and plated ware. Each department is under the direct supervision of a fully-trained European, and the workshops (at Bombay and Allahabad) are modernly equipped. A mail order department handles Mofussil orders, and at Bombay a special department advises on and undertakes valuations for insurance

**Management.**—Head offices, showrooms and workshops are under Mr. F. G. Scowen, Allahabad and the branches under Mr. J. H. Janson

**Head Offices.** Churchgate Street and Esplanade Road, Bombay  
Cables "Jansco," Bombay, "Jewellers," Allahabad, Cawnpore and Mussoorie

**Bankers.**—Allahabad Bank Ltd

### **VISITORS' GUIDE**

**ASSOCIATIONS.**—Bombay Chamber of Commerce, Graham's Buildings, Parsi Bazar St., Fort, Bombay Fire Insurance, Allahabad Bank Buildings, Apollo St., Fort, Bombay Millowners, 50 Graham's Buildings, Parsi Bazar St., Fort, Bombay Native Piece Goods Merchants, Bazar Hall, Out Fort, Bombay Presidency Trades, 13-15 Tamarind Lane, Fort, Bombay Stock Exchange, 9-11 Meadows St., Grain Merchants, 262 Masjid Bndar Road, Indian Merchants, Canada Building, 3 Home St., Fort, Indian Central Cotton Committee, 25 Wodehouse Road, Fort

**CLUBS.**—Bombay—Esplanade Road, Bombay Gymkhana, Esplanade Road, Byculla—Bellairs Road, Byculla, Elphinstone—Fort, Orient Chowpatty, Royal Bombay Yacht, Apollo Bunder, Western India Turf—Club Road, Byculla, Willingdon Sports

**CONSULATES.**—Afghanistan—Amir's Bungalow, Walkeshwar Road, Belgium—Central Bank Building, Meadows Street, Brazil—Asian Building, Nicol Road, France—Opposite Vania Building, near Colaba Railway Station, Italy—Asian Building, Nicol Road, Japan—192, Hornby Road, Netherlands—Exchange Building, Sprott Road, Norway—Alice Building, Hornby Road, Portugal—Ormsby House, Ormiston Road, Apollo Bunder, Spain—Morari Goculdas Cloth Market, Kalbadevi Road, United States—Pathe Building, Ballard Road,

**HOTELS.**—Carlton—Outram Road, Green's—Apollo Bunder, Hotel Majestic—Wodehouse Road, Taj Mahal—Apollo Bunder, Victoria Terminus—Hornby Road, Watson's—Esplanade Road

**THEATRES.**—Bombay—Falkland Road, Elphinstone—Falkland Road, Empire—Bastion Road, Fort, Gaiety—Hornby Road, Opera House—New Queen's Road, Princess—Kalbadevi Road, Ripon—Grant Road, Victoria—Grant Road







BALLARD ROAD, BOMBAY, WITH THE PORT TRUST OFFICES ON THE LEFT  
(See letterpress, page 331)

## PORT OF BOMBAY

**L**ITERALLY, as well as figuratively, Bombay is the Gate of India. It is not, however, to their geographical situation alone that the port and city owe their wealth and importance. The great seaport whereby travellers and commerce enter India from the West is actually more indebted to man than to nature for its present prosperity. Under the rule of the East India Company the seven islands upon which Bombay originally stood were linked together by causeways, land was reclaimed from the sea, breaches were filled and docks were built. The opening of the Suez Canal in 1869 did much to increase the importance of the port, which rapidly became one of the largest in the world, wherein to-day craft flying the flags of all nations may ride safely at anchor, and the entrepôt for the now firmly-established cotton trade of Western India.

**ACCOMMODATION.**—Bombay harbour is very capacious, being about 10 miles long from north to south, with a general width of 4 to 6 miles. The usual anchorage is on the west side of the harbour, off the city. There is from 23 to 36 ft. of water in the port, with a minimum depth in the fairway of six fathoms until abreast of the Sunken Rock. The accommodation for vessels of the largest tonnage is continually being increased and improved.

**ADMINISTRATION.**—The affairs of the port are under the control of the Port Trust, a body consisting of a chairman and twenty members (seven of whom are nominated by Government). It had its origin in 1862 by means of a private concern called the Elphinstone Land and Press Company, whose rights were taken over by the Government and vested in the newly created Port Trust in June 1873. In 1879 the Trust was reconstituted by Government on a basis which has remained practically unchanged to the present day. (See article following on the "Bombay Port Trust.")

**BACK BAY RECLAMATION.**—See under "City of Bombay."

**DOCKING FACILITIES.**—There are three fully equipped wet docks, known respectively as Prince's Dock, Victoria Dock and Alexandra Dock, having a total water area of 104½ acres and a quayside of nearly 4½ miles, also two dry docks, the newer having a length of 1,000 ft. and width of 100 ft., and the other a length of 500 ft. and a width of 65 ft. Over 200 hydraulic cranes, with a lifting capacity varying from 30 cwt to 100 tons, are in use in the wet docks. Until comparatively recently the railway connection with the docks was decidedly inadequate, necessitating a double handling of goods. Raw cotton had to be transported by carts from the railway goods termini to the Cotton

Green at Colaba, and thence to the mills or docks. The new scheme completed by the Port Trust provides direct communication between the railways, docks and goods depôts, also extensive storage shed accommodation at Sewri. The cotton trade has now been transferred from Colaba to Sewri, where the Port Trust has provided the largest and best equipped depot of its kind in the world. About three million bales of cotton can be accommodated, the depot, with its fireproof ferro-concrete godowns fitted with automatic fire-sprinklers, etc., covering an area of nearly 500,000 square yards.

**EQUIPMENT.**—See article following on the "Bombay Port Trust."

**OIL FUEL.**—For bunkering with liquid fuel there are an 8 in. and a 10 in. pipe line, pumping capacity, 65 tons per hour. For kerosene oil, one 8 in. pipe line, pumping capacity, 105 tons per hour, and one 10 in. pipe line, pumping capacity 184 tons per hour. For petrol, one 8 in. pipe line from Bulk Oil Pier at Pir Pau to the installations at Sewri (distance 4½ miles), pumping capacity, 134 tons per hour. Oil bunkering from service pipes can be carried out at the principal loading berths.

**PILOTAGE.**—In and out of harbour pilotage is compulsory for sailing vessels and steamers from 100 tons upwards. Minimum charge, 100 to 300 tons, Rs 30; for steamers



## BOMBAY PORT TRUST

West Side of the new Alexandra Dock. Depth of water alongside quays, 37 ft.

of from 2,100 to 2,200 tons, Rs 49, an increase of Rs 1 for every 100 tons or part above that tonnage

Pilotage to or from sea, or from dock or anchorage, for vessels of from 2,100 to 2,200 gross tons, Rs 68, with an increase of Rs 2 for every 100 tons in excess. In addition to the above charges, a surtax of 25 per cent on all pilotage charges is at present in force

**PORT CHARGES.**—See article following on the "Bombay Port Trust"

**RAILWAY COMMUNICATIONS.** — See article following on the "Bombay Port Trust"

**STEAMSHIP SERVICES.**—The following are the principal lines using Bombay Port: Peninsular and Oriental Steam Navigation Company, British India Steam Navigation Company, Lloyd Triestino, Marittima Italiana, Clan, Anchor, City and Ellerman Lines, Wilson Line, Hansa, Asiatic Steam Navigation Company, Scindia Steam Navigation Company, Nippon Yusen Kaisha, and Osaka Shosen Kaisha.

**TIDES.**—By the outer floating light it is high water, full and change, at 12 h, but at the dock head and where ships moor, at 11 h 31 m, extraordinary springs rise 18 ft 6 in, ordinary, 15 to 16 ft, neaps, 9 ft

It is necessary for every master sailing in or out of Bombay harbour to remember that the tides rise and fall from 14 to 18 ft on the springs and 9 to 10 ft at the quadratures. Except upon the reefs or shoals, the bottom is soft mud or clay

**TRADE AND SHIPPING.**—The total sea-borne trade of the port of Bombay with foreign countries and Indian ports for the years named is shown in the following table.

	1924-25 Rs	1925-26 Rs
1 Foreign trade (private)		
Imports		
Merchandise	87,37,89,045	78,93,13,987
Gold, silver and notes	95,05,10,759	51,00,98,965
Total imports	1,82,42,99,804	1,29,94,12,952

	1924-25 Rs	1925-26 Rs
Exports.		
Foreign merchandise	9,90,94,022	7,57,85,191
Indian produce	98,60,52,738	94,73,79,559
Gold, silver and notes	4,30,75,836	3,19,58,777
Total exports	1,12,82,22,596	1,05,51,23,527
Aggregate foreign trade	2,95,25,22,400	2,35,45,36,479
2 Coasting trade		
Imports	29,96,93,966	35,27,82,785
Exports	31,36,62,685	30,13,93,632
Total	61,33,56,651	65,41,76,417
3. Government transactions	2,18,50,053	3,49,82,419
Total trade	3,58,77,29,104	3,04,36,95,315

In 1925-26 the foreign trade (private) of the port declined by Rs. 59.8 crores to Rs. 235 crores. Exclusive of treasure, the decline in foreign trade was one of Rs 14.64 crores,



BOMBAY HARBOUR

1. Ballard Pier. 2. General View of Alexandra Dock 3. Victoria Dock 4. Prince's Dock

or 7 per cent, to Rs 181 crores. Imports of merchandise into Bombay decreased in value by 10 per cent, cotton manufactures, sugar, metals and ores, dyeing and tanning substances, cotton yarn, raw cotton and machinery and millwork chiefly accounting for the decline. On the other hand, there were notable improvements in silk manufactures, rubber, provisions, motor cars and cycles, spices, instruments and apparatus, and tobacco. Exports of Indian produce also declined by Rs 3 87 crores, or 4 per cent, to Rs 94 74 crores, the decrease being chiefly in cotton manufactures and yarn, raw wool, seeds and raw cotton.

**SHIPPING.**—The total number of vessels (steam and square-rigged) which entered the docks or were berthed at the harbour walls and paid dues in 1924-25 was 1,890, of an aggregate tonnage of 4,500,636, compared with 2,044 (tonnage 4,661,904) in 1923-24. The two dry docks were occupied during 1924-25 by 193 vessels, whose total tonnage aggregated 677,239, which was less than that of the preceding year by 51,952 tons.

### THE BOMBAY PORT TRUST

**Inception.**—The affairs of the Port of Bombay are controlled by a Trust created by the Government in 1873.

**Constitution.** This Trust consists of a chairman and twenty trustees, seven of whom are officials nominated by Government, five are elected by the Bombay Chamber of Commerce, five by the Indian Merchants' Chamber, two by the Municipal Corporation and one by the Millowners' Association.

**Administration.**—The whole administration of the Harbour—lighting, pilotage, docks, bunders, port railway and land estates—is vested in the Board.

**Harbour.**—Bombay harbour, one of the finest in the world, is a deep arm of the sea between the Island of Bombay and the mainland, 14 miles long, from 4 to 6 miles across, with an area of about 70 square miles. The general depth varies from 20 to 40 feet, with a mean tidal range of 13.9 feet. The port is well protected from the monsoon, and its approaches are excellently lighted.

**Docks.**—The harbour has commodious docks, wet and dry, equipped with the most modern cranes and machinery. The wet docks are Prince's Dock, 30 acres in extent for vessels drawing up to 24 feet; Victoria Dock, 25 acres for vessels drawing up to 26 feet; and Alexandra Dock, 49½ acres, for vessels drawing up to 36 feet. There are two dry docks, the Merwether Dock, 500 × 65 × 25½ feet, and the Hughes Dock, 1,000 × 100 × 34½ feet.

**Equipment.**—This consists of one hydraulic crane of 100 tons lifting capacity, one of 30 tons, one of 5 tons, eight 6-ton, eighty-four 35 cwt, one hundred and twelve 30 cwt, one 60 ton floating crane, 85 hoists and several runabout cranes. There is also a specially equipped barge for the reception of oil waste and bilge water, likewise a dredging fleet of 9 large modern dredgers, 9 steam hopper barges and a rock breaker.

**Railways.**—The docks are connected by railway with the G.I.P. and B.B. & C.I. systems, while the terminal passenger station on Ballard Pier (1,500 ft. long) is in direct

communication with all the railways in India. The Port Trust Railway effects these connections through a large Interchange Yard at Wadala, over 100 miles of track having been laid down, and the railway handles nearly 50 per cent of the terminal goods traffic of Bombay. The pier is used by the largest vessels to embark and disembark passengers and mails, and its facilities for baggage, Customs examination, refreshments, etc., are generally acknowledged to be unsurpassed by any large port.

**Development Schemes.**—The principal schemes completed during the past 20 years include (1) Alexandra (wet) and Hughes (dry) Docks, (2) Port Trust Railway and Ballard Pier Station, (3) Mazagon Sewri Reclamation Works, involving 583 acres of reclaimed land to provide goods depôts. The Sewri and Wadala reclamations accommodate the railway Interchange Yard, Antop model village for employees, the bulk oil installations, depôts for cotton, grain, manganese ore, etc., and other industrial works, (4) a deep water pier at Trombay for the discharge of bulk petrol and kerosene oil, with several miles of connecting pipe-line to the oil installations at Sewri. Oil bunkering can also be carried out at most berths in the Alexandra Dock.

The completion of the first three schemes just before the outbreak of the Great War enabled Bombay to be successfully utilised as the chief base port in India.

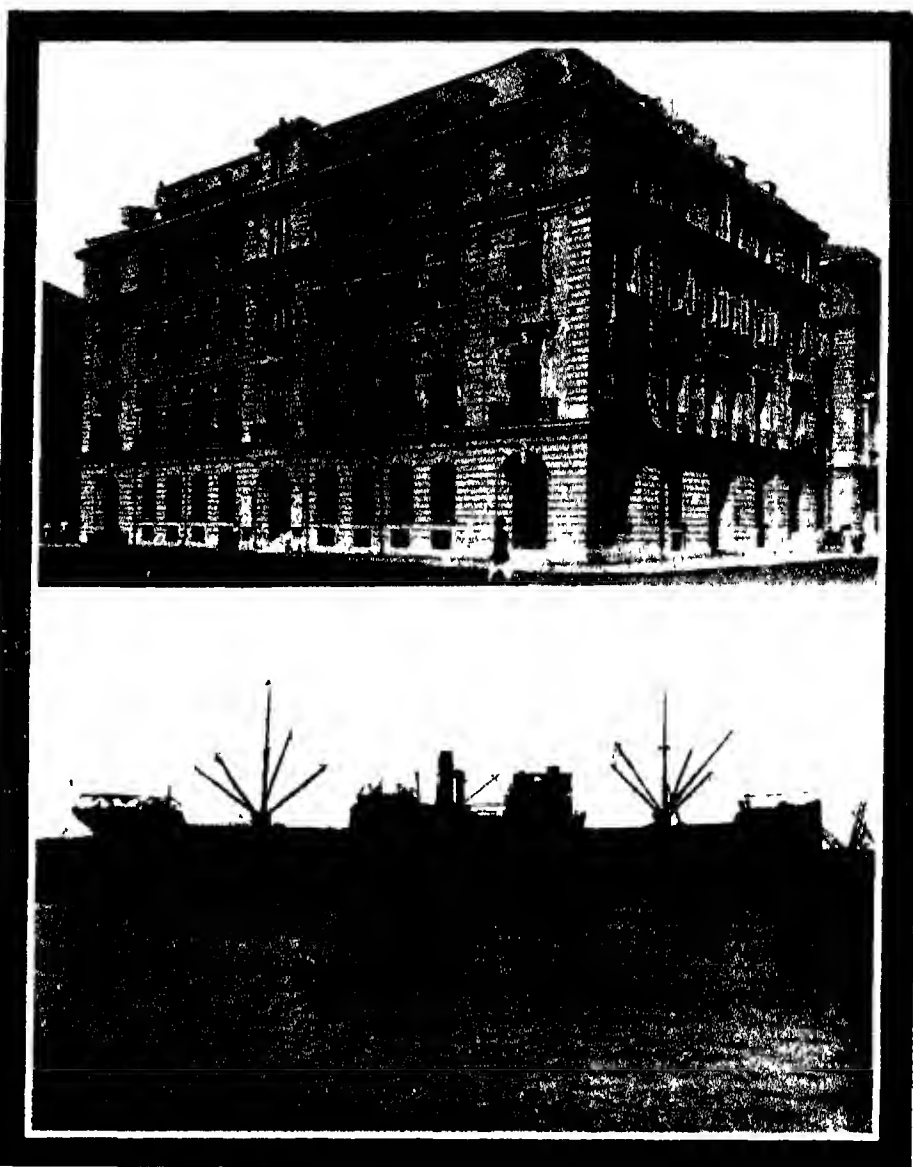
The Ballard Estate, on reclaimed ground south of Alexandra Dock, is being developed as a first-class business and residential area.

**Depôts, Sheds, etc.**—The transit sheds and warehouses cover 3,200,000 sq ft, providing ample accommodation for goods in transit. A new three-storied transit shed, 400 ft long by 120 ft wide, with a floor area of 140,000 sq ft, is now under construction at No. 9 berth, Alexandra Dock. The cotton depôt is probably the largest in the world, providing covered accommodation for 1 million bales and uncovered accommodation for another million. The total area is 432,500 sq yds, and the depôt is fully equipped with reception and loading stations, roads, godowns, offices, fire and salvage service.

**Revenue.**—The following are the gross receipts of the Trust since 1917-18 in lakhs: 1917-18, Rs 178.30, 1918-19, Rs 192.62, 1919-20, Rs 196.90, 1920-21, Rs 222.97, 1921-22, Rs 217.17, 1922-23, Rs 259.62, 1923-24, Rs 260.71, 1924-25, Rs 273.70, 1925-26, Rs 284.13. The value of the trade of the port has risen from 182 crores in 1917-18 to 304 crores in 1925-26. The volume of cargo handled in the Port during the financial year ended March 31, 1926, was 6,460,000 tons.

**Imports and Exports.**—The principal imports handled at the port are piece-goods, metals, sugar, machinery, rice, oils, glassware, motor cars, oilmen's stores, paper and hardware, the chief exports being cotton, piece-goods, grain and seeds, ground nuts, myrabolams, twist and yarn, oil cakes, wool, and manganese ore.

**Charges.**—Prince's, Victoria and Alexandra Dock dues, 2 pies per ton per diem on vessels under 1,500 tons, and 3 pies on vessels of 1,500 tons and over, cranes (30 and 35 cwt) hired at Rs.12 per diem. Import and Export wharfage charges at the Docks on goods vary according to class. The wharfage on cotton piece-goods is 6 annas a bale up to 40 cubic feet, and 12 annas over 40 cubic feet; iron, average Rs.2 per ton; grain, 12 annas per ton; seeds, 12 annas per ton; raw cotton (Indian), 8 annas per bale of 3 cwt; American or other pressed bale of 4 cwt or over, 12 annas; Egyptian 6 cwt. bales, 12 annas per bale. The above charges are at present subject to 50 per cent. surtax.



THE SCINDIA STEAM NAVIGATION CO., LIMITED, Bombay

- 1 "Sudama House," in which the Company's Head Office is situated.
- 2 S.S. "Jalarashmi," one of its Steamers.

**Secretary's Office.**—Ballard Road, Fort, Bombay. Cables "Port Trust," Bombay Code. Bentley's.

**Bankers.**—Imperial Bank of India

#### THE SCINDIA STEAM NAVIGATION CO. LTD.

**Inception.**—The steady increase in sea-borne merchandise between Burma and India, and also between the East and West Coasts of India, led to the formation of this purely Indian firm of steamship owners in March 1919 at Bombay. Messrs. Narottam Morarjee & Co. are Managing Agents for the company.

**Capital.**—This at present amounts to Rs.1,50,00,000, divided into 10,00,000 shares of Rs 15 each.

**Activities.**—The company maintains fortnightly services between Burmese ports and Bombay via Colombo and Malabar, and between Calcutta and Karachi via the Indian Coast ports. In addition, it controls the two important subsidiary companies, The Eastern Bunkers Ltd. for bunkering and steve-

doring and Narottam Limited for rice and other business.

**Fleet.**—The Scindia Steam Navigation Co., Ltd. owns seven steamers of a total deadweight tonnage of 50,402, and has at present on time charter a further four steamers of 32,470 dead weight tonnage. The fleet proper comprises s.s. "Jalavihar" (8,750 d.w. tons), s.s. "Jalaputra" (8,310 d.w. tons), s.s. "Jalajyoti" (7,104 d.w. tons), s.s. "Jalarashmi" (7,020 d.w. tons), s.s. "Jalapalaka" (7,570 d.w. tons), s.s. "Jalavijaya" (7,250 d.w. tons), and s.s. "Jalatarang" (4,398 d.w. tons). Three steamers of a total dead weight tonnage of 21,900 are under construction.

**Branches and Agencies.**—The company has branch offices at Rangoon, Moulmein, Akyab and Calcutta, also 29 agencies at all the principal ports on the Indian seaboard.

**Directorate.**—The Board consists of Mr. Narottam Morarjee (Chairman), The Hon. Sir D. E. Wacha, Kt., Mr. Walchand Hirachand, Mr. Lalji Naranji, Mr. Hiralal Dayabhai Nanavati, Mr. Ravashanker Jagjivan

Zaveri and Sir Lalubhai Samaldas, Kt., C.I.E.

**Head Offices.**—Sudama House, Ballard Estate, Bombay Cables "Jalanath," Bombay Codes Bentley's, Overseas and Scott's.

**Bankers.**—Central Bank of India Ltd., Bank of Baroda Ltd., Eastern Bank Ltd., Comptoir National d'Escompte de Paris, Mercantile Bank of India Ltd., Bank of India Ltd., Chartered Bank of India, Australia and China, Imperial Bank of India, and National Bank of India Ltd.

#### ERICSON & RICHARDS.

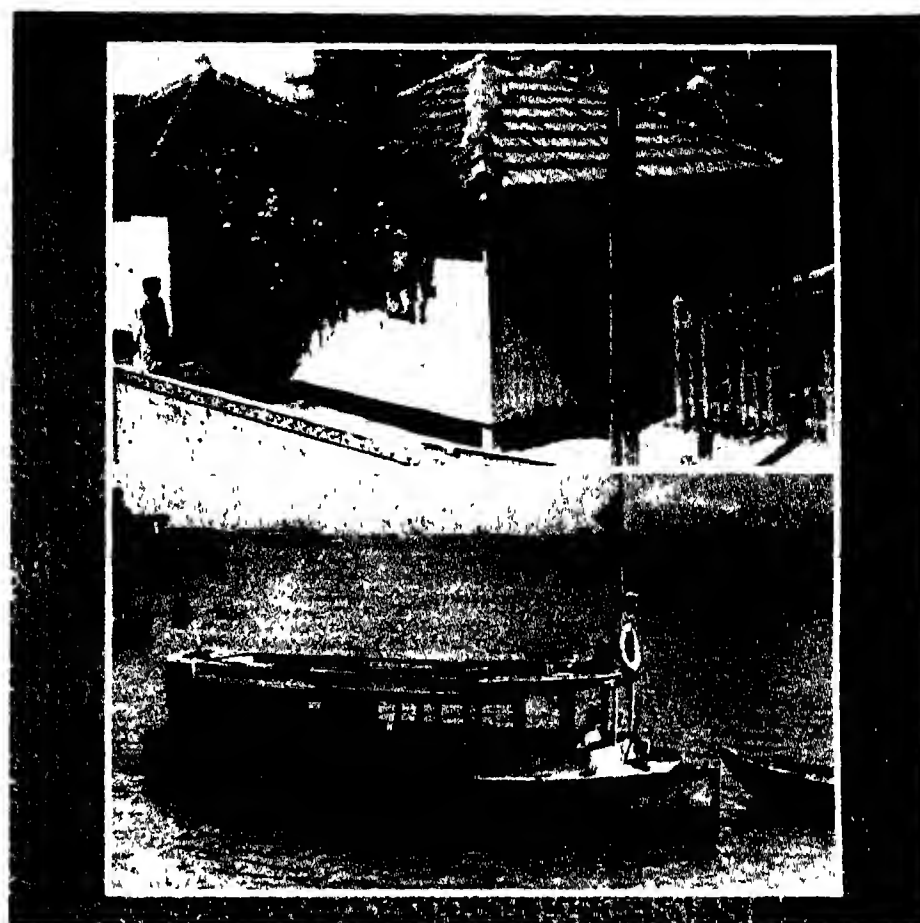
**Inception.**—In 1913 Capt A. Ericson and Capt J. C. Richards, who had been practising independently as marine surveyors, joined forces to establish the present concern.

**Development.**—The firm has made substantial progress, a branch having been opened at Karachi in 1921.

**Activities.**—Ericson & Richards are ship and marine surveyors, fire loss assessors, compass adjusters and ship valuers, and act as honorary agents for the Imperial Merchant Service Guild and other concerns. They are marine surveyors to Nippon Yusen Kaisha, P. & O. Steam Navigation Co., Hansa Line, Scandinavian Indian Line, Roosevelt Line, Holland British India Line, etc., surveyors to Lloyds Agents, Turner Morrison & Co., Mackinnon Mackenzie & Co., large insurance companies, etc., and ship-surveyors and agents for Germanischer Lloyd. The company's representatives can be sent over the whole of India.

**Management.** BOMBAY Partners: Capt J. C. Richards, F.R.G.S., A.I.N.A., Capt A. G. Robertson, A.I.N.A. Assistants: H. P. Crohn, A. E. Evans and F. W. Coleman. KARACHI Capt J. T. Burns.

Capt Richards was formerly a Commander in the Nippon Yusen Kaisha and holds the Rising Sun decoration from the Japanese Emperor. Capt Robertson is a Conway Gold Medallist.



ERICSON & RICHARDS, Bombay  
1 Wharf Office  
2 The Firm's Motor Boat, "Helga"

**Head Offices.** Hatia Building, 207, Hornby Road, Fort, Bombay.

**Branch.**—Coolanah Fadoo Building, Bunder Road Karachi Cables "Erichard."

Bombay and Karachi Codes A.B.C. 5th edition and Bentley's.

**Bankers.** Hongkong & Shanghai Banking Corporation, Lloyds Bank and Chartered Bank of India, Australia and China.

## ADDITIONAL ENTERPRISES OF IMPORTANCE WITH OFFICES AND BRANCHES IN BOMBAY.

**ALLAHABAD BANK, LTD.**—Apollo Street, Bombay. Established 1865, affiliated to the P. & O. Banking Corporation, Ltd. Bombay agency opened 1911, and the present Allahabad Bank building erected in 1920. Banking business of every description transacted.

**ARMY AND NAVY CO-OPERATIVE SOCIETY, LTD.**—Esplanade Road, Bombay. Established 1871. Incorporated in England. Chief office, 105, Victoria Street, London, S.W.1. Capital, £1,000,000 in 2,000,000 shares of 10s. each. Besides many departments, the Society has its own workshops for furniture, saddlery, engraving, printing, photography, tailoring, shirtmaking, etc. Branch: 41 Chowringhee, Calcutta.

**BANK OF TAIWAN, LIMITED.**—Standard Building, Hornby Road, Bombay. Incorporated by special Japanese Imperial charter in 1899. Head offices: Taipei, Taiwan (Formosa). Capital subscribed, 45,000,000 yen; capital paid up, 39,375,000 yen; reserve fund, 1,626,000 yen. Every description of

banking and exchange business transacted. Branches and correspondents all over the world. Agents, Barclays Bank (D.C. & O.), Ltd., and Seiryu Bank, Ltd.

**BOMBAY ELECTRIC SUPPLY & TRAMWAYS COMPANY, LTD.**—Registered office: Tramway Building, Post Fort, Bombay, No. 1. Incorporated in India 1920 to acquire the undertaking of similar company incorporated in England in 1905. Tramway service commenced 1907. System: Overhead trolley, double track, 520 cars, 27308 route miles. Energy purchased in bulk and transmitted to sub-stations. Cables "Tramways," Bombay.

**BOMBAY GAS COMPANY, LTD.**—Administration and finance office: Lloyd Buildings, Graham Road, Ballard Estate, Bombay. Gas works: Chinchpoo. Showrooms: Guzdar House, Hornby Road, Bombay. London office: 231-4 Moorgate Station Chambers, E.C.2. Cables "Cristolite." Code: A.B.C. 6th Ed.

**CONTINENTAL TYRE & RUBBER COMPANY, LTD.**—Asian Building, Nicol Road, Ballard Estate. Incorporated in Holland, proprietors, International Continental Caoutchouc Co. Controls the sale of world-famous Continental Motor Tyres in whole of India and Ceylon and markets all kinds of Indian rubber commodities under the "Horse" brand. Branches: Calcutta, Madras, Delhi, Rangoon, Colombo.

**COWASJEE DINSHAW & BROS.**—121, Meadows Street, Fort, Bombay. Agents for Burhanpur Tapti Mills. Naval and shipping agents, military bankers, shipowners and general merchants at Aden.

**CRESSWELL, WALTER N., & CO. LTD.**—16 Elphinstone Circle, Bombay. Merchants, established 1895. Managing agents for Wolverhampton Works Co. Ltd., Bombay, and agent for British Aluminium Co. Ltd.; Sir Jacob Behrens & Sons, C. Dutel & Cie, Jonas & Colver, Ltd., Acton & Borman, Ltd., Seals, Ltd., John Needham & Sons (Manchester), Ltd., F. J. Nathan & Co., and others.



**CURRIMBOY, EBRAHIM & SONS, LTD.**—12/14 Outram Road, Fort, Bombay Managing agents for the following mills Currimbhoy, Mahomedbhoy, Fazulbhoy, Pearl, Pabanev, Crescent, Indore-Malwa, Indian Bleaching, Premier, Kasturchand Imperial, Bradbury, Mathradas, Madhoras, Scindia and Ceylon, representing a capital of Rs 290,54,130 and employing 29,400 hands Cables "Mill Office"

**DEETH, W. H.**—Ajam Building, Ballard Road, Bombay Represents Newman, Hender & Co., Ltd., G. A. Harvey & Co. (London) Ltd.; Twyford, Ltd.; Carron Company, Lewis Berger & Sons, Ltd.; Sheffield Steel Products, Ltd.; Campbell Tile Company, L. Lumley & Co. Branches at Calcutta, Madras, Karachi, Tinnevely, Lucknow, Ahmedabad, Rangoon and Colombo Cables "Berdeeth," for all branches

**EMDEN, M. J., SONS, LTD.**—Yusuf Building, Churchgate Street, Fort, Bombay Established 1924 as branch of Messrs M. J. Emden Soehne, Hamburg, merchants and shippers Chief lines are piecegoods, hardware, cutlery, fancy goods and sundries Agencies at Calcutta, Colombo, Madras, Karachi, Lahore and Amritsar Cables "Mesex" Codes A B C 5th and 6th Eds, Bentley's and Mosse.

**FERGUSON, A. F., & CO.**—Allahabad Bank Buildings, Apollo Street, Fort, Bombay This firm of chartered accountants is also represented at the following addresses Dunolly Road, Karachi; c/o Bank of Indore Ltd., Indore; Kashmir Gate, Delhi; c/o Grindlay & Co., Simla London correspondents A. F. Ferguson & Co., 27 Old Jewry, E C 2 Cables "Ballance," Bombay, Karachi, Delhi, Basra and Baghdad, and "Fergreen," London Codes Bentley's and A B C 5th Ed

**FLEMING, SHAW & CO. LTD.**—Wheeler's Buildings, Hornby Road, Bombay Merchants and commission agents Also at Dunolly Road, Karachi, and Katra Ahluwala, Amritsar Cables "Flenning," Bombay, "Hypatia" Karachi, and "Centella," Amritsar Codes A B C 5th Ed., Bentley's Complete Phrase, Western Union and private

**FORBES, FORBES, CAMPBELL & CO. LTD.**—Forbes Building, Home Street, Fort, Bombay Merchants and agents. This company holds the following Indian agencies Gokak Mills, Ltd., New Prince of Wales Press Co. Ltd., Bombay Safe Deposit Co. Ltd., West's Patent Press Co. Ltd., Olpherts Paints & Products, Ltd., and Western India Match Co. Ltd., and a number of foreign agencies, including Finlay, Campbell & Co. Ltd., Borneo Co. Ltd., Dollar Steamship Line, Ellerman & Bucknall Steamship Co. Ltd. (American & Indian Line); Curtis and Harvey, Ltd.; Horrockses, Crewdson & Co. Ltd.; British Central Africa Co. Ltd.; Shire Highlands Railway (Nyasaland), Ltd.; Trans-Zambesia Railways Co. Ltd.; Liverpool and London and Globe Insurance, Ltd.; Ocean Marine Insurance Co. Ltd., Coutts & Co.; National Provincial Bank, Ltd.; Trummer & Co. (successors), Ltd.; Kubula Stores (Nyasaland), Ltd.; and Anglo-Ceylon & General Estates, Co. Ltd. The head offices of the company are in London, while branches are established at Karachi and Liverpool, with agencies at Calcutta and Delhi Manchester correspondents are Messrs. Finlay, Campbell & Co. Ltd. Cables: "Yesterday," Bombay; "Koran," Karachi; "Forcamp," Calcutta; and "Colgrain," Delhi.

**FOWLER, JOHN, & CO. (INDIA), LTD.**—Fowler Building, Bombay Established 1921 to operate India for the parent house in Leeds, manufacturing agricultural and road making machinery, including steam and motor ploughing engines, steam and motor road rollers, tar boilers, narrow gauge locomotives and rolling stock, steam wagons, etc. Agents for Wilkins Wire and Wire Ropes, Ltd. Cables "Traction," Bombay

**GENERAL ACCIDENT, FIRE & LIFE ASSURANCE CORPORATION, LTD.**—Chief office for India 50-52 Church Gate Street, Bombay Incorporated in Great Britain Established in 1885. Bombay branch opened in 1913 Calcutta in 1922 Funds over £10,000,000 Chief agencies at Madras, Colombo and other principal cities All classes of insurance transacted except life and marine Cables "Accidental," Bombay

**GILL & CO.**—Lloyds Building, Graham Road, Bombay Cotton brokers and commission agents Established over 50 years ago branch at Karachi Cables "Gillco," Bombay

**GLENFIELD & KENNEDY, LTD.**—Fowler Building, Goa Street, Fort, Bombay Incorporated in Scotland Manufacturers of reservoir iron works and all classes of water supply fittings Head office and works Kilmarnock Scotland Calcutta branch Farlie House, Fawcett Place Cables "Glenfield," Bombay

**GOSHO KABUSHIKI KAISHA, LTD.**—Hornby Road, Fort, Bombay Capital, 25,000,000 yen (£2,500,000) Cotton exporters, and importers of piece-goods, yarns and raw silk Cables "Gosho," Bombay Head office, Osaka

**GOSSAGE, WILLIAM, & SONS, LTD.**—Contractor Building, Nicol Road, Ballard Estate, Bombay Incorporated in England Manufacturers of soaps, glycerine, silicate of soda, etc. Head offices and works, Widnes, England Representatives of the Crown Perfumery Co. Ltd and Blyth & Pratt, Ltd. Agencies Madras, Rangoon, Colombo, Malabar Coast, Karachi, Basra, Baghdad, Calcutta Cables "Gossage"

**GRAHAM'S TRADING CO. LTD.**—Graham's Building, Parsee Bazar Street, Fort, Bombay Importers and exporters, shipping, insurance and general agents, representing some of the largest and best-known companies in the world Head offices, London, branches, Manchester, Glasgow, Liverpool, Calcutta, Bombay (opened in 1839), Karachi, Rangoon, Lisbon, Oporto Cables "Grahams," Bombay.

**GRINDLAY & CO. LTD.**—Nicol Road, Ballard Estate Incorporated in England Bankers and agents Affiliated with National Provincial Bank, Ltd. Branches Calcutta, Delhi, Simla, Lahore, Peshawar

**HARDCASTLE, F. E., & CO.**—Alice Building, Hornby Road, Bombay. Marine surveyors and insurance agents Agents and surveyors to the "Bureau Veritas" and "Norwegian Veritas," and chief agents for many well-known marine, fire and accident insurance companies Cables "Veritas" Codes A B C 5th Ed., Western Union 5 letter, Bentley's and private

**HARDCASTLE, WAUD & CO. LTD.**—Alice Building, Hornby Road, Bombay Exporters of hemp of all qualities, and grains, Akund cotton and Kapoc, myrabolams, cassien, cashew nuts blanched and natural, also of steel, iron, brass and copper scrap to Italy Cables "Veritas."

**HERBERT, SON & CO. LTD.**—11/13, Elphinstone Circle, Bombay. Manufacturers agents. Special agents for General Accident,

Fire & Life Assurance Corporation, Ltd., Indian Guarantee & General Insurance Co. Ltd., Empire of India Life Insurance Co. Ltd. Branch, Calcutta, agencies, Karachi, Madras, Colombo, Rangoon, Basra Cables "Herberton"

**HOARE, MILLER & CO. LTD.**—"Commerce House," Currimbhoy Road, Ballard Estate, Bombay Merchants and commission agents London correspondents Hoare, Miller & Co., Pinners Hall, Austin Friars, E C 2. Cables "Hoarmiller"

**INDIAN GENERAL TRADING CO. LTD.**—170 Hornby Road, Fort, Bombay Private limited company, incorporated in India 1920 General export and import merchants, dairy engineers and suppliers of machinery and appliances for dairy and agricultural work Sole agents for Dairy Supply Co. Ltd., London Cables "Ingentrade," Bombay Codes A B C 5th Ed and Bentley's

**INDIAN STATES & EASTERN AGENCY.**—Hararwalla Building, Ballard Estate, Bombay Founded 1909 Import, export and general agency Introduced wireless and established first broadcasting stations Advertising agents to Posts and Telegraphs Department Head offices, 25 Victoria Street London, S W 1, branch, Calcutta, agencies, Madras, Karachi, Lahore, Rangoon, Colombo Cables: "Basichief"

**LANGLEY & CO.**—Oriental Buildings, Hornby Road, Fort, Bombay Cotton merchants, brokers and commission agents Fire, marine, burglary insurance business transacted Branch, Karachi Cables "Langlet"

**LONDON & LANCASHIRE INSURANCE CO. LTD.**—45-47 Church Gate Street, Fort, Bombay Incorporated in England All classes of insurance business transacted Fire, marine, loss of profits, personal accident, plate glass, burglary, fidelity guarantee, baggage, workmen's compensation, motor car funds, £11,094,132 Cables "Lond-lanc"

**MARSLAND, PRICE & CO. LTD.**—Phoenix Building, Ballard Estate, Bombay Constructional engineers and contractors Workshops and stores, Nesbit Road, Mazagon, Bombay The Tata Construction Co., Ltd., are the managing agents

**MARTIN & HARRIS, LTD.**—Graham's Buildings, Parsee Bazar Street, Fort, Bombay. Head office 8 Waterloo Street, Calcutta Manufacturers' representatives Also at Madras, Karachi, Delhi, Lahore, Amritsar, Colombo and Rangoon Correspondents in Europe Levettus, Ltd. Cables "Rowlette" Codes A B C 5th and 6th Eds, Western Union and Bentley's.

**MAZAGON DOCK.**—Bombay Engineers and ship repairers Proprietors of modern workshops and dockyards containing graving docks and slipways Departments under expert European supervision.

**MERCANTILE BANK OF INDIA, LTD.**—52-54 Esplanade Road, Bombay. Incorporated in England. Subscribed capital, £1,800,000; paid up capital £1,050,000, reserve fund, £1,300,000, reserve liability of shareholders, £750,000 Head office 15 Gracechurch Street, London London bankers. Bank of England, Midland Bank, Ltd. Drafts granted on head office, branches and agencies, on London bankers, Bank of Scotland, Royal Bank of Scotland, National Bank (of Ireland), the South African, Australian and New Zealand Banks. Circular notes issued in sets of £10 on the Midland Bank negotiable all over the world. Branches: Calcutta, Colombo, Delhi, Galle, Howrah, Kandy, Karachi, Madras, Rangoon, Simla, etc.

**MITSUI BANK, LTD.**—Ernstsham Building, 243 Hornby Road, Fort, Bombay. Capital subscribed, yen 100,000,000, capital paid up, yen 60,000,000, special reserve fund, yen 20,400,000, reserve fund, yen 25,000,000, reserve fund for dividend, yen 6,000,000. Head office Tokyo, Japan. Local branches: Dojima (Osaka), Fukuoka, Hiroshima, Kawaguchi (Osaka), Kobe, Kyoto, Marmouchi (Tokyo), Moji, Nagasaki, Nagoya, Nihonbashi (Tokyo), Osaka, Osaka Nishi (Osaka), Otaru, Shimonoseki, Wakamatsu, Yokohama. Foreign branches: Bombay, London, 24 Birch Lane, E.C.3, New York, 61 Broadway, Shanghai, 4 Kinkiang Road, Sourabaya, 8 Heerenstraat. Foreign agents: London, Barclays Bank, Ltd.; Midland Bank, Ltd.; New York, National City Bank of New York, Bankers' Trust Company; Chase National Bank of the City of New York; Paris, Comptoir National d'Escompte de Paris, Banque De L'Union Parisienne; Hamburg, Commerz und Privat-Bank A.G.; Bombay, National Bank of India, Ltd., and Lloyd's Bank, Ltd.; Cox's Branch.

**NATIONAL MUTUAL LIFE ASSOCIATION OF AUSTRALASIA, LTD.**—45/47 Church Gate Street, Bombay. Incorporated in the State of Victoria. Funds exceed £20,305,160. Premium rates 10 per cent. below average of other offices. No shareholders, profits all go to pay policy holders. Claims settled at any of the Association's offices throughout the world.

**ORIENTAL GOVERNMENT SECURITY LIFE ASSURANCE CO. LTD.**—Oriental Buildings, Bombay. Established 1874. Authorized capital, Rs 10,00,000, subscribed, Rs 6,00,000, paid-up, Rs 3,00,000. Funds, Rs 6,85,00,000. Annual income, Rs 1,25,00,000 (1925). Policies in force (December 31, 1925), 101,458 for Rs 21,30,27,487.

**ORMERODS (INDIA), LTD.**—Shale Buildings, 28/32 Bank Street, Bombay. Formed in 1920 under Indian Registration but controlled by John Ormerod & Sons, Ltd., England, the parent firm, for whose mill stores it has sole selling agency. Also represents leading manufacturers, stocking and selling loom and weaving machinery and other lines of the highest grade. Cables "Ramshead".

**SASSOON, DAVID, & CO. LTD.**—59 Forbes Street, Fort, Bombay. Merchants, bankers and mill agents. This well-known company acts as agents for The Sassoon Spinning and Weaving Co. Ltd., Union Mills, Ltd., Sassoon and Alliance Silk Mill Co. Ltd., Port Canning and Land Improvement Co. Ltd., and the South British Insurance Co. Ltd. The organisation is also established at Manchester, Calcutta, Karachi, Hongkong, Shanghai, Hankow, Baghdad, Basra and Buenos Aires, while the head offices of the company are in London. Cables "Sassoons," Bombay.

**SASSOON, E. D., & CO. LTD.**—E. D. Sassoon Building, Ballard Estate, Fort, Bombay. Bankers, merchants and mill agents. The company acts as agents for the E. D. Sassoon United Mills, Ltd., comprising Jacob Sassoon Mill, Rachel Sassoon Mill, E. D. Sassoon Mill, Alexander Mill, Manchester Mill, E. D. Sassoon Turkey Red Dye Works, Edward Sassoon Mill, Ltd., Meyer Sassoon Mill, Ltd., Apollo Mills, Ltd., Elphinstone Spinning and Weaving Mills Co. Ltd., David Mills, Ltd., and Raymond Woollen Mills, Ltd. In insurance it represents the Royal Exchange Assurance Corporation (marine and accident) and the British India General Insurance Co. Ltd. (fire and accident). Among additional agencies held

are those for the Holland British India Lane, Eastern Chemical Co. Ltd., Tozer, Kemsley & Millbourn, Ltd., Bombay Trust Corporation, Ltd., Oriental Investment Co. Ltd., Asian Finance Corporation, Ltd., Ahmuty & Co. Ltd., and Lewis Berger & Sons, Ltd. E. D. Sassoon & Co. have branches in London, Manchester, Calcutta, Karachi, Rangoon, Hongkong, Shanghai and elsewhere. Cables "Ehas," Bombay.

**SCALES, W. H., & CO. LTD.** Central Bank Building, Esplanade Road, Bombay. Incorporated in England. Established in 1882 and re-registered as a private limited company in 1923. Piece-goods merchants and general agents. Head offices 63 East Parade, Bradford, also at Manchester and Delhi. Cables "Scales," Bombay. Codes: Lieber's 5 Letter A B C 5th and 6th Eds., Bentley's and private.

**SUMITOMO BANK, LTD.**—35-39 Church Gate Street, Fort, Bombay. Incorporated in Japan. Established 1912, successors to The Sumitomo Bank. Subscribed capital, yen 70,000,000, paid-up capital, yen 50,000,000, reserve fund, yen 21,000,000. Head offices: Kitahama, Osaka, Japan. Foreign branches: London, New York, San Francisco, Los Angeles, Bombay, Shanghai, Hankow. Cables "Sumitbank".

**SUN LIFE ASSURANCE COMPANY OF CANADA.**—Canada Building, Bombay (chief office for India, Burma and Ceylon). Incorporated 1805. Head office Montreal, Canada. Indian branches and agencies: Bombay, Calcutta, Madras, Lahore, Secunderabad, Karachi, Colombo and Rangoon. Burma agents: Harperink, Smith & Co. Bankers Bank of England, Bank of Scotland.

**SUZUKI & CO. LTD.**—Taj Building, Hornby Road, Fort, Bombay. Incorporated in Japan. Established in Bombay, 1917. Importers, exporters and general merchants, dealing in camphon, sugar, cotton, piece-goods, cotton yarn, iron, seeds, cotton, etc. Head office 10 Kaigan Dori, Kobe, Japan. London office 29 Mincing Lane, E.C. Cables "Suzuki," Bombay. Codes: A B C 5th and 6th Eds., Bentley's, Scott's 10th Ed., etc.

**TATA CONSTRUCTION CO. LTD.**—Phoenix Building, Sprott Road, Ballard Estate, Bombay. Engineers and contractors. Since 1920 carried out works amounting to 3½ millions sterling. Cables "Tatabuild," Bombay.

**"TIMES OF INDIA."**—Times Building, Hornby Road, Bombay. Proprietors: Bennett, Coleman & Co. Ltd. Founded in 1838 as the "Bombay Times" and published bi-weekly until 1850, when it became a daily paper. The present title was adopted in 1861, when Mr. Robert Knight was the editor. Among more recent editors the late Sir Thomas Bennett, Sir Stanley Reed, K.B.E., and Mr. Lovat Fraser were prominent. The present offices were built early in this century. The paper has expanded greatly in recent years, especially since the price was reduced to 1 anna. It now averages 16 pages, including a page of illustrations. Several other publications are associated with the "Times of India" and issued by Bennett, Coleman & Co. Ltd. These include the "Times of India Illustrated Weekly," which was founded in 1880 and turned into an illustrated journal in 1902, having now the largest sale of any weekly paper in India, the "Times of India Annual," an artistic production particularly distinguished for its colour work, published in November, the "Times of India" Directory for Bombay and Western India, now in its 74th year; the "Indian Year Book," a work of reference dealing with every aspect of

Indian affairs, now in its 13th year, and the "Evening News of India," a daily paper founded in 1924.

**TURNER HOARE & CO. LTD.**—Gateway Buildings, Apollo Bunder, Fort, Bombay. Works and warehouses: Suparibag Road, Parel. This engineering company acts as agents for the leading manufacturers of machinery, railway and general engineering material. These include the Anmonia Company of Australia, Ltd., Sydney, ammonia products, Aveling & Porter, Ltd., Rochester, steam road rollers, etc., Wm Beardmore & Co. Ltd., Glasgow, locomotives, wagons, railway and dock material, Bombay Motor Car Co. Ltd., Bombay, Daimler, Rover and Paige-Jewett motor cars, etc., Columbia Batteries, F. W. Brackett & Co. Ltd., Colchester (patent self-clearing circulating water screen), British Thomson-Houston Co. Ltd., Rugby, electrical plant, J. W. Brooke & Co. Ltd., Lowestoft, marine motors and motor boats, Broom & Wade, Ltd., High Wycombe, air compressor plants, Cable Accessories Co. Ltd., Tipton, Revolving and desk fans, etc., Chance Bros & Co. Ltd., Birmingham portable searchlights, signalling lamps and lighthouse machinery, Thomas Chatwin Ltd., Birmingham, stocks and dies, J. & F. Hall, Ltd., Dartford, refrigerating and cold storage plants, Hathorn Davey & Co. Ltd., Leeds, pumping machinery, Holophane, Ltd., London, electrical fittings, Perfecta Seamless Steel Tube and Conduit Co., Birmingham, Petters, Ltd., Yeovil, oil engines, Priestman Bros., Ltd., Hull, dredging machinery, Pulsometer Engineering Co. Ltd., Reading, centrifugal pumps, Pyrene Co. (India), Ltd., Pyrene, Phenolic and Simplex fire extinguishers, F. Reddaway & Co. Ltd., Manchester, "cannel hau" and cotton beltings, etc., Robey & Co. Ltd., London portable steam engines, loco type and vertical cross tube boilers, etc., A. R. Fattersall & Co., London, flour-milling machinery, Waygood-Otis, Ltd., London electric, hydraulic and hand power lifts. Turner Hoare & Co. Ltd. are also established at The Mall, Lahore. Cables "Endeavour," Bombay.

**WILSON, LATHAM & CO., LTD.**—Central Bank Buildings, Bombay. Incorporated in England. Successors of Latham, Abercrombie & Co. established 1882. Importers of piece-goods, yarns, metals, etc., exporters of Indian produce, also agents. Cables "Heureuse," Codes: Bentley's, A B C 6th Ed. and private.

**YORKSHIRE INSURANCE CO. LTD.**—16 Elphinstone Circle, Bombay. Established in 1824 at York, England, this company ranks among the great British insurance offices and has organisations in many parts of the world. For over a quarter of a century it has made all-round progress and now includes all those varied departments that are a feature of the great composite insurance companies of the 20th century. It transacts business in various classes of insurances, including life, marine, fire, consequential loss, livestock, accident, etc. It may truly be said that its business is built upon a solid foundation, just as its principal office in York is erected on a foundation that the ages have not been able to destroy—namely, the Roman wall of York. During its long, successful career a policy of building up extensive reserves has been maintained, as is evidenced by the enormous figures of its reserve funds. The Yorkshire Insurance Co., Ltd., has been represented in India for over a quarter of a century, and its present organisations embrace chief and sub-agencies in the important cities including Bombay, Calcutta, Madras and Karachi, the first-named being the chief.



Mammoth Figures in the Dumar Lena at Ellora Caves, on the G I P Railway.

## OTHER PORTS & CITIES OF THE BOMBAY PRESIDENCY

### AHMEDABAD.

(See under "Tourist Resorts")

### BIJAPUR.

One of the most ancient of the cities of Bombay, Bijapur (originally Vijayapura, "City of Victory,") is also among the most interesting places in India. During the 15th and 16th centuries it was the capital of the Shahi Kings of Bijapur, whose domination only ceased when the city was taken by Aurungzebe in 1686. The great architectural development of the place occurred during their reigns, and many of its most noteworthy features still survive. The population at the last census was 32,458.

**BUILDINGS**—The city has seven gates, all of which are architecturally interesting. Many of the ancient buildings of Bijapur are remarkable for their magnificence. The Jamī Masjid is said to be one of the finest mosques in India and dates from the middle of the 16th century. The Gol Gumbas, or "Round Dome," is the mausoleum of Muhammad 'Adil Shah, the seventh king, and is famous for its beautiful proportions and its great dome, 16 ft. more in diameter than that of St. Paul's. The Old Mosque is a converted Jain temple of beautiful Mohammedan design, and the Gagan Mahal, or "Heavenly Palace," is noted for its three magnificent arches. Had not the death of the Sultan put a stop to its progress and prevented completion in conformity with the original design, the Tomb of Ah 'Adil Shah II, which lies outside the citadel, would have surpassed every other building in Bijapur,

both in magnificence and in size. Even unfinished it is a noble ruin, with seven large Gothic-like arches on each side, constructed on a terrace 15 ft. high and 215 ft. square. Other imposing memorials are the Ibrahim Rauza, a group of tomb-buildings, the Andū Masjid, the Sat Manzil, or "Palace of Seven Storeys," and the Palace of the Asar-i-Sharif, which contains some hairs of the Prophet's beard.

### KOLHAPUR.

The city of Kolhapur, capital of the State of that name, with a population of 55,504, is celebrated on account of the antiquity of its temples, and is now also distinguished for its fine modern buildings. The Maharajah's Palace, between the Residency and the city, was built at a cost of Rs 800,000, and other prominent buildings are the Albert Edward Hospital, the Town Hall, the High School, and All Saints' Church. There are numerous Government offices, and behind them is the Shrine of Amba Bai, the tutelary deity of Kolhapur. North of the city is a sacred spot—the Brahmapuri Hill—where the Brahmans undergo cremation, and near by, close to the Panchganga River, is the Rani's Garden, where the bodies of the ruling family are cremated.

### POONA.

The important junction of the Great India Peninsula and Madras and Southern Mahratta Railways, Poona is the capital of the Deccan and the headquarters of the Bombay Government during the rains, also of the Southern Command. It was formerly the capital of the Mahrattas, and at Kirkce, 3½ miles distant, the British gained a great victory over the last Peshwa in 1817. The city,

with a population of 215,000, has many interesting and handsome buildings, the chief of these being Government House at Ghanesh Khind, the Council Hall (containing interesting pictures and portraits), the Sassoon Hospitals, Government Offices, and St. Mary's Church. The fine Wellesley Bridge, 48½ ft. long and 28½ ft. broad, crosses the Mutha River to the Sangam promontory close to its confluence with the Mula. It takes the place of a wooden bridge erected to commemorate the victories of the Duke of Wellington in India, and cost Rs 111,000.

The streets of Poona are wide, while many of the older houses are substantial and picturesque buildings. It is divided into nineteen divisions, called *paths*, some of them named after the days of the week on which the markets were held. In the Shanwar, or "Saturday," division are the remains of the Peshwa's castle, called Junawada, or "old palace," once a massive building of which only the walls remain. Not far away is the street in which, under the Peshwas, offenders were executed by being trampled to death by elephants.

**WATER SUPPLY**—The supply for the Poona Cantonment is obtained from Lake Fyfe, a large irrigation lake impounding 4,000 million cubic feet of water. There are eighty-six villages in the catchment area, resulting in very serious pollution, which is increased during the passage of the water through an open canal 11 miles long to the Cantonment Water Works. In 1916 the Government of Bombay installed the Paterson system of water purification, and the new Water Works, which have a maximum daily capacity of 3,000,000 gallons, have been one of the most successful undertakings in the Bombay Presidency.

### SHOLAPUR.

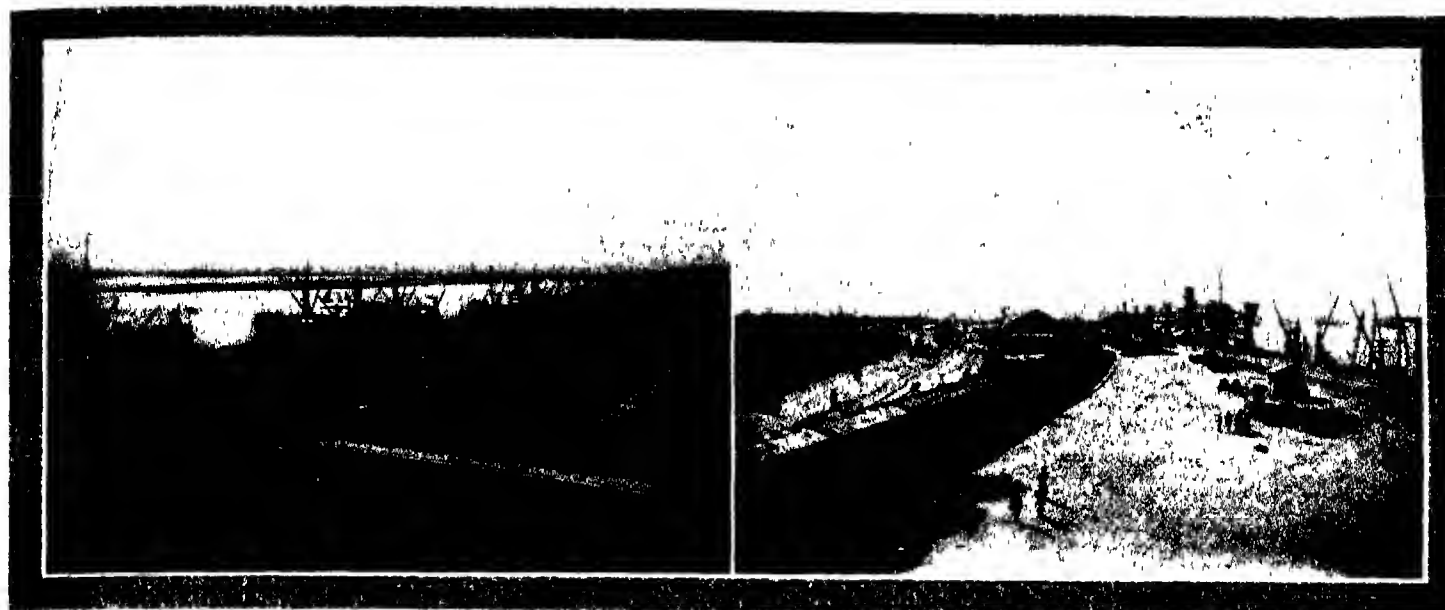
The city of Sholapur has attained to great importance owing to the development of its cotton industry. It is also a notable educational centre. Population, 119,581.

### SURAT.

Of nearly 120,000 inhabitants, Surat is one of the most important cities of the Bombay Presidency, and has been known as a trading centre since the end of the 15th century. It is the headquarters of a collectorate, is situated on the river Tapti and is surrounded on the land side by a wall about 5½ miles in circuit, with twelve gates. Except the main thoroughfare, running from the station road to the castle, the streets in Surat are narrow and tortuous, and some of them still bear marks of the great fire in 1837, which raged for nearly two days, when 9,374 houses were destroyed and many lives lost. Surat also suffered severely from another great fire in 1889 and from floods.

The city is historically important as having been the site of one of the earliest English settlements, of the defeat of the Portuguese by the English in 1615, and of later Dutch and French settlements. The Castle, prominent in the early annals of the British in Western India, stands at the point where the fine Tapti Bridge abuts on the banks of the river. Adjoining it are the well-kept Victoria Gardens. The remains of the original English Factory are near the way to the Katargam Gate, close to the river on the north side of the city. The English and Dutch cemeteries are of interest, and the four large mosques and tombs of the Bohras deserve a visit.

**PORT**—The port of Surat continues to have a good share of the coasting trade, while larger vessels can anchor off the mouth of the river. The River Tapti is buoyed, but is dangerous during April and May. Cotton, cotton seed, cashmere shawls, oil cake and grain are the principal exports.



1. Eastern Wharf

PORT OF KARACHI

2. Another View of the Harbour

## CITY AND PORT OF KARACHI

### CITY

**K**ARACHI, the chief city of Sind, is the headquarters of the Commissioner, the Judicial Commissioner and the General commanding the Sind-Rajputana Detachment. Until 1842 it was only a fort guarding the natural rock-bound haven which is now a busy harbour, but in that year it was ceded by the Talpur Amirs to the British. The present large and flourishing city is entirely a creation of British rule, its extensive commerce, splendid harbour works and numerous flourishing institutions having all sprung up since the establishment of settled administration.

The present-day importance of Karachi lies in its situation as the principal market and port of shipment for the surplus produce of North-western India and as a storage depot for the manufactures and foreign produce which the hinterland requires in exchange for the raw products sent down. Of recent years all branches of Karachi's growing export trade have shown gratifying increases, while the value of imports has also exhibited marked improvement. The vast irrigation projects recently carried out in Sind, the United Provinces and the Punjab are likely in the near future to triple or even quadruple the present trade of the city and port under notice while the recent decision of the Imperial Civil Aviation authorities to make Karachi the terminus and an port for the first airship service to India from the United Kingdom is bound still further to aid the city's development as a centre of world commerce and traffic.

**BUILDINGS, ETC.**—The architecture of Karachi is essentially modern and Anglo-Indian. Government House, the residence of the Commissioner in Sind, was built by Sir Charles Napier, the victor of Miani, to whose memory there is a fine stained-glass window in Trinity Church and also the

Obelisk by the Napier Mole. Frere Hall, built in 1865, commemorates Sir Bartle Frere, and contains in addition to the large entertainment chamber the Karachi General Library. North of the station are the Napier Barracks and Station Hospital, a fine block of buildings extending over the Maidan for a mile, with accommodation for 1,500 European troops.

From Government House, M'Leod Road leads to a fine block of buildings containing the quarters of the European and Persian Gulf Telegraph Staff, the General Post Office, the D. J. Sind College, the Victoria Museum, the Burns Garden and the Municipal Offices. On the left of the road is the Karachi City Railway Station, beyond are the Court House, the Chamber of Commerce and the offices and godowns of the European merchants, banks and steamship agencies. Northwest of these lies the native city, which contains many important public and commercial buildings. The New Karachi Municipal Offices on the Bunder Road, now in course of construction, will be a handsome addition to the city's architecture, and mention must be made of the Merewether Clock Tower at the junction of the Bunder and M'Leod Roads, the Port Trust Offices, the Observatory at Manora, and the Max Denso Hall, built to commemorate a former chairman of the Chamber of Commerce. Of private and commercial buildings the most noteworthy are those of the Imperial Bank of India, Cox's Bank, Mackinnon Mackenzie and Company, Ralli Brothers and Forbes, Forbes, Campbell and Company. The Sind Club occupies a conspicuous position in Victoria Road, and the fine buildings of the Mama Palace and the Madressah-tul-Islam are also prominent.

**CHAMBER OF COMMERCE.**—See under "Commerce."

**CHURCHES.**—The chief churches of Karachi are Trinity Church, the oldest and

largest Anglican edifice in Sind, St. Patrick's, a Roman Catholic church of fine proportions and some historical interest, the Scotch Church of St. Andrew, and the Methodist Episcopal Church.

**CLIMATE.** The climate of Karachi, owing to the prevalence of sea-breezes during eight months of the year, is more healthy than that of any other part of Sind. The low situation of the city and the near neighbourhood of marshland render the atmosphere moist and warm, but the heat during the hottest months cannot compare with that experienced in the interior. The mean annual temperature, collected from data for 25 years, may be stated at 65° in January, 85° in May and 75° in November. The annual rainfall averages about five inches.

**EDUCATIONAL FACILITIES.**—There is no lack of these in Karachi, schools and colleges of all grades providing instruction in every branch for Europeans and Indians. Probably the oldest educational institution in the city is the Church Mission High School, which was founded in 1846, and now has 600 boys on its roll. The Karachi Grammar School, which dates back to 1847, is a high class school for English and Anglo-Indian boys and girls, the Narayan Jaganath High School is a Government Institution of deservedly high repute, and the two Roman Catholic schools, St. Joseph's Convent and St. Patrick's High School have a record of educational progress for the last 60 years. The D. J. Sind College was opened in 1887, and provides full courses in arts and engineering. There are also several Anglo-vernacular, vernacular and guls' schools, all doing good work.

**GARDENS.** The Karachi Municipality maintains the Frere Hall Gardens, which are the popular resort of the city in the evenings and on holidays, Merewether Garden, which





1. KARACHI, looking over Retail Shopping Centre.
2. Convergence of Bunder Road, Marriott Street and Napier Road, the principal Indian Business Thoroughfares.
3. Eighth Avenue Street, the Shopping Centre, with Hear & Co.'s Premises in right foreground.

lies south of the Zoological Gardens and contains some very fine trees, and the Burns Garden, on the Kitchery Road which covers an area of 26 acres and is beautifully laid out with trees and flower beds. The Zoological Gardens (also controlled by the Municipality) contain not only an interesting collection of Indian and other animals, but also a remarkable fruit garden, the grapes from which are famous.

**HOSPITALS.**—The Karachi Civil Hospital, the Lady Dufferin Hospital and Louise Lawrence Institute are each well-staffed and equipped institutions doing a notable work among all sections of the populace. There are also an Eye Hospital, a Leper Asylum and a large Maternity Home.

**INDUSTRIES.**—Karachi is not yet a great industrial centre but with the provision of an increased water supply the way will doubtless be opened for further enterprise. At present the city possesses large railway workshops and three extensive and well-equipped flour mills, several cotton presses, dye works, printing presses and ice factories, whilst engineering works are likely to increase, and saw milling is also growing in volume. Salt is manufactured on a fairly large scale at the Mauripur Works a few miles to the north of Karachi.

**MAGAR PIR.**—The curious Magar Pir 11 miles north of Karachi, is well worth a visit, and there is a good motor road running within a mile of the tomb. From the roots of a clump of date trees gushes out a stream of hot water the temperature of which is 133 degrees. On the west side of the valley is a temple surrounded by a thick grove and close to a swamp caused by the superfluous waters of the spring. There is also a tank surrounded by a 5 ft. mud wall, containing some eighty or ninety crocodiles, which, as they attract a large number of visitors, the Mohammedans in charge of the Pir's Tomb regard as sacred for a brisk and remunerative business is done by these custodians in killing goats for visitors to see the crocodiles fed. The crocodiles are of the snub-nosed species, different from the long-snouted *gharial* of the Indus.

**POPULATION.**—The population of Karachi City and suburbs at the last census was 216,883, the density of population being 19,716 to the square mile.

**SPORT AND RECREATION.**—The presence of a large garrison and the fact that the Depot of the Royal Air Force is situated here make Karachi the centre of first-class cricket and football. Good sea-fishing is to be had in the harbour, which is famed for its fish and oysters. In the immediate neighbourhood of Karachi and Clifton the tanks and jeels swarm with small game-birds, while in the Baluch Mountains, 25 miles west of Manora, ibex, urial, panther and bear are occasionally to be found. In the Hub River, the boundary between India and Baluchistan (20 miles from Karachi), good mahsir fishing can be had.

**WATER SUPPLY.**—The difficulty of water-supply long formed one of the chief drawbacks to Karachi's proper development, most of the wells being too brackish for drinking purposes. Since 1882, however, by the construction of an underground aqueduct 18 miles in length from the Mahir river, the city has been in possession of a pure water supply. The capital outlay on this undertaking, including the pipes for distributing the water to the city, Kiamari and the Cantonment, amounted to Rs.17 lakhs. At the end of 1925 a municipal loan of Rs.500,000, running for 30 years, was sanctioned, the proceeds to be applied to extensions of the service to the newer parts of the city.



## PORT OF KARACHI

Karachi, situated in latitude  $24^{\circ}47'N$ , longitude  $68^{\circ}58'E$ , is the nearest port in India to Europe, being distant from Liverpool 10,580 miles by the Cape and 6,037 miles by the Suez Canal. The bay is formed by the projecting point of Manora Head, the extreme end of a reef 10 miles in length, which provides a natural barrier against the Arabian Sea. The opening of the indentation between Manora and the opposite sanatorium of Chifton has a width of about 3 miles, but the mouth is blocked by a group of rocky islets known as the Oyster Rocks, as well as by what was formerly the larger island of Kiaman now part of the mainland. The harbour stretches for five miles northward from Manora Head to the narrows of the Larian River, and about the same distance from the old town of Karachi on the eastern shore to the extreme western point.

The growth of Karachi port under British rule has been phenomenal. For a century and a half the city has been a gate of foreign commerce not only for Sind, but also for a great part of North-west India, Baluchistan and Afghanistan. The value of its trade at the time of the conquest of Sind in 1843 amounted to only 480,000 annually. In 1863 the value rose to 24,440,000, but this was due to a temporary cause, viz., the effect of the American Civil War on the Indian cotton market, and it was not until after direct rail communication had been established with the Punjab in 1878 that this level was again touched. The value of the total trade now exceeds 63,000,000. The completion of the Great Sutlej Valley and Sukkur Barrage Irrigation schemes and of the important extension and improvement works now in progress will certainly make Karachi one of the finest and busiest ports in the East.

**ACCOMMODATION.** The port area of Karachi consists of all the water contained in the space between the extreme end of Manora Point to the end of the Breakwater, and from it in a line due east to the shore at Ghuzri, thence by high water mark up the Chinni Creek round the head of all the creeks in the eastern, northern and western parts of the harbour by Baba point, and along the shore of Manora Spit to Manora Point. The breakwater running out from Manora Point a distance of 1,500 ft ensures safe entrance to the western channel during the south-west monsoon and the entrance is well marked by buoys.

The shipping facilities within the harbour at present afford a sufficient draught of water for any vessel that can pass through the Suez Canal, those drawing 27 ft are able to cross the bar at the lowest state of the tide. The *ss "Ivetina"* and "*Manoran"* hold the record for the deepest draught on leaving the harbour, having drawn 30 ft 6 in. Following are particulars of the principal works now in existence on the eastern side of the Ship Channel, commencing from the south end, where the eastern groyne constructed in 1863-65 springs from the mainland.

**BOAT BASIN.**—This, 11 acres in extent, is used to land and embark passengers from and on vessels in the stream. It has a railway service and hydraulic cranes erected in 1911.

**BULK OIL PIER.**—At this pier liquid fuel, oil and petroleum are discharged by pipes direct into the installations of the Standard Oil Company of New York, the Burma Oil Company, Limited, the Asiatic Petroleum Company, the Tank Storage Company, Limited, and the Anglo-Saxon

Petroleum Company, Limited, also by drums and into railway wagons. The pier was built in 1909.

**HEAVY LIFT PIER.**—This contains one 11-ton crane for use in connection with a 30-ton floating crane.

**KEMARI WHARF 1GL.**—This is a continuous line of wharfrage, 8,000 ft in length, completely served by the railway, with 87 hydraulic cranes of 35 cwt. one of 30 tons and one of 14 tons. The wharfrage line is divided as follows. The "*Merewether*" Wharf, with berths for four ships, the "*Erskine*" Wharf, for three ships, part of the old wharf of the same name built in 1888 and completed in 1908, the "*James*" Wharf, with three berths, built in 1895, the "*Gales*" Wharf, for three ships, erected in 1906-07 and the "*Younghusband*" Wharf built in 1907-10 to accommodate three ships. All these wharves are named after former Commissioners in Sind.

**NAPIER MOLE BOAT WHARF.**—With a length of 1,24 ft it is available for country craft trade.

**RETURN WHARF.**—This wharf is 325 ft in length is used by coasting steamers and is served by railway and hydraulic cranes provided in 1912.

There are thus seventeen ships' berths in line at which vessels can be discharged and load with the greatest ease and rapidity, and there are 20 moorings in the stream for ocean-going steamers, together with ample anchorage for native craft. At the north end of the Ship Channel is the Native Jetty, with warehouses for the cargo of vessels discharging and loading in the stream. This was built before the Port Trust was constituted, but it has been greatly improved, especially by the construction of additional warehouses during the past 23 years.

**ADMINISTRATION.** The affairs of the port are administered by the Karachi Port Trust which was formed in 1886 to take over the functions formerly exercised by the Harbour Board. (See article following.)

**BUNKERING.** Two 10-in. oil fuel pipe lines have been laid from berths 2, 3 and 4, Merewether Wharf, and 5 and 6, Erskine Wharf, to a place adjoining the oil companies' installations and can be connected with these and the North Western Railway installation pipe lines. They permit of simultaneous bunkering of two vessels, or the bunkering of one and the discharge of a tanker. This is a great convenience to vessels burning oil fuel, as they are able to bunker without removal from their loading and discharging berths, while it also provides an additional berth for tankers with oil fuel.

**DOCKS.**—There is a dry dock at Manora 273 ft long over all, 50 ft wide at the entrance at the high spring level, and 12 ft on the sill at high springs. There is also a small ship for steam launches at Manora. Ordinary repairs to hull and machinery can be undertaken.

**IMPROVEMENT SCHEMES.** In 1921 the Karachi Port Improvement Scheme was worked out, following the report of a distinguished English engineer, and was adopted at an estimated cost of nearly three crores of rupees (approximately 22,250,000), it is now being carried out. This scheme comprises the construction of a quay wall for six berths and equipment thereof on the west side of the main Ship Channel; the construction of two ship berths at the Native Jetty and the widening of the Native Jetty frontage; improved accommodation for country craft, the provision of a fishermen's harbour, more oil piers and a second boat

basin, a graving dock, the development of the Lower Harbour, and the reconstruction of the East Wharf. Provided that no unforeseen delays were experienced, it was estimated that three berths on the west side would be ready for occupation by the middle of 1927, nine additional berths to be built as required.

The quay wall is of the latest type of construction, being built on the monolith system, and each of the three berths is being equipped with a liberal number of up-to-date electrically driven lifting cranes of 2 to 5 tons' lifting capacity and a two-storied transit warehouse for the reception of over 12,000 tons of cargo. The cranes will span three lines of rails and deliver goods into either wagon or transit warehouses. Rail facilities for the expeditions removal and supply of goods are being laid along the quays and behind the warehouses, the whole being connected up as at the existing East wharves, with the North-Western Railway system. The original intention was to use these berths for imports only, but it has been decided to make them suitable for both import and export cargoes. The width of the channel between the East and West wharves will be 1,400 ft.

**PILOTAGE.**—Masters of ships should not on any account attempt to enter the harbour without a pilot. The pilot boat is a steam lifeboat. Charges in and out of port on sailing vessels and steamers vary according to the season and are as follow. The monsoon season commences May 15 and ends September 30.

	FAIR SEASONS	MONSOONS
	RS.	RS.
From 100 to 300 tons	35	52 8
" 300 " 500 "	30	50 8
" 500 " 1,000 "	43	60 8

With Rs 4 extra for every additional 100 tons. Sailing vessels when towed in or out pay half pilotage. Extra charge for pilotage on Sundays or holidays or between sunset and sunrise, is Rs 15.

**PORT CHARGES.** The port dues are 4 annas per registered ton, payable every three months. Vessels entering in ballast without passengers pay 3 annas per reg. ton, vessels neither loading nor discharging (excepting such transshipment as may be necessary to effect repairs) pay 2 annas.

**CRANE 1GL.**—Machinery up to 1 ton, 2 annas. Bales, cases and casks of merchandise, 1 anna each. Hire of cranes. Small cranes, Rs 3 per day, 1 hydraulic crane, per half-day, Rs 6. 30-ton crane minimum charge, Rs 30 (All cranes plus 33 per cent).

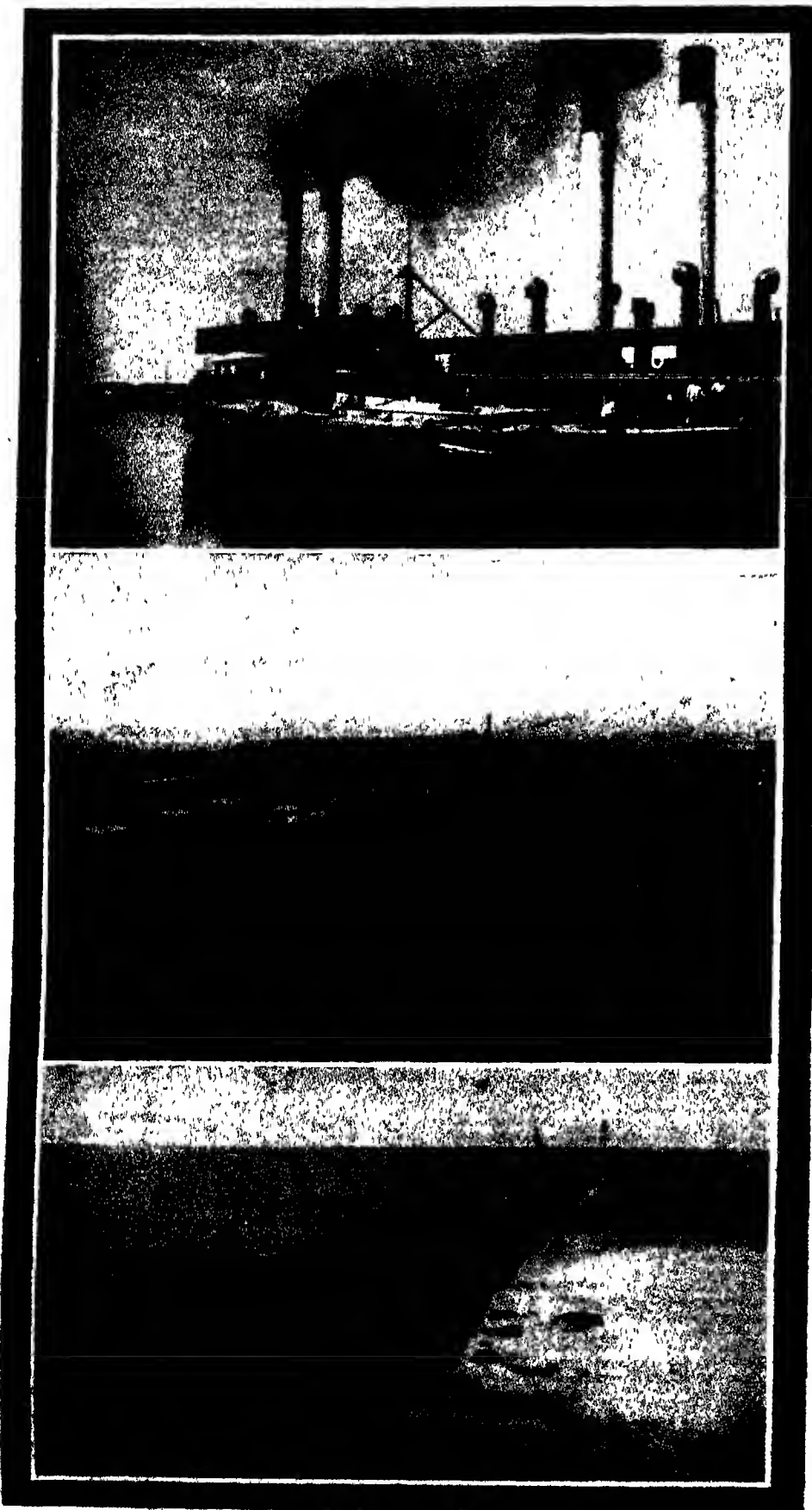
**CUSTOMS FELS.**—Rs 10 per night.

**DOCK DUES.** Rs 4 per 100 tons net reg., minimum, Rs 10, maximum, Rs 25 per day.

**LIGHT DUES.**—7 pies per ton.

**WATER.**—Charges for supplying shipping in the stream 1,000 gallons, Rs 7 a 8, at the pier or wharf, Rs 4 a 8.

**RAILWAY COMMUNICATIONS.**—Besides being the port of call for various steamship lines, chief among which is the British India Steam Navigation Company, Karachi is connected with two important railway systems and a number of trade routes from Afghanistan, Kalat and Central Asia. The North-Western Railway links the port with the Punjab, the United Provinces and British Baluchistan, while at Hyderabad (Sind) the narrow-gauge Jodhpur-Bikaner Railway connects with the North-Western line. The interior of Sind is tapped by a few small feeder railways of narrow gauge, constructed and managed by a private firm in Karachi.



#### KARACHI PORT TRUST

1. Suction Plant "Burns," built in 1925 at a cost of Rs 8,000, employed in discharging harbour silt from barges for reclamation purposes.
2. Portion of stacking area; wheat bags ready for export.
3. Manora Breakwater, constructed by Mr. W. H. Price in 1870-73.

**TRADE AND SHIPPING.**—The rupee value of the total sea-borne trade of the port of Karachi for the year 1925-26 amounted to Rs 84,03,58,462, a decrease of 2½ crores, or 23 per cent., on the corresponding figures for 1924-25, which in turn were nearly 2 crores in advance of those for 1923-24. The foreign trade accounted for 78 per cent of the total, or Rs 6½ crores, a reduction of 26 per cent on 1924-25. Exports contributed 56 per cent, and imports 44 per cent of the total value of the foreign trade, the former falling by Rs 1,788 lakhs to Rs 3,710 lakhs, and the latter by Rs 469 lakhs to Rs 2,873 lakhs. The following is a summary of the foreign and coasting trade of the port for the financial years named

FOREIGN TRADE	1924-25 Rs	1925-26 Rs
Imports	33,42,12,849	28,73,35,230
Exports	54,08,15,593	37,09,62,906
COASTING TRADE		
Imports	12,12,50,749	11,65,76,416
Exports	9,23,50,503	6,54,83,814

Rs 109,76,44,694 Rs 84,03,58,462

**EXPORT TRADE**—As is natural in a port which depends for the prosperity of its trade on the extent of the supplies of food stuffs and raw materials and produce shipped to foreign countries, the set back in 1925-26 was due in the first place to curtailed exports of wheat, barley and rape seed owing to a reduction in the world prices of the first two commodities, accompanied by a fall in the quantities available for export. The drop was most marked in the case of wheat, shipments having declined by no less than Rs 1,342 lakhs, though serious decreases were also recorded in the shipments of rape seed and barley. The unfavourable position created by the decline in the value and volume of these exports was relieved only by a notable expansion in the shipments of raw cotton, which, amounting to Rs 22.10 lakhs, as against Rs 18.60 lakhs in 1924-25, made a fresh record in the history of the port. Notable increases in exports in 1925-26 were: Skins (raw), Rs 73 lakhs, compared with Rs 55 lakhs, cotton seed, Rs 82 lakhs (Rs 39 lakhs), and rice not in the husk, Rs 91 lakhs (Rs 61 lakhs).

**IMPORT TRADE**—The position in 1925-26 in regard to the import trade was less depressing, though there was a fall in the total value of Rs 468 lakhs, due partly to a reduction in the general price level of several commodities, but mainly the result of the contraction in the values of cotton manufactures and sugar, which are the two leading commodities in the import trade of Karachi. Business in cotton goods was restricted through the heavy losses suffered by dealers owing to the drop in prices and to the disastrous speculations by many of them in sugar. Increases were recorded in metals and ores, oils, wool, motor-cars and cycles, tobacco, and fruits and vegetables; decreases in chemicals, coal and coke, cotton twist and yarn, tea, and dyeing and tanning substances.

**SHIPPING FIGURES.**—The number of vessels entering the port during 1925, exclusive of craft put back and fishing boats, was 3,565, with a tonnage of 2,869,362, against 3,647, with a tonnage of 2,486,175, in 1924. In the same year 1,036 steamers of all nationalities entered the port with a tonnage of 2,726,923, against 945 and 2,337,536 respectively in the previous year. Of these, 839 were of British nationality,

## KARACHI PORT TRUST

**Formation.**—From the year of the British Occupation, 1843, to the formation of a Harbour Board in 1880 the port of Karachi was managed by a Master Attendant and other officials who acted under the orders of the Commissioner in Sind. The necessity for the formation of a Port Trust was continually pressed upon the attention of Government, and was finally met by the passing of the Karachi Port Trust Act No. VI of 1886, a measure amended in 1902 and in subsequent years.

**Development.** Karachi, in the province of Sind, is situated on the northern border of the Arabian Sea, at the extreme northern end of the delta of the river Indus. It has the advantage of being the nearest of all the British ports in India to Europe, and is also 200 miles and 470 miles nearer to Aden and Basra respectively than is Bombay.

Karachi was quite an unimportant town of about 10,000 inhabitants when the fort at Manora, the headland on the western side of the harbour entrance, surrendered in 1839 to a British squadron commanded by Rear-Admiral Sir Frederick Maitland, of H.M.S. "Wellesley," but the census of 1921 showed a population of over 210,000. The port is the natural outlet for the produce of Sind, Baluchistan, the Phulkian and other States of the best wheat-growing areas of the Punjab and the United Provinces of Agra and Oudh.

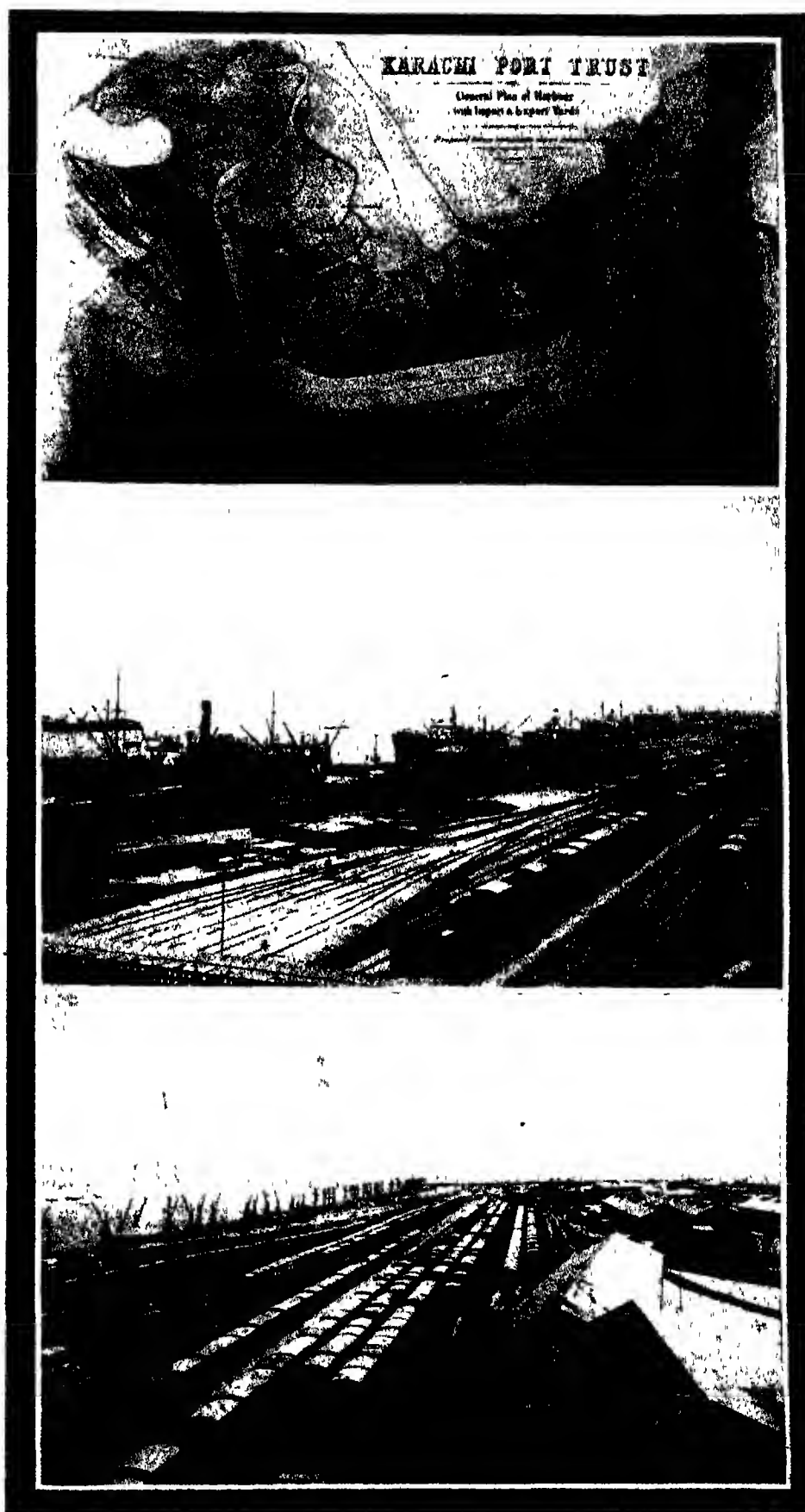
**Harbour.**—One of the first steps taken by Sir Charles Napier, the conqueror of Sind and Governor of the Province from 1843 to 1847, was the construction of a mole over 1½ miles long across the tidal marshes and the Chinna Creek between Karachi and Keamari. The last-named, now a township of some 9,000 persons, near the main entrance to the port, was at that time only a small fishing village. The causeway over the Chinna Creek was subsequently removed, having been replaced in 1864 by a steel bridge, 1,200 ft. in length and 40 ft. in width, the latter being increased to 70 ft. by the Port Trust in 1914.

The first British ship to make the voyage from England to Karachi was the "Duke of Argyll," of 800 tons burden, and she passed safely over the bar into the harbour in 1853 when there was a depth of only 21 ft. of water at high tide.

**Merewether Pier.**—During all the years before the formation of the Port Trust the question of providing safe anchorage received the most careful consideration of engineers and others among whom Mr. James Walker, C.E., was prominent in rendering expert assistance. He designed the breakwater which forms a continuation seaward of Manora headland and protects the harbour entrance from the fury of the south-west monsoon, the work being admirably carried out in 1870-3 by Mr. W. H. Price, M.I.C.E., the port engineer.

At this time (ca. 1873) the port was merely an anchorage, there were no docks, no ship piers and no wharves, and all export and import goods by sea-going vessels had to be shipped by means of country boats. The foundation stone of the "Merewether" ship pier, the first to be built, was laid by His Excellency the Viceroy of India, the Marquis of Ripon, in 1880, and this structure served a useful purpose until 1908, when the scheme of general improvements necessitated its removal. In 1906 H.M.S. "Renown" lay at this pier and received on board Their Royal Highnesses the Prince and Princess of Wales (now Their Majesties the King and Queen) at the termination of their first Indian tour.

**Accommodation (1887).**—The Port Trust Board, constituted by the Act of 1886, held its first meeting on April 4, 1887, under



KARACHI PORT TRUST.

1. General Plan of the Harbour.
2. View of Wharves and Railway System in Keamari Yards, looking North.
3. Another view of same installation.



Unloading two drums of Electric Cable at Karachi, each weighing 19 tons 3 cwt., diameter 9 ft. 8 in., width 6 ft. 2 in., the largest and heaviest drums of cable ever imported into India. Sent out by W. T. Henley's Telegraph Works Co. Ltd. for laying across the River Indus. Each contains 4,500 ft., 04 sq. in. 3-core extra high tensile 6,600 volt double wire armoured Underwater Cable.

The chairmanship of Col. R. I. Crawford C.I.E., the Collector of Karachi, when it found itself in possession of a port with facilities for accommodating steamers up to 3,000 tons burden as follows: (a) anchorage for three ocean-going steamers; (b) fixed and swinging moorings for eight similar vessels; (c) the Merewether Pier, accommodating one ocean-going steamer; and (d) the Napier Mole Boat Wharf, 680 ft. in length, for smaller craft used in country trading, while the construction of a wharfage line, 2,000 ft. in length, sufficient for five large steamers had just been commenced. The statistics given in the preceding article on the port of Karachi show how rapid has been the progress of late years, how the port has developed into one of first-class importance and become a most valuable Imperial asset.

**Reclamation.** Since the year 1900 the Board has reclaimed some 115 acres of land between Keamari and the Chinna Creek bridge, thus greatly improving the Trust's Keamari railway and produce yards, and this work has completely consolidated the area between the Chinna Creek bridge and Keamari to the north of the Napier Mole Road. In 1900 the Board purchased from the Karachi Municipality an area of 177 acres of tidal swamp, and this has been converted into a produce yard, named after the late Mr. A. Thole, an able and valued port trustee for 35 years. Since that year a further area of 61 acres has been reclaimed and is now the "Mansfield" Import Yard (named after a former Commissioner in Sind), in which there are extensive ranges of warehouses for import cargoes on the Karachi side of the Chinna Creek.

**Revenue and Expenditure.** The following figures relating to the financial years (April 1 to March 31) named show interesting variations in the annual revenue and expenditure—

YEAR	REVENUE Rs.	EXPENDITURE Rs.
1887-88	4,63,690	5,11,157
1897-98	9,03,422	8,97,841
1907-08	32,04,986	26,45,278
1917-18	66,75,962	50,78,748

(Continued next column)

YEAR	REVENUE Rs.	EXPENDITURE Rs.
1918-19	55,50,450	55,70,640
1919-20	13,22,545	52,20,033
1920-21	58,31,044	50,23,911
1921-22	63,18,378	61,27,745
1922-23	62,04,885	62,72,202
1923-24	68,08,040	61,53,085
1924-25	87,16,767	71,40,143
1925-26	94,51,210	63,99,050

It will thus be seen that in 35 years the revenue of the Port Trust has increased to over seventeen times as much as when the Trust was constituted. The revenue for 1924-25 was the highest obtained. The decrease in the revenue after 1917-18 was chiefly due to restriction on the export of wheat, but since this was removed it has steadily increased.

**Value of Trade.**—The values of the trade of the port for the years stated were:

YEAR	IMPORT Rs.	EXPORT Rs.	TOTAL Rs.
1887-88	6,18,61,331	1,08,16,877	10,26,78,208
1897-98	8,71,07,380	7,27,20,313	15,98,27,693
1907-08	21,60,01,881	11,14,26,339	32,74,28,220
1917-18	23,03,65,700	39,80,80,361	59,87,52,061
1918-19	21,13,31,710	28,92,73,501	49,73,05,211
1919-20	31,54,73,854	28,50,32,138	60,10,45,992
1920-21	50,36,96,493	29,99,02,761	80,15,99,254
1921-22	43,33,07,480	21,86,84,098	65,22,91,578
1922-23	37,02,34,431	33,85,00,332	70,87,34,763
1923-24	38,38,70,789	51,23,61,210	89,62,31,999
1924-25	49,36,43,573	13,52,80,123	83,89,32,696

**Financial Position.** In the earlier years of the port, debt was incurred by loans from Government. These were inherited by the Port Trust Board, and have since been paid. The financial position of the Trust is a very strong one, as it possesses exceedingly valuable assets in land, buildings and material, and has further established a Reserve Fund, amounting on March 31, 1926, to Rs. 45,16,000, while debts incurred by loans from the public aggregate only Rs. 4,35,24,000, the repayment of which at prescribed periods is secured by sinking funds, which now amount to Rs. 1,26,95,846. These sinking funds are maintained under Government audit.

**Extensions.**—In view of the certainty of future increase in both export and import trade on account of the Sutlej River project and the Lloyd Barrage Scheme, the Trustees

contemplate considerable extensions and improvements to the harbour. The estimated cost of the first series of which is about 3 crores of rupees equivalent to nearly £1,000,000 sterling.

**Transport.** Oversea transport is conducted through the agency of the British India Steam Navigation Co., the Ellerman City Hall, Wilson, Austrian Lloyd's and other well-known shipping companies, some of which run passenger vessels with a direct service between Karachi and England.

**Future Development.** Karachi is the principal port in India for the export of wheat, its supplies being drawn from the Punjab and the United Provinces. With the completion of the Lloyd Barrage it is estimated that nearly 6,000,000 acres of hitherto unproductive land will be brought under cultivation in British and Khairpur territories, and that the yield from this cultivation, together with additional supplies from the Punjab, will considerably increase the export trade in grain, seeds and cotton. This produce will find an outlet to the world's markets through Karachi, so that the port's future is assured, and, if railway developments keep pace with the increased traffic demands, the rate of progress should be equal to, if not greater than that experienced in the past. From time to time the necessity of providing a direct trunk line of railway communication between Cawnpore and Karachi has been represented to Government, but so far no steps have been taken to make provision for this important communication.

**Buildings.** The Port Trust Offices are a magnificent group of buildings at the corner of Bunder Road and Edulji Dinshaw Road, opposite the Karachi end of the Hardinge overbridge. The buildings are semi-circular, the exterior being treated in broad Renaissance manner; the ground floor is strengthened with channelled masonry and the two upper floors are grouped in one, with panelled piers carrying the architrave, frieze and cornice. Designed by Mr. G. Wittet, F.R.I.B.A., F.U.E., late Consulting Architect to the Government of Bombay, the buildings were constructed by the Engineering Depart-

ment of the Port Trust and completed in December 1915 at a total cost of Rs 9,74,990. The new offices were opened on January 5, 1916, by His Excellency Lord Willingdon, G.C.I.E., Governor of Bombay, and a month later the entire block was taken over by Government and utilised as a Military Hospital (No. 1 Indian General Hospital), with 500 beds and a large medical and nursing staff. The military vacated the buildings on May 6, 1919, and the various departments of the Port Trust re-entered their offices.

**The Mansfield Import Yard.**—This has already been mentioned. It is served by lines of rails from the neighbourhood of Bunder Head Station and is capable of practically limitless expansion to the W. and N.W.

**The McHinch Seamen's Rest.** This is a substantial oblong, two-storeyed structure at Kenari, on the east side of the Napier Mole Road, erected by the Port Trust about 1910 and managed by a committee, the president of which must be the Chairman of the Trust.

**Manora Lighthouse.** In 1880 the Trust decided to build the present lighthouse, at a safe distance from the Fort, from which a fixed light was exhibited. In 1900 the fixed light was replaced by the present modern 1st order Dioptric light and apparatus, with a candle power of 1,100,000 showing a flash of three-tenths of a second with an eclipse of 7/8 seconds. The light is 15 ft. above mean sea level with a range of 70 to 80 miles, and the tower is 91 ft. high, painted with red and white horizontal bands and black at the base.

**The Observatory, Manora.** Built and maintained by the Karachi Port Trust, this specially constructed building has a slit which can be opened for star observation from the north to south horizons. It is equipped with a transit and sidereal clock on isolated foundations and with two solar clocks, one of which is electrically connected with and drops the Time Ball on Blat Island at 2 p.m. Indian standard time. The meteorological instruments are in charge of the Port Trust, and weather observations are sent daily to the Director-General of Observations at Simla.

**Administration.**—The affairs of the Port Trust are managed by a board consisting of five trustees appointed by Government, four Trustees elected by the Karachi Chamber of Commerce, two by the Indian Merchants' Association, two by the Buyers' and Shippers' Chambers, one by Karachi Municipality.

### PROMINENT ENTERPRISES

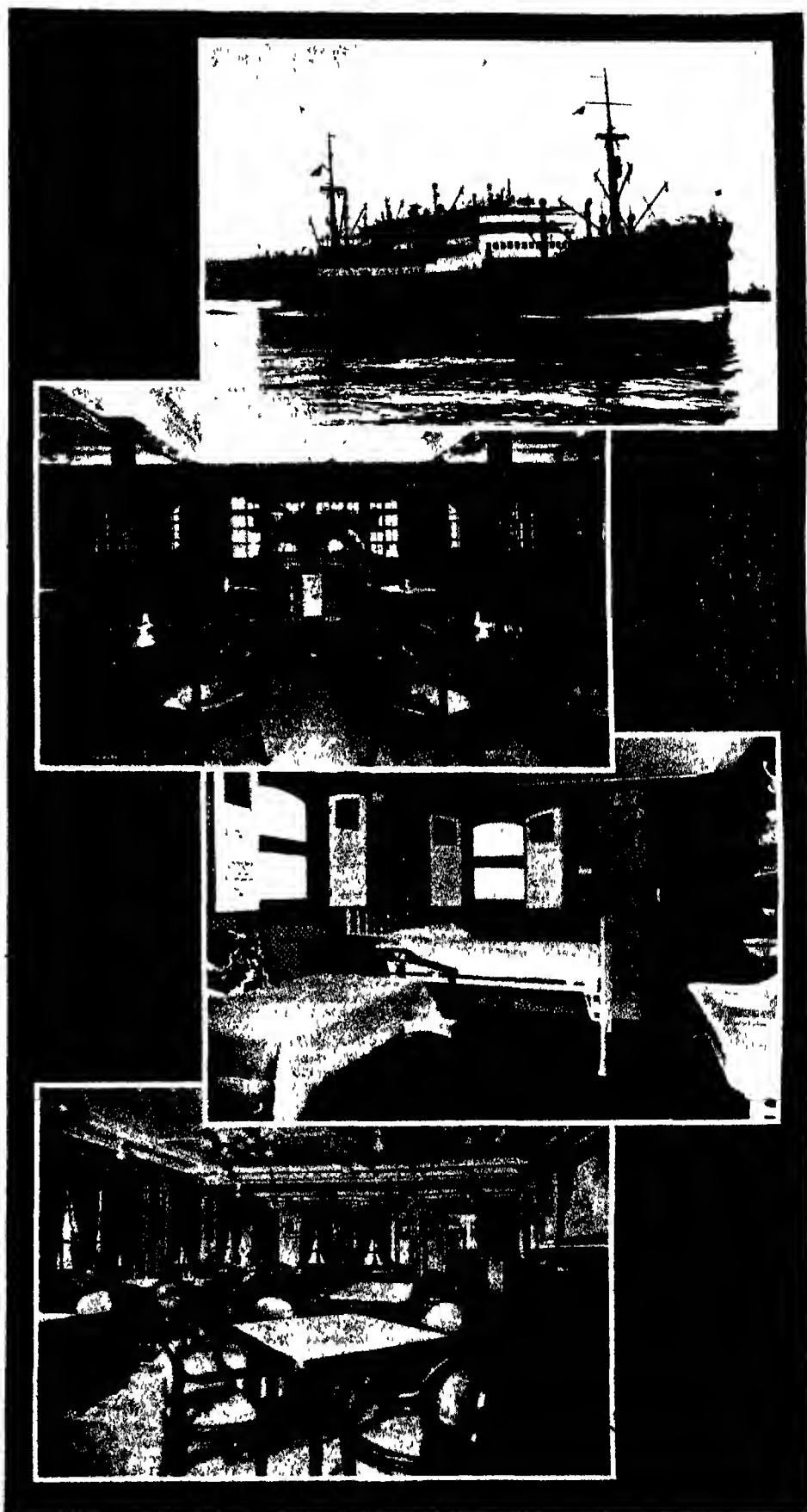
#### ANDERSON & CO.

**Inception.**—Established more than 40 years ago, this is the oldest firm of steamship brokers in Karachi.

**Activities.**—As brokers, Messrs. Anderson & Co. handle freight, wheat, cotton, indies and skins, seeds and all primary products of the Punjab and North Western India. As steamship agents they represent the Lloyd Triestino and Marittima Italiana Navigation Companies (Italian Mail and Far Eastern service), and are brokers for the Hansa Line. The company also transacts a large business in exchange and represents a number of first-class insurance companies.

**Insurance.**—The following agencies are held by the company: New Zealand Insurance Co. (fire and marine), Australian Alliance Assurance Co. (marine), London and Lancashire Insurance Co. Ltd., and Motor Car Insurance.

**Lloyd Triestino and Marittima Italiana.**—These companies maintain a joint fortnightly service between Italy and Bombay, the steamers of the Lloyd Triestino sailing outwards from Trieste, Venice and Brindisi and



ANDERSON & CO., Karachi.

1. New Motorship "Esquillo," running on the Karachi-Far East Service.
2. Smoking Saloon of one of the Boats on the Home Service—India to the Continent.
3. A Cabin on the India-Continental Run.
4. Saloon Accommodation, Far East Service.





CARLTON HOTEL, Karachi.

1. The Dining Room

2. The Lounge.

those of the Marittima Italiana from Genoa and Naples. On these services are employed modern oil-burning steamers fitted with electric fans, and ventilated throughout on the thermo-tank system. The port holes of each cabin open to the sea, and every steamer carries a laundry, a gymnasium equipped with all modern appliances and a swimming bath. Cinema performances afford the passengers a change in entertainments during the voyage, while the cuisine is excellent. The officers, crews, stewards and stewardesses are of Italian nationality. The fleet comprises the T.S.S. "Cracovia" and T.S.S. "Pilsna," both of 9,000 tons and 4,200 h.p., belonging to the Lloyd Triestino, and the T.S.S. "Genova" and T.S.S. "Aquilgia," both of 8,300 tons and 4,600 h.p., belonging to the Marittima Italiana Line.

The Lloyd Triestino Company also maintains a monthly service of motor vessels from Trieste and Venice to China and other Far East Ports, calling en route outward at Karachi and Colombo. These new vessels combine all modern improvements, and have excellent saloon (one class) accommodation for passengers. Messrs Anderson & Co's Karachi office will give all information as to

accommodation from that port to Colombo and the Far East.

The services of the Lloyd Triestino and Marittima Italiana companies have a high reputation for comfort and punctuality.

**Offices.**—Volkart's Buildings, McLeod Road, Karachi (cables "Nosredna," Karachi).

#### CARLTON HOTEL.

**Situation.**—Within two minutes' walk of the Cantonment Railway Station, the terminus for the residential part of Karachi, this hotel is most conveniently situated, being away from the noise and dust of the city proper, yet forming an admirable centre for residence.

**Accommodation.**—There are 47 rooms, single, double and in suites, each bedroom having its own bathroom and verandah and being fitted with overhead electric fans. The dining room is one of the largest and airiest in India, cooling breezes being continually wafted through the open arches from the verandah, while the comfortably furnished lounge, which adjoins the dining room, serves as a pleasant rendezvous for guests and visitors. The bedrooms are exceptionally large, even for the East, and are furnished to secure the maximum of comfort.

**Facilities.**—Visitors to this hotel will find at their command all the facilities usually obtaining at a first-class European establishment of the kind. The hotel porters meet all trams and steamers to supervise the transport of guests' luggage.

**Dances.**—A guest night is held every two weeks, at which there are usually 100 or 120 patrons, who dance to the accompaniment of high-class music rendered by an English band. These dances have proved very popular, and rank among the social functions of Karachi.

**Residents.**—There are always a large number of resident guests at the hotel, and visitors to Karachi for any length of time will be well advised to make this hospitable place their home during their sojourn in the city.

**Management.**—The hotel is under the personal supervision of the proprietress, Mrs. Croal, whose courtesy and attention to the comfort of guests have made it the best known and most popular of such establishments in Karachi.

**Address.** Bonus Road, opposite Cantonment Station (cables "Carlton" Karachi).

#### INDIA FLOUR MILLS, LTD.

**Inception.** The buildings of this well-known firm were completed in 1910, being erected on land more than six acres in extent.

**Development.** The following quotation from the pen of an expert writing in a leading English milling journal is a note worthy tribute to this organisation: "I have been all through the India mills, and am very pleased indeed with the way the miller is working this mill (The India Flour Mills). He has all the rollers working and the feeds are very evenly distributed throughout the buildings. The grinding is even, true, and lively without any flaking, even on the last reduction. The finished flour is bright and pure and I can well understand that the demand is greater than they can supply if the price is the same as other millers, for certainly the 'household' grade is to my mind well above the standard I have seen in other mills."

**Capital.** The authorised capital is Rs. 6,00,000 in 6,000 shares of Rs. 100 each; the subscribed capital stands at the same figure, the amount paid up being Rs. 5,10,000.

**Activities.**—Only the finest samples of flour-making wheat are used, and the mill is kept working day and night (except Sundays) to meet the demand. The average output for 24 hours is 1,000 bags of flour, each 190 lbs., 300 bags of attas, each 164 lbs., and 600 bags of sharps and bran, each 112 lbs. The term flour includes semolina or sooji, the high-class "patent," "superfine" and the baker's grade known as "households."

**Premises and Plant.**—The mills embody the latest improvements in constructional work. The whole of the machinery, erected on Turner's system, is driven by suction gas producing power, developing 600 indicated h.p., transmitted by 18 ropes from a flywheel, while an electrical lighting plant supplies the illumination. The firm has several large godowns and sheds for the storage of wheat, flour and other products.

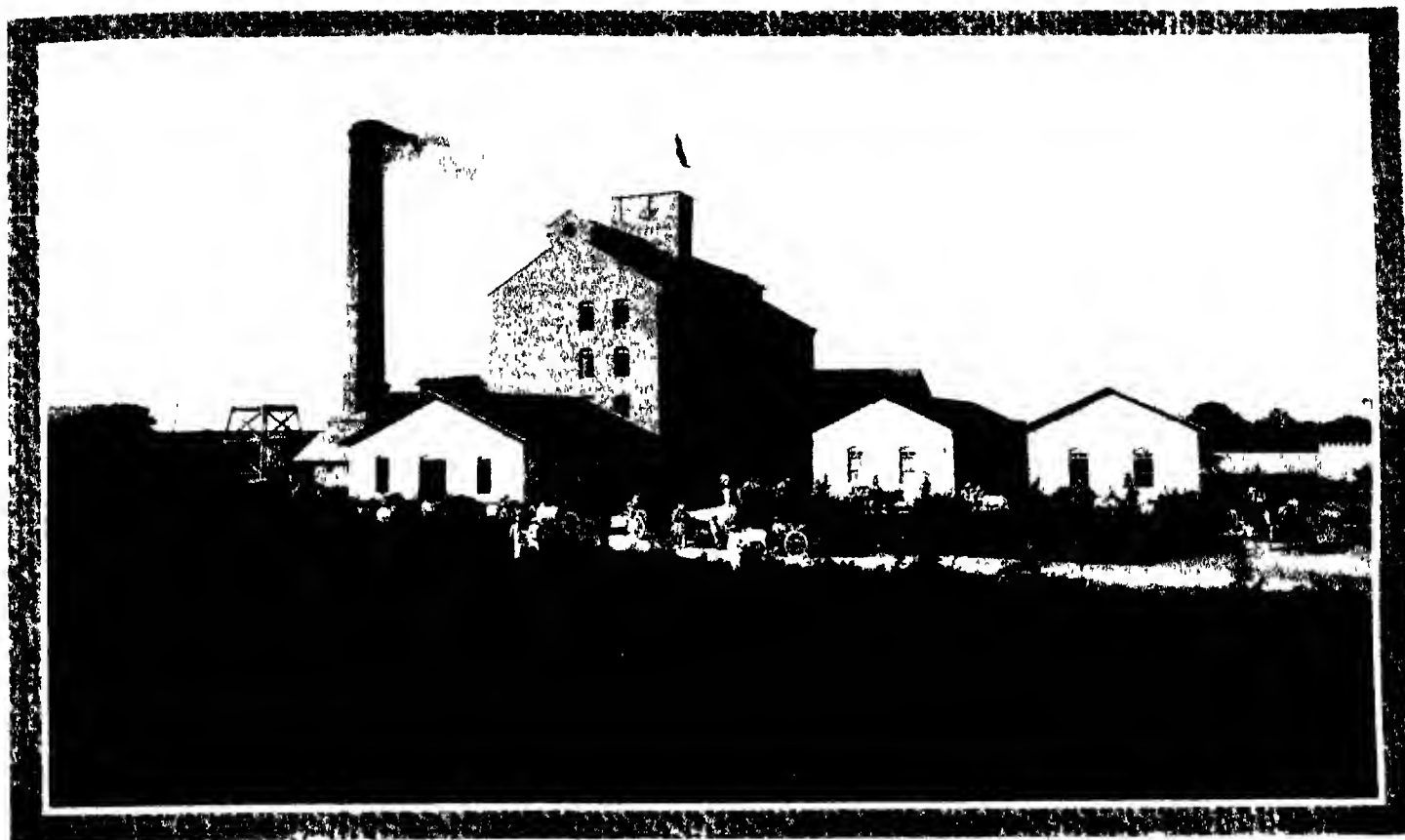
**Directors.**—Messrs E. Raymond, B.A., LL.B. (chairman), Dr. George Pires, Barr-at-Law, L.R.C.P., M.R.C.S., I. Sequeira, P. V. Castellino, I. J. Carneiro and A. N. Menezes.

**Offices and Mills.**—Lawrence Road, Clifton Town, Karachi (cables: "India-flour," Karachi).

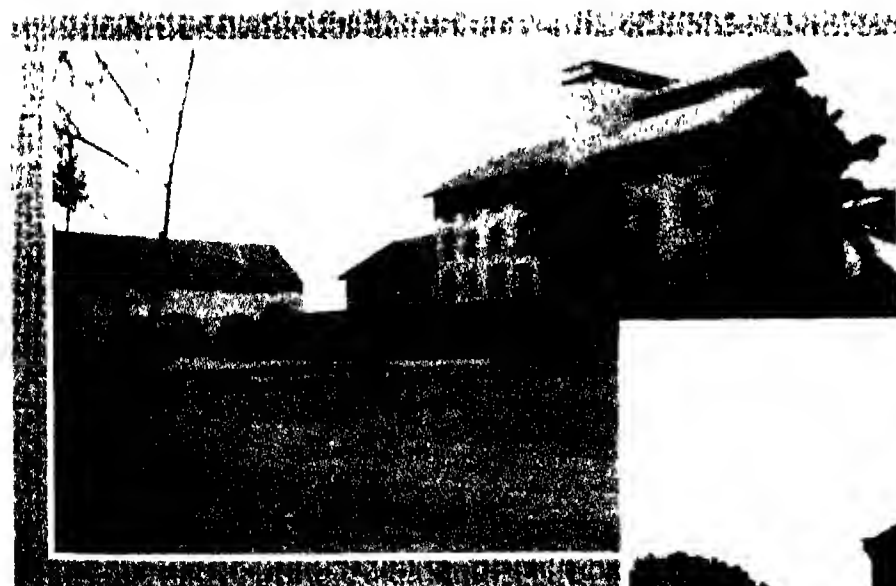
#### SIND FLOUR MILLS CO., LTD.

**Inception.**—Incorporated in 1896, this is the oldest commercial flour milling organisation in Karachi. The promoter was Mr. George Miller, who remains a director of the company.

**Development.**—Commencing with one mill, the business progressed so satisfactorily that



INDIA FLOUR MILLS LIMITED, Karachi Western View of the Mill.



in 1906 it was decided to double the capacity. Accordingly, a second mill was built and commenced working in 1907. It has again been found that the capacity is insufficient to meet all requirements, and a scheme is now under consideration whereby the output will be considerably increased and the mills brought thoroughly up-to-date.

**Capital.**—The capital of the company is Rs. 3,00,000, divided into 600 shares of Rs 500 each, of which 587 shares have been issued and fully paid.

**Output.**—The combined output of the two mills is now equal to 20 sacks per hour, requiring about 900 bags of wheat per day. The firm's products are "Sooji," "Rawa Superfine Flour," "Household Flour," "Atta No. 2" and "Atta No. 4," and bran and pollard, all of which are packed in sacks bearing the company's "Palm Tree" brand. The company has no agents but deals direct with buyers or through correspondents.

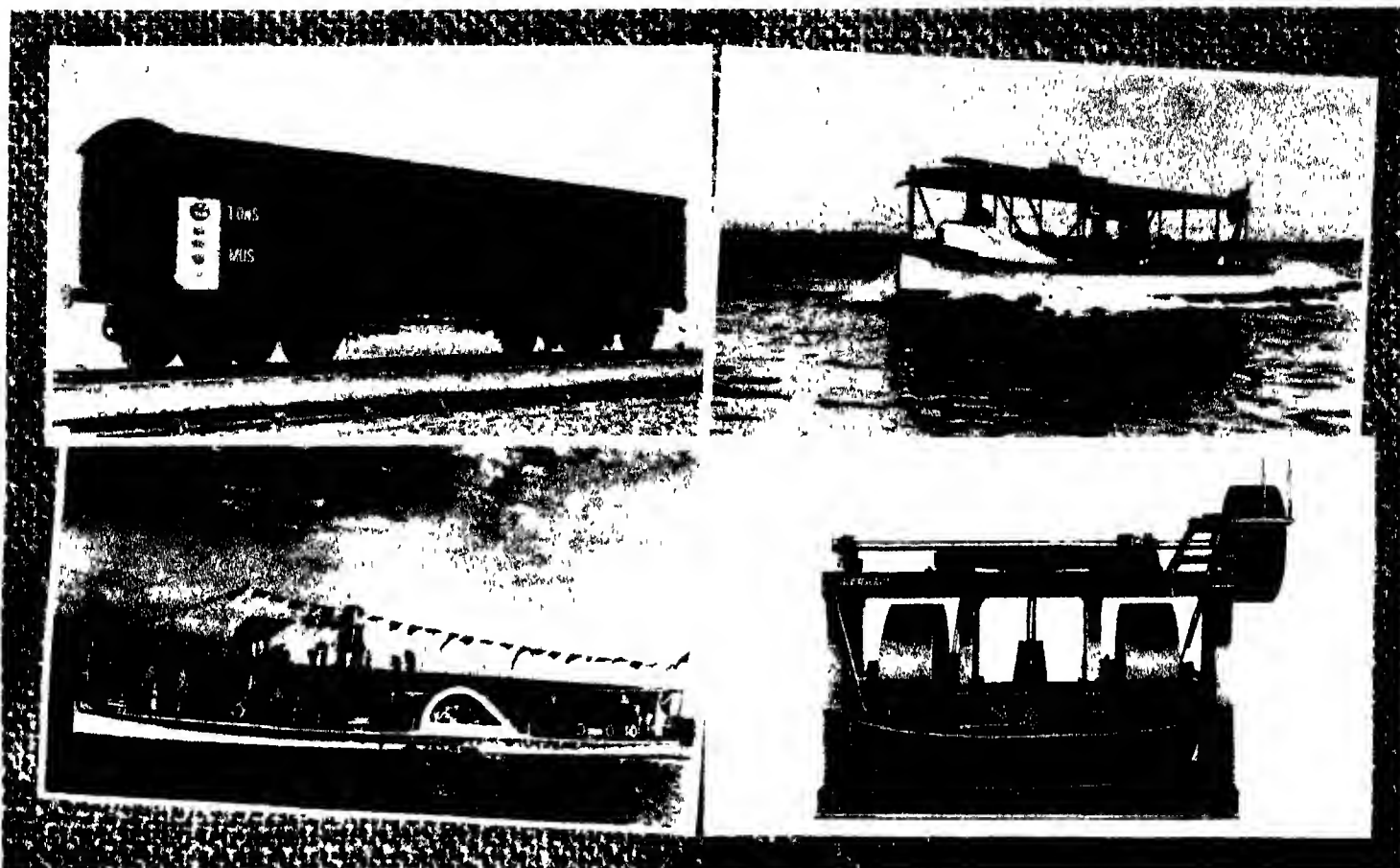
**Distribution.**—A proportion of the products is consumed in Karachi and district, and a



SIND FLOUR MILLS CO., LIMITED, Karachi.

1. The second Mill.

2. The original Mill.



B. R. HERMAN &amp; MOHATTA LIMITED, Karachi

1. One of many 42-ft Bogle Wagons supplied to the North Western Railway  
3. Paddle Steamer used for Ferry Service on the Indus

2. Shallow-draft River Motor Launch  
4. Overhead-drive Mortar Mill.

considerable business is done with near-by coast ports, also with Tuticorin, Colombo and Madras. In the north the company's products are well known at all Persian Gulf ports, and a good quantity goes to Basrah and Bagdad; other markets are Mauritius, Jeddah, Port Sudan and Egypt.

**Equipment.**—The machinery for both mills was supplied by the well-known milling engineers, Henry Simons Ltd, Manchester.

**Directors.**—Messrs W. D. Young (chairman), George Miller, F. K. Soparivala and K. K. Soparivala.

**Mill Agent and Managers.**—The agent for the company is Mr Soparivala, the manager is Mr R. F. Keeling, and the mill manager Mr W. Miller.

**Offices.**—Dhobie Ghat Road, Karachi (cables "Mill," Karachi). Codes: A B C, 5th Edition and Bentley's Complete Phrase.

**Bankers.**—National Bank of India, Ltd.

#### **B. R. HERMAN & MOHATTA, LTD.**

**Inception.**—The possibilities for engineering concerns arising from the development of North Western India were quickly seized upon by Mr B. R. Herman who founded the firm under notice in 1883. Originally a private concern trading under the name of B. R. Herman & Co., it was converted into the present limited liability company in 1919.

**Capital.** The authorised, subscribed, and paid up capital is Rs 10 lakhs.

**Activities.** Having made steady progress, the firm ranks to-day among the leading engineering concerns in India, devoting its energies mainly to constructional steel work—railway rolling stock of all gauges, bridges, cranes, barges, pontoons, bulk oil tanks, sheds, mooring buoys, well curbs, agricultural and other machinery, shipbuilding up to about 300 tons, and general contracts. Among the latter may be mentioned the British Residences at Bagdad and Bundar Abbas, and the Hannah Lake Dam near Quetta.

The company has a reputation for producing steam and motor-driven tugs and launches equal in every way to the products of the best known British yards, and several boats are still in service in Karachi Harbour which were built over 30 years ago.

**Agencies.**—The firm maintains an Engineering Sales Department which acts as technical and selling agents in North West India for a number of well-known British manufacturers of machinery, engineering plant and stores, amongst whom are the following: Marshall Sons & Co. (India) Ltd.; Blackstone & Co., Ltd.; Gwynnes

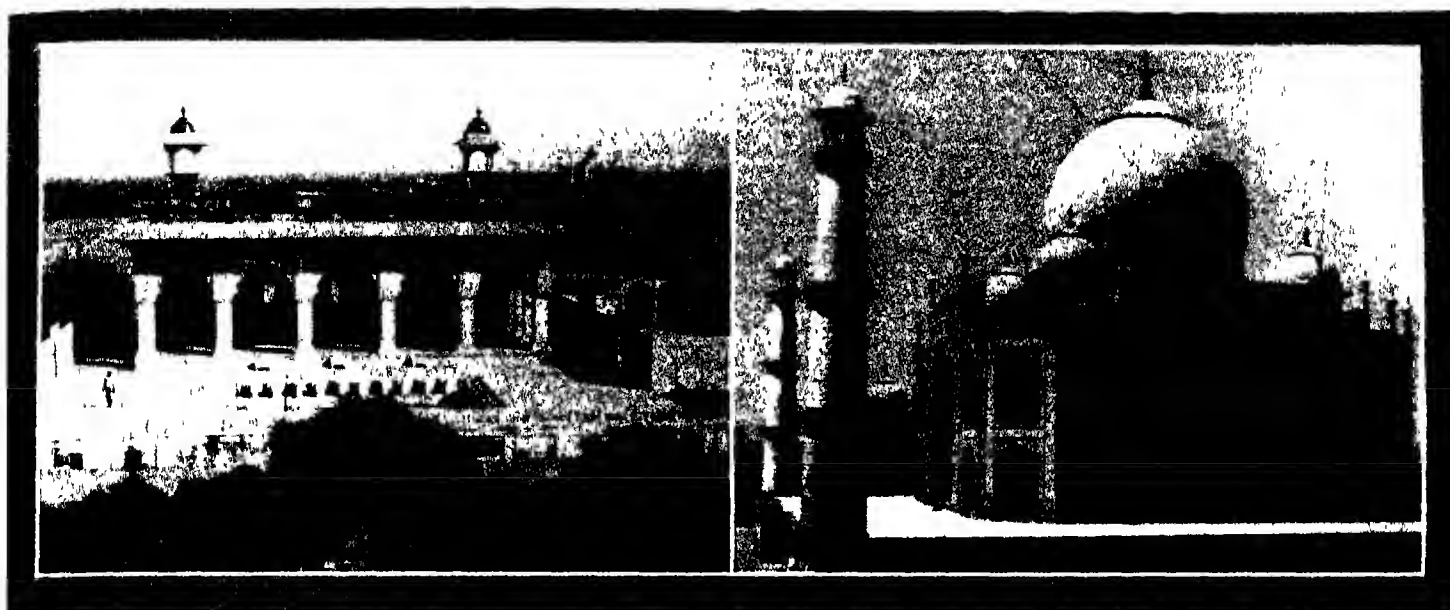
Engineering Co., Ltd.; Hayward Tyler & Co., Ltd.; A. Ransome & Co.; Small & Parkes, Ltd.; Manchester; Arthur Balfour & Co., Ltd.; Sheffield; Warrington Wire Rope Works, Ltd.; Liverpool; Consolidated Pneumatic Tool Co., Ltd.; Mitchell Conveyor & Transporter Co., Ltd.; Wales Dove Bitumastic, Ltd.; John M. Henderson & Co., Ltd.; Aberdeen; Bergius Co., Ltd.; Glasgow; Blacklock & MacArthur Ltd.; Glasgow.

**Works.**—The Vulcan Iron Works at McLeod Road, covering an area of about 36,000 square yards, are equipped with modern machinery and a foundry capable of handling castings up to 5 tons.

**Directors.**—The directors of the firm, which is a member of the Indian Engineering Association, are Messrs B. R. Herman (chairman), L. B. Herman (managing director), Ramgopal G. Mohatta, Shivrattan G. Mohatta (finance director), B. E. Herman, and Chandratan G. Moondhra.

**Offices.**—McLeod Road, Karachi (cables: "Expansion," Karachi). Codes: A B C, 4th and 5th Editions, Bentley's Phrase and Engineering 2nd Edition.

**Bankers.**—The Chartered Bank of India, Australia and China.



1 Akbar's Palace, Agra, with Taj-Mahal in background

2 Close-up view of Taj-Mahal, at Agra.

## INTERIOR PROVINCES

### BIHAR AND ORISSA

THIS administrative province of the Indian Empire includes the three sub-provinces of Bihar, Orissa and Chota Nagpur, lying to the south-west of Bengal. The area of the British territories which constitute the Governorship of Bihar and Orissa is 83,181 square miles inclusive of the area of large rivers. In addition to the districts which are directly under British rule, there are two groups of petty States which lie to the south and south west of the Province, and which under the name of the Feudatory States of Orissa and Chota Nagpur, are governed each by its own Chief under the superintendence and with the advice of the Political Agent and Commissioner, Orissa Feudatory States. The area of these territories is 20,650 square miles and as it is usual to include them when speaking of Bihar and Orissa, the extent of the whole Province may be stated at 103,837 square miles. The population at the last census numbered 37,961,858 and is almost entirely rural, no fewer than 903 per 1,000 living in villages. The principal industry is agriculture, Bihar (more especially North Bihar) being known as the "Garden of India." Rice is the staple product, but the spring crops, wheat, barley and the like, are of considerable importance. Oilseeds are also a prominent crop and the cultivation of sugar cane has largely succeeded that of indigo. Opium production has declined in consequence of the agreement with the Chinese Government. The principal industrial centres are Jamshedpur, where the Tata Iron and Steel Works are among the largest of their kind in the world, and Monghyr, noted for its cigarette factories. The iron and coal fields of the Province have shown enormous development during the present century.

#### CUTTACK

A pleasantly situated town on the Mahanadi River, Cuttack is the headquarters for ad-

ministrative purposes of the sub-province of Orissa. It has an area of about four square miles and a population of some 51,000. Cuttack was founded in the 10th century A.D. by one of the kings of the Kusan, or Laou, dynasty. Its position as the key to the Orissa hill territory and the centre of the Orissa canals gives it both military and commercial importance. It is famed for its filigree work in gold and silver. There are two clubs, one European and one Indian, a Circuit House, the Ravenshaw College (which is affiliated to Patna University), a Medical School and the Orissa School of Engineering.

#### DINAPORE

Situated in the district of Patna on the East Indian Railway, Dinaapore, a town of 50,000 inhabitants, has a number of thriving industries and a widespread reputation for its excellent cabinet-work, furniture, oil and printing presses, foundries and other establishments. The name Dinaapore is derived from the word *dana* and means "City of Gran" the town being an important centre of the trade in cereals.

#### JAMSHEDPUR

The great industrial centre of Jamshedpur, where is situated the parent company of the Tata Iron and Steel Works, is now the pivot of a ring of industries, covering tin-plates, agricultural implements, jute machinery, enamel ware, locomotive parts, etc. The population already exceeds 80,000 and is growing rapidly. The town is maintained at a high level of efficiency, having its own sewage disposal and water purification plants, the latter having been installed by the Paterson Engineering Company. The Paterson filters deal with a daily duty of 2,500,000 gallons and are capable of extension up to 12,000,000 gallons a day.

#### MONGHYR

A municipal town in the Bhagalpur division of the Province of Bihar and Orissa, Monghyr

has a population of 48,000. The chief attraction of the place is a fort, with walls of great extent which surround a high mound, the site of a citadel in earlier days. Monghyr is noted for the manufacture of arms and ebony work and possesses a large cigarette factory.

#### PATNA

Patna (locally known as Azimabad), formerly celebrated as one of the agencies by which the Government monopoly of Bengal and Bihar opium used to be worked, is the largest city in Bihar, is situated on the south bank of the Ganges, and has a population of 120,000. Occupying the site of an ancient city which is known to have existed five centuries before Christ and at one time to have been the metropolis of India, modern Patna is a long straggling place of business premises and brick residences in the European quarter, and of mud and tile-roofed huts in the bazar and native quarters. Bankipore, which is the western suburb of Patna, is an entirely modern and up-to-date Indian town, well laid out with Government and other public buildings. Patna College is one of the best in India, and near it are the Temple Medical School and Patna Hospital. The Patna Oriental Library, founded by Maulvi Klunda Baksh Khan Bahadur, contains a number of beautiful Persian and Arabic manuscripts, also some rare examples of Oriental calligraphy.

### THE UNITED PROVINCES

The United Provinces of Agra and Oudh lie in practically the centre of Upper India, and occupy an area of 106,295 square miles, with a population of 46½ millions. Since 1921 they have formed a province under a Governor, who is assisted in the administration by an Executive Council of two members and a Legislative Council of 123 members, of whom 100 are elected.



1. AGRA Garden and Great Gateway at Sikandra, Mausoleum of Akbar

2 AGRA Mausoleum of Prince I'timad-ud-Daulah and the Garden

The principal industry is agriculture, which supports no less than 75 per cent of the population, and the greater part of the provinces is highly cultivated, yielding excellent crops of rice, millet, maize, linseed, cotton, wheat, sugar cane, pulses, barley and poppy. Cotton

is ginned and spun throughout the provinces as a home industry, and weaving by means of hand-looms is carried on in most districts. Silk-spinning is confined almost entirely to the district of Benares, the embroideries of Lucknow are famous, and there are large

cotton factories at Aligarh, Meerut, Bareilly and Mirzapur. The main line of the East Indian Railway intersects the province, which in 1925 had over 7,500 miles of metalled and 28,000 miles of unmetalled roads.

#### AGRA

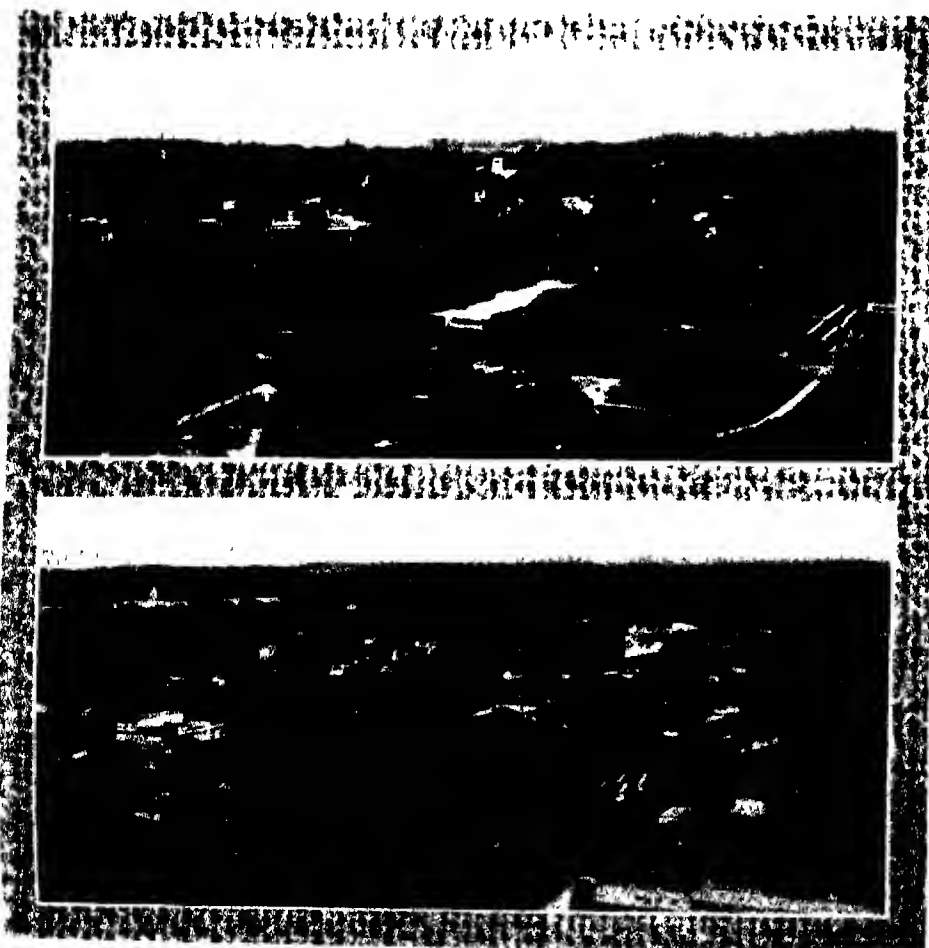
See under "Tourist Resorts."

#### ALLAHABAD

Capital of the United Provinces of Agra and Oudh and the seat of a University, Allahabad is situated 316 ft above sea-level on the left bank of the Jumna, on a wedge of land between it and the Ganges. The present fort and city were built by Akbar in 1583, but the Aryans possessed a very ancient city here called Prayag, which the Hindus now call Prag (place of sacrifice). It is a very sacred town with them, for they believe that Brahma performed a sacrifice of the horse here in memory of his recovering the four Vedas. After having changed masters many times, Allahabad was ceded to the British in 1801. In 1857 the city and cantonment played a prominent part in the Mutiny. Population, 157,220.

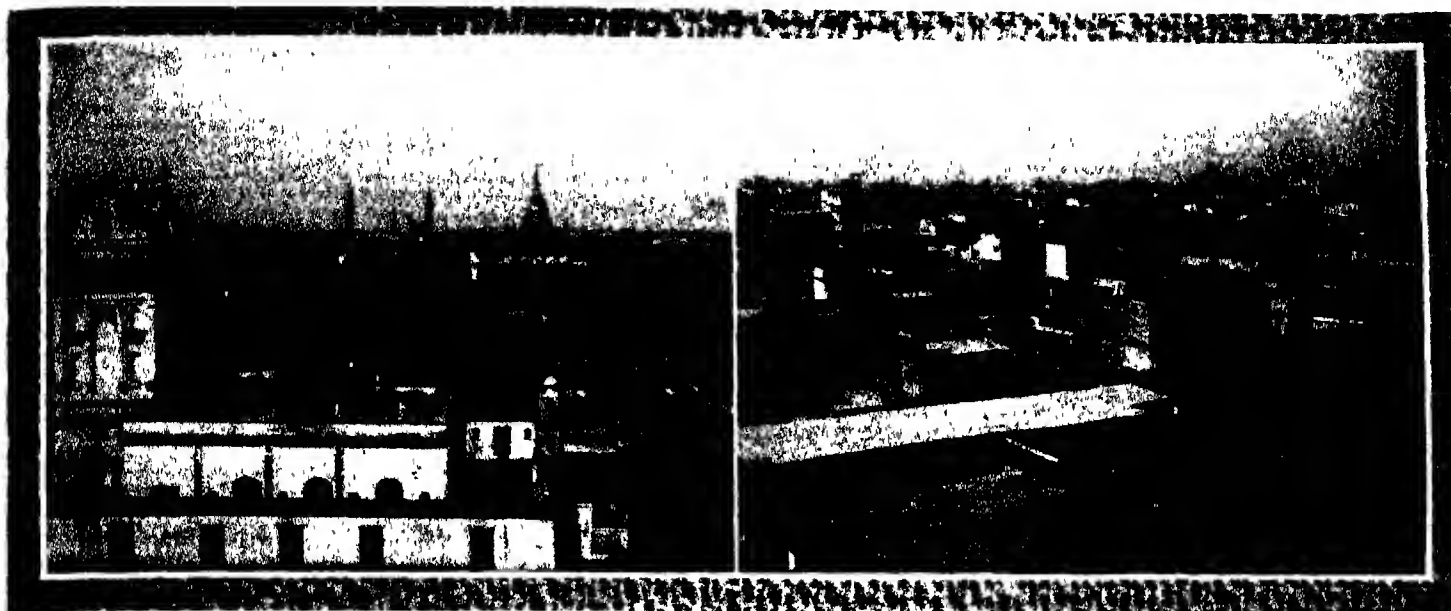
**BUILDINGS, ETC.**—The Fort forms a striking object from the river, but its high towers have been cut down and the stone ramparts topped with turfed parapets and fronted with a sloping glacis. The principal gateway is capped with a dome and has in addition a wide vault. The Zenana building of the Old Palace has been well restored and has wonderful examples of rich ornamentation. In front of the gateway inside the Fort is Asoka's Pillar, which rises 35 ft above ground and is of much interest on account of its great antiquity. The famous Akshai Bat, or Undying Banyan, is said to have existed in the seventh century, but probably the stump has been renewed from time to time. Modern erections of note in Canning Town, the European quarter, are All Saints' Cathedral, a fine 13th century Gothic structure, the Roman Catholic Cathedral, in the Italian style, the English Club, the Mayo Memorial Hall, the Muir College, and the New University buildings. The Khusru Bagh is a well-kept garden containing some interesting tombs.

**MAGH MELA.**—The Magh Mela, a religious fair of great antiquity, to which Allahabad probably owes its origin, occurs every



ALLAHABAD.  
Portions of the City, with the Ganges in the distance.





CITY OF CAWNPORE

year about January. On the chief day, called the Amawas, of the fair about a million pilgrims bathe (in ordinary years) at the confluence of the sacred rivers, at the Kumbh Mela, held every twelfth year, the number of bathers on the Amawas day is between three and four millions. On ordinary days the attendance would, in normal years, be about 20,000, in the Kumbh year it might be 200,000.

**WATER SUPPLY.**—The water supply for the city of Allahabad and cantonnments is pumped from the Jumna River and after natural settlement is filtered for distribution. The Allahabad Municipality has recently put in hand a very extensive waterworks reorganization scheme, including a new Paterson water purification plant. The estimated total cost of these new works is Rs 46 lakhs and on completion they will be among the finest of the kind in the world.

#### BAREILLY.

Bareilly is the capital of the country of Rohilkhand, in the United Provinces. It passed to the British by cession in 1801, was one of the prominent places of the Indian Mutiny in 1857, and has always been noted as a centre of religious differences which have often threatened to develop into actual fighting. The city, with a population of some 130,000, contains some fine bazars and mosques, and was always famous for its splendid avenues of bamboos, from which it is commonly called Bans Bareilly.

#### BENARES.

Benares is the second largest city of the United Provinces, but its population of 198,447 includes a great number of pilgrims and is liable to considerable fluctuation. The antiquity of the city is attested by its mention in several of the ancient chronicles, but details of its history are very scanty, and even the Puranas record only one dynasty of kings. It was close to Benares that Gautama Buddha commenced to preach. The city is accordingly one of the holiest of places to the orthodox Hindu and attracts great concourses of pilgrims, while many of its inhabitants are persons who have settled there in the hope of salvation through a death within its sacred

precincts. Every pilgrim besides visiting the various holy spots, must make the circuit of the Panch Kosi road (unnietalled) outside the city round the sacred territory of Benares, commencing at the Manikarnika Ghat, proceeding by the Asi Ghat, and returning by the Barna Ghat. The route, which is 36½ miles in length and the pilgrimage along which occupies six days is picturesquely lined by fine trees and small shrines. The end of each stage is marked by a village, with numbers of temples and small rest houses.

**DESCRIPTION.** The native city extends for four miles along a limestone ridge on the north-west bank of the Ganges, which forms a slightly curved reach below it, thus permitting the eye to take in at a single sweep the long line of picturesque ghats, surmounted by irregular buildings of various styles and proportions, the slender white minarets of Aurunzebe's Mosque rising high above the general level. For from one to two miles from the bank the city consists of winding labyrinths and alleys lined by many-storied buildings, used as shops and shrines in every part, ranging from a shapeless fragment of stone smeared with vermilion to magnificent temples. Rajah Man Singh of Kanpur is said to have presented thousands of temples to the city in a single day.

**BUILDINGS, ETC.**—To enumerate all the temples and shrines of Benares is clearly impossible within a small compass. One of the most revered is the Golden Temple, dedicated to Siva as the Lord of the Universe, with many interesting and beautiful features. The great Mohammedan Mosque, usually attributed to Aurunzebe, but probably built by Jahangir, lies to the north-west of the Gyan Kup, or "Well of Knowledge." Other Mohammedan monuments of interest are the tomb of Lai Khan (1725 A.D.), the Palang Shahid, and the Gang-i-Shahidan Mosque. Famous Buddhist temples are the Shrine of Sanchar, the temple of Shakh Vinayak and the Argal Kangura mosque. From the palace and fort of the Maharajah of Benares at Ramnagar, on the right bank of the Ganges, a splendid view of the river front can be obtained.

**MODERN BUILDINGS.**—These are by no means insignificant, the finest being the Town Hall, which was built at the sole expense of a Rajah of Vizianagram, the King Edward VII Hospital, Queen's College and St. Mary's Church.

**GHATS.**—The finest view of Benares is obtained from the River Ganges, the banks of which are bordered by *ghats*, or flights of stone steps, descending to the water from the most famous buildings in the city. The Asi, Barna and Manikarnika Ghats have already been mentioned. The latter is considered the most sacred of all the *ghats* and in November is visited by multitudes of pilgrims. The Desaswamedh Ghat is one of the five celebrated places of pilgrimage, the others being the junctions of the Asi and Barna with the Ganges, and the Manikarnika and Panchiganga Ghats. The first named is specially thronged during eclipses. Here Brahma is said to have offered in sacrifice ten horses, and to have made the place equal in merit to Allahabad. Beneath the Panchiganga Ghat the five rivers are supposed to meet.

**INDUSTRIES.**—The wealth of Benares depends largely upon the influx of pilgrims from every part of India. Many of the Hindu chiefs have town houses in holy Kasi and the city thus absorbs a large share of the agricultural produce of the district, besides acting as a distributing centre. The ornamental brass work, which is met with all over the world, has always been a speciality of Benares, but the modern work is far less carefully executed than the old, which is now difficult to procure. Small idols and other images in brass and other materials are made in great quantities in the narrow lanes around the Golden Temple. Shawls, brocades and embroideries are also manufactured in Benares, and there is a good trade in jewellery and lacquered wooden toys.

#### CAWNPORE.

Cawnpore (the city of Kanh, or Krishna) is the twelfth largest city of the Indian Empire, having a population of 216,436, and is situated

on the right bank of the Ganges, 270 miles from Delhi. Its importance as a great commercial centre dates from its cession to the East India Company by the Nawab Wazir of Oudh. The place, which is of no great antiquity, owes its present size and importance entirely to the British, its development having largely coincided with that of the railway system of Upper India. In addition to the East Indian Railway, the Oudh and Rohilkand broad gauge system passes through Cawnpore, providing through communication with the northern part of the United Provinces and with Bombay, while the narrow gauge lines traversing Rajputana and Central India on the west and the district north of the Gogra and Bihar and Bengal on the east meet here.

The chief interest of Cawnpore for Englishmen lies in the terrible events of the Mutiny in 1857. (See under "History.")

**BUILDINGS, ETC.**—Many of these, as is natural, are closely and indelibly associated with the Mutiny. The Memorial Church, built on the north-east edge of the entrenchment, is in the Romanesque style. Costing over £20,000 and consecrated in 1875, it contains an interesting series of memorials to those who fell near here in the Mutiny. A fine view of Cawnpore is obtained from the belfry. The Sati Chaura Ghat, east of the Church, is the site of the massacre on June 27, 1857. Higher up the river, near the fine bridge of the Oudh and Rohilkand Railway, was the pontoon bridge over which the convoy, three miles long, of women and wounded, brought by Sir Colin Campbell from Lucknow, passed, and here was Windham's small entrenched camp, the site of which is now occupied by the Government Harness Factory. From the head of the Sati Chaura Ghat raving the road runs north over the railway and the Ganges Canal and past the Queen's Park, with a statue of the Queen Empress, to the Memorial Gardens, situated at the east corner of the city. These are beautifully laid out and well kept, and in the middle, upon a mound raised over the well in which the victims of the Bibi-garh massacre were buried, is the memorial in the form of an octagonal Gothic screen, with Marochetti's Angel of the Resurrection. The King Edward Memorial Hall, in Queen's Park, is a fine building used for public functions and entertainments.

**INDUSTRIES.**—Cawnpore is a great collecting and distributing centre for raw products, such as cotton, food grains, oil seeds, salt, saltpetre, sugar and foreign manufactured goods. It is also a large manufacturing town, being a great emporium for harness, shoes and other leather work, and the principal centre of the cotton-mill industry in Northern India. The Upper India Chamber of Commerce has its headquarters here.

#### LUCKNOW.

Formerly the capital of the Kingdom of Oudh, Lucknow is now the junction of several branches of the Oudh and Rohilkand Railway. It is the greatest city in the United Provinces, its population at the last census totalling 240,566, including the cantonments. These latter are the most extensive in the United Provinces, Lucknow being garrisoned by British and Indian regiments of both infantry and cavalry, and by garrison and field artillery. The city has been a municipality since 1862, and is provided with a good water supply and drainage system.

**BUILDINGS.**—To Europeans, the central feature of Lucknow must always be the Residency (see later), but there are other buildings, both old and new, of great interest. The Moti Mahal, from which the King of

Oudh used to watch the fights between wild animals on the farther side of the river, the Shah Najaf and the Kadam Rasul all played their parts in the siege of 1857. The former palaces of the kings of Oudh are situated to the north up to the river-bank, but many of these have been adapted to European use and are utilised as Government offices, etc. The Jama Masjid, begun by Muhammad 'Ali Shah, is perhaps the most satisfactory specimen of Oriental architecture in Lucknow. The Nadan Mahal and tomb of Ibrahim Chishti, in the centre of the city, are also fine specimens of early Moghul architecture.

Government House, the Martinière, one of the best European schools in India, Christ Church, the Provincial Museum and the Post Office and Husainabad Clock Tower are the most prominent modern buildings.

**INDUSTRIES.**—The industries of Lucknow are no longer of great importance, though there are large railway workshops, printing presses, flour mills and an iron foundry. At one time rich fabrics and costly jewellery were manufactured here, but production in this particular has virtually ceased. Lucknow, however, is still noted for its *chikan*, or embroidery in silk or cotton on muslin, and for embroidery with gold and silver thread. Its silver-work has a good reputation, and the Lucknow potters and clay modellers are pre-eminent in the whole of India.

**PARKS AND GARDENS.**—Lucknow covers a vast area on the south of the Ganges, with suburbs extending across the river. It is often called the "City of Parks," and no place in India has more extensive or more tastefully laid-out open spaces. The Wing field and Victoria Parks, the Kaiserbagh, the beautiful Horticultural Gardens, the Sikandarbagh, and the Alambagh, which contains the grave and memorial of General Havelock, are the chief of these.

**RESIDENCY (THE).**—The stirring siege of Lucknow during the Mutiny of 1857 has made the city for ever famous in the annals of the British Empire, the Residency being the scene of the prolonged and gallant defence that was maintained by the garrison the siege lasting from July 1 to November 17, 1857.

The mound occupied by the ruins of this historic structure lies to the north of the Charbagh. The shattered walls of the main block of buildings in which Sir Henry Lawrence received his fatal wound, Dr. Fraser's house, where he died, the noble banqueting hall used during the siege as a hospital, the cellar where the women and children took refuge, and several other buildings are still standing, while high above all the topmost tower rears its battered sides. Further decay has been prevented by carefully executed repairs, and the grounds have been levelled and turfed. In one corner, under the shade of many cypresses, are the tombs or cenotaphs of over 2,000 Europeans who perished during the Mutiny. In front of the Baillie Guard is a memorial erected by Lord Northbrook to the faithful Indian soldiers who shared the defence with the British.

**WATER SUPPLY.**—The crude water supplying the city is pumped from the River Ganges at Gaughat and delivered to the water works station at Aishbagh. The Ganges is a typical large Indian river; in addition to the extraordinary amount of fine silt carried during the Monsoon periods, there are troublesome colloidal impurities, making the water most difficult to purify. The authorities have recently installed the Paterson system of water purification, and the whole of the

water now issued for public consumption is not only efficiently filtered, but is finally sterilised by chlorination.

#### MEERUT.

Famous as the scene of the outbreak of the Indian Mutiny in 1857, Meerut is a large city and cantonment, of which the total population numbers some 123,000. The cantonment is the headquarters of the United Provinces District of the Eastern Command, and is one of the biggest military stations in India. The city has a large number of temples and mosques, not one of which, however, is particularly noticeable. In the cantonment St. John's Church and the Cemetery have many interesting memorials.

#### MUTTRA.

Muttra (Muthara) is of very ancient origin, and is said to have been the centre of the Buddhist faith long before the Christian era. Not only the city itself, but the greater part of the district, known as Braj Mandal, commands the reverence and respect of Hindus. Muttra, which has a population of 53,000 and contains a fine Museum, is visited annually by devout crowds of pilgrims.

### THE CENTRAL PROVINCES AND BERAR

The Central Provinces and Berar comprise a great triangle of country midway between Bombay and Bengal. Their area is 131,052 square miles, of which 82,000 are British territory proper, 18,000 (Berar) are held on perpetual lease from the Nizam, and the remainder is controlled by feudatory chiefs. The population is 13,012,760 under British administration, including 3,075,310 in Berar.

Rice is the most important agricultural crop of the Central Provinces, wheat coming next, followed by pulses and other cereals and oilseeds. Industries are not yet highly developed, except in one or two centres, Nagpur being noted for its busy cotton-spinning enterprise.

#### BURHANPUR.

The city of Burhanpur (Central Provinces), once the Mohammedan capital of the Deccan, is now a centre of the gold and silver wire industry, and boasts a population of about 36,000. It has always been a place of considerable importance, and is completely walled in. The neighbourhood contains some interesting Mohammedan ruins and a curious aqueduct still in use. In the town are two handsome mosques, the Jam Masjid and the Bibi Masjid. The Badshahi Kila—a ruined citadel and palace—is beautifully situated on a height overlooking the Tapti river. Here died in 1629 Shah Jehan's wife, to whose memory the Taj Mahal was erected. The principal handicraft of Burhanpur is the production of silk cloth embroidered with gold and silver lace, which continues now in the same manner as described by Tavernier as long ago as 1638. The town has also a spinning and weaving mill, besides several ginning and pressing factories.

#### JHANSI.

The city of Jhansi, in the province of Bundelkhand (Central Provinces), is one of the main halting places for troops proceeding up-country, and has always been of great military importance. Its most interesting feature is the Fort, which has been many times besieged and captured, notably by Sir Hugh Rose in 1858. Jhansi, which has a population of 133,000, is a centre from which various places of interest can be reached.

**JUBBULPORE.**

Jubbulpore (population 108,793) ranks as the second city in the Central Provinces, and is considered to be the most desirable of the plain stations, having a good soil, a plentiful water-supply and a comparatively cool climate. It is an important civil and military station, besides being the meeting-place of the Great Indian Peninsula and East Indian Railways. The town is well laid out and cared for, and there are a number of fine buildings, including the Victoria Town Hall, Anglican and Roman Catholic churches, two colleges and six high schools.

The Government gun carriage factory employs many hands, and there are cotton mills and pottery works.

**NAGPUR.**

Seat of the Chief Commissioner of the Central Provinces, Nagpur is the terminus of the standard-gauge line of the Bengal-Nagpur Railway in the direction of Bombay. It is a stirring industrial and commercial centre in which are large spinning and weaving mills, cotton presses and ginning factories. Nagpur is also famous for its delicious oranges, quantities of which are exported, as are also teak wood, grain, seed and jungle produce. The hill fort of Sitabaldi, with its fine view and interesting collection of arms, dominates the town, which contains, amongst many fine buildings, the Secretariat, Law Courts, Victoria Memorial Technical Institute, the new Central Provinces' Club-house, Anglican and Roman Catholic Cathedrals, and a fine Mahatma Church.

Population 145,193.

**THE PUNJAB**

The Punjab, or land of the five rivers, is so called from those waterways by which it is enclosed—namely the Jhelum, Chenab, Ravi, Beas and Sutlej. Together with the North-West Frontier Province and the Native State of Jammu and Kashmir which lie to the north, the Punjab occupies the extreme north-western corner of the Indian Empire, and, with the exception of the above-mentioned province, comprises all of British India north of Sind and Rajputana and west of the river Jumna. Previous to 1912 the Punjab with its feudatories embraced an area of 136,330 square miles and had a population of over 24 millions—that is to say, about one-thirtieth of the area and population of the Indian Empire. But the formation of a separate province of Delhi reduced the area and population by about 450 square miles and 380,000 souls respectively. The total population of the province at the last census was 25,101,000, of whom 4,416,036 were in the Indian States.

The Punjab contains several well-diversified areas, those of the eastern and western plains being fertile, thickly populated, and including the large industrial centres of Lahore, Amritsar and Mooltan. Agriculture is the province's staple industry, wheat being the most important crop grown, after which come gram, barley, rice, millets, maize and oil-seeds. Cotton is grown generally throughout the province. The country being preponderantly agricultural, a considerable proportion of the wealth of the people lies in live-stock. Large profits are derived from the cattle and dairy trades, and wool is a staple product. The production of hides and skins is also important. Cotton weaving is carried on everywhere as a domestic industry, blankets and rugs are produced in considerable numbers, and the carpets of Amritsar are world-famous.



JUBBULPORE. Street Scene.

**AMBALA.**

Ambala city and civil station, together with the cantonments, five miles to the south-east, have a total population of some 76,000. The city is a second class municipal town, and the cantonments are laid out with roads and fine trees. The European shops are good, and there is a racetrack on the East Marian.

**AMRITSAR.**

Amritsar is, after Delhi, the wealthiest and next to Lahore, the most populous city of the Punjab. It is also the religious capital of the Sikhs. At the last census the population numbered 190,218. It was founded in 1577 by Ram Das, 4th Guru of the Sikhs, upon a site granted by the Emperor Akbar around a sacred tank from which the city takes its name, "Pool of Nectar." In 1802 it was seized by Ranjit Singh, who roofed the great shrine with sheets of copper gilt and also built the Fort of Govindgarh in order to overawe the pilgrims. He also surrounded the city with a massive wall, the greater part of which has been demolished since the British occupation. In 1919 Amritsar came into world-wide notoriety owing to the serious rioting and deplorable loss of life that took place. (See under "History.")

**BUILDINGS, ETC.**—The most imposing feature of Amritsar is the Golden Temple, containing the shrine at which thousands of Sikh pilgrims worship. The Temple Garden (Guru Ka Bagh) is 30 acres in extent and contains pomegranate, orange and other fruit-trees, a tank called Kaulsar and several small pavilions. The Fort of Govindgarh is usually garrisoned with British and Indian troops. More modern buildings are the Clock Tower, from which a magnificent view can be obtained, the Roman Catholic Church, the Khalsa College, the national college for Sikhs,

and several first class high schools. The Amritsar Municipality has given the city a good water-supply, a sewage-disposal scheme has been completed and an electric power station built.

**INDUSTRIES.** The manufactures for which Amritsar is most famous are those of pashmina silk and carpets, the first being the name of any fabric made from the fine wool of a breed of goats found in and beyond the Himalayas. Pashminas are either plain self-coloured cloths made up into lengths which can be cut as required, or are woven into plain or embroidered shawls, some of which are known as Rampur chadars. This industry at one time employed 4,000 looms, but it has declined and has been succeeded in importance by the carpet industry in which Kashmiris and Punjabi Mohammedans are chiefly employed. There are four large carpet factories in the city, and excellent goods are turned out. The manufacture of silk piece-goods is also still carried on to a considerable extent, while gold and silver thread, ribbon, spangles, etc., for embroidery are manufactured. Ivory carving is practised with considerable success, but is chiefly confined to combs, paper knives, card-cases and toys. Two important fairs, primarily religious, but also largely utilised for the buying and selling of agricultural stock, are held at Amritsar in April and November.

**FEROZEPORE.**

One of the busiest cities in the Punjab, Ferozepore is also of great antiquity, but has been almost entirely rebuilt since the British occupation. The principal battle fields of the Sikh Wars—Mudki, Ferozeshah and Sobraon—lie within easy distance. Ferozepore, which has a population of about 55,000, is an important market for raw produce.



1. The Mall, main thoroughfare of Lahore, looking West. The building in which the offices of the Jallo Rosin and Turpentine Factory are situated is in right foreground.
2. Dabbi Bazar with the Golden Mosque on left: the city's principal Indian business street.
3. The Delhi Gate, one of the entrances to the old City.

### LAHORE.

Lahore is the largest city of the Punjab, capital of the Province, seat of an Episcopal See, and an important commercial centre, as well as being one of the oldest and most historically interesting places in India. Its chief period of magnificence was during the rule of the Moghuls, the greatest of whom, Akbar, held his court here between 1578 and 1598 and greatly enlarged the city, surrounding it with a wall, which has been demolished. The glory of Lahore then declined, though some of its former splendour was regained under Ranjit Singh and since the period of the British rule, which commenced in 1849, buildings have greatly multiplied. The moat has been filled in and has been converted into fine lawns, which encircle the city on every side except the north west. The Circular Road runs round Lahore, to which it gives access by thirteen gates.

**ADMINISTRATION.** Lahore has been a municipality since 1867, and the elective principle is now established. The city is provided with an excellent water-supply from wells outside whence it is pumped by engines direct into four connected tanks. The Upper Mall and other parts of the town are lighted by electricity.

**BUILDINGS, ETC.**—Of the ancient buildings of Lahore the most prominent are the Fort, containing the Diwan-i-Am and the beautiful little Pearl Mosque, the Souhri Masjid, or Golden Mosque, the singularly fine Mosque of Wazir Khan and the Tomb of Anar Khan, who was a favourite of Akbar and is said to have been buried alive for venturing to smile at the Emperor's son. The Fort and Palace are full of interest to both archaeologist and sightseer, and many of the older buildings of the city offer an irresistible attraction to artists. The more modern buildings of which there are a great number, have been erected in a praiseworthy attempt to adapt Hindu and Mohammedan styles of architecture to present necessities. Government House stands on the Mall and was formerly the tomb of Mohammed Kasim Khan, cousin of the Emperor Akbar. The Lawrence Hall and the Montgomery Hall contain many interesting portraits and memorials, and the Central Museum, with its rich collections of sculpture, coins, paintings and jewellery, is well worth inspection. Other prominent buildings are the Cathedral of the Resurrection, a fine structure in the Early English style, the Roman Catholic Cathedral, a mixture of Roman and Byzantine, the Town Hall, the Punjab Public Library, the University Hall, the Mayo School of Arts, the Punjab Club and the Post Office.

**EDUCATIONAL FACILITIES.**—Lahore contains the principal educational institutions of the Province—the University of the Punjab, with its five colleges, Government College, and Forman Christian, Dayanand Anglo-Vedic, Islamia and Oriental Colleges, also the Medical and Law Colleges and the Central Training College. There are in addition a number of excellent high schools for Europeans and Indians. Technical and special education are provided by the Mayo School of Arts, the Medical School, the Agricultural and Technical Schools, the Veterinary College, the Hindu Technical Institute and the Government Normal School.

**INDUSTRIES.**—Most of the decorative arts for which Lahore was once famous have greatly declined or vanished altogether. The silk-workers, at one time noted for superior cloths of Bokhara thread, now turn out only coarse and inferior materials, though the trade in these still flourishes. The mystery of gold and silver-wire drawing has almost entirely disappeared, and so has the produc-

tion of glass, enamel and arms, while but little gold embroidery is now done. On the other hand, trades of a useful character have largely increased, among them being the manufacture of vegetable oils, candles and soaps, sulphuric and nitric acids, printing, lithography and bookbinding. The leather trade of Lahore is an important one, a large quantity of saddlery and shoes being turned out annually. Cotton fabrics are largely made, and a great deal of printing on coarse cotton stuffs is done. There are also furniture manufactories, cotton ginning factories and presses.

**FALETTI'S HOTEL.**—Lahore. Picturesquely situated in wonderful gardens, accommodating about 100 guests. Reconstructed in 1912. Cables "Faletti's," Lahore. Controlled by The Associated Hotels of India, Ltd. (See notice following "Simla," p. 74.)

#### **NEDOU & SONS' HOTELS.**

**Proprietors.**—The firm of Nedou & Sons, hotel proprietors and licensees, controls hotels of the highest repute at Lahore, Srinagar and Gulmarg.

**Nedou's Hotel, Lahore.**—Situated on the Mall, opposite the Government Horticultural Gardens and in close proximity to Government House and the Gymkhana and Punjab Clubs, the hotel stands in its own grounds and is surrounded by a beautiful garden, in which there are many fine shady trees. A post office and a number of shops are close to the hotel gate.

**Accommodation.**—There are 78 large airy bedrooms, and the public rooms include a lounge and billiard saloon, public and ladies' sitting rooms, card and smoking rooms. Every bedroom has hot and cold running water and its own bathroom, and, as soon as Government grants authority for the sewerage of Lahore, the hotel will have the most up-to-date sanitary arrangements.

**Premises.**—The hotel is built on the Eastern principle, which permits a free circulation of air through every room. The whole is surrounded by a stone verandah, and each room has its own section, which serves to keep the rooms cool in the hottest of weather. The building is one of the most imposing in Lahore, being built on the architectural design of a fort, with turrets and towers at all corners.

**Other Hotels.**—These are at Srinagar, 5,000 feet above sea level, and at Gulmarg, 9,000 feet above sea level, both in Kashmir State in the Himalaya Mountains. They are the only hotels in these summer resorts and are most popular. Nedou's Hotel at Srinagar, which has just been rebuilt, comprises three large annexes with private living rooms, and the usual public rooms. It stands in its own grounds, which are very extensive and contain gardens, orchard, vegetable garden, dairy, bakery, confectionery manufactory, soda-water factory, etc., making the hotel practically self-supporting.

The company's establishment at Gulmarg was originally started with accommodation for only four guests, but now there is ample room for 200, and in the season as many as 350 sit down to dinner, many visitors coming from the neighbouring bungalows. The hotel is built on the Swiss system of individual pinewood bungalows, each accommodating from six to twelve persons.

**Cables.**—"Nedou," Lahore, Srinagar and Gulmarg.

#### **MOOLTAN.**

Mooltan City (population, 84,806) is situated near the River Chenab in the Punjab, and was the scene of considerable fighting

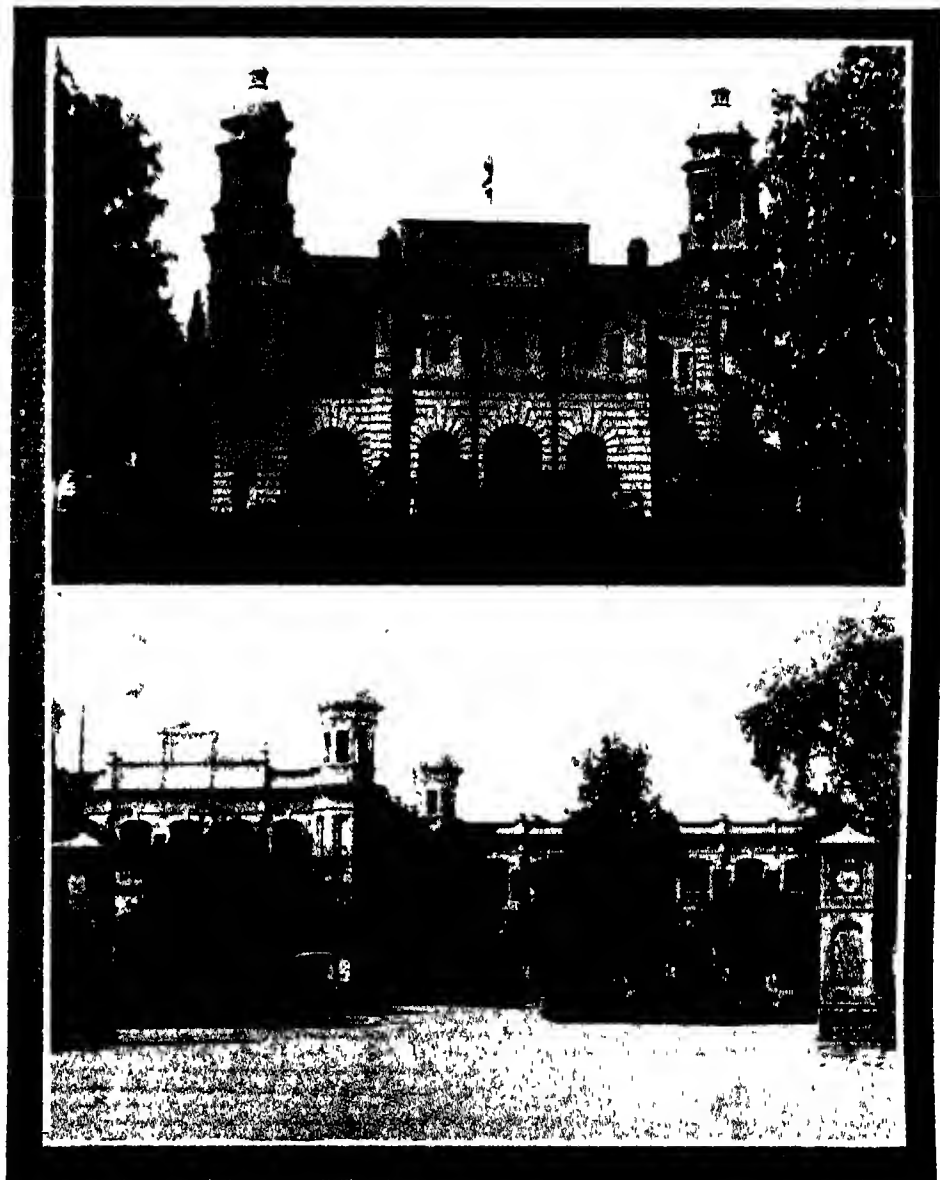
during the first and second Sikh wars. The heat of Mooltan is notorious, the rainfall being little above 7 inches annually. There are in the city and neighbourhood several interesting Mohammedan tombs, and the Old Fort, containing the famous temple of the Narsingh (Lion Man) form of Siva or Prahladpuri, is especially attractive to archæologists and visitors.

#### **MURREE**

The northern sanatorium of the Punjab and the headquarters of the Northern Command, Murree is situated on the south face of the Himalayas, 37 miles from Rawalpindi. At its highest point the station is 7,507 feet above sea-level, and from its houses, built on an irregular ridge, may be obtained extremely beautiful views of snowy peaks, wooded hills,

valleys and tilled fields. In the hills north-west of Murree, and easily reached therefrom, are certain small camps and stations known as the Galies, which afford delightful walks during the spring. Of these stations the furthest north, Nathagali, is the summer seat of the Chief Commissioner of the North-West Frontier Province. The climate is well suited to the English visitor, the minimum recorded temperature being 21° and the maximum 66°. During the four monsoon months Murree receives a rainfall of some 34 inches.

**CECIL HOTEL.**—Murree. Superbly situated, overlooking the plains of India, close to the Kashmir ranges. Provides excellent cuisine and comforts. The latest addition to the establishments of The Associated Hotels of India, Ltd. (See notice following "Simla," p. 74.) Cables "Cecil," Murree.



**NEDOU & SONS' HOTELS.**

Nedou's Hotel, Lahore.

1. Centre block of the Palatial Building, in which are the main entrance and most of the Public Rooms.
2. Portion of the Western Wing and Western Entrance.



**RAWALPINDI.**

The headquarters of a Civil Division and District of the Punjab and of the 1st Indian Army Division, Rawalpindi is one of the largest military stations in India, and was formerly surrounded by a chain of detached forts, which have been dismantled. A very fine Mall runs for 4 miles through the station, forming part of the Grand Trunk Road. Rawalpindi possesses an attractive public park, golf links, a European Club and Anglican and Scotch churches. The city and cantonment have a total population of 101,142.

**FLASHMAN'S HOTEL.**—Rawalpindi. An excellent residential hotel, accommodating 100 guests, and the main halt for travellers to and from Kashmir. Established on a small scale in the 'nineties, it has been taken over and immeasurably improved by The Associated Hotels of India, Ltd. (See notice following "Simla," p. 74.) Cables "Flashmans," Rawalpindi.

**NORTH-WEST FRONTIER PROVINCE**

This province, as its name denotes, is situated on the north-west frontier of the Indian Empire. It is in form an irregular strip of country lying between the Indus and the Durand boundary line with Afghanistan. To the north it extends to the mountains of the Hindu Kush. The total area of the province is about 30,000 square miles, and the population 5,076,476. The mountain regions north and west are occupied by tribes subject only to the political control of the Chief Commissioner in his capacity as Agent-General to the Governor-General, and are administered by five political Agencies. The most important sections of the population, both numerically and by social position, are the Pathans, with whom for many years the British in India waged war. The province is practically without manufactures on an organised scale, the population deriving its subsistence almost entirely from agriculture. Any commercial importance that it possesses is owing to the fact that it lies across the great trade routes which connect the trans-border tribal territories and the marts of Afghanistan and Central Asia with India, but the influence of railways is diminishing the value of these trading interests.

A division of the Province from the Punjab has frequently been discussed, with the double object, in the earlier stages of these debates, of securing closer and more immediate control and supervision of the frontier by the Supreme Government, and of making such alterations in the personnel and duties of frontier officials as would tend to the establishment of improved relations between the local British representatives and the independent tribesmen. The Province was eventually removed from the control of the Punjab Administration, and constituted under the before-mentioned Chief Commissioner and Agent to the Governor-General, with headquarters at Peshawar, in direct communication with the Government of India in the Foreign Department.

The climatic conditions of the North West Frontier Province, which is mainly the mountainous region, but includes the Peshawar Valley and the riverine tracts of the Indus in Dera Ismail Khan District, are extremely diversified. The air is generally dry, and hence the annual ranges of temperature are frequently very large. The province has two wet seasons, one the S.W. monsoon season, when moisture is brought up from the Arabian Sea and the Bay of Bengal; the other in winter, when storms from Mesopotamia, Persia and the Caspian Districts bring widespread rain and snowfall.

As to the flora of the region, it varies from the shrubby jungle of the south-eastern plains to barren hills, pine forests and fertile mountain valleys.

The inauguration of a system of light railways throughout the province apart from all considerations of strategy must materially improve the condition of the people and also by that means strengthen the hold of the Administration over them. The great engineering project of the Upper Swat River Canal, which was completed in 1914, and the lesser work of the Baharpur Canal also completed a few years ago, will bring prosperity to a number of peasant homes.

**PESHAWAR.**

This is the ancient capital of the Gandhara Province, a noted Buddhist centre in olden times, in the North-West Frontier Province. It is the headquarters of the 1st Army Division, the most important military station in India, and the residence of the Chief Commissioner. The city stands upon a ridge above the plain, stretching towards the mountains, on the left bank of the Bara stream, 15½ miles south-west of the junction of the Swat and Kabul rivers and 10½ miles east of the Khyber Pass. The houses of Peshawar (population, 104,452) are built of small bricks or mud, held together by a wooden framework to protect them from earthquakes, and the streets are irregular and tortuous. There is a large Islamic College, also good schools. The Idwardes, or Kabul, Gate leads to the main Kissa Kahani Street, and at the Bajauri Gate is a fine building used as a Government guest house. Peshawar has a great transit trade from Kabul and Bokhara and Central Asia. The bazars are well worth a visit, both for the objects they contain—many of them not seen in Central India—and for the fierce-looking and picturesquely dressed natives from Afghanistan and Central Asia.

**INDUSTRIES.**—The special manufacture of Peshawar is bright-coloured scarves or *lungis*, worn as turbans. Waxcloth work and some ornamental needlework are also produced here, as well as knives and small arms, in addition, a special form of wood-carving flourishes.

**WATER SUPPLY.**—Peshawar has an up-to-date and adequate water supply, the water being taken from the Bara River into large natural sedimentation tanks, constructed near Bara Fort. The tanks operate on the continuous flow system, and are of sufficient capacity to meet the demands of the city and cantonments, in addition to the British out-post station at Kachagarhi. Government has recently installed the Paterson system of water purification, and the new plant is capable of delivering 3,500,000 gallons of sterilised water per day.

**BRITISH BALUCHISTAN**

Baluchistan is an oblong stretch of country occupying the extreme western corner of the Indian Empire. It is divided into three main divisions: (1) British Baluchistan, with an area of 9,476 square miles, (2) Agency Territories, with an area of 44,345 square miles, composed of tracts which have from time to time been acquired by lease or otherwise brought under control and placed directly under British officers, and (3) the Native States of Kalat and Las Bela. The country is largely rugged and barren, with an irregular rainfall, the principal occupations of its inhabitants being agriculture and the rearing of live stock. Under the control of the Agent a large measure of self-government is allowed to the tribesmen.

**QUETTA.**

The administrative capital of British Baluchistan and the headquarters of the Western Command, Quetta is surrounded by

fortified lines, and, commanding both the Khojak and Bolan Passes, is one of the most important frontier posts. It is also a favourite summer resort. Population, 49,000.

**THE NATIVE STATES.**

Of the total area of India (1,773,168 square miles), a large part is not under British administration at all. That portion covered by the Indian States which are under the government of their own Rajahs or Chiefs is 675,267 square miles, with a population of 70 millions. These States embrace the widest variety of country and jurisdiction, varying in size from petty States like Lawa, in Rajputana, with an area of 19 square miles, and the Simla Hill States, which are little more than small holdings, to States like Hyderabad, as large as Italy, with a population of 13 millions. They include the inhospitable regions of Western Rajputana, Baroda (part of the Garden of India), Mysore, rich in agricultural wealth, and Kashmir, one of the most favoured spots on the face of the globe.

**ADMINISTRATION.**—The conditions under which the various Indian States were established and have come into political relation with the Government of India have varied greatly. Speaking generally, it may be said that as the British boundaries expanded the States were brought under the influence of the Government and their rulers were confirmed in their possessions. The Chiefs have, without exception, gained protection against dangers from outside and a guarantee that Great Britain will protect their rights as rulers, the Paramount Power acting for them in relation to Foreign Powers and other Indian States. The inhabitants of the States are the subjects of their rulers, and, except in the case of personal jurisdiction over British subjects, these rulers and their subjects are free from the control of the laws of British India. For instance, criminals escaping to an Indian State cannot be arrested by the police of British India without the permission of the ruler of the State.

On the other hand, the Indian States are under an obligation not to enter into relations with foreign nations or other States; the authority of their rulers has no existence beyond their territories. Their subjects outside their dominions become to all intents and purposes British subjects. Since the Indian States have no use for a military establishment other than for police or ceremonial purposes, or for co-operation with the Imperial Government, their military forces and armament are prescribed by Great Britain. Where cantonments exist in an Indian State, jurisdiction over the cantonment and the civil station is exercised by the Suzerain Power.

**POLITICAL OFFICERS.**—The powers of the British Government are exercised through Political Officers, who, as a rule, reside in the States themselves. In the larger States the Government is represented by a Resident; in groups of States by an Agent to the Governor-General, assisted by local Residents or Political Agents. These officers form the sole channel of communication between the Indian States and the Government of India and its Foreign Department, the officials of British India and other Indian States. They are expected to advise and assist the Ruling Chiefs in any administrative or other matters on which they may be consulted.

**PRINCIPAL STATES.**—The Indian States, in the order of their Chiefs' precedence, are Hyderabad, Gwalior, Mysore, Baroda and Jammu and Kashmir, whose rulers are each entitled to permanent salutes of 21 guns; Bhopal, Indore, Kolhapur, Travancore and Udaipur (19 guns); Bahawalpur, Bharatpur, Bikaner, Bundi, Cochin, Cutch, Jaipur,

Jodhpur, Patiala and Rewa (17 guns), and some hundred others of varying importance whose chiefs receive salutes ranging from 15 to 9 guns

### STATE OF HYDERABAD

Hyderabad, the premier Indian State in India, is in the Deccan, occupies an area of 82,628 square miles, and has a population of 12,471,770. During the long struggle between the British and the French for mastery in India the Nizam of Hyderabad threw in his lot with the British, and his successors have been so staunch in their engagements to the British Raj as to earn the title of "Our Faithful Ally". The present ruler is His Exalted Highness Sir Usman Ali Khan Bahadur Fateh Jung, G. C. B., G. C. S. I.

#### HYDERABAD CITY

Hyderabad, capital of the territory of the Nizam of Hyderabad, stands on the south bank of the Musi River, and is the fourth largest city in India, having a population of over 400,000. It has always been famous for its varied and warlike population. Formerly the inhabitants all carried weapons, but the practice is now confined to the Arab mercenaries, who may be seen disporting themselves in the streets with a perfect armoury stuck in their waistcloths. The city is in shape a trapezoid, of a total area of two square miles, it is modern and has but few remarkable buildings, but the bazars are extremely picturesque and are thronged with natives from all parts of India.

**BUILDINGS.**—The Residency is situated in a suburb of the city called Chadarghat, and in extensive grounds which contain many fine trees. Within the Residency limits is the Prestonji Kothi, now called the Kothi (large house) of Rajah Narsingh Gir, a large building erected on a high stone basement by the famous Parsee bankers, Prestonji & Co., who for some years farmed the revenues of Berar. Close to the Kothi are the Imperial Bank and St. George's Church. The General Hospital is a fine building in the Saracenic style, and there are two other large hospitals. The palace of the late Sir Salar Jang contains many interesting portraits. The Mecca Masjid is the principal mosque of the city, a grand but sombre building, whose gateway was completed by Aurungzebe in 1692. The Falaknuma Palace of the Nizam, situated to the south of the city, is considered the finest in India.

**GARDENS.**—To the north of the railway station are the beautiful public gardens, covering an extensive area, and surrounded by a high wall castellated with two lofty gateways. In addition to rare plants and well-laid-out beds of flowers, the gardens contain a menagerie and an Industrial Exhibition. In the north corner a Town Hall has been built to commemorate the anniversary of the fortieth birthday of the late Nizam.

**GOLCONDA.**—The Fort and Tomb of Golconda lie five miles west of the city, and are of great interest. The Fort, which is walled and moated, contains now little but ruins. The King's Tombs are those of the Kutb Shahi Kings, who reigned for 180 years in Golconda. They were repaired at the instance of the late Sir Salar Jang, and are now admirably kept, some of them are beautifully enriched with carvings and minarets.

The diamonds of Golconda, which have become proverbial, were cut and polished here, but came principally from Purlial, on the south-east frontier of the Nizam's territory, and from Kollur, in the Krishna district.

**INDUSTRIES.** Hyderabad has a considerable manufacture of textile fabrics, carpets, velvets for horse-trappings, and a material composed of cotton and silk. Red earthenware is also extensively made.

**WATER SUPPLY.** The water supply of Hyderabad is derived from a large impounding reservoir at Gundipet, which serves the double purpose of preventing floods and furnishing the city with drinking water. H. H. The Nizam's Government installed the Paterson system of water purification, and the new works have a daily capacity of 10,000,000 gallons. In addition to serving the whole of the city of Hyderabad, water is supplied to Secunderabad.

#### SECUNDERABAD

One of the largest British military cantonments in India, Secunderabad covers 19 square miles and stands 1,830 ft. above sea-level. It is connected with Hyderabad and Bolarum by excellent motor roads. The Parade Ground is a fine stretch, and is used almost entirely for ceremonial purposes. There are several imposing buildings, including the Hospital, Railway Station, Jail and Mahboob College, while the United Service Club stands out as a landmark for miles around. The military headquarters are at Bolarum, six miles to the north.

### STATE OF BARODA

The State of Baroda, situated partly in Gujarat and partly in Kathiawar, covers an area of 8,135 square miles, the population numbering 2,126,522. Its history as an independent State dates from the break-up of the Moghul Empire, and the Maharajah was one of those who remained staunch to the British during the Mutiny. The present ruler is His Highness Farzand-i-Khas-i-Dowlat-i-Englishia Maharaja Sir Sayaji Rao Gaekwar Sena Khas Khel Samsher Bahadur, G. C. S. I., G. C. I. E., L. L. D.

#### BARODA CITY

Baroda (population, about 95,000) is the capital of the very important Mahratta State of the Gaekwar. It is a handsome city containing several fine buildings, among which are the Baroda Hotel, or State Rest-House, the College, Museum, General Hospital, State Offices and Library. In the market-place are a fine pavilion of Mohammedan architecture, a clock-tower and the old Nazar Bagh Palace. The new Lakshmi Palace cost 60 lakhs of rupees.

### STATE OF GWALIOR

This State, which has from almost immemorial times been ruled by the House of Scindia, is the most important of the large number of native States which are for political purposes grouped together under the title of the Central Indian Agency. It occupies an area of 26,357 square miles, and has a population of 1,494,375. The main industries are cotton-ginning and the manufacture of fine muslins and leather work. The ruler is a minor, His Highness Jeewajirao Scindia, the administration of the State being at present carried on by a Council of Regency.

#### GWALIOR CITY

Famous above all for its fort, one of the most ancient and renowned strongholds in India, the city of Gwalior is the capital of Maharajah Scindia. The Old City has gradually decayed, and is now only one-sixth the size of the New City (Lashkar), in which the Sarafa, or Merchants' Quarter, is considered to be one of the finest streets in India. The Jama Masjid, outside the gate of the Fort, is a very beautiful mosque, with gilt pinnacled

domes and lofty minarets. The tomb of Mohammed Ghaus, a saint venerated in the time of Babar and Akbar, is one of the best specimens of Mohammedan architecture of the early Moghul period. The rock sculptures of Gwalior are unique in Northern India.

### STATE OF BIKANER

The Bikaner State in point of extent is the seventh largest of all Indian States and the second largest in Rajputana. With an area of 23,315 square miles, its population at the last census was 650,685. This is one of the States due to benefit enormously from the construction of the Sutlej Canal, which will bring over 600,000 acres under irrigation, while even larger expectations are associated with the Bhakra Dam project. The State owns a large railway system, with a mileage of 568.48. Bikaner is the capital. The present ruler, Major-General His Highness Maharajah Dhiraj Raj Rajeshwar Narendra Shiremani Sri Sir Ganga Singhji Bahadur, G. C. S. I., G. C. I. E., G. C. V. O., G. B. E., K. C. B., A. D. C., L. L. D., is the twenty-first of a long line of distinguished men renowned for their bravery and statesmanship, he himself holding the distinction of having fought for the British Crown on three continents.

#### BIKANER CITY.

Capital of the Bikaner State, Bikaner is the fourth largest city in Rajputana. It is situated on an eminence and has an imposing appearance, being surrounded by a battlemented wall and possessing many fine buildings. The stone carving with which many of the houses are faced is unique. From the Fort a magnificent view can be obtained, and the palace buildings, of every style and period, are magnificent. Other fine structures are the Durgar Memorial Home, the Nobles' School, the Maharajah's new palace, called Lalgarh, the King-Emperor's Hall and the Victoria Memorial Club.

### STATE OF JAIPUR

Jaipur, the ancient kingdom of King Virata, is the fourth largest of the Rajputana States, with an area of 15,579 square miles and a population numbering 2,338,802. For over 200 years the capital has been the city of Jaipur. The present ruler is His Highness Maharaja Sawai Man Singhji Bahadur.

#### JAIPUR CITY

A city of 120,000 inhabitants, Jaipur, surrounded on the north and east by rugged hills and crowned with forts, is the modern capital of Jaipur State—Amber, five miles distant, now ruined and deserted, being the ancient capital. Jaipur is a busy and important commercial town, with large banks and trading establishments. It is a centre of native manufactures, especially those of many kinds of jewellery and of coloured printed cloths and muslins. The enamel-work done here is the best in India, and the cutting and setting of garnets and other stones found in the State is an important industry. The crowded streets and bazars are lively and picturesque, while the city is renowned for the width and regularity of its thoroughfares. It is also well lighted by gas.

**BUILDINGS, ETC.**—The Maharajah's Palace, with its beautiful gardens and pleasure grounds, adorned with fountains, fine trees and flowering shrubs, occupies the centre of the city and covers one-seventh of its area. Here are the Chandra Mahal, a lofty and striking building, the famous Jantra, or observatory, the Hall of the Winds, and a particularly beautiful Minaret. The Public Garden, outside the city wall, is one of the finest in India, and attached to it are a note-

worthy menagerie and aviary. These gardens are said to cost the Maharajah Rs 16,000 a year to keep up. The Albert Hall contains a large Durbar Hall and a beautiful museum. Other notable buildings are the Mayo and Lansdowne Hospitals, the Maharajah's College, and the Public Library. The Old Palace of Amber ranks architecturally only second to that of Gwalior.

### STATE OF JODHPUR

Jodhpur State (also called Marwar), the largest in Rajputana, extends over an area of 34,963 miles and has a population numbering 1,841,642. As far back as 1818 this State entered into a treaty of alliance with the British Government, to whom in the European War it rendered notable service. The Maharaja of Jodhpur (Major Maharaja Sir Umed Singh Sahib Bahadur, KCSI, KCVO) claims descent from Rama, the deified King of Ayodhya.

#### JODHPUR CITY

Jodhpur is the capital of the Rajput State of that name and of the country known as Marwar. The Maharajah resides here, as also the Resident. The city (population, 73,480) stands on the south end of a range of sandstone hills running east and west, and is surrounded by a strong wall nearly six miles in extent, with seven gates, each bearing the name of the town to which it leads. Some of the houses and temples are of stone, richly carved. Amongst the most important buildings are the Temple in the Dhar Mandi (grain market) and the Talati Mahal (an old palace now used as the Jaswant Women's Hospital). The Fort of Jodhpur stands up boldly some 400 ft. above the city and plain, and presents a magnificent appearance. Here are the interesting Old Palaces and the Jewel House, which contains the Maharajah's wonderful collection of jewels. There is very good pig-sticking near Jodhpur.

### STATE OF MYSORE

The State of Mysore is surrounded mainly by the Madras Presidency, except on the north and north-west, where it is bounded by the districts of Dharwar and North Canara respectively, and towards the south west by Coorg. It embraces an area of 29,460 square miles, excluding that of the civil and military station of Bangalore, and has a population of 5,978,892. From 1831 to 1881 the management of the State was in the hands of the British Government, but in the latter year it was restored to the ancient dynasty. The city of Mysore is the capital of the State, but Bangalore city is the administrative headquarters. The present Maharajah is Colonel Sir Sri Krishnarajendra Wodeyar Bahadur, GCSI, GBE, who has reigned since 1902.

#### BANGALORE CITY

Together with that of the cantonment (the largest in the south of India), the total population of the city of Bangalore is nearly 250,000. Bangalore City, or Pettah, the seat of Government of the Mysore State and the headquarters of the British Resident, who is also Chief Commissioner of the Province of Coorg, covers an area of about 12 square miles. It stretches from Gibbon Park in the east to Chamrajpet in the west, some four miles, and is under the jurisdiction of the Mysore Durbar. The city has been extended in recent years, the congested native parts having been opened up, with the result that it has been virtually freed from plague visitation. The civil and military station of Bangalore adjoins the city on the east and covers an area of about 13 square miles. The cantonment was established in 1809 on the removal here of the garrison from Seringapatam, which had proved too unhealthy for

the troops. In 1881, on the rendition of Mysore, this area was made over to the British as an "assigned" tract, and became subject to the administration of the British Resident in Mysore.

By the Army reorganisation scheme Bangalore is the headquarters of the Bangalore area under the Wellington District Command. The garrison includes three batteries of artillery, regiments of British cavalry and infantry, sappers and miners, pioneers, and Indian infantry, also the Auxiliary Force. As many as 30,000 troops were stationed here during the Great War.

**BUILDINGS, ETC.**—The Fort of Bangalore, which stands in the extreme south-west, was said originally to have been built of mud in 1537 by Kempe Ganda. The present fortifications of rubble stone were constructed in 1761 by Hyder Ali from plans by a French engineer. Only one of the original gateways now remains—the Delhi Gate, handsomely built of cut granite. In the centre of the Fort is the arsenal, and there are some remains of Tipu's Palace. To the east of the Pettah and Fort is the Lalbagh, a beautiful garden said to have been laid out in the time of Hyder Ali; it contains fine collections of tropical and sub-tropical plants and wild animals.

In the cantonment are several notable buildings, the Maharajah's Palace, Indian Institute of Science, Roman Catholic Cathedral, Trinity Church, All Saints' Church, St. Andrew's Kirk, British Infantry Barracks, Lady Curzon Women's Hospital, the Residency and the various Public Offices. Gibbon Park is the popular afternoon resort of Bangalore, and in it are situated the Museum and the Seshadri Memorial Hall, where the Mysore Government Public Library is located. North east of the Museum is the Memorial Statue of the Queen-Empress, unveiled by King George, then Prince of Wales, in 1906.

**CAVALRY, ETC.**—See under "Tourist Resorts."

**INDUSTRIES.**—Bangalore, an important centre of industry, contains large spinning and cotton-manufacturing mills, woollen and silk mills, oil mills and a soap factory, brick and tile works, and a silk-worm farm under Japanese management. To the south-west, near the city railway station, are the locomotive workshops, the distillery and an iron foundry. Near the Cantonment Railway Station are large coffee-curing works, where also artificial manures are prepared. The Imperial Tobacco Company has a factory at Bangalore, and at the central Jail cloths, towels, table-cloths, dhurries, woollen pile carpets, etc., are manufactured in large quantities.

#### MYSORE CITY

This city, which is the dynastic capital of the State of Mysore and the residence of the Maharajah, covers an area of 7½ square miles, and has a population of over 84,000. It is of great antiquity, the earliest records dating back to the third century B.C. The modern city is handsome, and is laid out with fine roads and attractive public buildings. The Maharajah's Palace is situated inside the old Fort, and contains a large hall in which the Maharajah shows himself to the people on great occasions seated on his throne, which is of great antiquity. The new portion of the palace is a magnificent example of Indian architecture and is surmounted by a golden dome, which commands the whole city. There are also well-stocked Zoological Gardens, and the grounds contain an old maze which is a source of much amusement to visitors.

The racecourse at Mysore is one of the best in Southern India. Overlooking the city is

the Chamundi Hill, 3,489 ft. above sea-level, but with an excellent motor road which leads to the temple on the summit, famous for the human sacrifices which were there offered in the time of Hyder Ali and for the colossal figure of Nandi, the sacred bull of Shiva, which is hewn out of the solid rock.

### SERINGAPATAM

Though now little more than a village in size, its prosperity having rapidly declined after the fall of Tipu, Seringapatam is a town of historic importance and great interest, the neighbourhood having been the chief theatre of the wars between the British and Tipu Sultan, while the great fort was twice besieged by the English in 1792 and 1799. The Darya Daulat Bagh, a summer palace of Tipu Sultan, is distinguished for its graceful proportions and the arabesque work in rich colours which covers it. In the Lalbagh are the tombs of Hyder Ali and Tipu Sultan.

### STATE OF COCHIN

The State of Cochin occupies an area of 1,417 square miles on the south west coast of the Madras Presidency, and its population numbers 979,019. The most valuable asset of Cochin is its forests of teak, ebony and other hardwood trees. Rice forms the staple of cultivation, and coconuts are extensively grown and exported. The capital is Ernakulam.

#### COCHIN CITY

The city and port of Cochin are of special interest as being the site of the earliest European settlement in India, the Portuguese adventurer Cabral, having landed there in 1500. There is a population of some 20,000, also an interesting Jewish quarter and a picturesque main street. The harbour affords shelter to a large number of coasting vessels, and has good anchorage some 1½ miles off shore for over-sea steamers. These vessels, however, load and discharge at Cochin only during the north-east monsoon, using the auxiliary port of Malhipuram during the rest of the year. Coasting steamers between Bombay and Calcutta call once, and sometimes twice, a week. Coal and oil are obtainable.

### FRENCH POSSESSIONS

The French possessions in India comprise five Settlements, with certain dependent lodges or plots, and cover in all 203 square miles, with a total population of 277,516. These Settlements are known by the names of Pondicherry, on the east coast of Madras, Chandernagar, in Lower Bengal, Mahé, on the Malabar coast, Karikal, on the Comorandiel coast, and Yanam, on the coast of the Northern Circars. Since 1697 Pondicherry has been by far the most important of the Settlements, and is the seat of the administration-in-chief of the French possessions in India. The five Settlements are represented in the French Parliament by one senator and one deputy, and are administered by a Governor, the present holder of the office being Monsieur L. Gerbais.

#### PONDICHERRY

This is the capital of the French establishments in India, and dates from 1674. It is laid out in the French style, contains several handsome public buildings, and is well lit by electricity. Population, 46,533. There are important cotton mills and a large iron foundry. The port, which has no harbour or dock, is chiefly utilised in the very large export trade in groundnuts with Marseilles and in the importation of French manufactures.

### PORTUGUESE POSSESSIONS

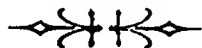
The Portuguese possessions in India consist of the province of Goa, situated within the limits of Bombay Presidency, on the Arabian Sea Coast, the territory of Daman, with the small territory called Pargana-Nagar Avelly on the Gujarat coast, at the entrance to the gulf of Cambay, and the little island of Diu, with two places called Gogla and Sumbor, on the southern extremity of the Kathiawar peninsula. The territory of Goa is by far the most important of these, having a total area of 1,301 square miles, and containing the historic city of Goa and the port of Mormugao. The total population of the whole Goa territory is about 500,000. The Governor General of Portuguese India is His Excellency Senhor Mariano Martino.

### GOA

The present capital of Portuguese India, Nova Goa, comprises Panjim and Ribandar, as well as the old city of Goa, and is six miles in extent. Old Goa is some five miles distant from the new city. Panjim occupies a narrow strip of land leading up to the Cabo, the cape dividing the Aguada bay from that of Mormugao, and mainly slopes down to the edge of the Aguada. Selected as the residence of the Portuguese Viceroy in 1759, in 1843 it was raised to its present rank as the capital of Portuguese India. The appearance of the city, with its row of public buildings and elegant private residences, as seen from the water is very picturesque, and this impression is not belied by a closer inspection of its neat and spacious roads, bordered by well-built houses. The most imposing public buildings are the quadrangular shaped barracks which

accommodate the Lycum, the Public Library and the Government Press. Other noticeable structures are the Governor's Palace and the Cathedral. The square in the lower part of the town is adorned with a life-size statue of Albuquerque standing under a canopy.

Old Goa, once the metropolis of the Portuguese empire in the East and the wealthiest city in all India, is now a place of magnificent churches only, four or five of these ranking as first-class and being in perfect preservation. The cathedral of St. Catherine erected by Albuquerque is the seat of an archbishop, while the convent of St. Francis is notable as having been the first structure consecrated to Christian worship in Goa. The church of Bom Jesus is a magnificent edifice which contains the shrine of St. Francis Xavier, the great missionary of the East and the patron saint of the Goanese.



## MINES AND MINERALS

### GENERAL DATA

**T**HE mineral resources of India are immense but as yet largely unexploited. There are deposits of some minerals unrivalled in quantity and quality—mica, manganese, barytes, barite and corundum. Iron ore exists to a degree only partially realised. Copper deposits are extensive, but have not yet been very freely drawn upon; the tin mines of Burma are of considerable importance, and the gold production of the country is worth nearly £2,000,000 annually.

**MINERAL OUTPUT.**—There was an apparent increase of £3,607,740 to £28,026,598, or about 14.6 per cent., in the value of the total output of minerals in India during 1924 over that of 1923 according to the last issued records of the Geological Survey of India. The figures are, however, somewhat artificial, being in part due to the higher average value of the rupee during 1924, while in some instances, though the output fell in quantity, it increased in value. The money figures of the principal minerals produced in 1924 were as follow, those given in parenthesis being for the preceding year: Coal, £10,706,928 (£9,738,569), petroleum, £7,341,202 (£7,007,915), manganese ore, £2,749,187 (£2,215,984), gold, £1,827,433 (£1,702,642), lead and lead-ore, £1,691,154 (£1,121,474), salt, £664,371 (£749,382), silver, £810,869 (£677,207), mica, £679,796 (£538,435), building materials, £733,117 (£512,409), tin and tin-ore, £191,026 (£185,641), saltpetre, £182,305 (£149,757), iron ore, £197,612 (£136,415), other minerals, £781,508 (£283,028).

The total for 1924 was thus £28,026,598, compared with £25,018,858 in 1923.

**MINES ACT.**—The Indian Mines Act of 1901 was amended in 1923 and came into force in its altered form in 1924. The rules and regulations under the measure of 1901 have generally been incorporated, but the provisions of some rules were strengthened and certain new ones inserted. The most important are those limiting the weekly hours of employment to 60 hours for work above ground and 54 hours for work below; those relating to the certification of mine surveyors and of underground foremen; to the raising and lowering of persons and to the conditions of roads and working places, to the use and custody of explosives, and to the use of safety lamps.

### MINING ASSOCIATIONS.

The leading associations connected with Indian mining are the Indian Mining Association (founded in 1892), whose headquarters are at Calcutta, and the Indian Mining Federation (Calcutta), which represents Indian capital in the coal-mining industry of Bengal and Bihar and Orissa. The Indian Mining Association has a membership of 150, and exists to protect by every legitimate means the interests of those engaged in developing the mining industries of India as also to provide a ready means of arbitration for the settlement of disputes.

### MINING EDUCATION.

—Some years ago a scheme for establishing a School of Mines at Dhanbad was strongly recommended by the Indian Industrial Commission, but was temporarily shelved on the recommendation of the Lythgoe Committee. The scheme has now taken practical shape, funds have been allotted, and a site has been selected. The building, which was expected to reach completion in 1926, is designed to accommodate 150 students in the first instance, but is capable of expansion. The Jamshedpur Technical (metallurgical) Institute has done a good deal for the advancement of mining education, and receives annual grants from the Governments of Bihar and Orissa and Bengal, from the State of Mysore and from other bodies.

### PRODUCTS

#### BUILDING MATERIALS, CLAY, ETC.—

The estimated value of building stone and road metal produced in 1924 was £733,117, the total increase in value over the previous year being above 43 per cent. The recorded output of building material and road metal now stands seventh in value among Indian minerals. By far the most important item in the building materials is limestone and kankar, including dolomite, of which the total production during 1924 was 1,851,455 tons, valued at £265,657. The value of the clay produced was £1,153, and of fuller's earth £1,153, both these products, as also gypsum (£5,527), showing a decline.

**CHROMITE.**—The principal chromite-producing regions of India are Baluchistan, Mysore, and Bihar and Orissa. The Baluchistan deposits are large and produce a rich ore averaging nearly 55 per cent chromic oxide

### PRODUCTS

The chief mines are located at Hindubagh, in the Zhob Valley. The chromite of the State of Mysore is high in iron and generally inferior to that of Baluchistan, yielding up to 52 per cent chromic oxide. It is stated that important deposits are being reserved by the State of Mysore in anticipation of an increased local demand for chrome chemicals to meet the requirements of the large domestic tanning industry and for projected steel plants. In Bihar and Orissa chromite deposits are very irregular in size and distribution, although they yield ore of fairly good quality, with 50 per cent chromic oxide. The total output in 1924 was 45,462 tons, against 54,242 tons in 1923, the decline being due to a greatly reduced output in Mysore.

**COAL.** Coal-mining is by far the most important branch of the Indian mineral industry. It is not generally realised that India produces more coal than any other division of the British Empire (Great Britain excepted), and that considerably over 90 per cent of the total output is consumed in the country. At present almost all the output is obtained from the Gondwana coal-fields in Bihar and Orissa and Bengal, and the remainder from the Tertiary coal-fields. There was a remarkable increase in production in 1924, the total 21,776,000 tons—being some 1,520,000 in advance of the 19,056,883 tons yielded in 1923. All the provinces except Baluchistan, Burma and Hyderabad showed an increase, the total being the largest recorded in any year with the exception of 1919, when the production was 22,628,037 tons.

The production of Indian coal in 1925 was provisionally stated as 20,900,088 tons, of which 216,000 tons were sent to foreign ports. (See also under "Commerce" and "Transport—Railways.")

**COAL COMMITTEE.**—In 1924 the Government of India announced the appointment of a Coal Committee to inquire generally into what measures should be taken by the Government, by the railways and by the ports, whether singly or in combination, to stimulate the export of suitable coal from Calcutta to other Indian and foreign ports. The most important recommendations in the report of the committee are those devised to ensure that the quality of Indian coal as exported shall reach certain guaranteed standards, for no freight or other concessions of a

financial nature will be of avail if the quality of the mineral as exported is below anticipated standards

**GROWTH OF COAL INDUSTRY.** The growth of the coal-mining industry is shown by the fact that at the end of the year 1923-24 there were 281 joint stock companies, with a paid-up capital of Rs 1,235 lakhs, as compared with 288 and 276 companies, with capitals of Rs 1,137 lakhs and Rs 1,013 lakhs respectively, in the years 1922-23 and 1921-22.

**LABOUR.** Coal mining employs more labour than any other mining industry in India, the number of persons working in all the coal-fields being slightly over 200,000. According to a report by the Department of Statistics, the major portion of those employed are the aboriginal Dravidians from the mountainous country of Chota Nagpur and the Central Provinces, but other castes are also engaged, particularly in the outlying fields. The majority of the workmen follow the vocation of agriculture as well as mining and return to their homes during the period of sowing and reaping, the result being that at such times the output of many of the mines is seriously restricted. At the Makum collieries of the Assam Railway and Trading Company, where the labour question has always been a very difficult one, nearly a third of the total labour force are Mekrans, Chinese and Nepalese.

Most of the large collieries are now equipped with electric power, while the scarcity of coal-mining labour has brought about a great advance in the use of coal-cutting machinery, over 40 electrically-driven machines being in operation in the RaneeGUNGE and Jharia mines alone.

**DIAMONDS.** The days when India occupied an important position as a source of diamonds have long passed, and as a result diamond mining is now comparatively unimportant. Stones valued at £1,085 were mined in 1924, as against £3,200 in 1923.

**GOLD.** The greater part of the total output of gold in India is derived from the Kolar gold-field in Mysore. Small quantities are also raised from the Nizam's mine at Hutti in Hyderabad and in the Anantapur district of Madras. There was a small increase in the output for 1924, which was 396,351 103 oz., valued at £1,827,433, as compared with 383,697 85 oz. (£1,702,642) in 1923.

In 1926 an extensive deposit of gold was located in the Patiala State, near Narnaul. The area of the field is said to be about 16 square miles, and the ore samples are reported to show from 1½ oz. to 2 oz. of gold to the ton, comparing favourably, therefore, with Mysore ore.

**IRON-ORE.** The production of iron-ore increased by 76 per cent from 821,053 tons in 1923 to 1,445,313 tons in 1924. Bengal and Bihar and Orissa are the only provinces in which iron ore is mined for smelting by European methods. The largest deposits of ore now being mined are those at Mayurbhanj and Singhbhum, in Bihar and Orissa, which are worked by the Bengal Iron and Steel Company and the Tata Iron and Steel Company respectively. (See also under "Commerce" and "Industries.")

**MAGNESITE.** The most important magnesite deposits in India are those found in the chalk hills situated between the town of Salem and the foot of the Shevaroy hills in the Madras Presidency. The magnesite here occurs over an area of about 4½ square miles, and the reserves of ore are practically unlimited. Important deposits also occur at Dod Kanya and Dod Katir in the Mysore area. The magnesite industry was revived in 1921 and has since shown continued prosperity, the value of the 24,461 tons mined in 1924 being £21,088, the highest figure yet recorded.

**MANGANESE ORE.** This industry commenced towards the end of the last century by quarrying the deposits of the Vizagapatam district, and from an output of 674 tons in 1892 the production rose rapidly to 92,028 tons in 1900, when the richer deposits in the Central Provinces were also worked. These latter now yielding a larger quantity of ore than the Vizagapatam mines. India alternates with Russia as the first manganese-producing country in the world. The ore raised in the Central Provinces is of very high grade, ranging from 50 to 54 per cent of the metal, and in consequence of its quality is able to pay the heavy tax of freight over 500 miles of railway, besides the shipment charges to Europe and America. The total output in 1924 was 803,000 tons, valued at about £1,750,000, as against 695,055 tons, valued at about £2,250,000 in 1923. These figures have only been exceeded in 1907 and 1913. (See also under "Commerce.")

**MICA.** Mica is the most efficient insulator known to practical scientists, and Indian mica ("Bengal Ruby") is the finest quality obtainable anywhere in the world. The successful exploitation of the metal is thus of high military as well as commercial importance, a fact recognised so clearly by the German General Staff that before the war Bengal Ruby was practically in German hands. In short, mica is a key industry, and steps have been taken to ensure the strict licensing of dealers, as well as of producers in the Government forest of Kodarma, which is the principal source and covers several square miles. At present, India furnishes at least one half of the total world production, the output in

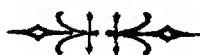
1924 was 3,504 tons. Mica is mined to some extent in the Nellore district of Madras, but the main deposit is in the great Bihar belt in the northern part of the Hazaribagh district. The Indian mica resources are tremendous, but the methods of mining are crude and wasteful, and far stricter supervision is necessary.

**MINOR MINERAL PRODUCTS.** Copper is found in Southern India, in Rajputana, and at various places along the outer Himalayas, but the ore is smelted for the metal alone, no attempt being made to utilise the by-products. Silver, lead, tin and zinc concentrates are mined almost exclusively in Burma. Jadeite, the output of which decreased in quantity from 3,636 cwt in 1923 to 2,630 cwt in 1924, but increased in value from £54,675 to £61,006 during the same period, also comes exclusively from that province, as does tungsten. Graphite is found in small quantities in various places, but little progress has been made in mining except in Travancore. The production of monazite in that region was valued at £0,301 in 1924, as against £3,697 in the preceding year.

**PETROLEUM.** Petroleum is found in India in two distinct areas, one on the east which includes Assam, Burma, and the islands off the Arakan coast, a belt extending to the productive oil fields of Sumatra, Java and Borneo. The other area is on the west, and includes the Punjab and Baluchistan, the same belt of oil bearing rocks being continued beyond the borders of British India to Persia. Of these two, the eastern area is by far the most important, and the most successful oil fields are found in the Irrawaddy Valley. The value of the oil deposits in the islands is uncertain. Attempts to develop the oil springs of the Punjab and Baluchistan have not hitherto met with much success.

The peak of petroleum production in all India was reached in 1919 and 1921, since when there was a small but definite fall in output to nearly 294½ million gallons in 1923. However, as the total production for 1924 was a little over 294½ million gallons, the decline appears to have been arrested. (See also under "Commerce.")

**SALTPETRE.** For many years the world's supply of potassium nitrate, or saltpetre, came chiefly from natural deposits in British India. The most important of these are in the district of Tirhut, Bengal. These deposits are constantly forming, a white crust appearing on the surface of the earth, which is scraped up and purified by re-crystallising from water. Owing to the competition furnished by potassium nitrate made from Chilean nitrate, the production of Indian saltpetre has steadily decreased, and amounted to only 8,543 tons in 1924.





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# CEYLON

## PHYSICAL GEOGRAPHY

### CLIMATE

### GEOLOGY

### FAUNA

### FLORA

#### PHYSICAL GEOGRAPHY



THE Island of Ceylon lies between  $5^{\circ} 55'$  and  $9^{\circ} 50'$  north latitude, and  $79^{\circ} 42'$  and  $81^{\circ} 53'$  east longitude, to the south-east of the Indian Peninsula, from which it is separated by Palk Strait, a shallow division some 40 miles across. The colony has an area of 25,332 square miles, about the same as that of Tasmania, or of Holland and Belgium together. England is twice and India sixty times as large. The greatest length of Ceylon from north to south is 270 miles, and its principal breadth is 137 miles. In general outline the island resembles a pear, the apex of which points towards the north. It is divided into nine provinces as follow:—Western, 1,432 sq m, Central, 2,287 sq m, Northern, 3,370 sq m, Southern, 2,146 sq m, Eastern, 3,848 sq m, North Western, 3,016 sq m, North Central, 4,068 sq m, Province of Uva, 3,272 sq m, and Sabaragamuwa, 1,893 sq m.

**COAST.**—The coast is fringed on the north-west by numberless sandbanks, rocks, and shoals, and may be said to be almost connected with India by the island of Rameswaram and Adam's Bridge, a succession of bold rocks reaching nearly across the Gulf of Manaar at its narrowest point. Between Ceylon and the opposite coast are the Manaar Passage, navigable only by very small craft, and the Paumben Passage, deepened considerably and used by large vessels passing from the Malabar to the Coromandel Coast. The west and south coasts, which are uniformly low, are fringed by coconut trees, which grow to the water's edge in great luxuriance and give the island a most picturesque appearance. Along these shores there are numerous inlets and backwaters of the sea, some of which are available as harbours for small native craft. The east coast from Point de Galle to Trincomalee is of a bold and precipitous nature.

**LAKES.**—Lakes strictly so-called do not occur in Ceylon, but lagoons, due to the damming up of river mouths by prevailing winds and currents, are frequent round the coast, and were united by canals in the time of the Dutch, forming important means of transport.

**MALDIVE ISLANDS.**—Some 400 miles west and south-west of Ceylon lie the Maldive Islands, a group of atolls or rings of coral, which are tributaries of the Empire. The Sultan of the Maldives sends an annual embassy and present to the Governor of Ceylon as representing the King. The

inhabitants are principally of Sinhalese descent, with an admixture of Tamils; then language is a dialect of Sinhalese though traders understand some Tamil, and Mohammedanism is their religion. The principal island is Male, where produce consisting of dried fish, coconuts, cowrie shells, tortoiseshell, woven mats, yarn and cloth is collected for export.

**MOUNTAINS.** Most of Ceylon is flat and undulating, but in the southern portion a mountain mass, composed of ridges running generally to the south-east and reaching its culminating height in Mt. Pidurutalagala (8,296 ft.), rises abruptly from the plains. The most conspicuous mountain is Adam's Peak (7,355 ft.), but it is only fourth in point of elevation. This mountain is chiefly remarkable as the resort of pilgrims from all parts of the East. The hollow in the lofty rock that crowns the summit is said by the Brahmans to be the footsteps of Siva, by the Buddhists that of Buddha, and by the Mohammedans that of Adam, while the Portuguese Christians divide their allegiance between the claims of St. Thomas and those of the Eunuch of Candace (Queen of Ethiopia). The footstep is covered by a handsome roof, and is guarded by the priests of a rich monastery (half way up the mountain), who maintain a shrine on the summit of the peak.

**RIVERS.** The chief rivers of Ceylon take their rise in the mountainous district of the south. The largest is the Mahaweli-ganga (Great Sandy River), which is 206 miles long. Rising in the district round Hattton and Nawalapitiya, it flows in a northerly direction to Kandy, where it runs eastward for a few miles before turning again to the north, and entering the sea near Trincomalee. The next largest river is the Malwatte Oya, or Aruvi-ar (104 miles), associated in history with the escape of Robert Knox from Kandy. No other river is 100 miles long. The Kelaniganga (90 miles) enters the sea near Colombo, and the Kalu-ganga (70 miles) near Kalutara, between which town and Ratnapura, the centre of the gemming industry, there is constant communication by boats. Generally speaking, however, the rivers of Ceylon flow so rapidly, and in recent times especially have become so silted up by floods caused by the clearance of forests for planting, that they are only navigable to a little extent by small boats, and are not a factor of serious geographical importance as means of transport.

#### CLIMATE

Ceylon, being close to the Equator, has an equable climate, with but minor variations from one time of the year to another.

**MEAN TEMPERATURE.** The range of temperature in one day is only slight at sea level, though more pronounced at altitudes, the average daily range for Colombo being about 12 deg. Fahr., while in Kandy (1,000 ft. up) it is 15 deg., and in Nuwara Eliya (6,200 ft.) about 18 deg. The mean temperature of the hottest month in Colombo is 82.6 deg., of the coldest 79.1 deg., the corresponding figures for Nuwara Eliya being 60.8 deg. and 50.6 deg. Fahr.

**MONSOONS.** The seasons are determined by the monsoons which blow alternately from north-east and south-west for about six months each. As a rule the earlier part of each monsoon is wet, the later comparatively dry, the end of the north-east monsoon (January to March) being distinguished in south-western Ceylon as the "dry season". The island may be clearly marked out into climatic zones by the effects of the monsoons, the south-west monsoon (April to September) bringing rain to the hills (chiefly on the western side) and the south-western plains, while the north-east monsoon (October to March) at first brings rain to all the island, but later only to the eastern side of the hills.

**RAINFALL.**—The annual rainfall is less than 50 in. in Jaffna, the north-west and the south-east from 50 to 75 in the north-east, 75 to 100 inches in a belt of 20 miles width surrounding the mountain zone, and from 100 to 200 inches in the tea country. The occurrence of rain can be anticipated with fair accuracy, and the seasons for heavy downpours regularly coincide with the change of the monsoons.

**WETTEST MONTHS.**—As much as 53 in. has been registered in Colombo during October and November. These months are therefore to be avoided by the tourist. August and September are often delightful months in Ceylon, and they are in great favour with the many visitors from India, Burma and the Straits Settlements.

#### GEOLOGY

A probable theory is that the island of Ceylon was at one time at the outer end of a peninsula which stretched north-eastward from South Africa through Madagascar towards Southern India. By the action of the tides, by subsidence and otherwise, this peninsula became broken up into islands, and finally disappeared, but traces of the connection may be seen to this day in the African affinities of some of the plants and animals of Ceylon and Southern India.

A small area round the coast of Ceylon, especially in the north, is of raised coral or other recent formation, and there is a sub-



merged or outer shelf along the northern coast of the island composed of detritus washed down from the rivers of India. In general, however, all the rocks are of igneous origin, gneisses resembling those of Southern India, and consisting mainly of felspar, quartz, and pyroxene, with frequent occurrences of mica, hornblende, and iron ores. Bands of crystalline limestone are also found and the decomposition of some of the rocks has resulted in the formation of kaolin, or China clay, and in the production of laterite (known locally as "kabok"), a rock which occupies large areas in the plains, and of which the famous "red roads" of Colombo are made.

### FAUNA

Ceylon belongs in a zoo-geographical sense to India, and, in common with Southern India, it has a number of animals whose nearest relatives are African. There are also slight indications of faunal relations with the Malayan and Australian regions. The centre and south-west of Ceylon, excepting the mountain tops and the scattered patches of forest, are too much cultivated to have many wild animals, but they are plentiful in the plains of the north and east, especially in the game reserves, of which the best known is that near Hambantota, occupying an area of 150 square miles.

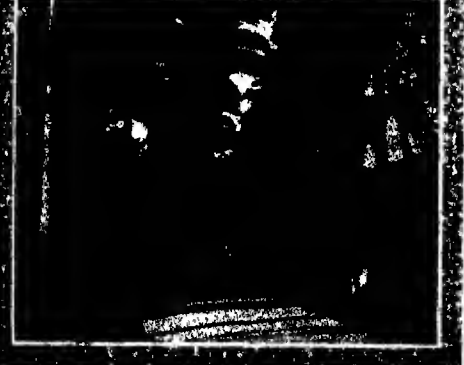
**ANIMALS.**—Of mammals, the most interesting is the elephant, which is still common and is carefully preserved. The Ceylon species is smaller than the African and rarely possesses tusks. Among other interesting mammals are the small black bear, the leopard, generally known as the cheetah, the monkey, of which there are five kinds, deer, buffalo, wild boar, jackal, mongoose, otter, and porcupine. Squirrels are about the commonest animals on the island, and bats are frequent, one gigantic species being known as the flying fox.

**BIRDS.** There are said to be 400 different varieties of feathered life on the island, of which a leading authority considers 47 to be peculiar to Ceylon. Few of them are of vivid colouring or are noted for their song, and they have been greatly reduced by the clearances made for agriculture.

The largest bird, the peacock, is plentiful in the denser jungles, and a variety of hawks are familiar to both town and jungle. A very attractive bird, whose song is heard in the low country during the mating season, is the koel, or Indian cuckoo. It is almost as large as an ordinary crow, and the male is jet black in colour. The female is spotted after attaining maturity, laying its eggs always in the nest of the crow which hatches them out. Eagles and owls, herons and egrets are indigenous to the island, and a popular bird is the weaver-bird.

**FISHES.**—Fish are abundant round the coasts of Ceylon, and there are some good edible varieties in the inland tanks and rivers. Of those in ordinary use for the table, the finest is the seer, a species of scomber. Mackerel, dories, carp, whiting, mullet (red and striped), soles, and sardines are abundant. Sharks appear off all parts of the coast, and the huge saw-fish infests the eastern side of the island, where it attains a length of from 12 to 15 feet. There are also several varieties of fish remarkable for their brilliant colouring, such as Red Sea perch, of the deepest scarlet, and the great fire fish, with scales of a lustrous green, known to the natives as the "parrot fish."

**INSECTS.**—These are well represented. There are many large and beautiful butterflies and moths. Leaf and stick insects,



1. Peradeniya Garden: Tall palm trees.  
2. Seehore, Mount Lavinia.  
3. Mount Lavinia Hotel.  
4. Fishing Coaster on Seehore, Welisawatta.  
5. Peradeniya Garden: Tall palm trees.

which successfully mimic the appearance of green leaves or twigs, are common. Ants, especially white termites, abound, as do fireflies, crickets, cicadas and cockroaches.

**MOLLUSCS.** Molluscs are very numerous, the most noticeable perhaps being the large snail which climbs up palm trees and lays eggs of enormous size. One of the most interesting events on the island is a "pearl fishery," when the pearl oyster, really a mussel, is captured in large numbers upon the shallow banks between Ceylon and India. For several years there will be no fishery, and then will come a season of favourable years, when the oysters are present in large numbers and can be fished.

**REPTILES.**—Of the reptiles of Ceylon, the most striking is the crocodile which is common in the irrigation tanks and some of the rivers, and has been known to carry off bathers, as well as cattle and wild animals which come to drink there. Two enormous lizards, the kabaragoya and the talagoya, are frequent, and snakes are common but are rarely seen. The largest is the rock snake (python molurus), which sometimes grows to over 20 feet in length. There is also the rat snake, which is the next largest, and which lives on frogs and rats; it is quite harmless. The most deadly are the cobra and the tie polonga, or viper. There are many varieties of non-poisonous snakes whose colourings are most beautiful.

### FLORA

The extensive range of climate in Ceylon is accompanied by a corresponding range of vegetation, though the total flora is poor compared with that of the Malay Islands. Generally speaking, the flora resembles that of Southern India.

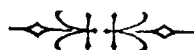
**PLANTS.** Very many of the species of plants are peculiar to the island. Most common are the gregarious plants known as Vilu, species of the genus *Strobilanthes*, which only flower at intervals of five, six and seven years. Tree ferns, often 25 ft in height, numerous tufted bamboos, melastomads, and orchids are found in the mountain forests. The orchids number about 150 species. In the more elevated parts many plants partake of European forms, yet presenting tropical characteristics. Such are the guelder rose, St John's wort, the pitcher plant, violets, geraniums, buttercups, sundews and campanulas. The most beautiful flowering shrub of the alpine regions is the rhododendron, which in some instances grows to a height of 70 feet. It is met with in great abundance in the moist plains of the elevated land above Nuwara Ehiya, flowering very freely in June and July.

**TREES.**—Palms are prevalent everywhere, the beautiful areca palm, the feathery jaggery or kitul, and the lovely talipot being the glories of Ceylon lowland vegetation. The coconut palm is characteristic of the southern and western districts, and the palmyra palm of the northern and eastern. The *Cocos nucifera*, or coconut palm, is a native of the island, and may justly be considered the most valuable of its trees. It grows in great abundance along the entire sea-coast of the west and south sides of the island, and furnishes almost all that a Sinhalese villager requires. Its fruit, when green, supplies food and drink, when ripe it yields oil. The juice of the unopened flower gives him toddy and arrack. The fibrous casing of the fruit when woven makes him ropes, nets and matting. The nut shells form drinking vessels, spoons, etc., while the plaited leaves serve as plates and dishes, and as thatch for his cottage. The dried leaves are used as

torches, the large leaf stalks as garden fences, and the trunk of the tree sawn up is employed for every possible purpose from knife handles to door-posts. There are four kinds of this palm: the common, the king, the dwarf and the Maldiva.

In the recesses of the low-country forests the trees are high and closely packed. Amongst the timber trees the most valuable are the calamander, satin wood, and ebony. One of the most valuable native trees of Ceylon is the mirinda. In the north the

dry forest region is remarkable for its valuable timber trees, of which the palu and halmilla, or Trincomille wood, are noticeable. Plantations of tea, rubber, cacao, cinnamon, cardamom, and tobacco abound in various parts of the island.



## HISTORY

**T**HE earliest inhabitants of Ceylon belonged to a prehistoric race now represented by the fast-dwindling Veddas, or wild men of the island. This was about three thousand years ago, when the Sanskrit-speaking Aryans of the north of India had not emerged from obscurity. But before the dawn of civilisation fell upon England the colonisation of Ceylon, according to the long metrical translation called the Maha Vansa, had been accomplished by a people of the Aryan race, who had discovered the wonderful resources of the island, had conquered and colonised it, and by a system of irrigation which is the admiration of engineers of to-day had brought the whole country into a high state of culture; moreover they had built beautiful cities, the remains of which even now hold a high position among the wonders of the world. The Maha Vansa recounts the history of Ceylon and its 171 native kings down to A.D. 1798. The Tamils from Southern India who established dynasties in the island in the third century B.C. waged war incessantly with the Sinhalese settlers. By the beginning of the 16th century the Tamils had gained possession of the greater part of the country, while the Sinhalese kings reigned in the south and west. The seaports remained in the possession of Arab traders, who introduced into the island the Mohammedan religion, and their descendants are settled to-day in all the chief trading centres, especially on the east and west coasts.

### 1508-1602 : THE PORTUGUESE

The first intrusion of the white man took place in 1506, when the Portuguese, who at that time were active in Eastern waters, discovered Ceylon, and entered into an agreement with the King of Cotta. Ceylon at that time was ruled by a number of petty rajahs or chieftains, both Sinhalese and Tamil, who were all subordinate in a greater or lesser degree to the Maharajah Dharana Prakrama Bahu the IXth. The power of the Maharajah had declined greatly since the time when a predecessor had sent a fleet of 500 galleys to Cambodia to avenge an insult offered to his ambassadors, a condition of affairs due to incessant strife with his rivals for supreme authority, and it was during these distractions that the Mohammedans from the Malabar coast gradually took into their hands the entire trade of the island. This trade lay principally in cinnamon which was of a finer quality than that found elsewhere. The Portuguese sought successfully to monopolise the trade in this commodity, and, after forming a settlement at Colombo in 1517, soon secured all the harbours on the north, west, and south of the island. Of these they remained the undisputed masters for over 100 years, though the Sinhalese, many of whom had embraced Christianity and adopted Portuguese names, never relaxed their struggle for independence,

and often inflicted local defeats upon their Portuguese masters.

Towards the end of the 16th century the Portuguese power in Ceylon was at its zenith. Their powerful fortresses of Galle, Colombo and Negombo controlled the cinnamon districts on the south and west coasts. Jaffna dominated the trade with India and Mannar the pearl fishery. In addition to these, there were several minor ports of which Kahitana was the most important. The east coast alone was left unguarded owing mostly to its unproductiveness and to the belief of the Portuguese that no danger could threaten them from that side.

**1602-1630 : EARLY DUTCH SETTLEMENT. NEXT PORTUGUESE POWER THREATENED.** The position at the beginning of the 17th century was that Wimala Dharma, the Rajah of Kandy, who had overthrown the Rajah Sinha of Cotta and his other rivals had obtained the sovereignty of the interior of the island, but was hemmed in by the Portuguese who controlled all the profitable parts of the realm.

It was precisely at this period that the Dutch first sent their expeditions overseas, three ships under Joris van Spilbergh anchoring in the Bay of Batticaloa on May 31, 1602. He was not unfavourably received, but another Dutch adventurer, De Weert, who arrived 6 months later was in 1603 with many of his followers killed by the Sinhalese. By this time it was evident that something more than the good will of the natives was needed to procure for the Dutch East India Company those valuable products of the island which they required. Just then, however, the energies of the company were mainly directed towards the establishment of its influence in the Malay Archipelago, and, beyond keeping up friendly relations with the Maharajah of the island and his successors, it made no attempt to establish a settlement in Ceylon. That the Dutch had merely postponed their designs on Ceylon till they became more powerful is evident from the contracts or treaties which they made with the native rulers from time to time, these giving them considerable rights as against the Portuguese, to be used as opportunity offered.

**1630-1658 : EXTENSION OF DUTCH INFLUENCE. PORTUGUESE DRIVE OUT.** The Portuguese saw their power threatened, and by 1630 they had succeeded in encircling the whole island by a ring of seven large and a number of smaller forts and fortified places, which not only commanded the coasts, but a considerable portion of the interior of the island. The attempts of Senerat, the Maharajah at that time, to take some of these strongholds were futile, at his death, in 1632, Rajah Sinha II ascended the throne and entered into an alliance with the Dutch. In 1638 the latter

captured Batticaloa, and during the following two years the forts of Trincomalee, Negombo and Galle. Negombo was, however, retaken by the Portuguese in 1640. The alliance between Rajah Sinha and his new masters (for it quickly became evident that the Dutch were in the island not to reinstate him but to supplant the Portuguese) soon gave way to open hostility, a treaty between the two European Powers being made in 1644. War with Rajah Sinha followed, and it was not until 1650 that a rapprochement took place, war being again declared by the Dutch against the Portuguese in 1652. Colombo was the main objective of the former, but it was only in May 12, 1656, that the city finally capitulated. The Rajah's demand that both Colombo and Negombo should be handed over to him in terms of the treaty of 1638 was ignored, the former town was strongly garrisoned, and though the north of the island and the island of Manaar still remained in the hands of the Portuguese, the Dutch were now masters of practically all the richest parts of the country. Two years later Manaar and Jaffna were captured, and, in the words of the official despatch of the Dutch admiral Van Coen, "thus by God's extraordinary grace had the Company become master of the Kingdom of Jaffnapatam and lord over the precious Island of Ceylon."

**1658-1796 : DUTCH POLICY -- COMING OF THE BRITISH.** The Dutch were now masters of the island, though nominally they only held the ports they had captured in the name of the Sinhalese king. In point of fact, the Kandyan had but exchanged Portuguese for Hollander, and were still confined to their fastnesses in the central mountain zone. The Dutch, however, concentrated their energies upon securing a monopoly of trade, and for 30 years they so managed affairs that nothing was exported from the island save through their factories. At this time Holland was at war with England, which captured in 1782 the Dutch settlement at Trincomalee in the north. It was later recaptured by the French and restored to Holland, but was again captured by Colonel James Stuart in 1795 on the renewal of the war between the British and the Dutch, and in 1796 Colombo surrendered.

**1796-1815 : CEYLON BECOMES A BRITISH COLONY.** By the capitulation of the garrison at Colombo all the Dutch settlements and strongholds in Ceylon were ceded to the British, though the island was not formally annexed until the Peace Treaty of Amiens in 1802. The native sovereigns, however, continued in possession of their mountain territory until the Kandyan king, Wikrama Rajah Sinha, after perpetrating many atrocities on his own people, seized and murdered certain native merchants, British subjects, trading to Kandy. War

followed in 1815, Kandy was taken, the tyrant deposed, and his territories were annexed by treaty to the British Crown. Civil and religious liberties were guaranteed to the natives, the religion of Buddha was declared inviolable, and the laws of the country were to be preserved and administered according to established forms.

**1815-1914 : PROGRESS UNDER BRITISH RULE**—With the exception of a serious outbreak in some parts of the country in 1817, which lasted for more than a year, and of two minor attempts at rebellion easily put down, in 1843 and 1848, the political atmosphere of Ceylon has remained undisturbed. During the 19th century the colony made remarkable progress, British capital was invested profitably, the cultivation of coffee was extended, and the revenue derived from it enabled successive Governors to bridge rivers, to make roads and railways and to restore many of the ancient irrigation works. When between 1870 and 1880 the coffee estates suffered from a fungoid epidemic, the cultivation of tea was fostered, and financial equilibrium was restored.

Continuously to the end of the 19th century railway extension went on, as well as the development of agriculture, a feature of successive years being the formation of strong local planters' associations, the Planters' Association of Ceylon having been established in 1854. In 1875 the island was visited by the Prince of Wales, afterwards King Edward VII, and in 1882 his present Majesty the King paid his first visit, with

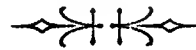
his brother the late Duke of Clarence. In 1897 the planters of Ceylon commemorated Queen Victoria's Diamond Jubilee by the completion of the handsome Victoria Buildings in Colombo.

In the South African War, Ceylon played her part by the equipment and despatch of a strong contingent of mounted infantry. In 1901 (King Edward VII having ascended the Throne a few months earlier) the Duke of York (as King George was then), with the Duchess of York, visited Colombo and Kandy, and they were received with the utmost enthusiasm and loyalty. A second contingent of troops was sent to South Africa early in 1902, a new weekly steamship service round the island being established in the same year. In 1910 the year of the Accession of King George V, the Franchise Bill became law, and a re-constitution of the Legislative Council took place, the former encountering much opposition at the time. In 1912 the Wireless Station at Colombo was installed and the first meeting of the reformed Legislative Council took place.

**1914-1925 : THE WAR AND POST WAR YEARS** The outbreak of the European War met with the response that might have been expected from so loyal a colony as Ceylon. The Ceylon Planters' Rifle Corps Contingent sailed as early as September 1914, and were at once accepted for service in Egypt, while large gifts of tea and other produce, as well as of comforts of all kinds, were made. The early activities of the German cruiser "Emden" caused

considerable excitement and some inconvenience, and an untoward incident was the occurrence of serious riots at Kandy in 1915, which spread to other provinces and caused the proclamation of martial law. Had the Army Council agreed, there can be no doubt that a complete battalion of Ceylonese could have been raised for service in Europe. Ceylon's memorial to her gallant dead has taken the form of a Victory Column and the endowment of a Seaman's Ward in the General Hospital, Colombo.

The years immediately following the War affected Ceylon less adversely than many other Eastern countries, though there was something approaching an industrial crisis in 1920. Further reforms of the Legislative Council were sanctioned in that year, and in 1922 the Prince of Wales' visit was the occasion of a loyal welcome everywhere. In 1924 the outstanding events were the successful participation of the colony in the British Empire Exhibition at Wembley, the vote of Rs 3,000,000 by the Legislative Council for the new University of Ceylon, the successful inauguration of broadcasting in the island, and the opening of the new Legislative Council. In 1925 Sir William Henry Manning's long and successful tenure of office came to an end and he was succeeded by the present Governor Sir Hugh Charles Clifford, G.C.M.G., while the Hon. Mr. Cecil Clementi, who had been Colonial Secretary since 1922, received well merited promotion on his appointment to the Governorship of Hongkong.



## PEOPLES

### POPULATION

### IMMIGRATION AND LABOUR

### EDUCATION

#### SPORT

#### PRESS

#### POPULATION

**T**HE total population of Ceylon at the last census of 1921 (excluding the military and shipping) was 4,498,605, or, including military and shipping, 4,504,549.

**CENSUS STATISTICS.**—The above total of 4,498,605 was distributed as follows:

PROVINCE	POPULATION
Western	1,246,847
Central	717,739
Southern	671,234
Northern	374,829
Eastern	192,821
North-Western	492,181
North-Central	96,525
Uva	233,864
Sabaragamuwa	471,814
Miscellaneous	751
Total	4,498,605

The districts with the largest population are—Colombo (exclusive of the Municipality), 678,980; Kandy (exclusive of the Municipality), 401,431; Kurunegala, 354,197; Jaffna, 330,541; and Kalutara, 323,704.

The population returns for 1921 of the principal towns were as follow—Colombo, 248,826; Jaffna, 42,511; Galle, 39,157; Kandy, 32,502; Moratuwa, 28,608; Negombo,

21,340; Matara, 16,779; Kalutara, 13,590; Panadura, 10,747; Batticaloa, 10,640; Kurunegala, 10,187.

**POPULATION BY RACES** The racial distribution of the inhabitants of Ceylon at the census of 1921 was as follows.—Sinhalese, 3,016,154; Tamils, 1,120,059; Moors, 284,964; Europeans, 8,118; Burghers and Eurasians, 29,439; Malays, 13,402; Veddas, 4,510; others, 21,959.

**POPULATION BY RELIGIONS**—In 1921 the number of Buddhists in Ceylon was 2,769,805; of Hindus, 982,073; of Muslims, 302,532; and of Christians, 443,400.

**SEX DISTRIBUTION**—Of the grand total of 4,498,605 returned by the 1921 census, 2,381,812 were males and 2,116,793 females.

**ESTIMATED POPULATION, 1924.**—The estimated population of the island on December 31, 1924, was 4,861,670.

**GROWTH OF POPULATION.**—The growth of population between 1911 and 1921 equalled about 9.6 per cent. This was considerably below the average rate of increase since 1871—the date of the first regular census—the fall being due to the incidence of the severe influenza epidemic in 1918-1919, to decreased immigration and increased emigration caused by the slump in rubber, and to the general

depression of trade resulting from the Great War. Statistics show that the highest rate of increase during the 1911-21 decade was among the low-country Sinhalese (12.2 per cent), the Burghers and Eurasians coming next with 10.4 per cent. The Veddas decreased by no less than 15.4 per cent.

**LANGUAGES.**—The language of nearly 70 per cent of the population is Sinhalese, of the remaining 30 per cent, with the exception of Europeans, the language is Tamil. A corrupt form of Portuguese is spoken by some natives of European descent. The Veddas speak a distinct language, and the Rodiyat, an outcast tribe, possess a large vocabulary of their own. The Sinhalese have several original poems of some merit and the Maha Vansa, a most interesting series of native chronicles, but their most valuable literature was written in Pali, and afterwards translated into Sinhalese.

**POPULAR OBSERVANCES.**—The Sinhalese have observances of their own, just as they have modes of dress and social customs peculiar to themselves, though western thought and culture have to a great extent banished the old and quaint observances of the people to the more remote parts. Many of the customs of the Sinhalese are largely the survivals of observances of a prehistoric time, and are frequently connected



WILD WATER BUFFALOES WALLOWING IN THE STREAM.

Fine Camera Study by Mr. F. E. Mackwood.

with the supernatural. Astrology, for instance, is still as important a branch of study and general Oriental culture as is medicine, and hardly any undertaking is set afoot without consulting the stars. A horoscope is drawn up at birth, and the child must be weaned, taught the alphabet, sent to school, put to employment, and married according as the stars dictate and at the time ordained.

On many occasions of importance propitiatory offerings are still offered to the gods, the portion set apart being ceremonially carried on the leaf of a plantain tree, made into an octagonal cake and then divided into eight parts by pressing down the diagonals of the octagon. The moon is still held to have so great an influence over birth that new rooms are continually built for the birth of an expected child when the moon is waning, such rooms being consecrated by offerings of rice, on which are written the names of the nine planets. Female children must have their ears pierced only on a Monday, Thursday or Friday, and a new born child must only see the sun for the first time after consultation of the stars and the offering of rice and coconut flowers to the deities.

Marriages are accompanied by a no less wealth of ceremonial observances, chief amongst which is the ritual of shaving his chin for the first time by the bridegroom. Burial, which is usually by cremation, is also crowded with observances, in which feasting forms a great part. These are only a few of the more intimate observances. They play no inconsiderable part in the life of the village, though in the towns and cities they are observed with much hesitation.

**RACES.**—The Sinhalese (Cingalese), the most numerous of the natives of Ceylon, are supposed to be the descendants of those colonists from the valley of the Ganges who first settled in the island in 543 B.C., and speak an Aryan language closely allied to the Pali. The dress of the men, who have delicate features and slender limbs, looks singularly effeminate, resembling very much a petticoat, their long hair, turned back from the forehead, is confined with combs, and earrings are worn

as ornaments. Polyandry still lingers in the interior of Ceylon, but this and many other customs are rapidly disappearing under the influence of education. The Kandians, or Highlanders, are a more sturdy race and maintained their independence for three centuries after the conquest of the Low Country by Europeans. The Malabars or Tamils, long contended with the Sinhalese for the sovereignty of the island. They have formed the chief population of Jaffna for fully 2,000 years, and constitutionally excel the Sinhalese and the Kandians. The Moormen, who are the most energetic and intelligent of native communities, are met with in every province as enterprising traders, and are generally believed to be of Arab descent. The "Burghers" of Ceylon are people of European descent who have become naturalised. Those of Portuguese extraction hold the lowest place, but the Dutch burghers frequently have responsible posts and are employed in the Government offices. Lastly, the Veddas who are not much removed from the wild animals of the forest, and are believed to be descended from the Yakhos, the aboriginal inhabitants of the country, occupy a district in the eastern part of the island. They have there preserved unaltered their ancient customs and manners of living for more than 2,000 years.

**RELIGIONS.**—The Census of 1921 showed the Buddhists to be more numerous in Ceylon than the followers of all the other religions put together. Buddhism in Ceylon (belonging to what is called the Southern School) was introduced by Mahinda, the Son of Asoka, King of Magadha about 250 B.C. The story goes that he brought with him (in memory, for none of the books were yet written) the collection of Buddhist "Canonical Books," known by the name of the Three Pitakas, and the Commentaries upon them, all in Pali. He translated them into Sinhalese, which is closely allied to Pali, and they are believed to have been preserved in Ceylon by oral tradition till they were committed to writing about 80 B.C. at Aluwihara, a spot on the road between Kandy and Anuradhapura. From Mahinda's time onward Buddhism may be said to have been the national religion, and

although it has since met with several vicissitudes and troublous times, it has also experienced extraordinary revivals, notably during the 19th century. Hinduism, or Brahmanism, is the religion of rather less than a million of the people of Ceylon, many of them immigrants from India. Mohammedanism was introduced by the Arabs, and the Christians are either descendants of the Portuguese or Europeans.

**VITAL STATISTICS.** The average annual birth-rate in Ceylon for all races between 1914 and 1923 was 38.9 per 1,000 of the population for Europeans 22.0, for Burghers 34.0, for Sinhalese 40.2, for Tamils 35.2, for Moors 36.9, for Malays 45.9, and for others 30.6. The average annual death-rate for all races between 1914 and 1923 was 30.0 per 1,000, for Europeans 10.9, for Burghers 21.5, for Sinhalese 28.1, for Tamils 33.7, for Moors 42.0, for Malays 34.0, and for others 37.3. The average annual infant mortality for the same decade was 193 per thousand births, as against 77 in England and Wales in 1922. The urban birth-rate in 1923 varied from 17.5 per 1,000 to 54.8, with an average of 32.2. The birth and death rates for the whole island in 1924 were 37.3 and 25.7 per 1,000 respectively.

## IMMIGRATION AND LABOUR

Ceylon is entirely dependent upon India for the supply of labour for her large tea estates, and this involves a constant immigration of unskilled Tamil coolies to the extent of about 100,000 a year. This immigration, which is assisted, is restricted under the Indian Emigration Act of 1922 and the Emigration Rules of 1923. There is also a certain amount of free immigration of those engaged in trade and other urban employment.

**ADMINISTRATION.**—In terms of the Ceylon Labour Ordinance of 1923 immigrant labour is under a Controller, who is assisted by an advisory "Board of Indian Emigrant Labour" appointed by the Governor. The Controller carries out the provisions of all ordinances relating to Indian immigrant labourers, and applies the measures adopted for the encouragement of the introduction

of such immigrants into the island. He also assesses and collects the amounts due from employers as contributions to the Immigration Fund, and he is in charge of the administration of the fund.

The supervision and control of recruiting in India are entrusted to an Immigration Commissioner appointed by the Governor, while on behalf of the Indian Government an Agent resides in Ceylon and is charged with seeing that the provisions of the Emigration Act and Rules are complied with.

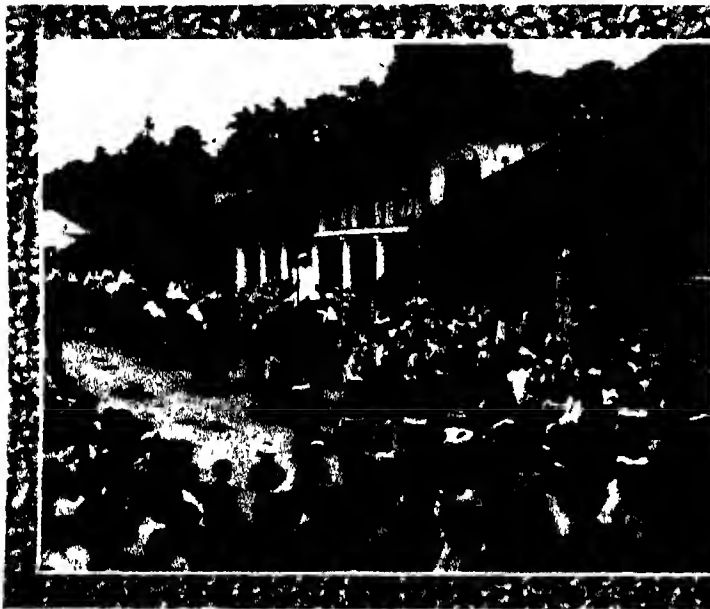
**GENERAL CONDITIONS.**—During recent years considerable attention has been given to the general condition of estate labour. Estate schools are provided, and housing and sanitation are carried out according to Government regulations. Rice is supplied by the estates, usually at less than cost price, and housing accommodation and medical attendance are generally free. Labour in Ceylon is cheap: a day's field work costing somewhat less than a shilling, while skilled labour costs twice or three times as much. There is no Poor Law or Poor Rate. The Buddhists and Hindus, in accordance with

from the labourer's point of view, by the Agent of the Indian Government in Ceylon.

**IMMIGRATION FUND.** This fund was established in 1923 for the purpose of recruiting immigrant labourers and their transport from India, of paying all Indian Government fees, of the repatriation of labourers and their dependants, and of the payment of the salaries of the Immigration Commissioner and his employees. The fund is financed by an acreage tax on estates employing Indian immigrant labour, and is payable in quarterly instalments by such estates with 10 acres or more planted in tea, or with 30 acres or more planted in rubber, cacao, or cardamoms. The rate payable per quarter is fixed from time to time by the Governor in Executive Council. In 1925 the annual cess stood at Rs 6 per acre for tea, and Rs 1 8s per acre for rubber, cacao, and cardamoms. The assessment payable by each estate is made by the Controller on returns furnished by the estates and scrutinised in the Controller's office. Estates paying acreage fees are entitled to recruit under the fund without further payment. Employers who do not pay acreage

as valid for travelling anywhere within the British Empire. No further visa is required for landing in British territory, but the holders are not exempted from the immigration regulations in force in the various countries of the Empire. Special regulations are in operation affecting British subjects travelling to South Africa, and enquiry should be made at the Colonial Secretary's Office before proceeding on a journey thither. Aliens travelling from Ceylon to any part of the British Dominions, Egypt, etc. (except Canada) must have their passports vised by the Colonial Secretary, Colombo, two days' notice of this being required. Special endorsement is necessary in the case of Egypt, Palestine, and Mesopotamia for all passports.

**RECRUITING.** Licenses to recruit coolies in India are issued by the Controller in Colombo, the recruiters being known as kangamies. In India there are a number of professional recruiters, but labourers known to have been received from them are invariably rejected, as experience has proved that the ultimate result is a loss to the estate concerned. Moreover, the unscrupulous



1. KANDY PERAHERA.



2. CREMATION CEREMONY, BUDDHIST PRIEST

their religious tenets, assist their poor with food, lodging, etc., and the public feeding of the destitute is a great local feature. In towns a good deal is done for the relief of the poor by Friend-in-Need Societies and other bodies devoted to Social Service.

**EMPLOYMENT OF CHILDREN.**—The Ceylon Government has, at the request of the Government of India, been enquiring into the question of child labour on the estates. In considering this question, it must be remembered that all over the East the children of agricultural workers in their home villages habitually assist their parents. It is also obvious that light weeding and other similar tasks, performed in the open air and out of school hours, do not fall into the same category as child labour under factory conditions in large manufacturing industries. While estate employers are ready to stop the employment of children under a certain age, it is felt that such a prohibition would be very unpopular with the labourers themselves, and at present the question is being investigated, particularly

those and who wish to recruit unskilled labour in India may receive recruiting licences on depositing (or furnishing the requisite guarantee for) a sum sufficient to meet the expenses of registering and bringing over the number of labourers whom they require.

**PASSPORTS.**—Passports are required by persons entering or leaving Ceylon, the only persons excepted from this rule being British subjects travelling between India and Ceylon, and Asiatic residents of Ceylon or India travelling between the Federated Malay States or the Straits Settlements and Ceylon. Emergency certificates, valid for a single specified journey to and/or from Ceylon, may be issued in cases where the granting of a passport is deemed inadvisable. The charge for a passport from Ceylon is Rs 5. The fee chargeable for the renewal of a British passport is Rs 1, in respect of each year for which it is renewed.

British subjects travelling to any part of the British Dominions (except Canada) must be in possession of valid passports endorsed

methods to which a professional recruiter will resort are calculated to prejudice recruiting for Ceylon with the Indian authorities.

**REPATRIATION OF COOLIES.** Under the Labour Ordinance, No. 1 of 1923, any Indian immigrant labourer whose return to his home may seem desirable on account of ill-health, or inability to do his work, or ill-treatment by his employer, is to be repatriated free of cost to the place of his recruitment at the expense of the Immigration Fund. A further scheme was brought into operation in 1924, under which any labourer certified by a District Medical Officer to be permanently unfit for further work and unable to maintain himself is repatriated free of charge. Indian immigrant vagrants are collected in all towns, and on being certified as such are sent to the "House of Detention" at Colombo. Here either a suitable situation is found for them, or they are sent back to their homes in India.

**STATISTICS.**—The total number of assisted coolie estate labourers entering Ceylon during





1923 was 89,007, against 78,100 in 1922. In addition to these, 100,905 miscellaneous immigrants were registered, many of these being small traders and Urban labourers from Tinnevely, Malabar, Travancore and Cochin. During the same year 51,762 estate labourers and their dependants left Ceylon for India, out of a total of 147,800 emigrants.

**WORK AND WAGES.** - In 1923 the Department of Statistics issued an exhaustive report on work and wages on estates. This clearly indicated that the Indian coolie gets a very comfortable livelihood. The immigration figures for that year showed (as stated before) that roughly 90,000 Indian recruits came to Ceylon estates during the year, and that of this total more than 46,000, or over 50 per cent, were old immigrants returning to Ceylon for a second or subsequent period. These figures supply convincing proof that work in Ceylon, with present wages and under present conditions, is not unpopular with a large class in the agricultural districts of Southern India.

### EDUCATION

There has been a great advance in public instruction since 1875 through the multiplication of vernacular, Anglo-vernacular, and

English schools by the Government, by the different Christian missions, and by Hindus who have come forward to claim the Government grant. The Board of Education was established in 1919 and consists of not less than 10 or not more than 20 members nominated by the Governor, of whom the Director and Assistant Director are *ex-officio* members while the others hold office for three years.

**ENGLISH SCHOOLS.** In 1923 there were 301 English and Anglo-vernacular schools attended by 61,003 pupils, of whom 47,349 were boys and 13,654 girls. There is one Government secondary school in Colombo, with an average attendance of 503, and there are also 30 other secondary schools, the total average attendance at which was 14,694.

In most of the larger English schools candidates are prepared for the Senior and Junior Cambridge school certificate examinations. In 1922 out of 1,030 senior candidates presenting themselves 84 obtained honours and 257 other passes, while of the 1,285 junior candidates 110 obtained honours and 558 other passes. In 1923, also, 408 candidates from Ceylon presented themselves for the London University Matriculation examination of whom 75 passed.



SPOTTED DEER (*Axis maculata*).

Camera Studies of Wild Animals in Their Native Haunts by Mr. F. E. Mackwood.

**FREE SCHOLARSHIPS.** Five Government Scholarships are now open to scholars at the English schools one on the results of the final examination in arts of the London University and one on the result of the final examination in science. A third scholarship is awarded on the results of the final examination in science on condition that the holder studies agriculture and forestry. Two more scholarships are awarded on the results of the same examination on condition that the selected candidates pursue a course of studies in engineering. The first three scholarships are tenable for two years, and the two engineering scholarships for three years. The scholarships are of the value of £300 per annum, with free passage and outfit allowance of £50. The holders may join any British university or any recognised engineering institution in the United Kingdom.

**FINANCE.**—On a total of 4,233 schools in 1923, with approximately 144,938 scholars, the expenditure by the Government was Rs 4,782,684.

**INDUSTRIAL SCHOOLS.**—In 1923 the aided industrial schools of Ceylon, which numbered 33, received grants amounting to Rs 31,674.33. The trades taught were

carpentry, dressmaking, tailoring, lace-making, embroidery, gardening, cookery, weaving, shoemaking, and smithy work. The most important of these schools is the Muggona Certified Industrial School, which is managed by the Roman Catholic Mission and is utilised by the Government as a reformatory for youthful offenders.

**TECHNICAL EDUCATION.** This is given at the Government Technical Schools, Colombo, where full time and evening classes are held in telegraph and telephone engineering and signalling also in building construction, mechanical and electrical engineering, carpentry, typewriting, shorthand, book-keeping, wood carving etc., and at the Jaffna Technical School.

**TRAINING COLLEGE.** The Government Training College at Colombo consists of three departments: English (men and women), Sinhalese (men), and Sinhalese (women). The object is to supply trained teachers for aided English schools and Government Anglo-vernacular and vernacular schools. At the beginning of 1923 the number of students in training was on the English side 35 men and 44 women, on the Sinhalese side 43 men and 40 women. There is also a

training school for Tamil teachers at Kopay, which was opened in 1923. Fifty-three students had been admitted.

**UNIVERSITY COLLEGE.**—The University College prepares students for the B.A., B.Sc., and B.Sc. (Economics) examinations of the London University. In 1923-24 there were 234 students in attendance. In 1923 the buildings formerly occupied by the Royal College were transferred to University College, and here all lectures, save those in science, are now given. Instruction is offered in English, Pali, Sinhalese, Tamil, History, Logic, Philosophy, Geography, Economics, Pure Mathematics, Applied Mathematics, Physics, Chemistry, Botany, and Zoology. There are Honours classes in Classics, Mathematics and Chemistry. It is very satisfactory to record that the results of the Intermediate Examination received at the end of 1923 showed an increase in the percentage of passes over 1922, and compared favourably with the percentages of students for the London external examinations conducted in England.

**VERNACULAR EDUCATION.**—There were 1,039 Government vernacular schools in 1923, with an attendance of 105,916 boys and 45,299 girls. Other schools, estate and controlled by religious organisations, numbered 1,820, with an attendance of 125,930 boys and 81,152 girls. The total sum expended by Government on vernacular education in 1922-23 was Rs 2,532,787.97 of which approximately two-fifths was spent on Government schools and three-fifths on aided schools.

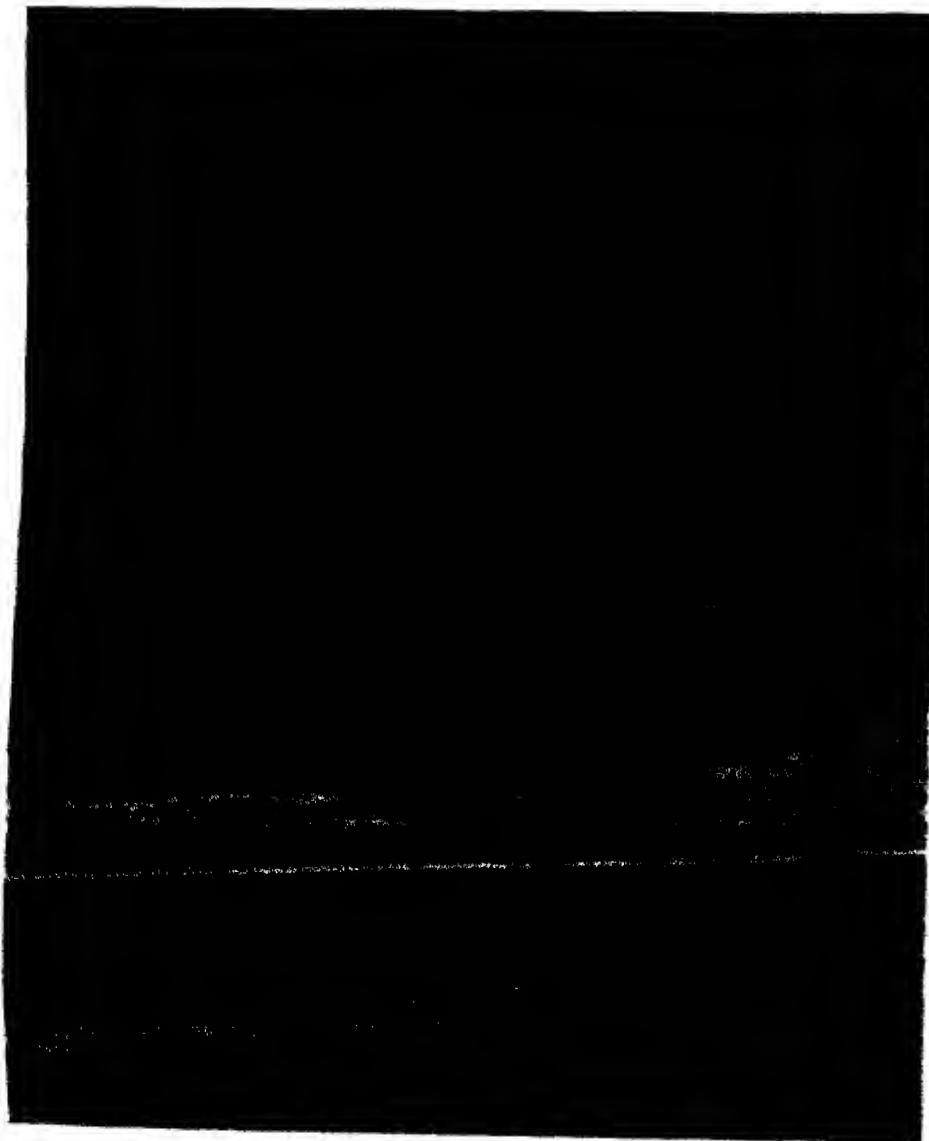
## SPORT

Outside the capital and one or two of the larger towns, where European games have become attractive, sport in the island lies mostly in the direction of wild game shooting or hunting.

**CRICKET.**—Cricket is a most popular ball game in Ceylon, and is played not only by the English, but by the Sinhalese, who often attain to great proficiency. The Ceylon Cricket Association controls the various cricket clubs throughout the island. Most of the prominent business houses in Colombo run their own clubs, and these compete annually for the Senior and Junior Shields offered by the Ceylon Chamber of Commerce, the contest being under the management of the Mercantile Cricket Association, which was formed in 1911.

**ELEPHANT KRAALS.** A comparatively rare sporting event in Ceylon which arouses much interest is an Elephant Kraal. Owing to the felling of the large forests the elephant is gradually disappearing from the island, though it is still fairly numerous in the Low Country. The kraals are enclosures erected by native chiefs who have obtained permission. Into these the elephants are driven, and the animals obtained in this way are divided amongst those organising the kraal, being then used for draught work or for the service of the temples. A famous kraal was that held in 1881 at Labugama, 28 miles from Colombo, when King Edward VII and his brother visited Ceylon. The last kraal was held in 1924.

**FISHING.**—Some of the inland rivers of Ceylon provide excellent trout fishing, notably the Nanu Oya, the Kotmaleganga, the Bemura-ella Oya, the Hambantota Oya (North Cove Stream), the Sita Eliya Stream and its many tributaries, the Horton Plains Stream, the Gourakelle and Rajanalee Streams, Lake Gregory, and the Hawa Eliya Lake. Many of these waters (in all some 30 stretches) are vested in the Ceylon



WILD ELEPHANTS (*Elephas maximus*) ENJOYING A DUST BATH.  
A Unique Camera Study by Mr. F. E. Mackwood.

Fishing Club, which has done so much to improve, by means of fish-hatcheries and attention to the rivers, the facilities offered to sportsmen. The open season for trout fishing on the Nana Oya, Kotmaleganga, Lake Gregory and Hawa Eliva Lake is from January 1 to October 31, on all other waters it is from May 1 to October 31.

**FOOTBALL.** Football is an exceedingly popular game with the Sinhalese youth, as well as with the British. The Association game is the favourite, the Ceylon Association Football League, the Colombo Association Football League, and the City Association Football League each having a full quota of affiliated clubs, and the matches attract good crowds. The Ceylon Rugby Football Union controls the older game which, after the inevitable post-War slump, has during the last two years greatly improved its position among the sports of the island. Colombo naturally furnishes the strongest team, though the Uva Club is always able to give it a close match. Other prominent clubs are at Dumbura, Kalutara and Dikoya.

**GOLF.** Golf flourishes at Colombo, Galle, Kandy, Nuwara Eliva, and Victoria where there are good courses.

**POLO.** Though not played so much as in India, where the military element is stronger, polo has always been a feature of Ceylon sport. The Colombo Polo Club uses the racecourse for its contests.

**TENNIS.** This game has a large number of devotees in Ceylon, numerous clubs having been formed, not only in Colombo, but in almost every town of importance.

**RACING.**—Racing in Ceylon grows in popularity every year, the Ceylon Turf Club having been quick to recognise the desirability of providing good stakes for competition. During recent years there has been a large influx of horses into the island, and the success of some of the imported animals has been remarkable. On the whole, the standard of horse racing in Ceylon has shown a steady improvement since the War, the times recorded during the past few years in comparison with those of a decade previously being alone sufficient to prove this.

The Ceylon Turf Club owns the well-appointed racecourse at Borella where the principal races, the Governor's Cup, Robert's Cup, and Colombo Cup are run. There are also excellent courses and interesting racing at Galle, Nuwara Eliva, Kelani Valley, and other centres.

**SHOOTING.** Apart from the larger wild game of the island, which are dealt with separately, the various wild fowl provide the best sport for the gun, and these are to be found in many parts. Snipe abound near Wenda, Maha Oya, Wakwella, and the Batticaloa Tanks. For miscellaneous shooting the district lying between Badulla and the Yala River offers perhaps the best opportunities. The cost of a general game licence is Rs. 5 for residents and Rs. 15 for non-residents.

**WILD GAME.** The jungles of Ceylon are famous for their wild game, elephants and deer being the best known. Elephants are no longer indiscriminately shot, a licence to kill being necessary but occasionally a "rogue elephant" as dangerous to the peace of the community as is a homicidal maniac is proscribed and sportsmen are invited to shoot him. An excellent centre for elephants, buffalo, bear and leopard shooting is Palutupana, 6 miles north of Kirinda, on the south-east coast. The sambur or elk deer often provides good sport for the hunter, as do the wild bear and the bear, which are killed mostly at waterholes during the dry season. There is no pig sticking in Ceylon, as the country does not lend itself to the sport.

A licence to shoot an elephant costs for residents Rs. 100, and for non-residents Rs. 300, to shoot a buffalo Rs. 20 for residents, and Rs. 75 for non-residents.

## PRESS

The first newspaper printed in Ceylon was the "Colombo Journal," which issued its initial number on January 1, 1832, but survived for only two years. On February 4, 1831, the "Colombo Observer" (since 1867 the "Ceylon Observer") began its successful career and it is by far the oldest existing newspaper in the colony, the "Times of Ceylon" having issued its first number (under the title of the "Ceylon Times") in 1840. These two papers, with the addition of several others, many of which had more or less brief careers, have worthily upheld the best traditions of the British press, and were for a long time the only journals of any importance in the colony, though of recent years there has been a very marked increase in the number, as well as a noticeable improvement in the tone and get up, of the vernacular press.

**DAILY PAPERS.** There are seven daily newspapers published in Ceylon, five in English and two in Sinhalese. The leading English daily, the "Times of Ceylon," is published every week-day evening. Besides

providing a fully up-to-date service of foreign and local news, the "Times" is also a great advertising medium and circulates throughout the whole of the island.

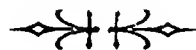
The "Ceylon Observer" was the first newspaper in Ceylon to establish a regular weekly edition (see below). The "Observer" is, like the "Times," an evening paper, has a growing circulation, and has ever been to the front in the advocacy of measures designed to benefit the colony and its inhabitants.

The three morning papers, all published in Colombo, are the "Ceylon Independent" (1888), the "Ceylon Daily News" (1918) and the "Ceylon Morning Leader" (1907). The leading Sinhalese daily paper is "Dinamina" (established 1909), a vernacular journal enjoying a status equal to that of the English journals, and controlled by the proprietors of the "Observer." The "Lakshana," another Sinhalese daily, was established in 1912 and has a large circulation.

## ENGLISH AND NATIVE WEEKLIES

The "Ceylon Observer" publishes an excellent weekly called the "Overland Weekly Observer" for both foreign and local readers. This edition was established in 1840 as the "Overland Observer" and has had continued success. A "Sunday Edition" of the "Observer" is also published. The weekly emanating from the office of the "Times of Ceylon" is the "Sunday Illustrated." From the Government printing office comes the "Government Gazette," the official organ of His Majesty's Government. The "Morning Star" is published in both English and Tamil at Jaffna. An able weekly in English is the "Searchlight" and Sinhalese weeklies with large circulations are the "Sinhala Bandhaya" and "Swadesa Mitraya."

**VARIOUS.** The Department of Agriculture publishes monthly the "Tropical Agriculturist," which contains a mass of valuable information, and the Government Press issues annually an official Handbook of Commercial and General Information. A Tamil monthly, "Kudumba Theepam" ("The Light of the Home"), has a large circulation, as has also the "Tamil Makal," the women's Tamil monthly. Mention may also be made of two excellent annual publications, invaluable to the resident or tourist in Ceylon. Ferguson's "Ceylon Directory," issued by the "Ceylon Observer," and the "Times of Ceylon Green Book." The Australian Bureau in Colombo undertakes the preparation, direction and distribution of any advertising intended for the Ceylon Press and public in any Oriental language.



# ADMINISTRATION AND COMMUNICATIONS

## CONSTITUTION AND LAW

### PUBLIC WORKS

#### CONSTITUTION

**T**HOUGH geographically a part of India, Ceylon is politically independent of it. Soon after its conquest by the British, the island was placed under the Government of Madras, but the result of the latter's attempt to govern it by Indian methods was a serious revolt. Ceylon was therefore created a Crown Colony, which status it now occupies, being generally regarded as the richest and most progressive of this class of dominion. In 1920, with a view to giving a larger measure of popular control over administration, changes in the Constitution, which had been for some time under consideration, received the approval of the King.

**ADMINISTRATION.** As a Crown Colony, Ceylon is controlled by the Crown through the Secretary of State for the Colonies, and is administered by a Governor with the aid of an Executive Council and a Legislative Council. The head of the Civil Service is the Colonial Secretary. For administrative purposes the island is divided into nine provinces, comprising 10 revenue districts; each province is under a Government Agent.

**EXECUTIVE COUNCIL.** The composition of the Executive Council has changed very little since its establishment in 1833. It now consists of seven members. Three of these are ex officio members (the Colonial Secretary, the Attorney General, and the Government Agent of the Western Province); there is one official member, and the remaining three are unofficial nominated members. This unofficial membership has for a long time consisted of a European, a Sinhalese, and a Tamil. The Executive Council is merely an advisory body to the Governor as President. Far-reaching changes in its composition, including the inclusion of an elected element, are foreshadowed.

**GOVERNOR.** The Governor is appointed by the Crown for a term of six years at a salary of £7,000 per annum, with residences in Colombo, Kandy, and Nuwara Eliya. The present Governor is Sir Hugh Clifford, G C M G, G B E, who assumed office in 1925.

**LEGISLATIVE COUNCIL.**—The Legislative Council of Ceylon, as reconstituted by the Order in Council of December 10, 1923, consists of 12 official members (of whom five are ex officio members, viz., the Senior Military Officer, the Colonial Secretary, the Attorney General, the Controller of Revenue, and the Treasurer, with 7 nominated public officers) and 37 unofficial members (3 nominated and 34 elected, including the three Mohammedan members and two Indian members directed by the Governor to be elected under powers given him). This means that the Council has an unofficial majority of 25.

The Governor is president of the Legislative Council, but the Vice-President is elected by the Council. The presiding member has an original vote and also a casting vote in case of an equal division.

## ARMY AND NAVY

### POSTS, TELEGRAPHS AND TELEPHONES

**FRANCHISE.** The franchise is confined to male British subjects of the age of not less than 21 years, able to read and write English, Sinhalese or Tamil who have during the whole of the period of 6 months immediately prior to the commencement of the preparation of the register of voters, resided in the electoral district to which the register relates and who enjoy a clear annual income of not less than Rs 600, or have other property qualifications.

**POLLERS.** Laws to be effective must be assented to by the Governor, but the Crown may disallow them even after such assent. The Governor may reserve any bill passed by the Legislative Council for the Crown to signify its pleasure thereon, and, except where power is expressly given to the Council to make provision by law, he is compelled so to reserve a bill which alters, or is inconsistent with, any provision of the Order in Council establishing the Legislative Council. The Council cannot pass nor can the Governor consent to any law, vote, or resolution imposing a tax or disposing of or charging any part of the public revenue unless proposed by the direction or with the express approval of the Governor. The Governor may, either before or after the votes of members are taken, declare any question to be of paramount importance in the public interest; in such case, if a majority of the official votes are in favour of the measure it is deemed to have been passed by the Council, the Governor having at once to report the case to the Secretary of State, with a statement of any objection made.

#### LAW

The law of Ceylon is Roman-Dutch, modified by colonial ordinances. Kandyan law is to a certain extent in force in the Kandyan provinces, and special systems of personal law are recognised for the Mohammedan community, also for the Tamils of the Jaffna district. The criminal law has been modified on the principal of the Indian Penal Code. There is a Supreme Court which decides appeals, and also tries serious crimes under its original jurisdiction on circuit. Five judges comprise the Full Court. In the island there are 30 Police Courts, 3 Municipal Courts, and 21 District Courts having criminal jurisdiction, and 41 Courts of Request concerned with civil cases only.

**APPLICATION OF ENGLISH LAW.** The tendency of legislation during the last hundred years has been slowly but surely to introduce into the island a considerable mass of English law, though judicial precedents and decisions have helped to preserve the pure Roman-Dutch law. The latter, though not so firmly established in Ceylon as it is in South Africa, appears to be in no danger of extinction, as in British Guiana. The laws of Ceylon relating to Persons, Property, Torts, and Intestate Succession are almost entirely Roman-Dutch in origin, though they have been in many cases either

modified or codified by statute. In the law of contract the exigencies of modern trade and mercantile custom have necessitated the introduction of English law, an arrangement that helps considerably to facilitate commercial relations between the Mother Country and its premier Crown Colony. (See also under "Commerce.")

#### LOCAL GOVERNMENT

Local government in Ceylon has hitherto been carried on as far as possible by means of old native machinery, each village or small tract of country being under a "headman." He became responsible to a headman of a higher grade, and the latter again to another, who became responsible directly to the Government Agent of the province, a member of the regular Civil Service. The headmen of a group of villages formed the Gonsabhlawa or village council, a body which collected funds by local taxation, and assumed responsibility for good order, for the decision of minor civil and criminal cases, and the improvement of the village. Under the Local Government Ordinance of 1920 Urban District Councils have been established at several centres, and the Ordinance is to be brought into operation throughout the island at an early date by the constitution of Urban, General, and Rural District Councils.

## ARMY AND NAVY

### ARMY

At the beginning of British occupation Ceylon was governed as a military settlement, and British regiments were for a long while stationed on the island as in India. There is now no British regiment in Ceylon. Colombo, however, still ranks as one of the defended ports of the Empire, and units of the Royal Garrison Artillery, Royal Engineers, Royal Army Service Corps, Royal Army Medical Corps, Royal Army Ordnance Corps, Royal Army Pay Corps, the Corps of Military Accountants, and the Army Educational Corps are stationed in the island.

**ADMINISTRATION.**—The administration of the military forces of Ceylon is controlled by the Officer Commanding Troops, who is an ex officio member of the Legislative Council. There is a Command Staff, with headquarters at Colombo in the cool season and Nuwara Eliya in the hot season. A small garrison is stationed at Kandy, and Diyatalawa, situated at an elevation of about 4,000 feet, is the principal training centre and the station to which troops go each year for a change of air from Colombo. At Nuwara Eliya is a military sanatorium.

**DEFENCE CORPS.**—The Ceylon Defence Corps is composed of the successors of the old Volunteer Corps of the island, of which the oldest is the Ceylon Light Infantry, dating from 1881. Compulsory service for all Europeans was introduced in 1917, during the Great War. The Prince of Wales (afterwards King Edward VII) was Monarch

Colonel of the Light Infantry till 1904 when as King-Emperor he honoured the whole Volunteer Force by becoming its Colonel-in-Chief and was succeeded by his present Majesty in 1910. The other branches of the Defence Force are the Ceylon Garrison Artillery, the Ceylon Engineers, the Ceylon Mounted Rifles, the Ceylon Planters' Rifle Corps (of which H.R.H. the Prince of Wales is Honorary Colonel), the Town Guard, the Supply and Transport Corps, the Medical Corps, and the Cadet Battalion.

**MILITARY EXPENDITURE.** The estimated military expenditure for the financial year 1924-25 was Rs 2,120,100, compared with Rs 2,247,730 in 1922-23, and was apportioned as follows: Ceylon Defence Corps Rs 800,000; Military Contribution Rs 1,207,000; special and other expenditure, Rs 22,500.

#### NAVY

Colombo is one of the ports on the East Indies Station of the Royal Navy, and all naval matters relating to the island are dealt with at H.M. Naval Office Colombo where there is a small staff. The ships on the East Indies Station in 1924 were H.M.S. "Chatham," "Colombo" and "Canoe," of the Fourth Cruiser Squadron and the four sloops H.M.S. "Triad," "Crocus," "Cyclamen," and "Lupin." H.M.S. "Chatham II" was in charge of the Matara Wireless Telegraph Station. The R.L.A. "Rapidol" oiler, was stationed at Trincomalee, where there is a Naval Yard under a Naval Store Officer and Superintendent. At Divulawa is a Royal Naval Camp for the hot season.

#### PUBLIC HEALTH

The Medical Department is concerned with the treatment and prevention of disease throughout the island. It is under the direction and control of the Principal Civil Medical Officer and Inspector General of Hospitals, assisted on the medical side by an Assistant Principal Civil Medical Officer and Inspector General of Hospitals, and on the sanitary side by a Sanitary Commissioner.

**HOSPITALS.** In 1923 there were 91 Government hospitals in the island, the largest being the General Hospital at Colombo, with 711 beds. There are also a hospital for tuberculosis equipped with modern furniture and appliances, two leper asylums, hospitals for ear and eye diseases and for women and children, and 472 central and branch dispensaries. A new lunatic asylum is being built at Angoda, 6 miles from Colombo, to replace the old asylum which does not provide sufficient accommodation. The total of admissions into all Government hospitals during 1923 was 34,522.

**INFECTIOUS DISEASES.** Malaria is the greatest curse of Ceylon as of other tropical countries, and outbreaks are often very severe. An intensive campaign against the scourge is being waged by the Government, propaganda being organised in the villages and especially among school children. Dysentery, chicken-pox, enteric fever, and measles are of frequent occurrence. Small-pox has been almost stamped out.

**MEDICAL INSTITUTIONS.** The Medical College in Colombo, founded in 1870, grants diplomas in surgery and medicine which are recognised by the General Medical Council of Great Britain, and is attended by 200 students. At Colombo the Bacteriological Institute and the Pasteur Institute are both doing much useful work.

#### PUBLIC WORKS

The Public Works Department of Ceylon has under its control the administration of the State Railways, the Posts and Telegraphs, the construction and maintenance of public buildings and roads, and irrigation works. The two first named are dealt with separately in this section.

**BUILDINGS.** Some of the more important public buildings of Colombo will be found described under that city. The department has also been responsible for the construction of such important buildings as the General Hospital, Colombo, the new Lunatic Asylum at Angoda, the Experimental Station and Agricultural School at Jaffna, and the handsome new bridges across the Mahaweli-Ganga at Gampola.

**FINANCE.** The total expenditure of the Public Works Department increased from Rs 3,437,862 in 1896 to Rs 11,380,248 in 1923, the latter figure showing an increase of Rs 1,585,683 over that of 1922. The annual expenditure during the past 28 years has been Rs 7,971,336.

**IRRIGATION WORKS.** Irrigation works are of the utmost importance in Ceylon, where the best lands yield in rice alone only half the requirements of the population. Every effort has been made in recent years to increase the acreage under paddy, the department having spent much money in the maintenance and repair of the village irrigation works, as well as on the inauguration of a vast hydro-electric project, to cost eventually over Rs 33,000,000, which is to utilise the Laxapana Waterfalls in the central mountain range. The number of Crown irrigation works in 1923 was 184, under which 145,093 acres were irrigated, an increase of 820 acres on the previous year. There were also approximately 5,250 village tanks and dams in operation, while some 1,680 more village tanks were being restored. Altogether, about 194,400 acres were cultivated under village works. Government expenditure on irrigation in 1922-23 amounted to Rs 1,205,938.

**ROADS.** The total length of roads maintained during 1923 by the Public Works Department was 4,100 miles, of which 3,871 miles were cart roads and 235 miles bridle roads. (See also under "Transport.")

#### POSTS, TELEGRAPHS AND TELEPHONES

##### POSTS

The postal service of Ceylon, under a Postmaster General and an efficient staff, is up-to-date and progressive. On December 31, 1924, there were 625 offices open for the transaction of postal business, including about 350 village receiving offices, and 179 telegraph offices. The village receiving offices were established in 1886 with the object of extending postal facilities to rural districts.

**LETTERS.** The total number of postal articles, exclusive of parcels, which passed through the post in 1924 was estimated at some 68 millions, about 7,000,000 more than in 1923. Of this total, 6,709,000 were received from and 5,905,000 were sent to the United Kingdom and other British Possessions, about 54,000,000 letters, etc., being dealt with internally. Some 719,000 were received from and 667,000 sent to foreign countries. Of the grand total of 68,000,000, roughly 46,500,000 were letters, 8,500,000 post cards, and 13,000,000 news-

papers, book packets, samples and circulars. The increase in circulation in 1924 was principally in inland correspondence, which comprised over 70½ per cent of the total. Correspondence with India formed 13 per cent, with the United Kingdom about 4½ per cent, and with other countries 3 per cent.

**MONEY ORDERS.** All post offices in the island transact money order business, the inland system having been introduced into the colony in 1877. The value of orders issued in that year amounted to Rs 500,000, compared with Rs 28,387,526 in 1923. The total value of all money orders handled in 1923 was Rs 40,507,757. Business with India, which dates from 1880, formed a large percentage of the remaining money order transactions, orders issued payable in that country totalling over Rs 9,500,000, or Rs 500,000 more than in 1922. A fair proportion of such remittances was due to savings remitted by Indian immigrant coolies.

**PARCEL POST.** The total number of parcels dealt with in 1924 was 973,061, an increase of more than 50,000 over the 1923 total. Of these, 57,984 were received from the United Kingdom and 224,104 from other countries, chiefly from India.

**PARCEL RATES.** The local parcel post rates are as follow: For parcels not exceeding 2 lb 25 cents, with 10 cents additional for every 1 lb up to 11 lb. The registration fee for parcels is 15 cents.

Parcels to the United Kingdom cost Rs 1.50 for the first 3 lb, and Rs 1.25 additional for every further 4 lb. Maximum length 3½ ft, maximum length and girth combined 6 ft.

Parcel rates to India only are 25 cents for the first lb, and 15 cents for each additional lb up to 11 lb. For a parcel between 11 and 12 lb the fee is Rs 3.25, and 25 cents additional for each further lb up to 20 lb. A fee of 6 cents is charged for acknowledgment of delivery.

All parcels sent overseas are subject to Customs Regulations, being liable to be opened for examination, and their contents are subject to duty according to the laws of the country of destination.

**POSTAL ORDERS.** Postal orders dealt with in 1924 numbered 221,018, value Rs 882,264, as against 203,414, value Rs 771,884 in 1923. British postal orders issued were 13,278 of the value of 26,709, and British orders paid, 13,681, value 210,618.

**POSTAL RATES.** The rates for overseas postage are: 10 British Possessions, 12 cents for the first oz., and 10 cents for each subsequent oz.; post-cards, 10 cents. 10 foreign countries, the corresponding rates are 20 cents, 10 cents, and 12 cents. The inland rates of postage and the rates to India are 10 cents for letters not exceeding 4 oz., 3 cents for post-cards, and 3 cents for 2 oz. of printed matter.

**REVENUE AND EXPENDITURE.** The total revenue of the Posts and Telegraph Department for the year 1924 was Rs 5,786,188, receipts from letters, parcels, etc., totalling Rs 3,405,500 and those from telegraphs and telephones Rs 1,511,208. The expenditure for the year amounted to Rs 4,802,615, of which sum Rs 4,608,939 was for salaries, wages, and the expenses of the postal service within the colony, while Rs 194,576 was expended on the conveyance of mails beyond the colony. The net revenue for the year was, therefore, Rs 983,573.

**SAVINGS BANK.**—The deposits at the 203 branches of the Post Office Savings



Bank amounted on December 31, 1924, to Rs 7,613,945, deposits during the year having exceeded withdrawals by Rs 754,392. The rate of interest is 2 40 per cent 2 cents per month for each complete Rs 10.

### TELEGRAPHS

The telegraph system of Ceylon dates back to 1857, when the Government decided to establish it, and the first line from Colombo to Galle a distance of 74 miles, was completed in 1858. In June, 1858 the telegraph line was extended from Colombo to Kandy, and in October of the same year direct communication was established with India by the construction of a line from Colombo via Kandy and Anuradhapura to Manair and Talaimannar, nearly 250 miles in length. In 1864 the telegraph wire was extended from Kandy via Dambulla to Trincomalee, but owing to frequent interruptions from herds of wild elephants, which pulled down and broke the posts, this line was dismantled in 1881, and another and better route from Anuradhapura to Trincomalee took its place. The first direct message from Europe was received in Colombo on March 2, 1865.

To-day all the important towns in Ceylon are served by the Government telegraph system, 170 postal telegraph offices being open for public business in 1924, besides several railway telegraph offices. There are two telegraph circuits between Ceylon and India, on one of which the Bandot printing

machine is employed in duplex working. The total number of telegrams handled in 1924 was a little over 2½ million, some 300,000 more than in 1923.

**CABLES.** Ceylon is connected with the West by direct cables of the Eastern Telegraph Company to Aden and the Seychelles, and to the East with Singapore. In 1923 some 80,000 private cable messages were despatched to and 88,000 received from other countries.

### RATES (TELEGRAPH AND CABLE).

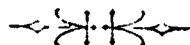
Telegraph rates are as follow. Inland, 40 cents per minimum of 10 words, including address and 5 cents for every additional two words. India and Burma ordinary service. R 1 for the first 12 words, and 15 cents for each additional word. Cables to Europe, Rs 1 35 per word. New York, Rs 2 15, Australia, Rs 2 05, South Africa, Rs 1 80, and the Straits Settlements, Rs 1 80. The deferred rate to the United Kingdom is 65 cents. The charge for urgent telegrams is three times that of ordinary private telegrams.

**PRUSS MESSAGES.** Inland R 1 per 100 words, additional 50 words, 50 cents. To the United Kingdom 25 cents per word. To India and Burma, R 1 for 32 words or groups of five figures, every additional four words or groups of five figures, 10 cents. Minimum charge to India, R 1.

**WIRELESS.** The Government wireless station at Colombo, of 5 kw. power, has a normal daylight range of about 400 miles and a normal wave-length of 600 metres and is open to traffic of all kinds. During 1923 the station dealt with 8,585 messages, containing 104,008 words. The rate is 60 cents per word. Licences for wireless apparatus cost Rs 10 per annum.

### TELEPHONES

The telephone system in Colombo was taken over by the General Post Office on January 1, 1896, having been purchased from the Oriental Telephone Company at a cost of Rs 42,666 with 50 subscribers. 25 miles of posts and 151 miles of wire. In 1899 at a cost of about 700,000, earth return circuits were replaced by metallic return circuits on account of earth current and induction from the Electric Tramway system. On December 31, 1922 there were in Ceylon 3,974 miles of telephone overhead wires and 12,627 miles of underground wires, in addition to 1,770 miles of lines and 3,294 miles of wire in connection with private licensed telephone exchanges which serve the rural areas, these being linked together by Government junction and trunk lines. There were 2,301 subscribers to the Colombo exchange in 1923, 153 at Kandy, 122 at Nuwara Eliya, 70 at Galle, 57 at Kurunegala, and 15 at Negombo. Some 13,000,000 calls were dealt with throughout Ceylon during 1923.



## FINANCE AND BANKING

### FINANCE

**F**EW countries in the British Empire have been able to show financial results more continuously favourable over a number of years than those of the Crown Colony of Ceylon. Previous to 1917 (the third year of the European War) there had been a long succession of credit balances, ranging from one to eleven million rupees. The years 1917-18 to 1920-21 each, it is true, showed a deficit (in the last named period as high as Rs 21,000,000), these being due to the diversion of trade from its normal channels, the post war economic "slump" in almost every country of the world, and the extraordinary military expenditure incurred by the colony. In 1921-22, however, the tide turned with a balance of nearly Rs 2,000,000 credited to revenue over expenditure, while in 1922-23 the credit balance was one of Rs 8,000,000, and in 1923-24 of nearly Rs 2,000,000. An even better view of the sound financial position of the colony is disclosed by the statement that on September 30, 1924, her assets were estimated at Rs 62,739,335, while her total liabilities were only Rs 39,520,430. To use in substance the words of the Colonial Secretary when introducing the 1924-25 Budget, not only is the financial position thoroughly sound at present, but there is no known local reason why it should not go from strength to strength.

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**BUDGET.**—The Budget for 1924-25 was introduced in the Legislative Council on October 17 of the first-named year, and provided for an estimated revenue of Rs 102,000,000, against an estimated expenditure of Rs 111,168,200. No change was made in existing taxation, the Government feeling justified, from the previous year's experience, in assuming that the amount budgeted for would be collected. It is to be noted that, of the estimated expenditure, Rs 10,029,327 was eventually to be charged to the surplus and deficit account, which totalled Rs 21,563,659. The Budget was therefore balanced.

**CURRENCY.**—The standard currency is the Indian silver rupee, which is divided, not into annas, but into 100 cents. The following fractions of the rupee are coined:—(1) silver half-rupee or 50 cents; (2) silver quarter-rupee or 25 cents; (3) silver 1/10th rupee or 10 cents, and (4) a nickel 5 cent piece. The copper coins consist of 1 cent and 1/2 cent pieces. The chief medium of exchange is the currency note, issued by the Government to the value of Rs 1,000, Rs 100, Rs 50, Rs 10, Rs 5, Rs 2, and R 1. The sovereign is not legal tender in Ceylon. There is no Mint in the island, the rupee being coined in India and the lower value coins minted in England. The average equivalent of the shilling may be said to be 75 cents, making the £ sterling equal to Rs 15, and the rupee itself the equivalent of 1s. 4d., as in India. The following Indian table is useful for reference:—

## INSURANCE

10 Annas	R 1	C 00
8 "	0	50
4 "	0	25
2 "	0	12½ (50 ras)
1 "		6¼ (25 ras)

**LOAN BOARD.**—The Loan Board is a Government Institution controlled by the Colonial Treasurer, the Postmaster-General and the Solicitor General, and exists for the purpose of making loans only on the security of household property within the Municipality of Colombo.

**NOTE ISSUE.**—The present Government note issue, representing 1, 2, 5, 10, 50, 100, and 1,000 rupees, is regulated by the Ordinance No. 32 of 1884, since amended, and is managed by a Board of Currency Commissioners consisting of the Colonial Secretary, the Treasurer, and the Controller of Revenue. The Commissioners retain a reserve in silver or gold coin of one-half of the amount of notes in circulation, the other half of the value is invested in Indian Government, United Kingdom or Colonial securities. On September 30, 1923, the value of currency notes in circulation amounted to Rs 39,704,944. The Currency Commissioners on the same date held silver rupees to the extent of Rs 15,272,715 and Rs 28,500,352 (market value) or Rs 26,238,318 (purchase price) in British, Indian, and Colonial securities. The value of the reserve at that date was thus in excess of the value of notes in circulation by Rs 4,128,123.

**PUBLIC DEBT.**—The Public Debt of the Colony on September 30, 1924, stood at £12,738,293 8s 4d, and the rupee debt at Rs 3,000,000, the total being less than two years revenue. The interest on this for 1924-25 was estimated at Rs 9,496,794, and the sinking fund at Rs 2,786,540, besides Rs 19,875 Crown Agents' charges. The following table summarises the Public Debt as on September 30, 1924, —

	£	s	d
Debentures Unredeemed	99,200	0	0
4% Inscribed Stock (Debentures Converted), 1934	1,076,100	0	0
3% Inscribed Stock, 1940	2,550,000	0	0
3½% Inscribed Stock, 1950	1,500,000	0	0
4% Inscribed Stock, 1959	1,000,000	0	0
6% Inscribed Stock, 1930-51	6,212,993	8	4
<b>Total</b>	<b>12,738,293</b>	<b>8</b>	<b>4</b>

The Rs 3,000,000 debt is in 4% Ceylon Inscribed stock, falling due in 1944.

**REVENUE AND EXPENDITURE**—The total revenue for the financial year ended September 30, 1924, amounted to Rs 102,363,116 (£6,824,207), which was Rs 10,090,515 more than the estimate and Rs 8,642,047 more than the amount collected in 1922-23. Following are details of the revenue for 1923-24 with the corresponding figures for 1922-23 —

HEADS OF REVENUE	1922-23 RS	1923-24 RS
Customs	32,322,863	36,223,135
Port, Harbour and Wharf Dues	4,421,080	5,212,042
Licences, Excise, etc	22,901,815	21,793,640
Fees	3,562,975	3,600,013
Posts and Telegraphs	1,348,594	1,471,336
Government Railways	22,361,340	24,747,571
Interest	2,747,174	3,895,810
Miscellaneous Receipts	1,830,275	2,834,007
Land Revenue	1,201,361	1,324,318
Land Sales	953,671	1,260,247
<b>Total</b>	<b>93,710,160</b>	<b>102,363,115</b>

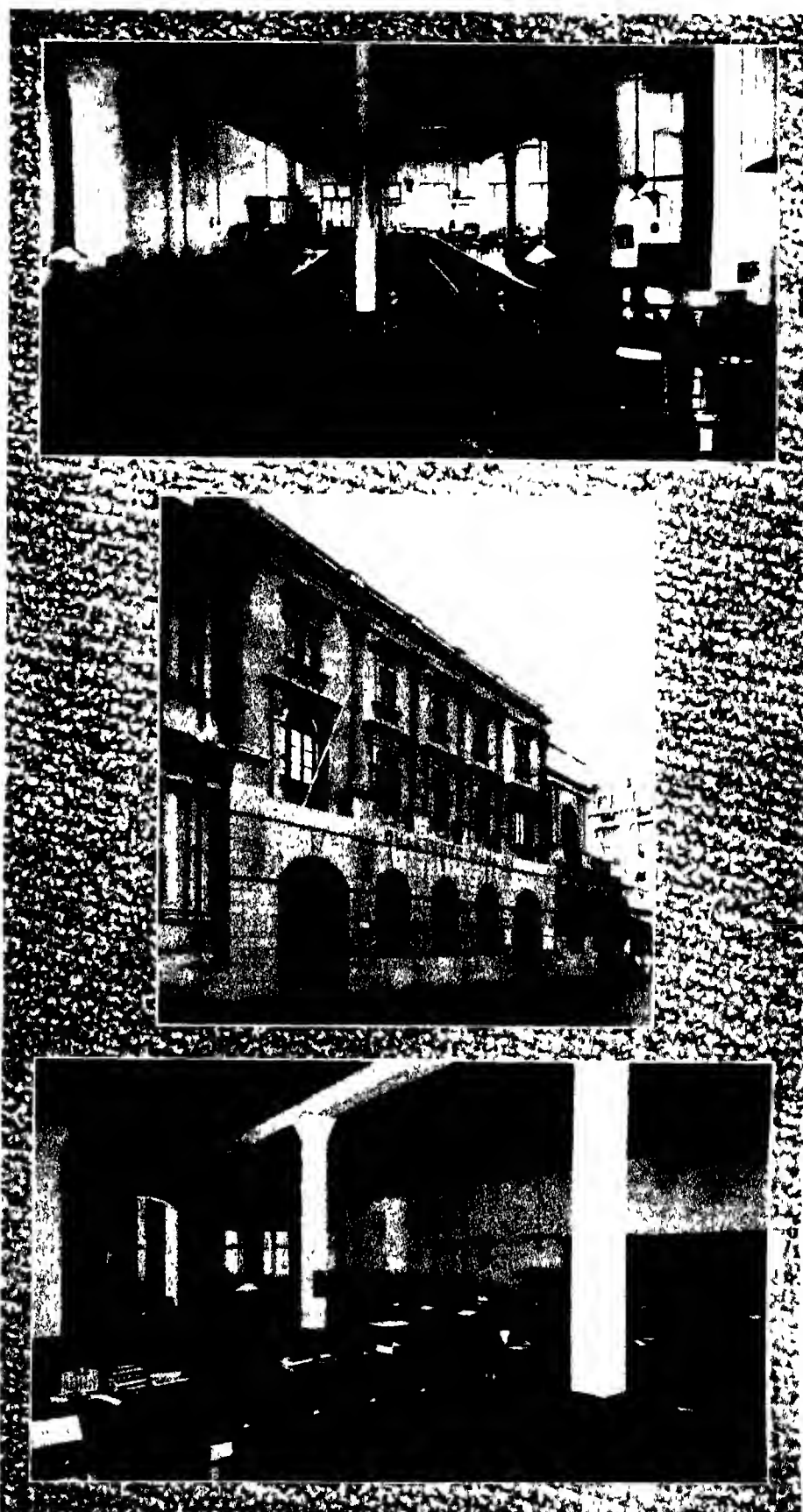
Expenditure for 1923-24 amounted to Rs 100,695,713 (£6,713,047), and exceeded that of the previous year by Rs 15,111,804, payments being apportioned as follow —

HEADS OF EXPENDITURE	1922-23 RS	1923-24 RS
Personnel Emoluments	30,937,282	35,782,590
Other Charges	15,737,822	21,217,102
Railway Extraordinary Works	829,063	905,610
Irrigation Works	567,302	440,554
Public Works	6,962,500	9,171,680
Military Expenditure	2,247,730	2,069,751
Public Debt	7,408,103	11,125,735
Pensions	2,153,992	3,309,600
Exchange	2,352,532	—
Miscellaneous Services	16,387,583	13,073,031
<b>Total</b>	<b>85,583,900</b>	<b>100,695,713</b>

**CUSTOMS REVENUE**—The total revenue under the head of Customs for the financial year ended September 30, 1924, was Rs 36,223,135, compared with Rs 32,322,863 in 1922-23, and Rs 26,152,640 in 1921-22. (See also under "Customs.")

**RAILWAY REVENUE AND EXPENDITURE**—See article on "Railways."

**TAXATION.**—This can hardly be said to press heavily on the people of Ceylon, since there is neither income-tax nor super-tax. The principal items of revenue derived from internal sources are the various excise duties, estate duty, and stamp duties.



CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA

1. Interior View.
2. The Bank Premises.
3. Another view of the Banking Chamber.

(See letterpress, page 15)

**ESTATE DUTY**—This is levied on the value of estates of the value of Rs 1,500 and upwards, the duty ranging from Rs 1 per cent to Rs 20 per cent on estates exceeding Rs 15,000,000 in value. The rate of estate duty where the property is settled is 1 per cent. The amount received in 1923-24 was Rs 1,618,030.

**EXCISE**—The principal sources of excise revenue are arrack and toddy. A license for the distillation of arrack costs Rs 50 yearly, to deal in arrack by wholesale, Rs 100 per annum. Licenses to sell toddy by retail are auctioned. The total revenue from arrack and toddy in 1923-24 amounted to Rs 9,380,809, as against Rs 7,309,064 in 1922-23.

The Government revenue from licenses to sell foreign liquor amounted to Rs 110,071 in 1923-24.

**STAMP DUTIES**—These are many and varied, and range from the ordinary duties on agreements, banker's cheques, bills of lading, bills of sale, mortgages, transfers, promissory notes, etc., to applications to register trade marks, designs, copyrights, patents, and the fees paid on registration of business names or naturalisation. The revenue from stamp duties rose from Rs 8,029,232 in 1922-23 to Rs 8,178,619 in 1923-24.

## BANKING

Though the Government of Ceylon had previously issued notes of the old rixdollar denomination, the history of banking proper in Ceylon commences with the grant of a Royal Charter in 1840 to the Bank of Ceylon, the Western Bank of India, whose headquarters were at Bombay, commencing business at Colombo and Kandy three years later. For some time Government notes continued to circulate side by side with the notes of these two banks. In 1847 came the financial crash occasioned by the failure of coffee planting, in which the Bank of Ceylon was seriously involved, £60,000 being ultimately lost. At this juncture the Western Bank of India, later known as the Oriental Bank, came forward, and, in return for the Royal Charter of the Bank of Ceylon, took over its business and liabilities, advancing a sum of money to the shareholders in lieu of their bank's outstanding liabilities, which it undertook to realise. In 1851 the two institutions were formally amalgamated, and the Oriental Bank Corporation under a Royal Charter commenced a prosperous career in India and Ceylon, which was only closed by the disastrous crash of 1884 which affected so many Eastern banks. But for the prompt action of the Governor, Sir Arthur Gordon (afterwards Lord Stanmore), who transferred to the Colonial Exchequer the obligations of the insolvent bank in respect of its notes then in circulation in the island, the consequences to the country might have been most serious. (See below, "Note Issue.")

**EXCHANGE.**—Since 1901 the value of the English sovereign has been fixed at Rs 15, but from 1920 it ceased to be current or legal tender in Ceylon.

**LEADING BANKS.**—Following are the principal Exchange Banks in Ceylon:—The Chartered Bank of India, Australia and China, Queen Street, Colombo; The Eastern Bank Limited, Chatham Street, Colombo; The Hongkong and Shanghai Banking Corporation, Prince Street, Colombo; The Imperial Bank of India, Prince Street, Colombo; and the Mercantile Bank of India, Queen Street, Colombo, with branches at Kandy and Galle; The National Bank of

India, York Street, Colombo, with branches at Kandy and Nuwara Ehya; and the P & O Banking Corporation, Victoria Arcade, Colombo. The Bank of Ceylon, Ltd., has a branch at Badulla, and in addition are the headquarters of the Hatton Bank and Agency Company, with branches at Maskelyna, Bogawantelawa, Agras, Watawala, and Matale.

**CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA**—Founded in 1853 by Royal Charter, this institution, whose head office is at 38, Bishopsgate, London, is one of the most important of Indian Exchange Banks. Its branch at Colombo was opened in 1892. (See article following.)

**EASTERN BANK LIMITED**—This Bank, which from its branch office in Colombo does an extensive general banking and exchange business, has been established there since 1920. The London office is at Crosby Square, Bishopsgate, and there are branches at Amara, Baghdad, Basra, Bombay, Calcutta, Hilla, Karachi, Madras, Mosul and Bahrain. At the end of 1924 the authorised capital stood at £2,000,000 and the called up capital at £1,000,000.

**IMPERIAL BANK OF INDIA**—This Bank was constituted under a special Act of 1920 to take over the business of the three Presidency Banks of Bombay, Bengal and Madras. It assumed control of the branch bank at Colombo which the Bank of Madras had established in 1867, and has ever since conducted a large banking business in Ceylon. The Imperial Bank has had since February 1925 a London Advisory Committee which includes the Governor of the Bank of England, and which was formed to keep the two central banks in close touch on matters of policy.

**MERCANTILE BANK OF INDIA**—This bank was formed to acquire the business

of the old Chartered Mercantile Bank of India, London, and China. In 1916 it took over the Bank of Mauritius, and now has 21 branches in India, the Far East, and Mauritius, including the three at Colombo, Kandy and Galle respectively. (See article following.)

**NATIONAL BANK**—This Bank was established in India in 1863 and registered as a British company in 1866. On January 2, 1881, the branch at Colombo was opened, on July 11, 1892, that at Kandy, and on September 1, 1892, a branch at Nuwara Ehya. In addition to its Indian and Ceylon branches, the Bank has a number in Kenya, Uganda, and Tanganyika Territory. (See article following.)

**P & O BANKING CORPORATION**—Established under the auspices of Lloyd's, the Westminster and National Provincial Banks, and the P & O Steam Navigation Company in 1920, the P & O Banking Corporation acquired virtually the whole capital of the Allahabad Bank in the following year. It does a general banking business, but makes a speciality of letters of credit. The branch at Colombo was opened in 1922.

**SAVINGS BANK.** At the end of 1924 the Ceylon Savings Bank had a sum of Rs 5,180,737 to the credit of 44,742 depositors, an increase of Rs 186,201 during the year. The amount of the banks' invested funds was Rs 5,771,461, which included investments made from the reserve fund of Rs 743,057. Interest is allowed at the rate of 4 per cent on sums of Rs 1,000 and under, and 3 per cent on sums above Rs 1,000 up to Rs 3,000—the maximum which a depositor is allowed to have at any time as principal—the deposits in any one year being restricted to Rs 1,000, irrespective of withdrawals. The minimum deposit is 50 cents. (See also under "Posts.")



THE MERCANTILE BANK OF INDIA LTD., Colombo.

Bank Building.

(See letterpress, page 15)

## REPRESENTATIVE BANKING INSTITUTIONS

### CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA.

**Inception.**—This bank was incorporated in England by Royal Charter in 1853, the Ceylon branch being established in Colombo on July 1, 1892.

**Capital.**—£3,000,000, in 600,000 shares of £5 each, paid up.

**Balance Sheet.**—For the year ended December 31, 1924, the net profit, after providing for all bad or doubtful debts, was £993,123 11s 8d, inclusive of £222,407 15s 6d brought forward from the previous year. An interim dividend at the rate of 14 per cent per annum was paid in September, also later a final one at the rate of 14 per cent, per annum, together with a bonus of 6s 3d per share, making 20½ per cent for the whole year free of income tax. The reserve fund was increased to £4,000,000 and a balance of £210,623 11s 8d was carried forward.

**Activities.**—The Colombo branch transacts every description of banking operations and exchange business on all countries.

**Agencies and Branches.**—Alor Star (Malay States), Amritsar, Bangkok, Batavia, Bombay, Calcutta, Canton, Cawnpore, Cebu, Colombo, Delhi, Haiphong, Hamburg, Hankow, Hongkong, Hilo, Ipoh, Karachi, Klang, Kobe, Kuala Lumpur, Kuching, Madras, Manila, Medan, New York, Peking, Penang, Puket, Rangoon, Saigon, Semarang, Seremban, Shanghai, Singapore, Sourabaya, Taping (F.M.S.), Tavoy, Tientsin, Tokyo, Yokohama, Zamboanga (Philippine Islands).

**Agents.**—In Galle Mercantile Bank of India, in Jaffna Jaffna Commercial Corporation Ltd.

**Directorate.**—Sir Montague Cornish Turner (chairman), Messrs Henry Bateson, Colin Frederick Campbell and Thomas Cuthbertson, Sir William Henry Neville Goshen, K.B.E., The Rt. Hon. Lord George Hamilton, G.C.S.I., Mr. Archibald Auldjo Jameson, The Rt. Hon. Sir John Newell Jordan, G.C.M.G., G.C.I.E., K.C.B., Messrs William Foot Mitchell, M.P., and Lewis Alexander Wallace.

Manager in Colombo, Mr. J. W. Thomson, sub-manager, Mr. A. R. Macqueen. There are 54 clerks.

**Head Office.**—38, Bishopsgate, London.

**Cables.**—“Cinchona,” Colombo only.  
(See illustration, page 13.)

### THE MERCANTILE BANK OF INDIA LTD.

**Inception.**—The Colombo branch of this bank was established in 1857, and in the same year sub-branches to Colombo were opened in Kandy and Galle.

**Capital.**—The authorised capital of the bank is £3,000,000, of which £1,800,000 has been subscribed and £1,050,000 paid up.

**Balance Sheet.**—For the year ended December 31, 1924, the reserve fund was shown as £1,300,000, the net profits for that year, including £157,811 11s 11d, brought forward from the last account, were £401,221 11s 5d, and the total dividend paid was 16 per cent.



THE NATIONAL BANK OF INDIA LTD., Colombo.  
1. View from York and Prince Streets entrance.  
Centre. The Bank premises.  
3. General view near manager's office.  
(See letterpress, page 16.)

**Activities.**—The Colombo branch transacts every description of local banking and exchange business in all parts of the world.

**Branches and Agencies.**—At Bangkok, Batavia, Bombay, Calcutta, Delhi, Howrah, Hongkong, Karachi, Kota Bharu, Kuala Lumpur, Madras, Penang, Port Louis, Mauritius, Rangoon, Shanghai, Simla, Singapore, Sourabaya. In Scotland Messrs R and E Scott, 64 Queen Street, Edinburgh. In New York Bank of Montreal, 64 Wall Street.

**Directorate.**—Sir Robert J Black Bart (chairman), Mr J M Ryrie (deputy chairman), Lord Carmichael, G.C.S.I., G.C.I.E., K.C.M.G., Messrs P R Chalmers, C J Hambro, H McVill Simons, Sir David Ayle, Bart, Chief manager Mr J Stewart.

Manager in Colombo Mr G Marshall

**Head Office.**—15, Gracechurch Street, London, E.C.3

**Cables.**—"Paradise," Colombo  
(See illustration, page 14)

#### THE NATIONAL BANK OF INDIA LTD.

**Inception.**—This important bank was registered in London under the Companies Act of 1862 on March 23, 1866. The Colombo branch of the institution was established in 1881, agencies being opened at Kandy and Nuwara Eliya in 1892.

**Capital.**—The subscribed capital of the bank is £4,000,000, of which £2,000,000 has been paid up, while the reserve fund stands at £2,800,000.

**Balance Sheet.**—The net profits for the year ended December 31, 1924, after providing for all bad and doubtful debts, amounted to £535,925 6s 9d, making, with the sum of £190,054 18s brought forward, a total available of £744,980 4s 9d. A dividend was paid for the year of 20 per cent free of income tax, £50,000 was added to the reserve fund, £20,000 was written off the house property account, and £40,000 transferred to the officers' pension fund, leaving a balance of £224,980 4s 9d to be carried forward.

**Activities.**—The Colombo branch, which employs a staff of 12 Europeans and about 110 clerks, transacts every kind of local banking operations and exchange business in all countries.

**Branches.**—Calcutta, Bombay, Madras, Karachi, Chittagong, Amritsar, Cawnpore, Delhi, Lahore, Tuticottin, Cochin, Rangoon, Mandalay, Colombo, Kandy, Nuwara Eliya, Aden, Steamer Point (Aden), Zanzibar, Mombasa, Nairobi, Nakuru, Kisumu, Entebbe, Kampala, Jinja, Tanga, and Dar-Es-Salaam.

**Agencies.**—Galle, Ceylon. Messrs Clark, Spence & Co., Edinburgh. Messrs Moncrieff & Horsburgh, 46 Castle Street, and Glasgow. Messrs Mackenzie, Robertson & Co., 176, St Vincent Street.

**Directorate.**—Sir Charles C McLeod, Bart (chairman), Mr J N Stuart (deputy chairman), Sir John P Hewett, G.C.S.I., K.B.E., C.I.E., Mr R Langford James, Mr Robert Miller, Mr J D Nimmo, Sir Marshall F Reid, C.I.E., and Mr J A Toomey. General manager, Mr C Nicoll. Manager in Colombo: Mr E H Lawrence.

**Cables.**—"National," Colombo  
(See illustration, page 15)

#### INSURANCE

Insurance in Ceylon, so far as fire and marine risks are concerned, is controlled by two powerful associations, the Ceylon Fire Insurance Association, which was established in 1897, and the Colombo Marine Insurance Agents' Association, established in 1917. To the former are affiliated no less than 78 separate companies, the majority of these being of British origin, and including such well-known names as the Alliance Assurance Company, the Eagle, Star and British Dominions Insurance Company, the General Accident, Fire and Life Assurance Corporation, the Lancashire Fire and Life Insurance Company, the Liverpool and London and Globe Insurance Company, the New Zealand Insurance Company, the North British and Mercantile Fire and Insurance Company, the Norwich Union Fire Insurance Society, the Hongkong Fire Insurance Company, and the Scottish Insurance Corporation. Foreign companies include the Balaise Fire Insurance Company, the Batavia Sea and Fire Insurance Company, the Home Insurance Company of New York, the Java Sea and Fire Insurance

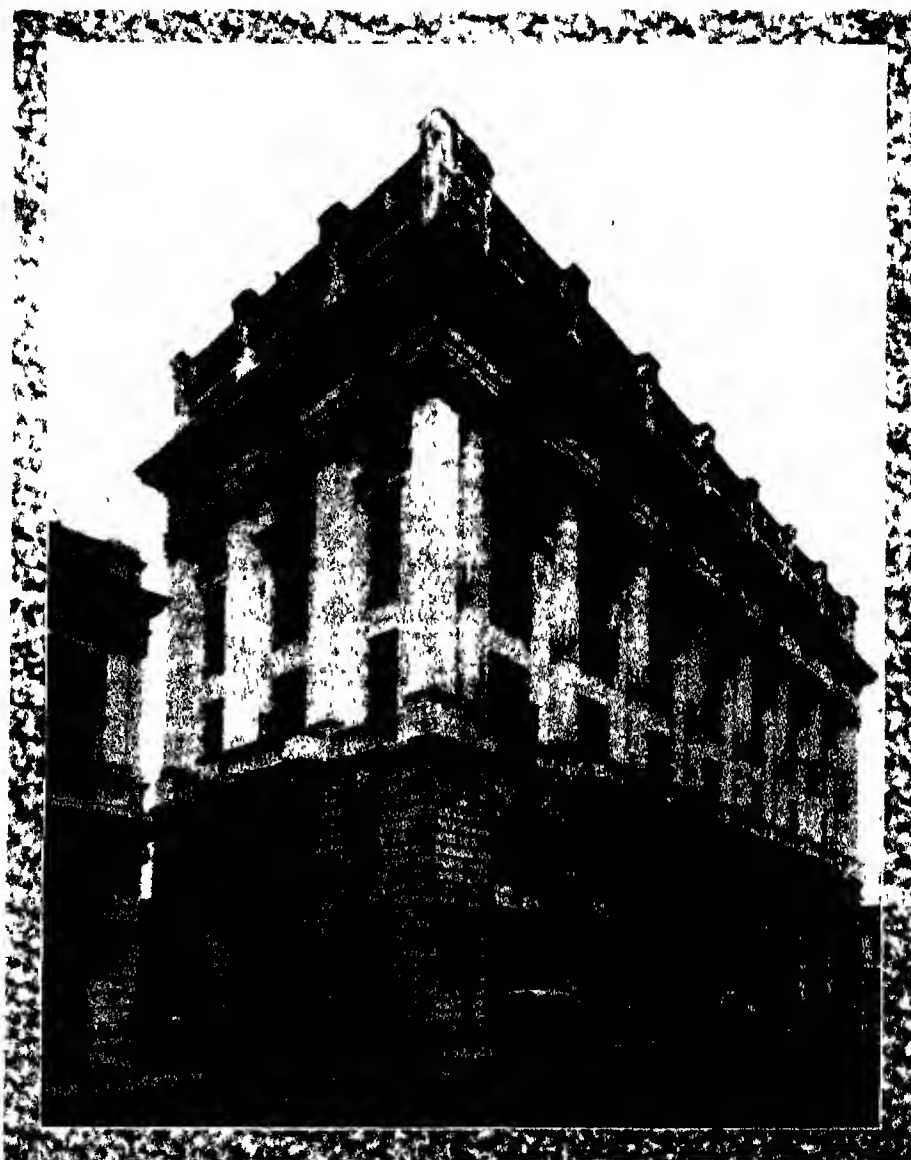
Company, and the Tokio Marine and Fire Insurance Company.

Included in the Colombo Marine Insurance Agents' Association are some 50 companies, several of whom are mentioned above, others being the Ocean Marine Insurance Company, the Queensland Insurance Company, the Royal Exchange Assurance Corporation, the Thames and Mersey Insurance Company, and the World Marine and General Insurance Company.

Many of these companies also issue life policies.

#### THE NATIONAL MUTUAL LIFE ASSOCIATION OF AUSTRALASIA LTD.

**Inception.**—Established in 1869 at Melbourne, this association soon extended its operations to the whole of Australasia, while branches are now in existence in South Africa, Great Britain, India, Ceylon, and the Straits Settlements. Operations were commenced in Ceylon in 1905 and the business transacted at the agency led in 1912 to the acquisition of one of the finest business sites in Colombo, in which the branch now conducts its business.



THE NATIONAL MUTUAL LIFE ASSOCIATION OF AUSTRALASIA LTD.

View of the Colombo Building.



**Development.**—Since its inception the association has expanded steadily, and on September 30, 1924, the amount assured under policies current was £55,932,757 1s 1d, the assurance fund at that date being £20,365,160 3s 9d, while the income for the year 1923-24 was £3,260,737 3s 9d.

**Activities.**—The Ceylon office is a fully constituted branch of the association, and transacts all classes of life and annuity business.

**Policies.**—In the original policies of the association a condition was inserted that when default was made in payment of any premium, and the surrender value of the policy was sufficient to pay such premium, the directors should advance the amount of the premium in order to keep the policy in force for the benefit of the person insured, and so on with subsequent defaults. The premium or premiums thus paid remained

as a debt against the policy, to be repaid with interest for the time during which it or they remained a debt. The promoters, by inserting this condition in policies, introduced the non-forfeiture principle into life assurance, and this was very effective in aiding the development of the association.

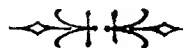
**Offices.**—Ceylon branch, Corner of Chatham and Queen Streets, Colombo.

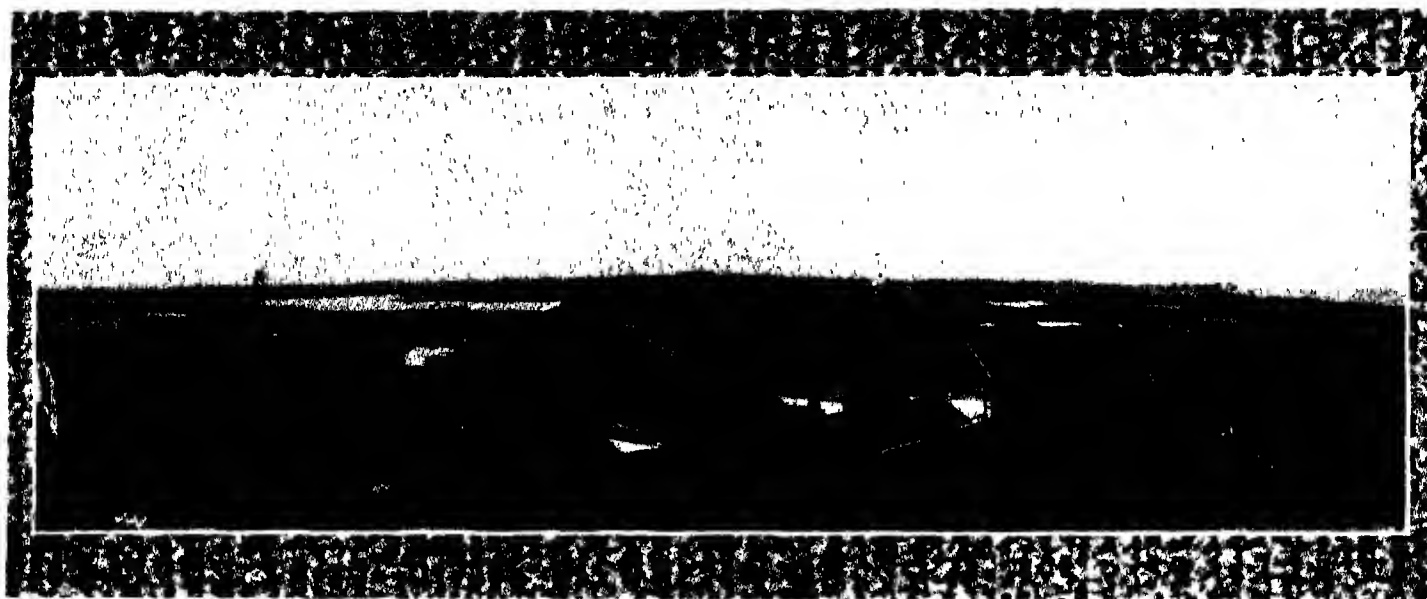
Mr. R. A. Lyons is manager for Ceylon.



1. A STREET IN THE NATIVE QUARTER, COLOMBO

2. A BUSY CORNER OF THE PETTAH, COLOMBO





PANORAMA OF COLOMBO, TAKEN FROM THE ROOF OF THE GRAND ORIENTAL HOTEL.

## CITY AND PORT OF COLOMBO

### CITY

**C**OLOMBO, the capital of Ceylon, is the last of a long succession of cities that have borne that title having succeeded Kandy, which had been the capital for 223 years, in 1815. The city extends from the Kelani River on the north to the fourth mile of the Galle Road on the south, and has a breadth of  $3\frac{1}{2}$  miles from the sea to the east outskirts, covering an area of 8,617 acres.

In few of the world's large ports is the traveller offered so pleasant a prospect on landing. Contrary to the position in many large cities, there are no slums to be traversed before the surroundings become attractive, but the visitor immediately sees the city at its best. Colombo is prosperous as well as beautiful, its streets are broad and admirably shaded, the merchants' offices and stores are capacious and often of considerable architectural merit, and the leading hotels are surpassed by none in the East. The growing prosperity of Britain's premier Crown Colony is reflected in the sustained order and cleanliness of its capital, which at the same time gay and fascinating with the wealth of local colour.

**BAZAARS.** Visitors to Ceylon never fail to find the native bazaars of absorbing interest. The bazaar quarter is easily reached by the Borella tramway. The open character of these native shops is universal, they vary only in the class of goods offered for sale. Here there are fruits, curry stuffs, dried fish, spices, market baskets and earthenware chatties, while in another are to be seen baskets of live fowls. The tin shop, with the tin smith at work, is ubiquitous, next door, perhaps, is the stall of the astrologer who casts horoscopes at birth and on every

subsequent step of life taken by the credulous Sinhalese. The stalls of the goldsmiths and manufacturers of brassware are as bright as the varied throng of customers who pass to and fro.

**BUILDINGS.** The Queen's House, built about 1850, is the residence of the Governor-General, and is a solid structure of massive masonry shaded by beautiful trees. Near to it, the Fort is an interesting relic of the Dutch and early British settlement. Opposite the Queen's House stands the General Post Office, a building of which Colombo is justly proud. The Military Barracks, with their spacious parade ground, are a noticeable feature as the visitor drives out to Galle Face. The picturesque Mohammedan Mosque near the Circular Drive, the National Bank, and the Grand Oriental Hotel are other notable buildings.

**CHURCHES.** The Anglican Cathedral of Christ Church, known as the "Stone Church," stands in a park given by Dr. Chapman, the first bishop, but is to be replaced by a new and handsome edifice on Galle Face. Architecturally, the first building in the island is the Roman Catholic Cathedral of Santa Lucia, of greater antiquarian interest is the massive cruciform edifice known as Wolfendhal Church, built by the Dutch in 1749 on the site of an old Portuguese Church called Aqua de Lupo, and commanding a fine view of the city and harbour. Here are many monuments and hatchments recording the decease of Dutch officials. It is the most interesting, as well as the most complete, of the few remaining relics of the Dutch occupation. In the suburb of Mutwal are several large and handsome Roman Catholic Churches.

**CLIMATE.** The climate of Colombo is tempered by sea breezes, and the mean monthly temperature in the shade never exceeds 80 degrees, the average for the summer months being about 77 F. and for the winter months about 74 F. The average total rainfall per annum is 80.50 inches.

**CLUBS.** The principal European club is the Colombo Club, on the Galle Face, a fine oval building overlooking the sea. The Golf Club, 3 miles from the Fort, is a favourite resort and has a membership of over 400. The Prince's Club is a lavishly appointed European institution in the Cinnamon Gardens. The Colombo Garden Club has a large number of tennis courts and a charming pavilion in Victoria Park.

**CUSTOMS HOUSE.** In 1924 the work of erecting a new Customs House at the Passenger Jetty to meet the growing requirements of the port was commenced. The scheme provides for a much enlarged and better equipped building to take the place of the old one, and in every detail of its accommodation, construction, and design it is anticipated that the new house will be worthy of the growing port. Accommodation is to be provided for Customs officers, the police and the port surgeon, as well as means of communication for passengers passing through Colombo with the Railway, Municipal Inquiry Bureau, and Post Office Departments.

**FINE ART GALLERY.** It having been decided to erect an art gallery in Colombo, the plans for it have been prepared, the present idea being to build gradually. The complete building is to consist of three wings devoted to fine arts, applied arts, music and drama, and a library. The fine arts wing is

to contain galleries for the exhibition of paintings, sculpture, etc. and this will be the first section to be built, the estimate of the cost of each wing being about Rs 60,000 (£4,000).

**HOSPITALS.** The Colombo General Hospital is a fine building in spacious grounds near the Cinnamon Gardens. There are thoroughly well equipped wards for travellers who may arrive sick or fall ill during their stay in Ceylon. Other wards supply suitable accommodation for all classes, the fees for paying patients being moderate. In 1924 there were 626 non-paying beds and 82 paying beds, and the number of patients treated during the year was 17,171.

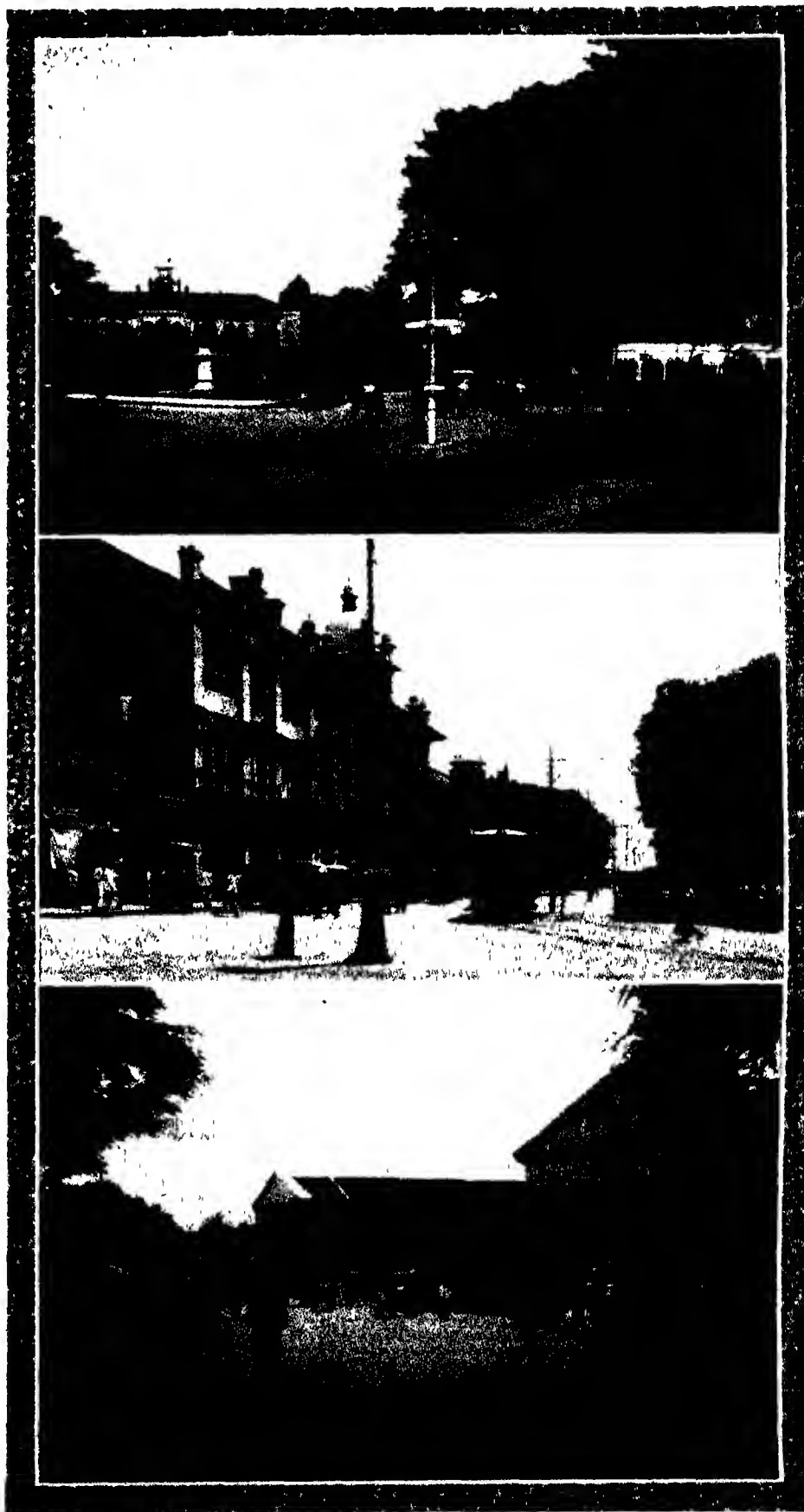
The Ceylon Medical College opposite is carried on in accordance with the Medical Acts of Great Britain, and its licentiates are at liberty to practise throughout the United Kingdom. The Victoria Memorial Eye Hospital is a handsome building erected by the people of Ceylon to the memory of Queen Victoria. Other hospitals and similar institutions are the Forster Robinson Memorial Free Hospital at Maradana, the Infectious Diseases Hospital in Buller Road, the King Edward VII Memorial Anti-Tuberculosis Institute at San Sebastian, the Military Hospital on Galle Face, the Royal Victoria Home for Incubables, facing Campbell's Park, the Anti-Tuberculosis Sanatorium at Kandana, and the Home for the Aged Poor (St. Mary's House) at Maradana.

**HOTELS.** The Grand Oriental Hotel (generally known as the G.O.H.) stands conveniently near to and overlooking the passenger jetty, and close by are the Bristol Hotel, "Queen's House," the Barracks, and some remains of the old Dutch Fort. About a mile away, the road passing by the Government Offices and the new General Post Office, is the Galle Face Hotel, standing in a very pleasant situation close to the sea. To this hotel a fine swimming bath is attached. The Hotel Metropole, in Queen Street, is a popular resort, and the Grand Hotel at Mount Lavinia 7 miles by rail from the city, is famous for its excellent fish tiffins on Sundays and for the sea-bathing it provides.

**INDUSTRIES.** The principal industries in Colombo are those dealing with the preparation and packing of tea, cocoa, coconut oil, plumbago, coir fibre, and cardamoms. There are also several engineering works, printing offices, and a number of hand-loom cloth factories. In 1924 a summary furnished by Ferguson's Ceylon Directory gave the total number of gas and steam engines in use as 576, and their available horsepower was returned at 20,850½. The number of persons employed in preparing and packing the commodities named above was 13,500, while the total of persons employed in all the factories and industrial concerns in Colombo and district was put at 35,000.

**LIBRARIES.** The Colombo Library in Queen Street, Fort, was established in 1874, and with it is incorporated the late United Service Library dating back to 1812. It is proposed to establish a Municipal Free Library, to be located at Edinburgh Crescent, and to be controlled by representative public men, including two municipal councillors. In this library will be merged the Colombo Pettah Library, which has long performed the function of a public library. Colombo has also a Law Library and a Medical Library, and a Literary Association, formed in 1912.

**LIGHTING.** The streets of Colombo were first lighted with gas in 1872, the Colombo Gas and Water Company, Limited, being responsible for the service. The incandescent system of lighting was first introduced in



1. WARD PLACE, COLOMBO, showing the Eye Hospital
2. YORK STREET, COLOMBO, Miller's well known department store prominent in left foreground.
3. LAW COURTS, COLOMBO.



1. CHATHAM STREET, COLOMBO, showing National Mutual Building on the left in front of Clock Tower.
2. QUEEN STREET, COLOMBO, from below the General Post Office.
3. PRINCE STREET, COLOMBO, showing Colombo Apothecaries Stores.

1900, and has since been greatly improved. In 1923 the company extended its plant in the south of the city by erecting a large 2-ft spiral guided gasholder, engine and governing apparatus at Havelock Town (Greenlands Road), the new depot being opened by the Mayor of Colombo on July 30 of the year named. In 1924 large alterations and extensions at the main Gas Works in the Pettah put the gas requirements of Colombo on a most satisfactory basis.

**MUNICIPALITY.** The Municipal Council which was created in 1865, consists of half elected and half nominated members, the latter being nominated by the Governor. The Chairman and Mayor, a member of the Civil Service, is also nominated by the Governor. He is the head of the Executive, and has full authority in most matters the Council having control over finance. The city is divided into ten wards, each represented by an elected councillor. There are 20 councillors in all, about six of whom are Government officials. The staff consists of some 511 pensionable officers, and the total number of employees is about 5,000.

**MUSEUM.** The Museum, a two-storeyed building of imposing appearance which stands in Victoria Park, dates from 1877, and is exclusively devoted to the exhibition of Ceylon products, antiquities and natural history. Here is preserved the famous tortoise said to have been 200 years old at its death. On the ground floor are some interesting fragments, noticeable among which are the colossal lion brought from Polonnaruwa on which the king used to sit to administer justice, one of the unique windows from the ruins of Tapahuwa, and the cast of a colossal portrait statue of King Parakrama Bahu A.D. 1153. Attached is a valuable library of zoological and archaeological literature. A statue of the Rt. Hon. Sir William Gregory, Governor from 1872 to 1877, stands in front of the museum.

**PARKS.** Colombo's principal recreation ground is the Victoria Park, which is well laid out with gardens, band stand and promenade, tennis courts, a galloping course for riders, and a circular carriage drive. The park is surrounded by many beautiful bungalows. Part of the park is known as the Cinnamon Gardens, having been in earlier times one of the chief reserves under cultivation of the precious spice. Here the beautiful traveller's tree (*Urania speciosa*) is to be seen, the purple flowered thimbalegia, and many other gorgeous tropical plants.

**POPULATION.** The population of Colombo grew from 164,296 in 1901 to 218,526 in 1911, and to 244,163 at the last census of 1921. This total is exclusive of the military and shipping, and was distributed by race as follows: Low-country Sinhalese, 110,470; Indian Tamils, 39,560; Ceylon Moors, 25,417; Burghers and Eurasians, 14,863; Ceylon Tamils, 14,593; Indian Moors, 14,275; Malays, 5,852; Kandyan Sinhalese, 4,130; Europeans, 2,830; Veddas, 1; and others, 12,166.

**PUBLIC HEALTH.** The Public Health Department consists of a higher staff of four Medical Officers of Health and a Bacteriologist, who has a laboratory equipped with all the latest instruments and appliances. There are also four dispensary doctors, while the City Analyst assists in chemical matters. The Health Department is organised on the most up-to-date lines, and the average death rate for the last five years, viz., 32.5, is one of the most satisfactory in the East. The methods of combating infectious diseases, epidemics, and the like are thorough and prompt, while the drainage

system, which is of the up-to-date water carriage type, serves about three fourths of the city and is being rapidly extended. Refuse is burnt at a large modern destructor.

**REVENUE, ETC.**—Rates are 4/- in the pound, and fees are very moderate. The revenue of the Municipality is nearly £350,000, and its debt is less than £1,000,000. The Council, which has reformed its finance completely since 1915, has now an appreciable annual surplus of revenue over recurrent expenditure, and considerable cash balances.

**SPORT.** The European population of Colombo is well catered for in the way of sport. The Sports Club cricket ground is on Galle Face, and good wickets are obtainable here on con matting. Cricket in Ceylon is played all the year round and is the national game, the Ceylonese being remarkably proficient at it. The Sports Club has also a squash racket court. The Havelock Race course at the south of Victoria Park is among the best in the East, and besides the

disappearing. In York Street are some of the Government Offices, the Bristol Hotel, and the Chamber of Commerce. Prince Street and Baillie Street are both devoted to important commercial houses and institutions.

**TRAMWAYS.** The tramway system of Colombo, which is controlled by the Electric Tramways and Lighting Company, Limited, dates from 1898. In 1902 the company named was registered, and it now operates the whole of the electrical power traction and lighting service of the city. (See article following on the company's enterprise.)

**WATER SUPPLY.** Colombo being very inadequately and precariously supplied with water from wells, a special committee was appointed by the Municipal Council in 1866 to report upon the water supply and drainage of the city. It was not, however, until 1879 that the scheme to obtain water from the Labugama Hills was finally decided on, and in 1882 the work of construction was

renewed. Its capacity is about 7½ million gallons.

(c) The Elk House Reservoir was commenced in 1903 as a consequence of the duplication of the 20-inch main pipe line between Labugama and Colombo. This reservoir, which has a length of 300 ft. and a width of 195 ft., was completed in 1905 at a total expenditure of Rs 321,441, the cost of the duplication of the main and auxiliary works being estimated at Rs 3,000,000.

At the beginning of 1908 the waterworks, which had hitherto been under Government control, were transferred to the Municipal Council, and in 1911 they were placed under a separate department. Since then, owing to the rapid increase of Colombo's population, coupled with the desire to make the water supply as pure as possible, the Council has made several extensions and improvements, notably in the laying of a 30-inch steel main and the installation of a filtration plant. The laying of this main has increased the



YORK STREET, COLOMBO, SHOWING CARGILLS STORES

Colombo Turf Club's regular meetings, gymkhanas and other sports are held on it. The Ridgeway Golf Links are extensive and well laid out, and the game is very popular in Colombo. (See also "Sporting.")

**STREETS.** A feature of the main streets of Colombo is the fine rain trees with which they are sheltered. Queen Street may be called the main thoroughfare of the capital, as it contains the Government Offices, General Post Office, and the principal banks. At its junction with Chatham Street stands the Lighthouse, which serves as a clock tower, and close to this is the fine building occupied by Messrs H. W. Cave & Co., the rendezvous of large numbers of visitors to Ceylon. Chatham Street has several interesting native jewellers' shops, though many of the older buildings are fast

commenced. By 1880 the whole of Colombo was supplied with water from this source. The main features of the scheme as then completed and afterwards added to are:

(a) The Labugama Reservoir, situated about 30 miles by road from Colombo. The catchment area is 2,500 acres in extent, surrounded by hills 500 to 1,500 ft. in height. By throwing an earthwork bund across the narrow neck of the valley between the hills an artificial lake was formed, which was completely filled in four months' time. The rainfall in this district is heavy, averaging 161 inches per annum. The greatest depth of water in the Labugama Reservoir is 59 ft., the area at top water level being 170 acres, and the total capacity of the reservoir is 1,333,000,000 gallons.

(b) The Maligakanda Service Reservoir was completed in 1885, but had later to be

delivery capacity of the mains to 12,000,000 gallons a day. In 1924 the total consumption was approximately 3,251,264,000 gallons, or roughly 9,000,000 gallons per diem.

### VISITORS' GUIDE

**CLUBS.** Colombo—Galle Face, Indian "Storm Lodge," Colpetty, Orient, Turret Road, Cinnamon Gardens, Prince's, Bailler's Road.

**CONSULATES.** Argentina—Messrs. Harrison and Crossfield Ltd. and "Combe," Horton Place; Belgium—19, Queen Street; Bolivia—9, Queen Street; Brazil—Lloyd's Buildings; Chile—Prince Building, Prince Street; Denmark—15, Baillie Street; France—Prince Building, Prince Street; Italy—5, Prince Street; Japan—Gaffoor Building, Main Street; Netherlands—Gaffoor



Building, Main Street, Norway 12, Baillie Street, Peru Darley Buildings, Union Place, Slave Island, Portugal National Mutual Buildings, Forsyth Place, Siam Lloyd's Buildings, Prince Street Spain National Mutual Buildings, Forsyth Place, United States Lloyd's Buildings Prince Street

**HOTELS.** Army and Navy 4, Main Street, Bombay 4th Cross Street, Bristol

York Street, Fort, Brown's Hospital Street, Fort, Galle Face Hotel Galle Face, Grand Oriental York Street, Fort, Hotel Metropole 5, Queen Street, Hotel de l'Univers, 74, Union Place, Slave Island, Lord Nelson Chatham Street, Metropolitan 61, Keyzer Street, Pettah, Mount Lavinia Grand Hotel Mount Lavinia, Prince of Wales 44, 1st Cross Street Pettah, White Horse 27, Chatham Street

**SCHOOLS.** All Saints' College (C of E), St Joseph's College (R C), St Bridget's Convent School (R C), St Margaret's School for Girls (C of E), St Thomas' College, Mount Lavinia, Wesley College, Ananda College (Buddhist), Zahira College (Muslim)

**THEATRES.** Empire Fort, Olympia Sutherland Road, Maradana, Palace Maradana, Tivoli Wellawatta

## PORT OF COLOMBO

Colombo is one of the most important junctions of the world's shipping system. Situated in lat 6° 54' N and long 79° 55' E, on the west coast of Ceylon, it is an entirely artificial harbour, backed by the mountains and valleys of which the colony is justly proud, and of which the outstanding feature as seen from the sea is the far-famed Adam's Peak. The construction of the fine harbour was begun in the year of the late King Edward's visit to Ceylon in 1875, and has altogether cost over two and a half million pounds sterling. That the money has been well expended admits of no doubt for the harbour has been of immense value to the colony, not only in protecting from the fury of the elements the vessels that use it, but in attracting the shipping of the eastern world and of other countries by the conveniences it offers as a coaling station and entrepôt for the exchange of passengers.

The shipping trade now carried on within the port of Colombo would have been impossible in the seventies, when every vessel was compelled to anchor in the open roadstead, and to embark or disembark in a sea that was generally rough and sometimes dangerous. So difficult, indeed, was the transaction of shipping business in those days owing to the heavy surf that the P & O Company avoided Colombo altogether, and used to land both passengers and mails at Galle. There are now from 20 to 40 steamships always to be seen riding at anchor

within the harbour, and the tonnage entered and cleared in the course of the year amounts to upwards of ten millions.

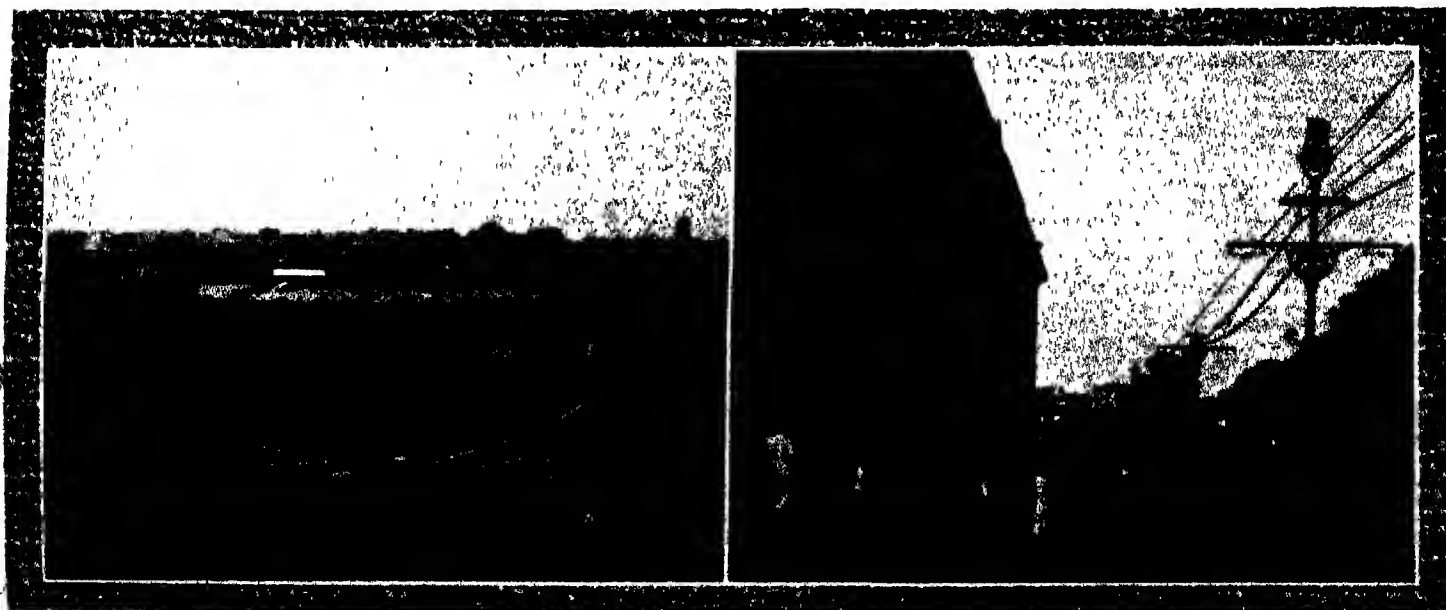
**ACCOMMODATION.** - The harbour of Colombo is formed by four breakwaters, of which the S.W. breakwater was the first to be constructed, and was completed in 1885 at a cost of £705,207 or Rs 8,402,484. It is 4,212 ft long, and is formed of concrete blocks of from 18 to 33 tons each and capped by a solid concrete mass, the top of which stands 12 ft above low water level. It terminates in a circular head 62 ft in diameter, on which stands the Pilot Station and a small lighthouse showing a red light. Of the other breakwaters, the N.W. is an island one, 2,670 ft long, carrying two small lighthouses, one at each end, and was completed in 1907 at a cost of £137,092, the N.E. breakwater cost £92,665, and the last one constructed the arm running at an angle to the S.W. breakwater, was completed in 1912, having cost £338,930. The area protected by these breakwaters is 943 acres, or 1 sq m, three fourths of which has water more than 27 ft deep, and affords shelter during the S.W. monsoon for 45 ocean going steamers drawing from 27 to 39 ft, and for 30 during the N.E. monsoon drawing from 27 ft to 33 ft of water. The total warehouse area available in the port is 569,880 sq feet. The Chalmers granaries are noticeable, providing accommodation for 600,000 bags of rice stored in ten buildings of ten storeys

each. The quays and jetties have a total length of about 10,330 ft. They are mostly Government property, and only lighters and launches go alongside them, all ships of any size lying at anchor or moored to buoys, and discharging or loading with lighters.

**ADMINISTRATION.** The Port of Colombo is administered by a body designated the Colombo Port Commission, which was established in 1913, and consists of six official and six unofficial members and a secretary. Five of the unofficial members are nominated by the Ceylon Chamber of Commerce. In 1923-24 the revenue of the Port Commission (Rs 5,157,984) exceeded the expenditure (Rs 2,638,310) by Rs 2,519,674.

**APPROACH.** - The flashing light which marks the entrance to the harbour is situated on the shore near the south end, on the top of the clock tower and is visible 18 miles at sea. The entrances at the north-east and south-west ends are 700 and 800 ft wide respectively, the depths being (western) 40 ft, and (eastern) 34 ft, at low water ordinary spring tides. The channels from the entrances to the anchorage are Western, 630 ft wide, 30 ft deep, Eastern, 580 ft wide, 28½ ft deep.

**BOAT RATES.** The fare for public motor boats from the steamer to the landing jetty or vice-versa is 50 cents for each adult during the day from 6 a.m. to 7 p.m., and 75 cents from 7 p.m. to 6 a.m. Baggage



1. RECLAMATION ROAD, COLOMBO, SHOWING EXPORT WHARF.

2. PRINCE STREET, COLOMBO.

charge is 15 and 25 cents per article according to weight and quantity. The rates for jetty or row-boats are slightly less than for motor-craft. Most steamship companies have their own tenders to bring passengers ashore and return them to their own steamers free of charge, and shipping agents specify hours of arrival and departure on a notice board on the Landing Pier.

**BUNKERING.** A coaling depôt 18 acres in extent, with 18 jetties, each 190 ft long, and a large repairing basin, have been recently constructed. Coal can be discharged from steamers at the rate of 500 to 800 tons per day of 12 hours.

**OIL INSTALLATION.** The Port of Colombo is equipped with an up-to-date installation which provides for the rapid bunkering of ships using liquid fuel, the scheme having cost approximately Rs 5,251,796. A depot for storage purposes, about 92 acres in extent, is situated at Kolonnawa, about 3 miles inland from the

**DOCKS.** There is a Graving Dock opening on to the eastern shore of the harbour, capable of taking vessels up to 700 ft in length, 75 ft in breadth and 30 ft draught. This dock was constructed for the use of His Majesty's ships and for the accommodation of the numerous vessels using the port. It was opened in 1906, and cost altogether £387,592, of which £150,000 was contributed by the Admiralty. Electric light was installed in 1918 and the docking of ships can now be carried on by day or night. A patent ship for small vessels to raise 1,200 tons dead weight has been in use since 1903.

**DREDGING.** Since 1912 dredging in the port has been carried out in accordance with a scheme drawn up in that year, which provided for the deepening of the harbour to 30 ft. The new dredger, the "Sir William Matthews" capable of dredging to 15 ft, was obtained in 1921.

With regard to the further deepening of the harbour the British Imperial Shipping

area of about 10 acres of water and a beaching ground of about 60 acres have been constructed at Mutwal at a cost of nearly £20,000.

**HARBOUR DUES.** The revenue from harbour dues collected in 1924 at Colombo amounted to Rs 2,744,009, compared with Rs 2,102,626 in 1923, and Rs 1,894,811 in 1922.

**HARBOUR RAILWAY.** The harbour is now fully connected with the Main Railway Line, the connection of the existing lines in the Customs premises south of the passenger jetty with the harbour lines near the Harbour Engineer's premises having recently been completed.

**LAKE HARBOUR CANAL.** A canal connecting Colombo Lake with the harbour was completed in 1922 and affords direct water transport between the mills on the lake side and the harbour. The canal has been sufficiently dredged to admit of the navigation of fully-loaded 40-ton harbour barges.



1. MALIBAN STREET: WAREHOUSES OF THE E.P. & E. CO. LTD., 2 MAIN STREET, SHOWING THE OLD TOWN HALL, COLOMBO seen on right.

harbour front, on which the various oil companies have erected their storage and distribution tanks. Two main pipe-lines have been laid connecting the discharge berth and Kolonnawa—one for fuel oil and the other for kerosene and petrol. Branch lines have also been laid to the Measuring Tank Depôt at Bloemendahl, and thence to the bunkering berths.

The oil jetties consist of one discharge jetty and two bunkering jetties, the former normally capable of accommodating vessels up to 350 ft long and 30 ft draught, and the latter for vessels of similar length but of 28 ft draught. The discharge jetty is at present available for vessels of 25 ft draught only. Ships also use the southern side of the Graving Dock Guide Pier for discharging oil. The outer oil bunkering jetty can be used by vessels provided their draught does not exceed 27 feet after bunkering. The inner bunkering jetty is used only by barges.

Company reported in 1924 that there was no present justification for a general deepening if it should appear on the completion of the survey which was then in progress that the cost was likely to be very large. The programme at present in view is to deepen the outer areas of the harbour to 30 ft and the areas near the foreshore to 33 and 30 ft respectively. All the berths in the 36 ft area are expected to be available by about 1932, but the deepening of the northern entrance will take longer.

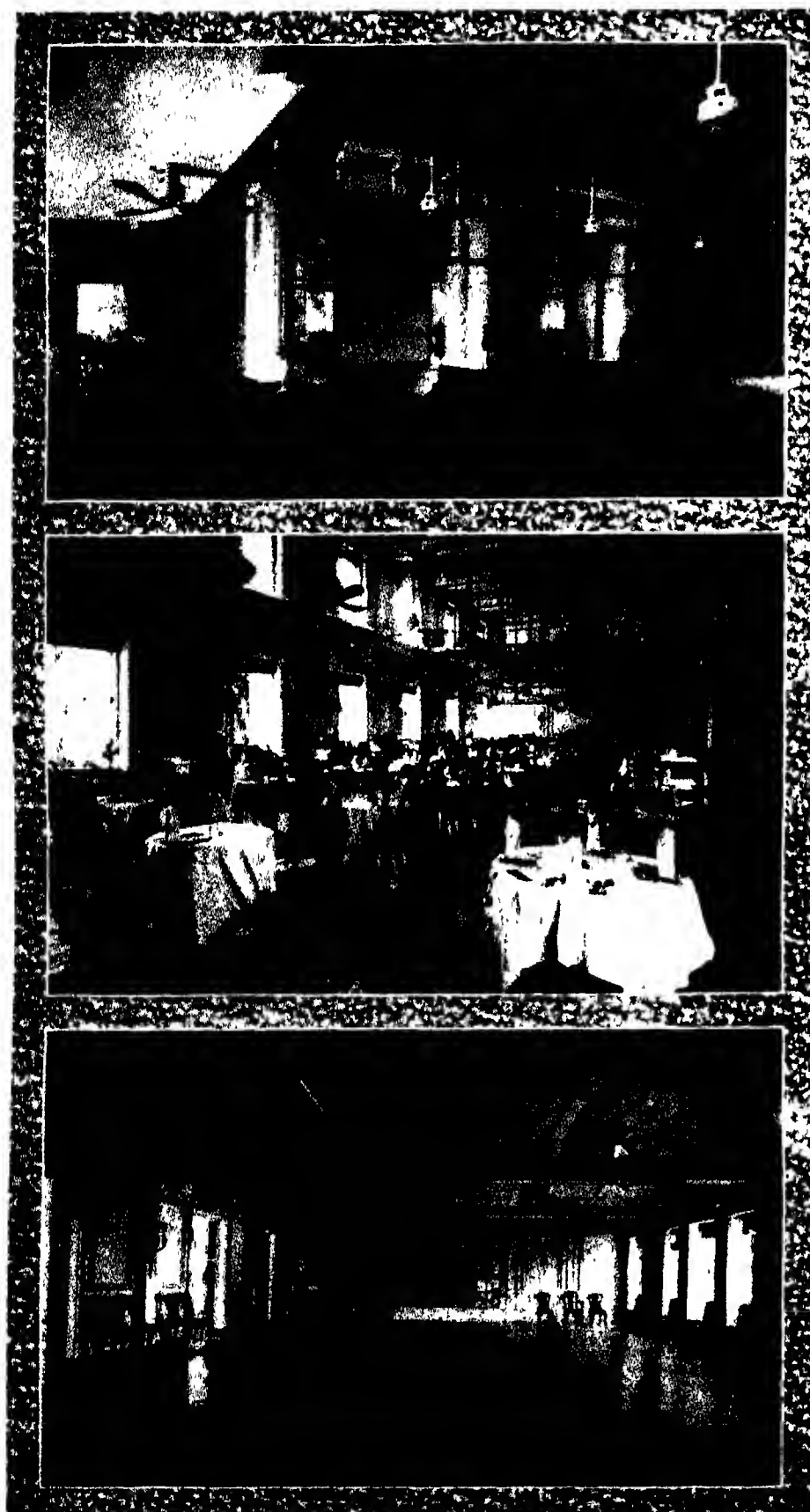
**EXPLOSIVES.** As the Prince of Wales' jetty, which was the authorised place for landing explosives, was found unsatisfactory, the North Pettah jetty is now used for the purpose.

**FISHERY HARBOUR.** Owing to the whole of the foreshore inside the harbour being taken up for coal storage, etc., it became necessary to provide accommodation for fishermen outside the harbour. A sheltered

**PASSENGER TRAFFIC.** The total number of passengers using the port in 1924 was 232,775, of whom 135,584 were in transit, while 48,885 disembarked and 48,336 embarked.

**PILOTAGE.** Vessels entering Colombo pay pilotage at rates which range from Rs 15 for vessels up to 499 tons gross to Rs 120 for vessels over 10,500 tons, by increases of Rs 5 for each 500 tons. A further 25 per cent must be added to these rates.

**PORT CHARGES.** Port dues range from Rs 3 on ships under 50 tons to Rs 12 on ships between 150 and 200 tons, afterwards rising to Rs 45 on vessels between 400 and 500 tons, and Rs 85 on those between 900 and 1,100 tons, after increases being roughly at the rate of Rs 19 per 200 tons up to 1,500 tons, then Rs 19 per 250 tons up to 2,500 tons, then Rs 19 per 500 tons up to 4,000



GRAND ORIENTAL HOTEL, Colombo.

1. Part of the new Public Ball Room looking through Dining Room into hotel gardens.
2. Dining Room.
3. Private Ball Room.

tons. After charges are, not exceeding 1 500 tons, Rs 319, 5,000 tons, Rs 350, 5,500 tons, Rs 387, 6,000 tons, Rs 437, 8,500 tons, Rs 750. These dues clear a vessel inwards and outwards, provided her stay in port does not exceed 96 hours. If exceeding 96 hours and not exceeding 288 hours, 50 per cent to be added. If exceeding 288 hours, the same rate to be paid outwards and inwards, and buoy rent is charged in addition.

**DISCHARGING AND LOADING DUES.** Vessels loading or discharging cargo, 10 c per ton up to 200 tons register, 32 c per ton over 200 tons register. Transshipment cargo, if landed and re-shipped after the fifth day of landing, is liable for harbour dues and rent. Vessels of 300 tons or under are allowed to land or ship 5 tons of cargo free. Petroleum, liquid fuel, and coal cargo, 25 c per ton payable inwards only. Cattle Rs 1 per head, horses, Rs 5 per head, sheep and goats, 20 c per head. Live stock re-shipped within five days of landing (the day of landing and day of re-shipment each to count as one day) to be exempt from these dues.

**WALLER.**—Rs 2 50 per ton, free on board.

**QUARANTINE.**—All live stock must be removed from the wharf to the quarantine station within 12 hours.

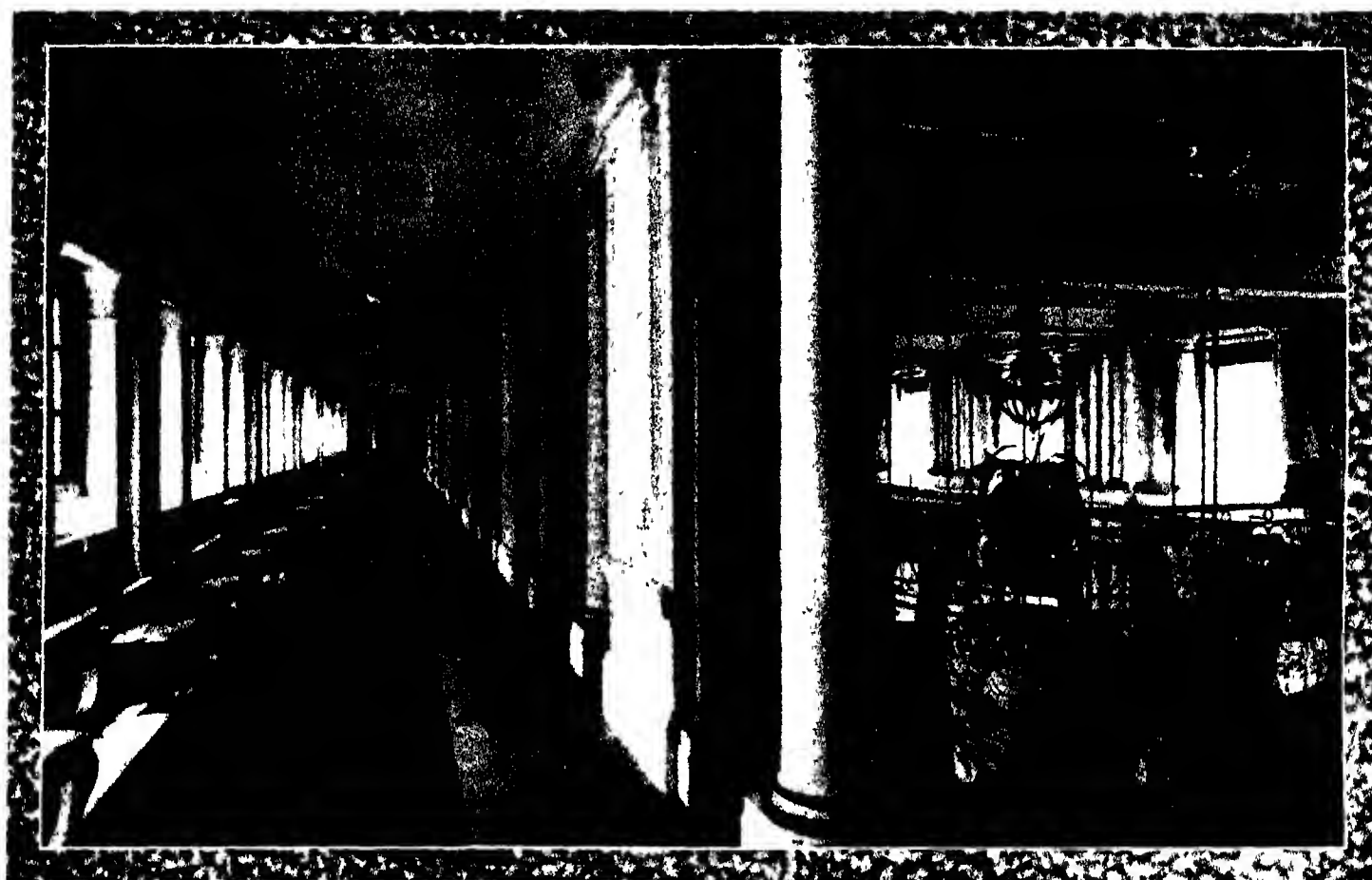
**REGISTRATION OF SHIPS.** At the beginning of 1925 there were 24 ships (2,501 tons) on the ship's register of the port, no vessels having been added to the register during 1924.

**SHIPPING AND TRADE.**—The net tonnage of vessels (sailing and steam) which visited Colombo in 1924 amounted to 10,013,951 tons, in addition, 58 warships and transports with a gross tonnage of 176,414 tons, and coasting vessels with a net tonnage of over 50,000 tons, entered the port. During 1923-24 there was a considerable increase in shipping visiting the port, which is rapidly reaching its pre war standard. The following are the numbers of merchant ships of all nationalities and their tonnage calling at the port during the years named—

	NUMBER OF VESSELS	NET TONNAGE
1913	2,979	9,475,893
1922	2,463	8,416,373
1923	2,563	9,006,640
1924	2,773	10,013,951

The tonnage of goods imported to Colombo, which in 1915 was 945,114 tons, rose from 923,853 tons in 1923 to 1,170,630 tons in 1924, while that of goods exported from Colombo, which was 532,567 tons in 1915, rose from 539,734 tons in 1923 to 650,793 tons in 1924. These figures are exclusive of coal imported, which in 1923 reached a total of 555,434 tons and in 1924 amounted to 646,220 tons. The total number of ships taking in fuel oil bunkers at the port during 1924 was 253, as compared with 242 in 1923. The quantity of bunkers taken was 137,597 tons, as against 125,281 tons in 1923.

**TIME SIGNAL.**—The semaphore time signal has been replaced by a time ball on the Master-attendant's office. The ball is hoisted half-way 5 minutes before and close up 2 minutes before the signal, and dropped at 1 h. 0 m. 0 s. standard time, corresponding to 19 h. 30 m. 0 s. Greenwich mean time.



GRAND ORIENTAL HOTEL: Corridor and part of Sitting Room.

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### GRAND ORIENTAL HOTEL.

**Situation.** This well known hotel, generally alluded to as the G.O.H. is under the control of The Colombo Hotels Company Ltd. (1876). Overlooking the Passenger

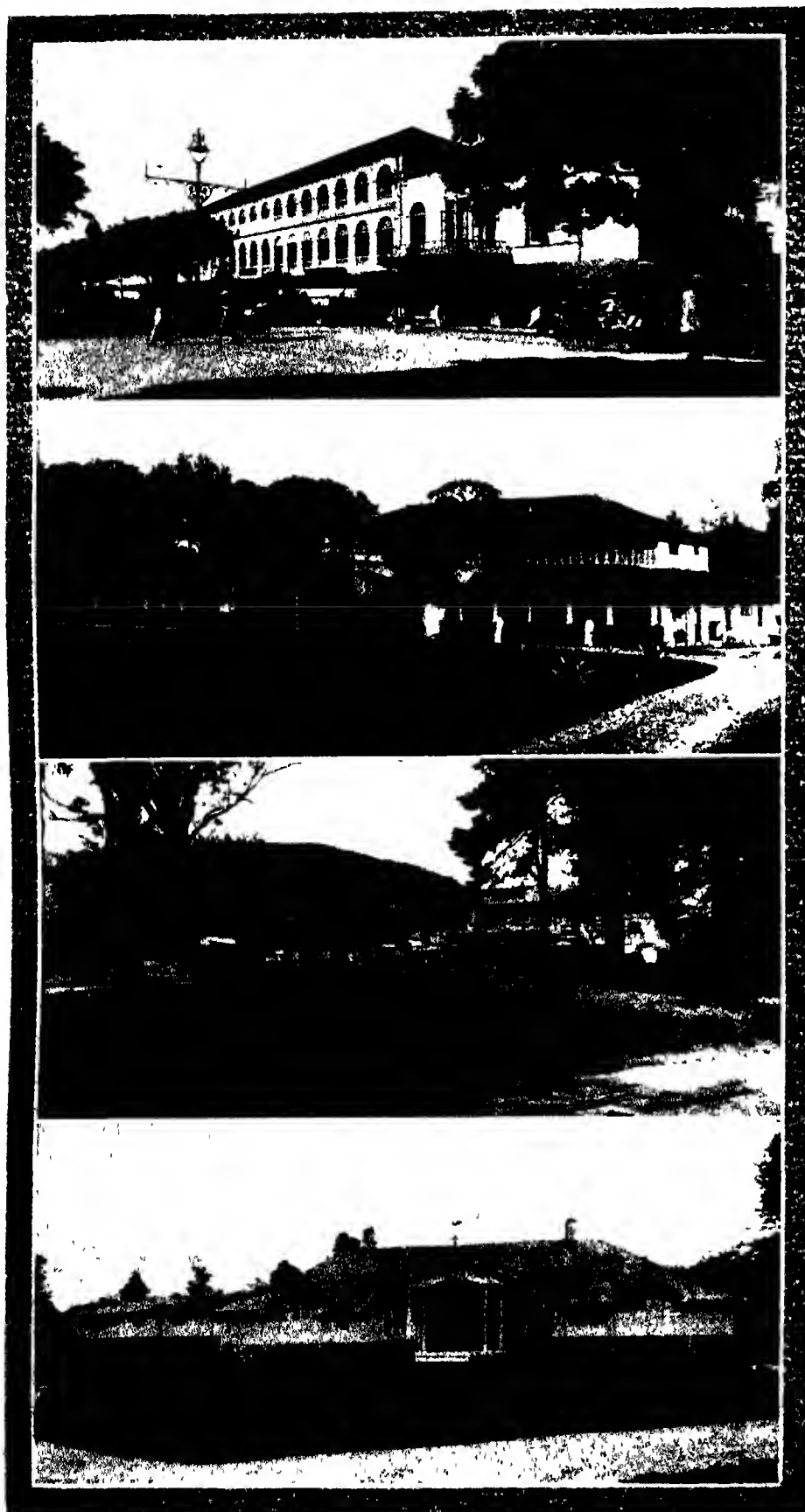
Jetty at Colombo, it is in close proximity to the main shopping centre, near Queen's House, the Barracks and remains of the old Dutch Fort. The Post, Telegraph, and Wireless Offices are also adjacent.

**Premises.** The lofty rooms, replete with every modern feature for the comfort of visitors, bear comparison with those of any

up to date hotel in the East. The public rooms are all bright and airy, while many of the reception rooms have cool balconies. Hydraulic lifts, running day and night, are placed conveniently about the building. Telephones are installed on all floors, and they have unrestricted connection with the whole of Ceylon.



MOUNT LAVINIA GRAND HOTEL AND TERRACE.  
(See *Interpress*, page 26.)



1. BRISTOL HOTEL, COLOMBO.  
2. ANURADHAPURA HOTEL, ANURADAPURA.  
3. GRAND HOTEL, NUWARA ELIYA.  
4. ST. ANDREW'S HOTEL, NUWARA ELIYA.

**Dining Room.**—On the ground floor there is a beautifully decorated dining room with accommodation for over 300 guests. This room, of which the management are justly proud, is perfectly arranged, being free from all noise. It is lofty and cool, with an excellent balcony room at each end. Running the whole length of one side is a delightful lawn with garden. The cuisine is an outstanding feature of the hotel.

**Ball Room.**—A spacious ball room, which has recently been added to the hotel, adjoins the dining room, and a very complete installation of electric fans makes dancing, even in the hottest weather, thoroughly enjoyable. This room is used more for the larger public dances, another one of smaller proportions being utilised in its place on other occasions.

**Other Features.**—The usual reading rooms, reception halls, lounges, etc., are all spacious and equipped in a manner befitting the importance of the hotel. A very popular feature of the Grand Oriental is its splendid roof garden, from which a wonderful panoramic view may be obtained. Cinema entertainments are given on Wednesday and Sunday evenings, with the latest pictures and pleasant music. An excellent hairdressing establishment is situated in the basement of the hotel, and the billiard room has six perfect tables. On the ground floor of the establishment is a Cook's Tourist Bureau.

**Financial.**—For the financial year ended December 1924, a dividend of 8 per cent was paid by the company.

**Directorate.**—Messrs Thomas Walker (managing director and chairman), S. P. Hayley, F. H. Layard, C. E. Haslop, F. I. Wright and Colonel T. Y. Wright. Secretary, James Anderson, hotel manager Frank Winfield.

**Cables and Telegrams.**—"Grand," Colombo Code used. A B C. Telephones 1050 and 1051.

**Bankers.**—National Bank.

#### MOUNT LAVINIA GRAND HOTEL.

**Situation.**—Established in 1897, this hotel occupies one of the finest positions in Ceylon. It is built on a cliff overlooking the sea, is always cool and free from dust, and is not troubled by mosquitoes. Situated about 7 miles from Colombo, the hotel is easily reached by carriage, motor, or rail in from 15 to 30 minutes. The drive from Colombo along the Galle Face Road is one of the most picturesque and interesting in Ceylon, while the railway journey by the sea shore is equally attractive. Near the hotel, adjoining the Galle Road, there is a magnificent Buddhist Temple, which tourists in Ceylon will find well worthy of a visit. Hotel charabancs convey passengers to the "Grand."

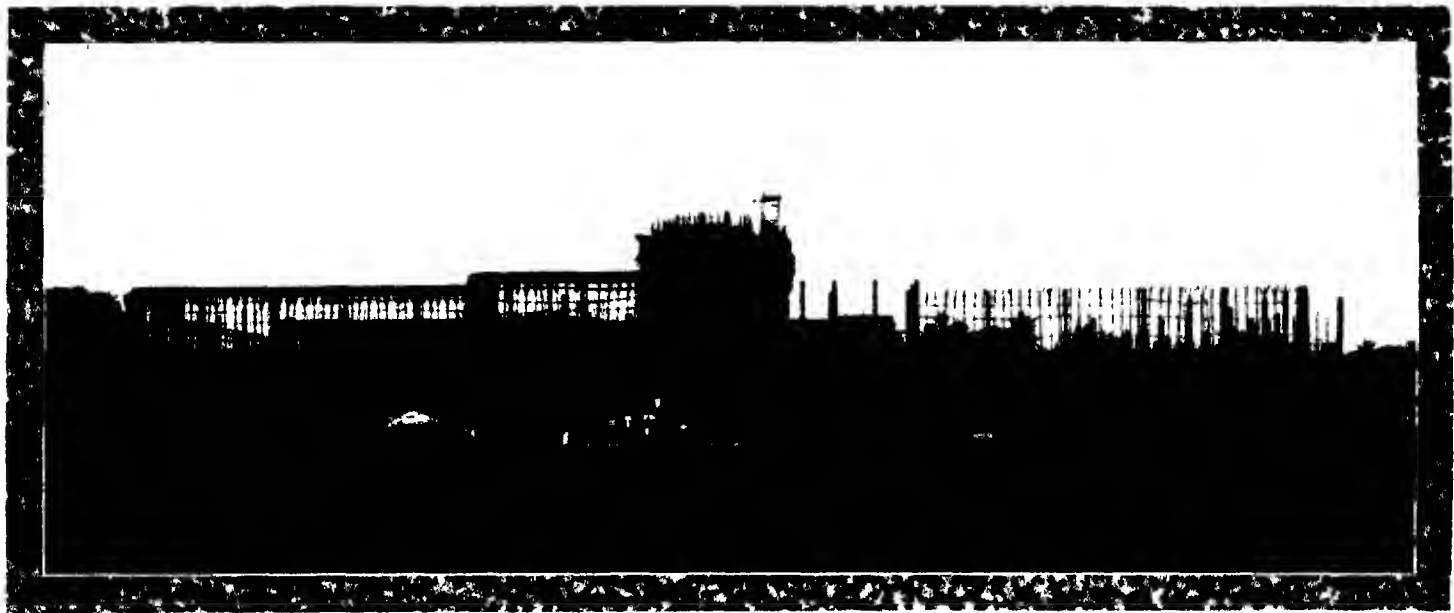
**Premises.**—These have recently been remodelled and renovated, and everything possible has been done for the comfort and convenience of visitors. Electric light and fans are installed throughout the building, both fresh and salt water baths are provided, and billiards and tennis can be played. Particular attention is paid to the cuisine, which is of high quality, and a feature is made of special tiffins and dinners to order. The charges are moderate, special terms being quoted to families and permanent residents.

**Managing Director.**—Mr. Arthur E. Ephraums.

**Telegrams.**—"Seaside," Galkissa Telephone, No. 466.

(See illustration, page 25.)





J. C. GAMMON LTD., Colombo  
Reinforced Concrete Contract of the Firm. The new Town Hall under construction

#### BRISTOL HOTEL, COLOMBO.

**Situation.**—Centrally situated, this hotel is about three minutes from the Passenger Jetty, and close to the leading business houses, banks, custom house, etc.

**Accommodation.**—Well furnished, with electric light and fans throughout features of the hotel are the excellent cuisine, moderate charges, and the cool lounge. The orchestra plays during lunch and dinner, there is a first class grill, and curries are a speciality.

**Telegrams.**—"Bristol," Ceylon  
**Managing Director.**—Mr Arthur E Ephraums

#### ANURADHAPURA HOTEL.

**Situation.**—This hotel is in the old Experimental Gardens Anuradhapura, the most important "buried city" in Northern

Ceylon, was for 1,200 years (437 B.C. to 769 A.D.) the capital of the ancient Sinhalese Kingdom. As the town is only 120 feet above sea level, the temperature is rather high, but the air, as a rule, is dry.

**Premises.**—There is accommodation for from 30 to 40 guests at the hotel, and the building is well equipped for the comfort of visitors. Three trains a day serve the city, morning, midday, and evening, the distance from Colombo being 126½ miles and the time taken on the journey about 6½ hours.

**Managing Director.**—Mr Arthur E Ephraums

#### ST. ANDREW'S HOTEL, NUWARA ELIYA.

**Situation.**—Nuwara Eliya, the health resort of Ceylon, lies about 6,300 feet above sea level. St Andrew's Hotel, standing in its own grounds of over six acres in extent

and adjoining the golf links, occupies one of the best positions at the Sanatorium.

**Accommodation.**—There are over 40 airy and well furnished bedrooms, a large dining room, drawing room, smoking room, billiard room, and lounge, as also roomy stables and garages, and a good tennis court. Electric light and bells are installed throughout the building, the cuisine is excellent and the service is good. The charges are moderate and Cook's hotel vouchers are accepted.

**Telegrams.**—"St Andrews," Nuwara Eliya  
**Managing Director.**—Mr Arthur E Ephraums

#### J. C. GAMMON LTD.

**Inception.**—The firm of J. C. Gammon Ltd. was registered as a private company in June 1922, the managing director, Mr J. C. Gammon, B.Sc., O.B.E., A.C.S.I., having



J. C. GAMMON LTD., Colombo.  
The new Town Hall as it will appear when completed.

previously practised from 1919 in Bombay as a reinforced concrete and consulting engineer

**Development.**—For two years the firm confined its activities to Western India, and Bombay in particular, but having clearly shown that concrete is ideal for the Tropics, providing a building material highly suitable for varying conditions, it has been able to extend its scope through public and private contracts to many other parts of India and the Malay Peninsula. The Ceylon branch was opened late in 1924.

**Activities.**—During the first two years of the company's existence it secured on account of the Bombay Port Trust the contract for the great Cotton Depot, valued at 70 lakhs of rupees. This depot provides accommodation for 2,000,000 bales of cotton and is one of the largest concrete works ever undertaken in the East, having been described by the Governor of Bombay at the opening ceremony as a triumph for concrete engineering. The work was completed in 2 years and 3 months, exactly 15 months under contract time. Other important works in Bombay include a 6,500,000 gallon reservoir at Malabar Hill, the Lady Lloyd's Pier, Karachi, Antop Model Village of 370 single storeyed units, the De Hisle Road Chawls, providing 50,000 one-room tenements, foundations for the Gateway of India, etc. Works in progress in 1925 included the Pugara Dam for H.H. the Maharajah of Gwalior, the Fuse Factory at Kirkee for H.M. Government, railway approaches and viaduct at Ahmedabad, and the Cotton Exchange, Bombay.

**Other Constructions.** In 1924 branches were opened at Calcutta and Singapore. In Calcutta, the Dum Dum Bridge is under construction, while in Rangoon important undertakings are the Municipal Reservoir and Municipal Market. In Malaya are being built the Medical School, Criminal Prison, etc. (at Singapore), the Muar Mosque, the Asahan Dam, Bukit Treh Reservoir, Kedah Bridge, Banut Wharf, etc. In Ceylon contracts in hand include oil fuel jetties and dolphins for H.M. Admiralty at Trincomalee, and the reinforced concrete construction for the new Town Hall at Colombo, as also the first of a series of European residential flats at Galle Face, a hospital for infectious diseases at Angoda, arcade and shops in the Fort, etc.

**Offices.** New Town Hall Site, Colombo Cables "Gammun," Colombo Codes Bentley's, A B C, and Private. Telephones No 1910 Post Box 475.

#### CARGILLS LIMITED.

**Inception.**—This firm was established in 1844 to carry on the business of a general store in Colombo, and it operates one of the leading establishments of the kind in the East.

**Departments.**—The house is divided into the following departments—

**DRUGS AND CHEMICALS.**—This department, which is both wholesale and retail, is under the control of qualified European chemists. All drugs are imported from British and American firms of the highest repute, and are guaranteed. Cargills are sole agents in Ceylon for the leading manufacturers of surgical instruments and appliances, and keep comprehensive stocks of the vaccines and sera in general use. Prescriptions receive the special attention of a highly competent staff. The firm is also a large importer of high class perfumery, both French and English.

**DRIPERY.** In this department the latest novelties in ladies' wear of every description may always be found, including millinery, shoes, and sunshades. There is also a dressmaking section in the hands of a capable European.

**MEN'S CLOTHING.** This department comprises a tailoring section with European cutters and a general outfitting department. Complete outfits for Europe and the Tropics are a speciality, as well as travelling kits of all kinds including suit cases, hold-alls, bags, and trunks in leather, fibre, or steel.

**WINE, SPIRITS, ETC.** This department with its subsidiary sections, confectionery, tobaccos, cigars, etc., silverware and electroplate covers a floor space of 2,500 square feet, and offers a large choice of goods, the frequent and regular arrival of which ensures absolute freshness of stocks. Cargills Ltd. hold the sole agency for many of the best known brands of wines and spirits, and buy direct from leading distillers, growers, and shippers. Their cellars cover 10,500 square feet, and hold an average stock of 40,000 gallons. The stocks of tobacco, cigars, smokers' requisites and confectionery are equally extensive.

In the silver and electroplate department there is always a large selection of articles suitable for presentations and prizes, and special quotations are made to sports' committees.

The stationery and sports section is fully equipped with every requisite, including all kinds of stationery, the latest novels, a large stock of cameras and photographic materials and a wide selection of fancy leather goods, dressing cases, handbags, and sports games.

The children's section contains a varied stock of dolls, bicycles, scooters, tricycles, and mechanical toys.

**Agencies.** Cargills Ltd. are agents for a large number of important concerns, among which are The Burmah Oil Co. Ltd., B.S.A. Ltd., Chappell Piano Co. Ltd., Kodak Ltd., Mellins Food Co. Ltd., Ronuk Ltd., Scott & Co., Somerville Bros., John Fann Ltd., Apollinars, Bouchard Pere et Fils, Courvoisier et Cie., Robert Crawford, John Dewar & Sons Ltd., Duff Gordon & Co., Gilmour Thomson & Co., Gordon's Gin Co., J. Haig & Co., Moet & Chandon, Sandeman, Sons & Co., White Horse Distilleries Ltd., Anglo-French Drug Co., Boot's Pure Drug Co., Felice Bisteri & Co., Fellows Manufacturing Co., "4711" Eau de Cologne, E. Griffiths Hughes Ltd., Foster, McLellan & Co., Lintox Distemper Cure, Pastex Dyes, Stephen Smith & Co., Hall's Wine, Veet, A. Wander Ltd., Wulfang's Albulactin, Sanatogen, Formamint, and many others.

**Offices and Branches.**—The registered office of the company is at 163, Hope Street, Glasgow, while the London office is at Balfour House, 119-125, Finsbury Pavement, E.C.2.

The Colombo offices and branches are at No. 1, Princes Street, Nos. 15 to 18, York Street, No. 10, Bailie Street, No. 6, Canal Row, Fort, also at Cinnamon Gardens and Galle Face, and there are branches at the hill stations, Kandy and Nuwara Eliya.

The Forage Mills are at Staple Street, Colombo.

**THE APOLLO MOTOR TOURING CO.**—No. 2, Canal Row, Fort, Colombo. This company is the sole agent in Ceylon for the well-known "Rollin" and "Ariel" cars. It is under European management, and keeps a large fleet of cars of all sizes for hire by the hour, day, or for longer periods. Particular attention is paid to the convenience

of travellers and tourists, and those whose stay on the island is likely to be limited can save time by sending beforehand instructions by wireless of their requirements as to tours, the number of persons in the party, etc. The cost of such wireless message is refunded on the arrival of passengers, moreover, any trip so arranged can be cancelled if, after arrival, the weather be found unfavourable, or the time at disposal does not permit the tour to be undertaken. The charges for the hire of a car range from six rupees an hour for a four-seater up to 10 rupees for an eight-seater, while the rates for trips are equally moderate. The charges for the larger tours include luncheon at a first-class hotel. Thus the trip to Kandy, which takes about 3½ hours each way and passes through some of the most interesting scenery in Ceylon, costs for four passengers 35 rupees each person, but for larger parties the individual cost is somewhat less, this includes lunch and visits to places and sights of interest in and around Kandy. Tours can also be arranged in accordance with tourists' own particular plans. In addition to this side of the business, the Apollo Company holds large stocks of motor tyres, tubes, oils, accessories, novelties, etc., for the convenience of private owners of cars. Partners Messrs. H. P. Cosmas and A. Karamahalis. Garage, Union Place Junction. Cables "Apollo," Colombo Codes A B C 5th Edition and Bentley's Bankers. Chartered Bank of India, Australia and China.

#### COLOMBO APOTHECARIES CO. LTD.

**Inception.** This company was formed in 1892 to take over the business of a private company of the same name, which carried on a trade in drugs and dispensing.

**Development.** To the original business were added drapery, stationery and hardware, and at various subsequent dates the other departments and enterprises which are now controlled by the company. In 1904 the business of Messrs. Smith-Campbell & Co. (tailoring and outfitting) and Mann & Co. (boots, saddlery, etc.) were acquired, and in 1917 the Anglo-Oriental Furnishing Co. was absorbed. The printing plant, which was established in 1901 primarily for the company's own requirements, has developed into a first-class Press, in which all classes of printing are produced.

**Premises.**—The main premises are situated at the corner of Prince and York Streets, and immediately adjoin the Grand Oriental Hotel. They thus furnish a convenient entrepôt for the traveller.

**Departments.** The firm now controls a large Stores with many departments.

In the Dispensary are prepared prescriptions under fully qualified European supervision, and it carries stocks of patent and proprietary medicines from the world's leading makers. The chief English and Paris manufacturers of toilet requisites and perfumery are also fully represented.

The Tailoring and Outfitting Section provides clothes of good quality both ready-made and made-to-measure, and complete outfits for tourists and others may be obtained.

Tobacco and cigars are stocked in all well-known brands.

In the Boots and Shoes Department a local speciality is shoes made of the skin of the Cabra Goya, a variety of lizard, hand bags and suit cases are also made of the same skin.

The Ladies Department has in stock all that the resident (temporary or permanent) may require; while an increasing trade is



CARGILLS LTD., Colombo.

Five of the many departments of Cargills well-known Store at Colombo.



COLOMBO APOTHECARIES CO. LTD., Colombo,

- |                             |                          |
|-----------------------------|--------------------------|
| 1. Books and Stationery.    | 2. Boots and Shoes.      |
| 3. Haberdashery Department. | 4. Provision Department. |
| 5. Pharmacy Department.     | 6. Tailoring Department. |
| 7. Leather Goods.           | 8. Furniture Department. |

(See Jallorpress, page 29.)



done by the Furniture Section, in which both local and imported woods are used.

Other departments deal with watches and jewellery, repairs being supervised by qualified Europeans, books and magazines, stocks being replenished each week by mail, and photography, in which section a speciality is made of developing and printing.

**Directorate.**—Messrs W. Pole Fletcher, W. E. Mitchell, D. W. Watson, W. Bartlett, S. P. Hayley, and J. and S. Collett. General manager: Mr. F. Trollope.

#### **MILLER & CO. LTD.**

**Inception.**—The foundation of this company was laid in the early fifties by Mr. William Cramond Miller at Kandy, in the days when coffee was the staple industry of Ceylon. At that time the firm traded as Bell, Miller & Co.

**Development.**—After 1858 the business was carried on under the name of Findlay Miller & Co. but in 1862 the style was changed to Miller & Co. and it was so maintained until 1921, when the firm was incorporated as a private limited company.

**Expansion.**—The expansion of this old established firm has been remarkable. From the modest beginnings of 70 years ago, it has now assumed such large dimensions as importers and distributors of merchandise that the company's name has become a household word in Ceylon, and the Services civil, military and naval, Government Departments and the planting, professional, and business communities are all fully represented on Messrs Miller & Co.'s register of customers.

**Activities.**—Owing to the great growth of the company's enterprises and the variety of goods imported, the business is now divided into various departments, as follow:—

**WINE AND SPIRITS.**—Valuable agencies are held in noted brands of sparkling wines, liqueurs, whiskies, brandies, ales, cider, etc., and standard lines of port, claret, burgundy and other wines figure in the company's catalogue.

**GROCERIES.**—A feature is made of numerous high-class specialties from well-known firms in Europe, America, Australia and the East, for many of which Messrs Miller & Co. are sole agents.

**CONFECTIONERY.**—Regular consignments are received, and a large and varied stock of delicacies is always held.

**CIGARS AND TOBACCOS.**—All the well-known brands of cigars, tobaccos, cigarettes, and every kind of smoker's requisite are carried.

**MEN'S WEAR.**—Complete outfits may be obtained, and a great feature of this department is the tailoring section, where first-class European cutters are employed, and a high standard of quality and service is carefully maintained.

**LADIES' WEAR.**—New and fashionable goods are constantly imported from the best markets, the section is under expert European supervision, and the firm has its own lady buyer in London and Paris.

**SILVERWARE.**—A varied stock, imported from first-class British houses, is displayed, all specially suitable for gifts or prizes.

**DRUGS AND DISPENSING.**—Fully qualified European chemists are in charge of properly equipped dispensing departments both in Colombo and the branch establishments, the purity and freshness of drugs are ensured by the numerous important agencies which the department holds for manufacturers of world-wide repute.



MILLER & CO. LTD., Colombo.

1. Tailoring and Piece Goods Department.
2. Confectionery and Provisions.
3. Sports and Hardware Department.



**HOUSEHOLD WARE**—Particular attention is paid to the needs of persons furnishing bungalows under tropical conditions, and all kinds of household utensils and requisites are stocked.

**SPORTS GOODS**—There is a complete selection of articles for all kinds of sports and games, and provision is made for the requirements of sporting clubs.

**Deliveries.** Messrs Miller & Co have given particular thought to the requirements of tourists and ocean passengers, and make rapid delivery to all parts of any goods ordered, for which purpose they maintain a large fleet of motor delivery vans.

**Directorate.**—The Hon J. Lochon (chairman), Messrs Walter Philips (managing director), William Geddes, and H. J. Hutchings.

**Offices and Branches.**—The headquarters of the firm are at "Australia House," York Street, Colombo, and these premises represent the modern type of a fully equipped Depart-

accommodation for 100 guests, and the magnificent lounge, which is 200 feet in length, affords a grand view of the mountain scenery. Hotel runners meet all steamers and trains, and hotel motor cars await visitors at Kandy and Peradeniya. Motor trips to places of interest are arranged at moderate rates. The hotel is entirely under French management, the cuisine is first-class, and excellent wines are specially imported. Rates are moderate, and have not been raised since the extensive alterations and improvements were carried out. Cook's coupons are accepted. Of much interest for visitors are the Royal Botanical Gardens at Peradeniya, the Temple of the Tooth, Temple elephants bathing in the river at Katugastota, the Kandyan Art Museum, Lady Horton's Drive, Lady Blake's Drive, Waco Park, and tea, rubber and cocoa factories in the vicinity while there are several very old interesting temples within easy reach. Cables "Simsotel," Kandy, code ABC 5th Edition.

Coconada and Aden. London correspondents: R. G. Shaw & Co., Winchester House, Old Broad Street, E.C. 2. Cables "Shawlace," Colombo. Codes Bentley's, Scott's, ABC (5th and 6th Editions), and Kandale's.

**SUN LIFE ASSURANCE CO. OF CANADA.**—Lloyd's Building. Fort. Subscribed capital, £110,958, paid-up, £174,657. Report for 1924: Assets, £56,328,166, total income, £13,358,066, payments of claims £6,916,176, undivided surplus over all liabilities (Canadian Government valuation) £5,172,812. Head office, Montreal, Canada. Cables "Sunbeam," Colombo.

**WALKER SONS & CO. LTD.**—Fort and Mutwal, Colombo. Founded 1854, converted into limited liability company 1891. Engineers, builders and contractors, general merchants, ship building and repairs, salvage, estate machinery and supplies, motor workshops, etc. Branches at Kandy, Lalwakkelle, Ratnapura and Galle. London office 30, Basinghall St.,



Silverware Department.

MILLER & CO. LTD., Colombo.

Drug Department

ment Stores. The Forage Mills are at Slave Island, Colombo, and there are branches at Kandy, Nuwara Eliya, and Baudarawella.

**London Office.** 45-47, Wigmore St., W. 1.

**Cables:** "Millers," Ceylon.

**HOTEL SUISSE.**—Kandy, Ceylon. Proprietors, The Hotel Suisse (Kandy) Ltd. The Hotel Suisse is situated in the most picturesque portion of the city of Kandy, known as the Hill Capital of Ceylon. The building is charmingly placed in the centre of a lovely garden of three acres, facing the Lake, affording a grand view of the mountain scenery, and is in the healthiest and coolest part of the town. The hotel is within easy reach of the railway station (the journey only taking five minutes by car), and is away from the noise and dust of the Bazaar and heavy street traffic. The accommodation has recently been enlarged and extensively improved. Hot and cold water are laid on, and the majority of the rooms are fitted with private baths and lavatories. There is

**SHAW WALLACE & CO.**—Hongkong Bank Building, Prince Street, Fort. The Colombo branch of this firm was opened in 1909 under the name of R. G. Shaw & Co., and was changed to its present style in 1912. Business: Merchants and agents, importers of piece goods, fertilisers, flour, sugar, rice, soap, etc., exporters of desiccated coconut, tea, rubber, etc. Proprietors: Atlas Fertiliser Works, Agencies: Eildon Hall Tea & Rubber Co. Ltd., Welimada Tea Co. of Ceylon Ltd., Adams Peak Tea Estates Ltd., Ocean Marine Insurance Co. Ltd., Royal Insurance Co. Ltd., Eagle, Star & British Dominions Insurance Co. Ltd., Joseph Crossfield & Sons Ltd., Anglo-Persian Oil Co. Ltd., Seang Line of Steamers, Admiral Oriental Line, Commercial India Line, Bankers & Traders Insurance Co. Ltd., British Tanker Co. Ltd., Henderson Line, Lewis Berger & Sons Ltd., Spicer's (Export) Ltd. Head office, Calcutta. Branches at Bombay, Madras, Karachi, Cochin, Mormugao,

F.C. Cables "Walkers," Colombo. Codes ABC 5th Edition, Bentley's, Western Union. Ceylon manager, Mr E. J. Hayward.

**THOS. COOK & SON LTD.**—Grand Oriental Building, York Street, Colombo. The offices of this famous firm of agents and bankers are within one minute's walk of the Passenger Landing Jetty, and at that address all necessary facilities and information may be easily availed of by the travelling public. Messrs Thos Cook & Son Ltd. act as railway, steamship and general passenger agents to all countries of the world, and a booklet they have published on Ceylon gives the stranger all the particulars he may require with regard to the city of Colombo, its hotels, the currency, rickshaw, carriage and taxicab fares, as also the trips which can be undertaken according to the time available at port. The head office of the firm is at Ludgate Circus, London, E.C., while the telegraphic and cable address for Colombo is "Coupon."

**N. D. H. ABDUL CAFFOOR.**

**Inception.**—This business was established in 1893 in Bristol Buildings, York Street, Colombo, by Mr N D H Abdul Caffoor, the present proprietor, who is a pearl and diamond merchant dealer in precious stones and manufacturing gold and silversmith.

**Development.** Until 1916 the business remained in York Street, but in 1914 it was decided to erect the building in which the present office and show room are situated. This is the Caffoor Building Main Street, Colombo which is one of the finest structures in the city and the property of Mr Caffoor. In 1904 the firm gained a gold medal at the St. Louis Exhibition, and at the recent Wembley Exhibition it was given the sole privilege of representing Ceylon in the gem and jewellery section, where a representative exhibit of precious stones and Kandyan antique jewellery collected during thirty years, was shown and it was patronised by Royalty besides being specially commended by the Ceylon Government.

**Activities.** The firm does an extensive wholesale business in catseves, blue sapphires, sapphires, rubies, alexandrites, star sapphires, star rubies cabashons, moonstones, etc which are exported to Europe, America and other countries, while a large stock of precious stones is always on hand in various forms and weights cut as well as in the rough. These are attractively displayed in the modern showrooms, which are thoroughly up-to-date and well arranged for the convenient inspection of stocks by customers. Everything supplied by the firm is guaranteed to be genuine. The manufacturing side of the business is equipped with all modern accessories for smiths, lapidarists and other craftsmen in the jewellery and arts trades, and all kinds of such work are undertaken, special attention being given to the rapid and efficient execution of orders. An interesting selection is always kept by this establishment of ware made by the Kandy Art Work Store, which employs only the most skilled workmen. Ceylon pearls are world-famous, and the pearl fishery off the Gulf of Mannar was held in 1925 for the first time in twenty years. A first-class collection of pearls of various sizes and colours was secured by N D H Abdul Caffoor from the 1925 undertaking.

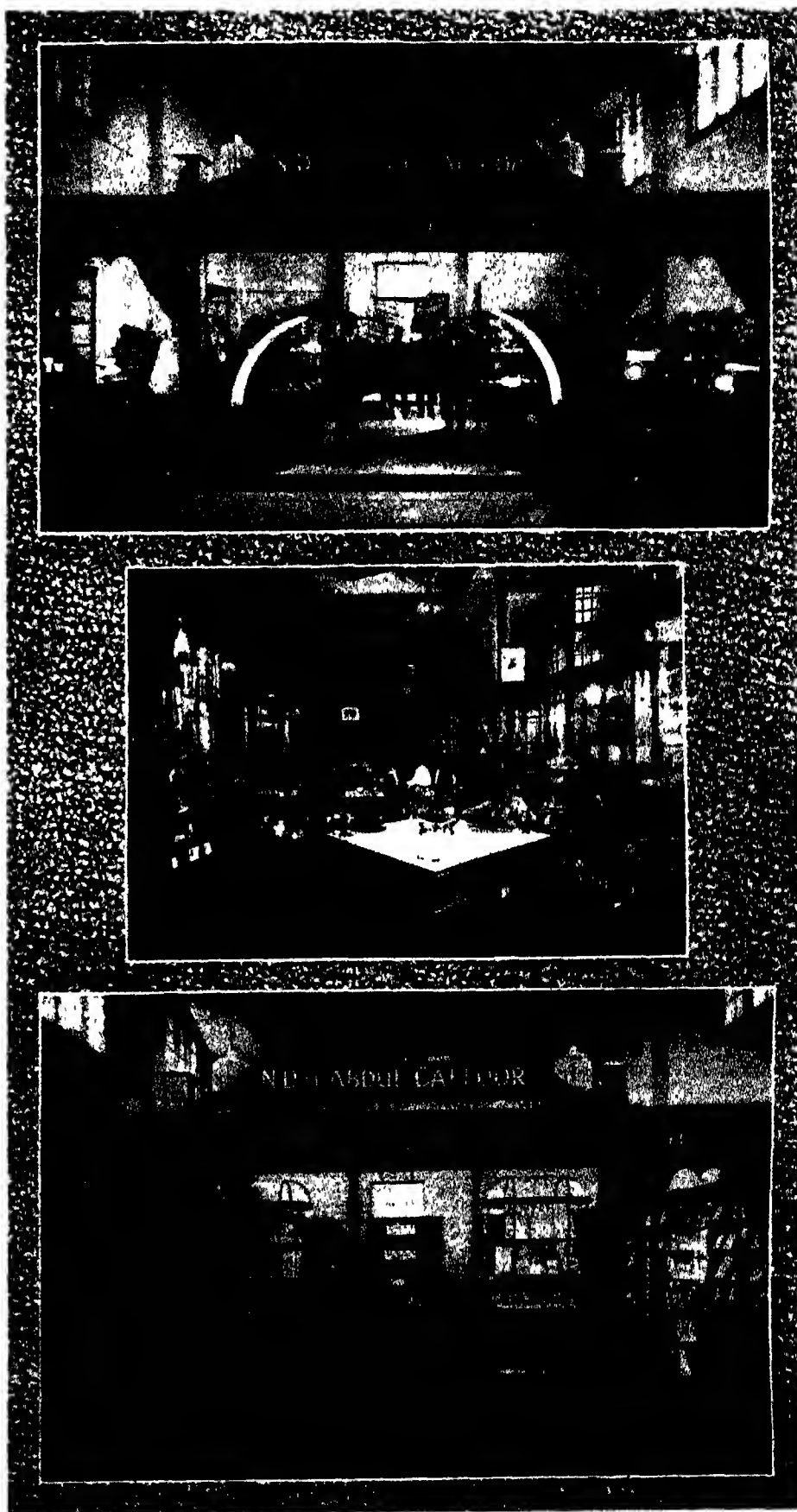
**Agencies.** The firm has agencies and correspondents in all the principal cities of Asia, Europe, America and Australia.

**Offices.** Caffoor Buildings, Main Street, Fort, Colombo. Cables "Caffoor," Colombo. Codes used A B C (5th Edition), Bentley's and Private.

**Bankers.**—Colombo National Bank of India, Chartered Bank of India, Australia, and China, Imperial Bank of India Ltd, London. National Bank of India Ltd.

**COLOMBO TEA TRADERS' ASSOCIATION.** Formed to promote common interests of sellers and buyers of tea in Colombo. All sellers, buyers, agents of tea gardens, buyers representing separate interests and tea brokers eligible for membership. Committee four buyers, four sellers, and chairman or vice-chairman of Ceylon Chamber of Commerce.

**EASTERN BANK LTD.**—33, Chatham Street. Colombo branch opened May 1920. Authorised capital, £2,000,000, paid-up, £1,000,000; reserve, £340,000. Branches in India and Mesopotamia. Head office 2 and 3 Crosby Square, London, E.C.3. Cables: "Eastertide," Colombo.



N. D. H. ABDUL CAFFOOR, Colombo.

1 and 3. Displays at Wembley which attracted much attention and enthusiastic comment.

2. Fine Showrooms at Colombo.



H. W. CAVE &amp; CO., Colombo.

1. The Printing Department.
2. The Music Department.
3. An Attractive Refreshment Rendezvous for Visitors to Colombo.
4. Framing Goods.

**H. W. CAVE & CO.**

**Inception.**—Established in 1876, this firm carries on the business of printers, publishers, bookbinders, process-block makers, electroplaters, and photographers.

**Works.** The printing works are at Slave Island, and cover an area of about one acre.

**Head Office and Store.**—The head office and store are situated at Gaffoor Buildings, Port, Colombo, and the latter is divided into a number of departments. The Music Department comprises pianofortes, other musical instruments and sheet music. In connection with this section there is a well-appointed workshop for repairing, re-designing and re-building organs and pianos. The Book Department carries a varied stock of fiction, also of educational and scientific books of every description. The Stationery Department specialises in typewriters and office equipment. Another department deals with fancy goods, pictures and picture framing, clocks, watches and silverware. The Sports Department furnishes the requisites for all kinds of outdoor and indoor games toys, etc. There is also a Tea Room and Confectionery Department, which is equipped with a modern bakehouse plant, manufacturing table delicacies in great variety.

**Employees.**—These total 450.

**Agencies.** Messrs H W Cave & Co are sole agents for Corona typewriters, Oliver typewriters, portable adding machines, Burroughs' adding machine, and Burroughs and Watts' billiard tables.

**Partners.**—Messrs E A Bartlett, C S Brown, F A Dawkins, and C H Wratten.

**Cables.**—"Cave," Colombo Codes Bentley's, A B C 5th Edition.

**HARRISONS & CROSFIELD LTD.**

Prince Building, Fort. Founded 1844, limited company formed 1908. Exporters of all Ceylon produce, general importers, tea-lead manufacturers, estate and insurance agents. Capital £1,844,986. Head office: 1 to 4 Great Tower Street, London, E C. Cables—"Crosfield," Colombo Codes A B C 5th Ed., Western Union, Bentley's, A 1, Private.

**HAYLEY & KENNY.**—Chamber of Commerce Buildings, Colombo. Founded 1909 by Chas P Hayley & Co., Galle. Manufacture and export all coconut products, rubber, etc. Agents (import) for Brunner Mond & Co., Erasmic Co Ltd, etc. Correspondents in London, Tokyo, New York, Sydney, Capetown, etc. Cables—"Hayken," Colombo Codes A B C (5th and 6th Editions), Bentley's, Private Bankers Imperial Bank of India.

**IMPERIAL BANK OF INDIA.**—Colombo. Est 1921 to take over the business of the old Presidency Banks of Bengal, Bombay, and Madras. "Clearing House" for all banks in Colombo. Authorised capital, Rs 112,500,000; paid-up, Rs 56,250,000; reserve, Rs 46,750,000. Branches all over India. London office: 5, Whittington Avenue, E C.3.

**QUEEN'S HOTEL.**—Kandy. Two minutes from station. Porters and carriages meet all trains. Rooms for 350 guests. Lounge, dining, reading, drawing, billiard rooms, ball room, palm court, and music room. Moderate charges. Electric light and lifts. Cables: "Queens," Kandy Codes: A.B.C. 5th Edition, Bentley's. Manager, William J. Byrne.

**COLOMBO ELECTRIC TRAMWAYS & LIGHTING CO. LTD. (BOUSTEAD BROS., AGENTS.)**

**Inception.**—This tramways and lighting company was established in February 1902 to acquire the electric tramways and lighting business at Colombo previously carried on by the United Planters Co of Ceylon, Ltd., the tramways having been constructed in 1898 under an exclusive concession granted by the Municipal Council of Colombo and assigned to that company. The present company now operates the whole of the electrical power traction and lighting service of the city.

**Capital.**—The authorised capital is £150,000, in 15,000 shares of £10 each, of which £130,840 has been issued. The debenture stock, 5 per cent (first mortgage), repayable at par December 31, 1940, stands at £120,000, interest being due in May and November. In 1902 a dividend of 1 per cent was paid, during 1911-19 it was 10 per cent, 20 per cent in 1920, and 15 per cent in 1921-24. The balance carried forward in 1924 was £33,039 16s 3d.

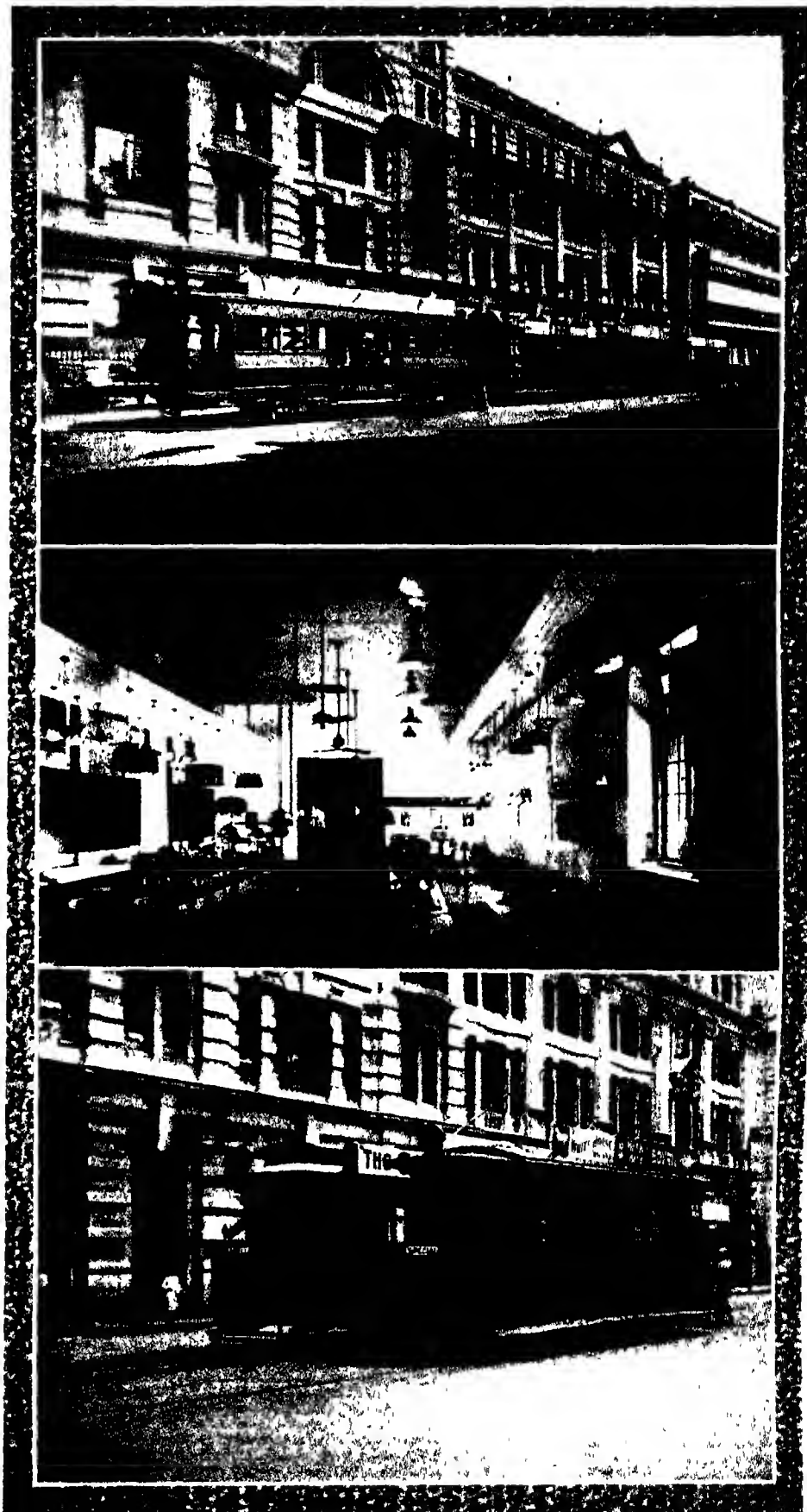
**Development.** This is shown by the dividend results and also by the following figures. Units generated, 1914 2,926,870, 1919 3,324,845, 1923 4,280,083. Passengers carried, 1914 12,087,664, 1920 13,722,301, 1923 14,670,148. Car miles run, 1922 920,000 (approx.), 1923 1,001,893. Motor omnibuses were introduced in 1922.

**Route Track.**—The tramways include seven route miles of double track, the two main routes, Grand Pass and Borella, serving the most densely populated parts of Colombo and the European business quarter. About fifty cars, including trailers, are operated and the system is cheap, efficient and safe working. Motor omnibuses are used for both public service and private hire.

**Power and Light.** The power and lighting service gives a supply to the European business quarter in the Fort area on the three-wire system at 220-440 volts, direct current, the remainder of the city being supplied with alternating current distributed at 2,200 volts, single phase, 60 cycle, and transformed down to 100 volts for consumer's premises, the area of supply covering about six square miles, and the tramways with overhead trolley, continuous current, at 550 volts. Power for both tramways and lighting is supplied from a common generating plant consisting of eight Diesel engines ranging from 250 to 600 h.p. and three steam sets.

Other details of the system are: Boilers—Babcock & Wilcox, Generators—Dick, Kerr, G.E.C., Lances—Dynamo Co., and E.C.C., total capacity, 3,040 k.w. Engines—Belliss & Morcom, M.A.N., Carels, Sulzer and Willans Diesel. Rolling stock—44 single deck open and corridor cars, G.E.C. and Dick, Kerr equipments. Brill and M. & G. trucks. Rails—95 lbs., Thermit welded. Gauge—3 ft 6 in.

**Electrical Work.**—Besides these operations, the company, by means of its installation department and sales organisation, undertakes all kinds of electrical work of any size, and carries out, in addition to a large volume of work in Colombo, power and lighting installations for out-station towns, tea estates and private houses, etc. The company's workshops are thoroughly equipped for all electrical repair and construction work, and, in addition to local repairs to all kinds of plant, a considerable amount of work is done on ships' installations, including those of H.M. Navy.



COLOMBO ELECTRIC TRAMWAYS & LIGHTING CO. LTD.  
(BOUSTEAD BROS., AGENTS.)

1. Street Cars.
2. View in the Showrooms.
3. Street Cars.

**Administration.**—Directors Messrs H Tabor Brooks, W C Tabor, H Ansell, G M Boustead, J C Brooks and R C Boustead. Chief engineer: Mr O S Gill. Trustees for Debenture Stockholders Anglo-American Debenture Corporation Ltd.

**London Offices.** 11, St Benet Place, E.C., secretary Mr A W Jones.

**Agents in Ceylon.** Messrs Boustead Bros., Gasworks Street Pettah, Colombo. Cables "Boustead," Colombo Codes A B C (5th Edition) and Bentley's.

**Bankers.**—Midland Bank.

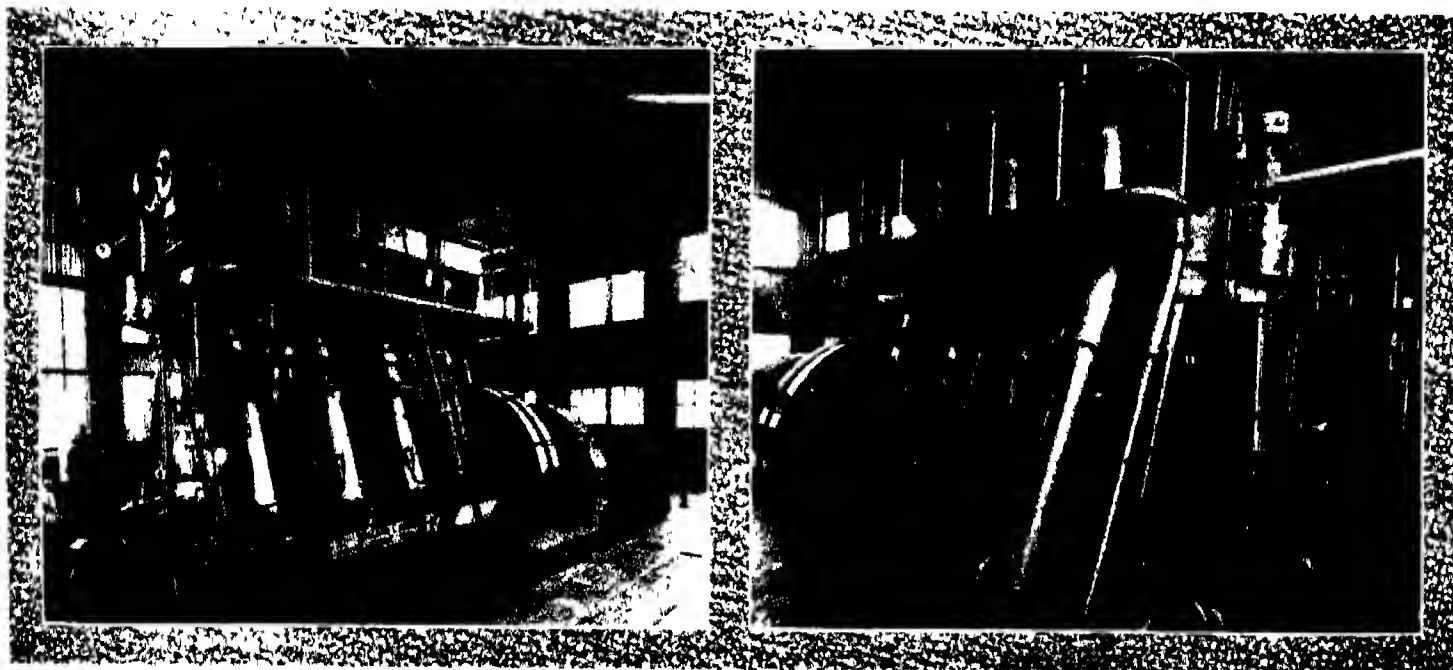
#### **EASTERN GARAGE & COLOMBO**

**TAXI-CAB CO.**—Galle Face. Est 20 years. Motor engineers and hiring car proprietors, 40 cars and taxis. Tours arranged. Machine, electrical and repair shops. Agents for Armstrong, Siddeley, Standard, Bean, Chrysler, Maxwell Hupmobile, Oldsmobile, Hudson Super-six. Showroom Chatham Street Fort. Cables "Hustle," Colombo.

**GALAHIA CEYLON TEA ESTATES & AGENCY CO. LTD.**—Union Place, Slave Island Colombo. Owners managing agents and shipping agents for numerous large estates under tea, rubber, coconuts, card

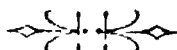
amoms and cocoa. Agents and secretaries Rowe, White & Co Ltd, 4, Lloyd's Avenue, Fenchurch Street, London, E.C. Cables "Eulogian." Colombo Bankers National Bank.

**GALLE FACE HOTEL.**—Colombo. On sea-front, a mile from landing stage, 240 suites and rooms, with bathrooms and sitting rooms, electric light and fans, lounge, dining room for 400, reading room, card room, drawing room, ball room. European chef. Swimming bath. Garage, cars for hire. Cables "Gallface," Colombo Codes A B C 5th Edition and Bentley's.



**COLOMBO ELECTRIC TRAMWAYS AND LIGHTING CO. LTD.**  
(BOUSTEAD BROS., AGENTS)

1 and 2 Diesel Engine Units of Company's Power Plant at Colombo.





# COMMERCE

## GENERAL DATA

**C** EYLON'S general prosperity and increasing foreign trade during the years 1922-1924 were in striking contrast with the commercial depression prevalent in most of the other countries of South-eastern Asia. The total trade of the island for the year 1923 surpassed that of 1922 by more than 60 million rupees, an increase of nearly 10 per cent, reaching the grand total of Rs 638,982,720 (42,598,848) while the total value of trade for 1924, which was Rs 688,088,988 (45,872,599), showed a further increase of over 40 million rupees about 7½ per cent.

This very gratifying result is without doubt attributable mainly to the satisfactory condition of the tea industry, on which the colony so largely depends, but it is a mistake to suppose that prosperity is confined to those directly interested in tea. According to the Annual General Report issued by the Government throughout 1924 the Customs import returns indicated a wide diffusion of wealth. All classes were spending money freely on luxuries, as well as on necessities of life. Increased trade activity was reflected in the number of commercial travellers coming to the island, which rose from 121 in 1922 to 161 during 1923. Of these, 110 represented British firms. There was a further increase in 1924.

**BALANCE OF TRADE.** The following table shows the annual values of imports and exports for the years 1923 and 1924 as compared with those for 1914, excluding the value of specie and of coal and liquid fuel supplied to steamers together with the figures of the favourable trade balance—

YEAR	EXPORTS RS	IMPORTS RS	FAVOURABLE BALANCE RS
1914	172,317,549	218,363,846	46,046,297
1923	287,947,472	351,035,248	63,087,776
1924	302,734,490	385,354,418	82,619,928

**COMMERCIAL LAW.**—By Ordinance 5 of 1852, the law of England is to be observed in all matters relating to Bills of Exchange, Promissory Notes, and Cheques. Ordinance 22 of 1866 makes similar provision with regard to the law of Partnerships, Joint Stock Companies, Corporations, Banks and Banking, Principal and Agent, Carriers by Land, Life and Fire Assurance (See also under "Administration Law").

## EXPORTS AND IMPORTS

The following table shows the annual values of exports and imports from 1921 to 1924, excluding the value of specie and the value of coal and liquid fuel supplied to steamers—

YEAR	EXPORTS RS	IMPORTS RS	TOTAL RS
1921	260,897,161	256,600,413	517,497,574
1922	280,414,704	297,753,215	578,167,919
1923	287,947,472	351,035,248	638,982,720
1924	302,734,490	385,354,418	688,088,908

The total values of Ceylon trade for the same years, excluding specie, but including coal and liquid fuel supplied to steamers, were as follow:—

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YEAR	LAKHS OF RUPEES
1921	5,481½
1922	5,982
1923	6,601
1924	7,119½

**EXPORTS.** The following table shows the quantities of the principal exports from Ceylon in 1923 and 1924.

COMMODITY	1923	1924
Tea (lb)	151,931,731	204,930,307
Coconuts fresh (No)	15,064,670	20,121,041
Tobacco (unmanuf'd) (lb)	2,951,004	4,158,880
Copra (cwt)	1,015,465	1,769,189
Citronella Oil (lb)	1,121,271	1,433,381
Coconut, desiccated (cwt)	818,793	871,341
Rubber (cwt)	748,256	719,722
Coconut Oil (cwt)	480,543	552,633
Coir Fibre (cwt)	359,082	480,192
Plumbago (cwt)	213,383	193,617
Poonac (coconut)	116,549	156,251
Areca Nuts (cwt)	166,578	130,904
Coir Yarn (cwt)	105,088	117,116
Cacao (cwt)	60,904	69,351
Cinnamon (cwt)	14,984	17,181
Skins (cwt)	8,605	10,685
Cardamoms (cwt)	2,788	2,667

The following table shows the values of the staple products exported from Ceylon in 1923 and 1924.

	1923	1924
Tea	1,857	2,150
Rubber	735	637
Copra	181	310
Coconut (desiccated)	227	226
Coconut Oil	139	158
Areca Nuts	35	33
Coir Fibre	24	29
Citronella Oil	21	29
Cinnamon	21	29
Coconuts (Fresh)	13	25
Cacao	22	25
Coir Yarn	20	21
Plumbago	15	13
Tobacco (unmanuf'd)	7	10
Poonac (coconut)	6	9
Cardamoms	6	7
Skins	7	6

The increase in the value of exports was largely attributable to the firmness of the tea market. In 1923 some 182,000,000 lb of tea were exported at an average price of Rs 1.02 per lb, whereas in 1924 some 205,000,000 lb yielded Rs 215,000,000, or an average of just under Rs 1.05 per lb. The increased production, stimulated by high prices, combined with the slight increase in selling price, resulted in a rise of the total export value by some three crores of rupees, or roughly 60 per cent of the total increase in trade for the year. Second only to the increase in tea exports, and even greater in proportion, was the increase both in volume and in value of the copra exported. From a total in 1923 of 1,015,464 cwt at an average

## COMMODITIES

price of Rs 17.82 per cwt, the export of copra rose in 1924 to 1,769,189 cwt, at an average price of Rs 17.51 per cwt, the value of exports increasing by approximately Rs 13 crores or over 25 per cent of the total increase in trade. Exports of tea and copra thus accounted together for 85 per cent of the total increase in the value of the year's trade. Rubber exports decreased slightly from 748,350 cwt to 719,722 cwt, the average price falling from 88 cents to 77 cents per lb. This fall was far more than counteracted by the "boom" prices of 1925.

**DISTRIBUTION OF EXPORTS.** Of Ceylon's exports in 1924, the United Kingdom took 45.78 per cent, as against 47.28 per cent in 1923 and 47.4 per cent in 1922. The United States took 18.68 per cent, compared with 23.30 per cent in 1923. Australia took 4.92 per cent, Germany 4.41 per cent, and Denmark 2.76 per cent.

**IMPORTS.** A feature of the continued commercial prosperity of Ceylon during the years 1923 and 1924 was the comparatively limited nature of its imports to meet the needs of some 4,500,000 people. Roughly estimated, general merchandise constitutes 38 per cent of the total imports, and consists largely of estates' implements, tools, building materials, and a limited amount of machinery. Foodstuffs make up 50 per cent and cotton goods 11 per cent of the imports. The following table shows the principal imports in the years named.

CLASS OF GOODS	1923 RS	1924 RS
Rice	83,424,898	70,749,249
Cotton (manufactured and raw)	26,954,348	27,021,596
Coal	16,844,436	19,052,471
Sugar	12,295,161	14,834,906
Metals and Metalware	9,087,050	11,876,465
Liquid Fuel	8,076,552	11,574,023
Manures	9,226,386	9,823,580
Non-Ferrous Metals	4,756,194	5,744,995
Motor Cars and Lorries	3,365,128	5,325,892
Kerosene Oil	5,309,732	4,254,985
Tea Shooks	3,570,699	4,157,805
Flour	3,370,742	3,312,873
Cement	1,232,304	1,547,184

Tobacco, Cigars and Cigarettes (lb)	350,223	431,021
Spirits (gal)	159,047	183,463

From the above table it will be noticed that the highest figures of increase are those relating to liquid fuel (about 30 per cent), coal, motor cars and lorries, metals and metalware, and sugar.

**TRADE BY COUNTRIES.**—The following table shows the comparative percentages for the years 1922-24 of the values of imports, exports, and total trade between Ceylon and the United Kingdom, British Possessions,

*For latest statistics, see "ADDENDA"*

and Foreign Countries respectively. The figures are exclusive of imported rubber, and of coal, liquid fuel, and other ships' stores —

IMPORTS	1922	1923	1924
From the United Kingdom	22 42	22 30	23 06
From British Possessions	59 63	57 80	53 76
From Foreign Countries	17 95	19 75	23 18
	100	100	100
EXPORTS	1922	1923	1924
To the United Kingdom	46 27	46 64	44 69
To British Possessions	16 30	17 01	18 26
To Foreign Countries	37 37	36 35	37 05
	100	100	100
TOTAL TRADE	1922	1923	1924
From and to United Kingdom	34 78	35 81	35 29
From and to British Possessions	37 21	35 25	33 69
From and to Foreign Countries	28 01	28 94	31 02
	100	100	100

It will be seen that the percentage of imports supplied by countries other than British rose in value from 17.95 in 1922 to 19.75 in 1923 and to 23.18 in 1924. This increase was entirely at the expense of British Possessions the percentage of goods supplied by Great Britain having slightly risen. About 68 per cent of the total imports in 1924 came from Great Britain, India and Burma, India having in 1923 replaced Burma as the chief country of supply owing to increased consignments of rice and of fish guano and manure. Australia which had advanced to fifth place in 1923 mainly owing to large imports of railway sleepers, fell to tenth place in 1924. Java, Japan, the United States and Borneo all improved their positions. The ten leading countries from which Ceylon obtained imports in 1924 with their percentages of the total value of imports, were: British India (31.09), United Kingdom (22.64), Burma (15.2), Java (3.88), United States (2.95), Borneo (2.91), Japan (2.12), Natal (1.93), Germany (1.93) and Australia (1.79).

In the export trade Great Britain has remained easily first among the colony's customers, but the percentage of exports to her fell from 46.64 in 1923 to 44.72 in 1924. The decrease in purchases by the United States was still more noticeable and was represented by the figure of 18.68 per cent of the total in 1924, as against 23.36 per cent in the previous year. Other countries which failed to maintain their percentage in 1924 — though in a much less degree — were Canada, Egypt, New Zealand, and France. On the other hand, Australia, Germany, and Denmark showed increased figures, as did Italy and Holland. The first ten countries taking Ceylon produce and manufactures (with their percentages) were: United Kingdom (44.72), United States (18.68), Australia (4.92), Germany (4.41), Denmark (2.76), Italy (2.58), Canada (2.46), British India (2.4), Egypt (1.88) and Norway (1.85).

**AUSTRALIA** — Ceylon has a large favourable balance of trade with Australia, exports in 1924 exceeding imports by no less than Rs 11,109,169. Imports from Australia fell from Rs 10,782,298 in 1923 to Rs 7,389,056 in 1924, while exports to that country rose

from Rs 12,840,661 to Rs 18,498,225 during the same period. After the United Kingdom and the United States, Australia is the largest purchaser of Ceylon tea, the amount exported there in 1924 being 15,460,636 lb, as against 10,815,635 lb in 1923, an increase of 4,645,001 lb. Imports from Australia are mainly flour and some meat products.

**BELGIUM** — Trade with Belgium, which reached a total value in 1924 of Rs 7,213,072, was made up of exports Rs 4,529,169 and imports Rs 2,683,903, the latter being largely iron and steel manufactures with some refined sugar, window glass and chemicals. Exports were principally rubber, copra and coconut oil.

**BURMA** — The value of the total trade of Ceylon with Burma in 1924 was Rs 46,156,752, as against Rs 59,372,902 in 1923 and Rs 75,717,697 in 1922. This considerable decrease was almost entirely due to the big decline in the quantities of rice imported in 1923 and 1924, imports of all kinds falling from Rs 59,288,580 in 1923 to Rs 46,028,104 in 1924, while exports during the same period increased from Rs 84,312 to Rs 128,648. The export trade with Burma is small, but varied, the largest items being gold and silver plate and foodstuffs and tobacco. Imports from Burma in addition to rice include non-ferrous metals, pig lead and jewels.

**CANADA** — Ceylon's total trade with Canada grew from Rs 10,457,182 in 1923 to Rs 10,988,678 in 1924, imports rising from Rs 1,570,457 to Rs 1,734,750, and exports from Rs 8,916,725 to Rs 9,253,922. The latter are mainly tea and rubber, the tea exported to the Dominion having been 7,903,614 lb in 1924 compared with 7,261,404 lb in the preceding year. There was a decrease in the quantity and value of motor cars imported from Canada in 1924.

**EGYPT** — Exports to Egypt were valued at Rs 7,345,534 in 1923 and Rs 7,050,737 in 1924. Tea (2,758,063 lb in 1924) and coconut oil were the chief exports. Imports from Egypt declined from Rs 249,298 to Rs 160,878.

**FRANCE** — Ceylon's trade with France reached a total value of Rs 5,470,215 in 1924, a slight increase on the figure of Rs 5,229,112 for 1923. Imports from France, largely silk manufactures, motor cars and brandy, rose from Rs 1,668,387 in 1923 to Rs 1,910,179 in 1924, while exports to France, which were Rs 5,229,112 in the former year, also rose slightly to Rs 5,470,215 in 1924. Rubber, tea and copra are the principal exports.

**GERMANY** — Trade with Germany, which declined in 1923 by over a million and a half rupees, showed a remarkable increase in 1924, the total figure being Rs 22,262,858, compared with Rs 13,259,736 in the preceding year. Both exports to and imports from Germany increased, the latter from Rs 9,307,822 to Rs 16,836,203, and the former from Rs 3,951,914 to Rs 5,426,655. Exports to Germany were tea (695,132 lb in 1924, as against 119,463 lb in 1923), desiccated coconut, coconut oil, and rubber, in which last named commodity there was a considerable decrease. Imports from Germany included (amongst others) Cement, Rs 413,665, muriate of potash, Rs 331,117, hoop iron, Rs 235,998, glass and glassware, Rs 215,700, barbed wire, Rs 208,501, haberdashery and millinery, Rs 187,770, beer and ale in bottles, Rs 186,214, cutlery and hardware, Rs 161,675, sulphate of potash, Rs 159,138, and toys, Rs 155,780.

**GREAT BRITAIN** — This country is by far the largest purchaser of Ceylon products and manufactures, and is second only to



1. MELPERI DIVERS PREPARING TO DIVE.  
2. DIVERS.  
3. A. FRANK DOLLER.  
4. STAFF ATTENDING AT BEACH.

British India as a source of imports. The following table shows the values of exports to and imports from the Mother Country in the years named —

	1923 Rs	1924 Rs
Exports to	163,705,410	172,322,283
Imports from	63,356,230	69,448,553
Total trade	227,061,640	241,770,836

There was, it will be noticed, a satisfactory growth in both the export and import trade with the United Kingdom, exports increasing by Rs 8,616,873 and imports by Rs 6,092,323, while the total increase on all trade was Rs 14,709,196. Tea is by far the most important export, and in 1924 the United Kingdom took 132,886,382 lb., as against 119,768,283 lb. in 1923, and 13,118,099 lb. in 1922. She is also the largest buyer of coconut oil, and takes 25 per cent of the rubber exported, besides large quantities of desiccated coconut, copra, and plumbago.

Imports from the United Kingdom cover a very wide range, almost every article of manufacture being included. Leading items are cotton piece goods, in which Great Britain still holds first place, other manufactures of cotton, coal, metals and metalware (76 per cent of the total), non-ferrous metals and manufactures, aluminium goods, cement, screws, nails, etc., tobacco and cigarettes, tea shooks, and tea lead. The imports from the United Kingdom in 1924 were classified according to value as follows:

	Rs
Food, drink and tobacco	6,482,733
Raw materials, and articles mainly manufactured	7,550,795
Articles wholly or mainly manufactured	54,007,568
Miscellaneous	136,250
Total merchandise	68,177,346
Bullion and specie	1,271,207
Grand Total	69,448,553

**INDIA**—Ceylon's exports to India (excluding Burma) rose in value from Rs 10,687,286 in 1923 to Rs 12,059,905 in 1924, while the value of imports from India also rose from Rs 85,581,202 to Rs 100,163,998. The value of the colony's total trade with India in 1924 was, therefore, Rs 112,223,903, compared with Rs 96,268,548 in 1923. Ceylon takes large purchases of rice, coal, raw rubber, raw cotton, fresh fruits, and vegetables, and in return exports tea, lead sheets for tea chests, and betel nuts.

**JAPAN**—Imports from Japan rose from Rs 5,447,478 in 1923 to Rs 6,425,177 in 1924, tea chests accounting for Rs 2,510,798 and cotton piece goods (various) for Rs 1,758,919. Exports also increased from Rs 1,813,060 in 1923 to Rs 1,965,846 in 1924, tea being a leading item.

**NETHERLANDS EAST INDIES**—The balance of trade as between Ceylon and the Netherlands East Indies is all in favour of the latter, imports thence in 1924 amounting to Rs 24,666,587, compared with Rs 19,772,901 in 1923, and exports to the Indies to only Rs 453,798, as against Rs 521,738 in 1923. The total trade done in 1924 was, therefore, valued at Rs 25,120,385, compared with Rs 20,294,639 in 1923. Java supplied five-sixths of all the sugar imported into Ceylon in 1924; and another large item on the import list was the liquid fuel and petrol supplied by Sumatra and Borneo.

**NEW ZEALAND**—The value of the total trade of Ceylon with New Zealand fell slightly from Rs 6,846,414 in 1923 to Rs 6,429,286 in 1924. Exports totalled Rs 6,427,916 and imports Rs 1,370 in the latter year. Of tea, by far the largest item, 5,884,136 lb. were exported.

**SIAM**—Ceylon's trade with Siam was valued at Rs 368,819 in 1924, as against Rs 283,126 in 1923, imports in 1924 being worth Rs 324,360 and exports Rs 44,459. Raw materials (largely teak) and articles mainly manufactured provided the bulk of the imports from Siam.

**SOUTH AFRICA**—The principal commodity imported from South Africa is Natal coal, increased quantities of which were received in 1924. Imports from South Africa in that year were valued at Rs 5,834,708, as against Rs 4,886,872 in 1923, while exports to the Union (principally tea) totalled Rs 7,350,447, compared with Rs 6,778,601 in 1923.

**STRAITS SETTLEMENTS**—Exports of tea to the Straits Settlements showed an increase of 79,170 lb. in 1924, the figures for that year being 970,775 lb., against 897,605 lb. in 1923. A considerable amount of sugar is imported from the Straits Settlements, the total trade in 1924 being valued at Rs 5,753,848, compared with Rs 5,625,037 in 1923.

**UNITED STATES**—Reference has been made to the decrease in Ceylon's export trade with the United States in 1924, comparisons in respect of that and the import trade with the same country being afforded by the following table:

	1923 Rs	1924 Rs
Exports to U.S.A.	82,980,163	74,867,812
Imports from U.S.A.	6,464,147	9,180,299
Total trade	89,444,310	84,048,111

In imports it will be seen that the United States have gained ground. In 1924 the following were the values of the leading imports thence: Crude petroleum, Rs 1,565,481, motor lorries, Rs 1,231,708, motor cars, Rs 1,155,644, kerosene oil, Rs 1,026,303, lubricating oil, Rs 747,577, pneumatic tyres, Rs 272,201, cotton piece goods, Rs 237,043, chemical manufactures, drugs, etc., Rs 148,128, and painters' colours, Rs 139,014. The United States was the second largest purchaser of tea in 1924, exports from the island amounting to 16,300,413 lb., compared with 15,550,436 lb. in 1923, and only 758,977 lb. in 1922.

## TRADING METHODS

**TRADE MARKS.** These are governed by the Trade Marks Ordinance of 1888. An application to register a trade mark for one or more articles, or a series of trade marks for one or more articles, included in one class costs Rs 10. A certificate of registration, for the purpose of obtaining registration abroad, costs Rs 5.

**TRADE ORGANISATIONS.** In addition to the Ceylon Chamber of Commerce, which is noticed later, there are several important organisations in the island which have for their object the promotion, fostering, and protection of the trade interests of the colony. The Ceylon Estates Proprietary Association was formed to promote the common interests of those engaged in the cultivation of tea, rubber, and agricultural products generally. Proprietors of, and agents for, estates not less than 53 acres in

extent are eligible for membership. The Ceylon Planters' Association, Kandy, is the representative body of the chief planting interests. It is open to all proprietors, firms, and individuals interested in planting, and has branches in the chief planting districts. The Low Country Products Association is open to owners of at least 25 acres cultivated with low country products: coconuts, rubber, and cinnamon, and also to mill-owners. Other important organisations are the Plumbago Merchants' Union, Colombo Tea Traders' Association, Colombo Rubber Traders' Association, and Colombo Brokers' Association.

## CEYLON CHAMBER OF COMMERCE

This Chamber was established on March 25, 1830, and was incorporated in 1895. It has consistently kept in view the improvement and development of trading facilities throughout the island and with overseas countries, and has rendered great assistance to commercial undertakings of every class and degree. The Chamber, whose premises are in Lower Chatham Street, Fort, Colombo, is administered by a chairman, a vice-chairman, a secretary and a committee of nine members. The present chairman, who is also the representative of the Chamber in the Legislative Council, is the Hon. Colonel E. J. Hayward, C.B.L., V.D.

**WEIGHTS AND MEASURES.** The ordinary English weights and measures are used in Ceylon. For gold and silver, the ounce, divided decimally, and not into grains, is the sole unit of weight. For precious stones and pearls the metric carat of 200 milligrammes is the legal standard of weight.

## ANIMAL WEIGHTS & MEASURES

The following are the Sinhalese land and dry measures:

1 Amunam	4 pelas	40 lahas or kurum,
		8 parrahs, 5 bushels, 20
		pecks, and 160 quarts or
		seers
1 Pela	10 lahas or kurum,	2
	parrahs, 1 bushel, 5 pecks	
	and 40 quarts or seers or	
	neh	
1 Laha	4 quarts or seers or neh	
1 Parrah	5 lahas or kurum, and	
	20 quarts or seers or neh	

The extent of land is generally indicated by the amount of seed necessary for sowing it, and the area surveyed is computed by the amunam and its minor divisions, the pela, the laha, and the parrah. Thus, "five amunams" of land would mean an area over which that quantity of grain might be sown. The following are the principal measures of land survey, with their equivalents in the standard table of measures:

1 Amunam's sowing extent	2½ acres
1 Pela's	2 roods and 2 perches
1 Laha's	10 perches
1 Parrah's	1 rood and 10 perches
1 Quart's	2½ perches

In the Jaffna district the usual measures of land are —

12 kulis	1 lachelam
24 lachelams	1 acre

The "fathom" of two yards is the commonest measure of distance, the "gawwa" is nearly the length of four statute miles. The "cubit" of 18 inches is used in the measure of superficial area.

## COMMODITIES

**ALUMINIUM WARE**—There was a notable increase of 300 per cent in imports of aluminium manufactures from the United Kingdom in 1924, that country, which ranked fourth in 1923, attaining first place at the expense of British India, Germany, and Switzerland.

**CARDAMOMS.**—The production of cardamoms has decreased during recent years, and exports in 1924 were only 2 667 cwt.

**CEMENT.** Imports in 1924 increased by 193,477 cwt, the figures being 714,814 cwt (Rs 1,547,184), compared with 521,337 cwt (Rs 1,232,304) in 1923. Great Britain is still the largest supplier, and imports from this source increased by 20 per cent. Supplies from Germany rose by over 100 per cent, and those from Denmark by over 20 per cent.

**CINNAMON.** The export of this spice formerly the best-known product of the island slightly increased from 44,984 cwt in 1923 to 47,484 cwt in 1924. Improved grading of

quantities of the chief palm products exported in the years named

COMMODITY	1923 CWT	1924 CWT
Copra	1 615,465	1,769,189
Coconut Oil	480,543	552,633
Desiccated Coconut	818,793	871,341
Coconuts	15 963,670	20,121,041
	Nuts	Nuts
Poonac	116,549	156,251
Coir Fibre	359,082	480,492
Coir Yarn	105,088	117,119

Exports of coconut palm products to the Netherlands, Denmark, Germany, and Italy showed increases in 1924 as compared with 1923 but decreases were recorded in exports to the United Kingdom, the United States and Sweden. Exports of desiccated coconut to the United Kingdom remained at about the 1923 figure, but Germany, the Netherlands, Italy and Australia all increased their share. Consignments to the United States declined. The chief recipients of coconuts which increased their share were Germany,

cent. Of the various sub-divisions, declines were shown in bleached, grey, and other piece goods, and in muslin. On the other hand there were increases in imports of dyed and printed piece goods. Except in the dyed goods market, where, as in 1923, India took the premier place, the United Kingdom maintained her predominance, but by a decreased majority, only in printed goods was there an increase in imports from the Mother Country. India, on the other hand, made considerable headway in every branch except muslin and "other piece goods." Imports from Holland fell off greatly all round, but Japan and Switzerland made noticeable progress in the market.

## DIAMONDS AND OTHER STONES.

The duty recovered on the import of diamonds and other precious stones during 1924 was Rs 147,919 on a value of Rs 1,470,098. Of this duty, Rs 126,230 was refunded on subsequent re-exportation, the net recoveries being thus Rs 21,689. The value of precious stones brought to Ceylon by commercial



1. COCONUTS COLLECTED AFTER BEING PICKED.

2. VANILLA PODS

3. CINNAMON BUNDLING.

quills and chips has led to an increased demand, especially on the German market. The demand for cinnamon oil has also improved, France and Germany being the chief purchasers.

**COAL.**—Imports of coal increased in quantity from 544,548 tons in 1923 to 675,136 tons in 1924, and in value from Rs 16,844,436 to Rs 19,952,471. Imports from the United Kingdom were slightly larger in quantity and about the same in total value. Both Natal and India sent increased quantities to Ceylon, Natal now being the leading source with 34 per cent of the total, Great Britain's share being 27 per cent, and India's 25 per cent. Australia and Mozambique are also sources of supply.

**COCONUT PRODUCTS.**—Exports of all the products of the coconut palm showed a large increase in 1924 over 1923, and were also in excess of 1922, which was considered a good year. The following table shows the

the United Kingdom, the Netherlands, and Egypt. Of the total exports of coconut and poonac, Belgium and Germany absorbed 131,848 cwt and 21,610 cwt respectively. Exports of coir fibre were mainly to the United Kingdom, Continental countries, Japan, and South Africa. The bulk of the coir yarn went to the United Kingdom (52,722 cwt) and to Continental countries (45,243 cwt). (See also under "Agriculture" and "Mining and other Industries.")

**COPRA.**—See "Coconut Products."

**COTTON.**—Imports of raw and manufactured cotton were valued at Rs 27,021,596 in 1924, as against Rs 26,954,348 in 1923. The imports of raw cotton, which are almost entirely from British India, declined by 15 per cent.

**COTTON PIECE GOODS.**—These form the bulk of the imports of cotton into Ceylon. There was in 1924 a decrease in quantity to the extent of about 2,000,000 yards, or 5 per

travellers amounted to Rs 1,421,619, whilst imports by local merchants were valued at Rs 57,479. (See also under "Mining and other Industries.")

**KEROSENE OIL.**—Imports of bulk oil fell off in 1924 by 18 per cent. Over three-quarters of the year's supply was received from Asiatic Russia, as against just over one-third in 1923. There were no imports from Persia, and those from the United States fell away by over 45 per cent. The latter country furnished the bulk of the case oil, though in diminished quantities. In all, 4,698,101 gallons were imported in 1924, as against 5,841,059 gallons in 1923.

**LIQUID FUEL.**—There has recently been a great increase in the demand for liquid fuel for bunkering steamers, and imports increased in 1924 by about 30 per cent., viz., from 32,179,572 gallons (Rs 8,976,522) in 1923 to 42,332,008 gallons (Rs 11,574,023). Of these total imports, more than three-quarters were

re-exported in the form of ships' stores Borneo, the largest supplier, sent twice as much as Persia, but fell short by 20 per cent of her record in 1923. Other countries furnishing considerable amounts were Sumatra and the United States.

**LIVE STOCK.** Imports of live stock from India in 1924 were: Buffaloes, 1,995; cattle, 5,734; goats, 58,251; sheep, 13,120; and horses, 27. In addition, 74 horses were imported from the United Kingdom and 2 from Natal. There were no imports from Australia.

**MANURE.** Importations of manure increased in 1924 by 10 per cent. In the case of both poonac and fish guano, the bulk of the imports were from India. Nitrate of soda, nitrohm, sulphates of ammonia and potash all showed considerable increases.

**METAL AND METALWARE.** Imports of ferrous metals and metalware rose in 1924 by 30 per cent in value and 34 per cent in quantity. Once more the United Kingdom supplied the bulk, the value of her share being 76 per cent of the total. The next largest exporters were Germany (10 per cent) and Belgium (9 per cent), both of whom considerably increased their consignments. The United States was the only other competitor who supplied as much as 2 per cent, thus representing a falling off from 1923 of 14 per cent. Government imports, reviving somewhat in value, helped to swell the total to Rs 11,876,465, representing 839,483 cwt, as compared with Rs 9,087,050 and 624,104 cwt in 1923. The largest single sub-head was 'Iron and Ironware Unenumerated,' which showed an increase of over 30 per cent. Nineteenths of the imports under this sub-head were from the United Kingdom. Other large items were iron bars and rods (60 per cent increase) and corrugated iron sheets (20 per cent increase).

**METALS (NON-FERROUS).** Imports in 1924 showed an increase over 1923 of nearly 22 per cent in value, at Rs 5,744,905, against Rs 4,750,194. Of the various importing countries two alone supply four-fifths of the total viz., the United Kingdom and Burma. In 1923 Burma had a slight preponderance, in 1924 the pendulum had swung a trifle the other way, broadly-speaking, there was an equal division between them in both years.

**MOTOR CARS AND LORRIES.** An increase of over 20 per cent in the number of cars imported took place in 1924, the rise in the total from the United Kingdom being nearly 150 per cent, and from the United States 40 per cent. Canada alone showed a considerable decline, both in quantity and value, and now ranks second to the United States in number and third in value of imports. The average value of American cars imported was Rs 2,732, of British cars Rs 3,573. There was an increase of over 150 per cent in the number of lorries imported in 1924, to 800, valued at Rs 2,168,158, as compared with 318 valued at Rs 891,689 in 1923. Imports from Canada were larger by 128 per cent, from the United States by 174 per cent, and the United Kingdom by 187 per cent.

**PETROL.** Imports of petrol have increased largely ever since 1918, when 988,427 gallons came into the island. In 1923 the amount reached 1,959,474 gallons, which was increased in 1924 to 3,749,236, nearly a 100 per cent rise. In 1924 Borneo was a strong rival to Sumatra as a supplying country, the proportion sent by the latter being roughly 53 per cent of the total imports, as against 47 per cent by the former.

**PIG LEAD.** Imports of this mostly come from Burma, and showed a 20 per cent increase in 1924.

**PLUMBAGO.** The export of plumbago, or graphite, which fell off considerably after the War, showed a welcome development in 1922, when the total reached 216,999 cwt. There was, however, a fall in 1923 to 213,383 cwt, and a further decline in 1924 to 193,017 cwt, the value of which was Rs 1,329,125. Of this, the United States took 67,685 cwt, Germany 49,256 cwt, the United Kingdom 28,248 cwt, and Japan 19,200 cwt. (See also under "Mining and other Industries.")

**POONAC.** See "Coconut Products."

**RICE.** The rice trade of the island has settled down again after the severe shortage which necessitated the imposition of food control in 1920, and competition among merchants has produced a fall in prices. India and Burma are the two countries of supply, but imports from the latter have greatly decreased to the benefit of the former. In 1924 the total value of rice imports was Rs 76,749,249 (7,510,180 cwt), against Rs 83,434,898 (7,423,933 cwt) in 1923.

**RUBBER.** The effects of restriction of output were seen in the decrease in the total exports from 104,595,278 lb in 1922 to 83,816,228 lb in 1923, and further to 82,900,851 lb in 1924. In 1924 there was also a fall in price, which led to the value of exports being only Rs 63,749,711, as against Rs 73,594,340 in 1923. The United States is by far the largest buyer, her purchases in both 1923 and 1924 being over two-thirds of the whole, while the United Kingdom takes rather less than 25 per cent. During the first nine months of 1925 no less than 70,542,478 lb of rubber were exported, the United States, United Kingdom, Germany and Australia all substantially increasing their requirements. (See also article "Rubber" following "Agriculture.")

**SPIRITS.** In 1924, 183,463 proof gallons of spirits were cleared for consumption, as against 159,047 in 1923, and 120,373 in 1922. The separate quantities in the last two years were as follow—

		PROOF GALLONS	
		1923	1924
Brandy	..	33,803	44,080
Gin	.	67,252	83,487
Whisky		57,992	55,887
Total		159,047	183,463

Whisky is obtained exclusively from the United Kingdom, brandy mainly from France, and gin principally from Holland.

**SUGAR.** There was in 1924 an increase of about 25 per cent in the imports of raw sugar, the total amount being 601,294 cwt, valued at Rs 14,834,906, compared with 553,191 cwt, valued at Rs 12,295,164, in 1923. Of the total amount imported in 1924, Java supplied five-sixths, as against four-fifths in the preceding year. Imports from Hongkong and the Straits Settlements also increased. India shipped less than in 1923, but maintained her place as a supplier of coarse sugar.

**TEA.** This is, of course, the chief source of Ceylon's commercial prosperity, and the continued improvement in both the quality and value of exports has been marked. The total exports in 1924 amounted to 204,930,307 lb, compared with 181,939,731 lb in 1923, or an increase of 22,990,576 lb. Ceylon tea finds a ready market in almost every country of the world, from Great Britain, with its purchase of 132,886,382 lb,

to Algiers, which took 1,100 lb. The following are the ten leading countries of destination, with the exports thereto in the years named:

	1923 Lb	1924 Lb
Great Britain	119,768,283	132,886,382
United States	15,550,436	16,309,113
Australia	10,815,635	15,460,636
Canada	7,201,404	7,963,614
New Zealand	6,386,188	5,884,136
Egypt	4,860,068	4,494,073
Natal	3,232,364	3,096,665
Cape Colony	2,556,170	2,058,663
South America	1,554,505	1,604,005
British India	1,854,021	1,575,906

Other countries showing increases in the quantities of tea purchased were Germany (695,132 lb in 1924, as against 119,463 lb in 1923), Turkey in Asia (770,216 lb in 1924, as against 450,152 lb in 1923), and Russia, which took (for the first time for many years) 131,183 lb. (See also special article on 'Tea'.)

**TEA CHESTS.** In 1924 there was an increase of 18 per cent in imports. Japan supplied three-quarters of the total imports, which numbered 2,328,477, valued at Rs 4,157,865, compared with 1,663,682 chests, valued at Rs 3,570,699, in 1923. Most of the rest came from the United Kingdom.

**TOBACCO, CIGARS, AND CIGARETTES.** The following were the quantities imported in the years named:

	1923 Lb	1924 Lb
Cigars	7,387	7,272
Cigarettes	327,482	403,370
Manufactured tobacco	21,354	20,379
Total	356,223	431,021

Cigarettes and tobacco are imported almost exclusively from the United Kingdom, while cigars come mainly from the Philippines, India and Holland.

**WHEAT FLOUR.** Imports increased from 240,524 cwt in 1922 to 275,405 cwt in 1923, and 320,074 cwt in 1924, the value of the last year's imports being Rs 3,312,873. Imports from Australia have increased, while those from India have declined.

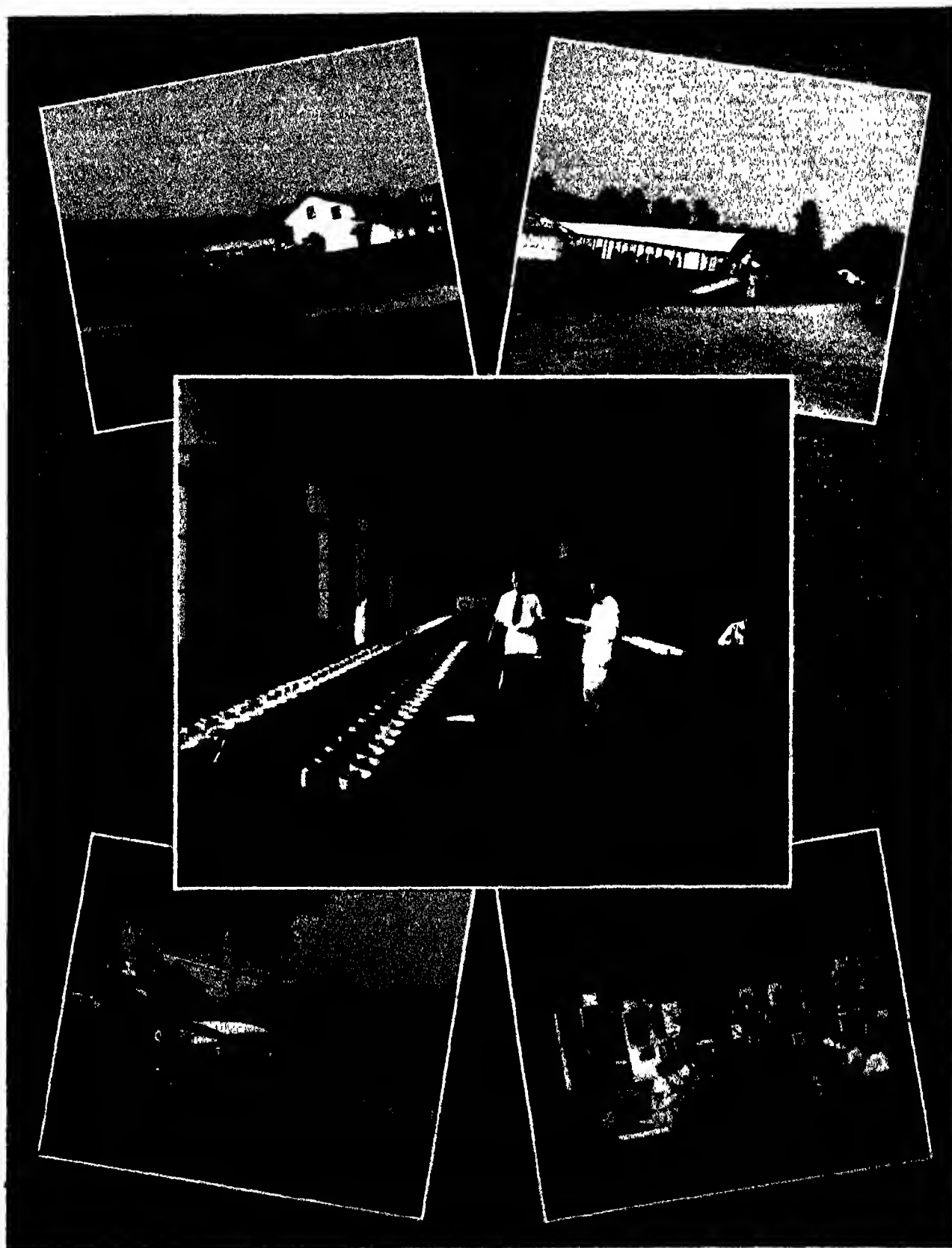
**YARN.** Imports of bleached yarn fell off in 1924 by no less than 62 per cent, and the United Kingdom dropped out of the market almost entirely, supplies from British India rising from 3,000 lb to over 23,000 lb. There was a remarkable increase in price from 45 cents per lb to Rs 1.56 per lb. There was also a heavy decline in imports of dyed yarn, hardly any coming from Great Britain, while imports from India also fell off.

## CUSTOMS TARIFF

**A** NEW Customs Tariff has been in force in Ceylon since October 1, 1922. Under it all goods, wares, merchandise, and machinery not otherwise charged with duty, exempted from duty, or prohibited or restricted, are subject on first importation to a duty of Rs 10 for every Rs 100 of the value thereof, that is, 10 per cent ad valorem.

**CUSTOMS REVENUE.** The total duties collected by the Customs Department in 1924 amounted to Rs 36,859,240, exceeding the total of the previous year in itself a record.





**MACKWOODS LTD., Colombo.**

- |                                |                                  |
|--------------------------------|----------------------------------|
| 1. Tea and Rubber Godowna.     | 2. View of Tea Blending Godowna. |
| Centre. Tea Sample Room.       |                                  |
| 4. Deallocated Coconut Stores. | 5. Tea Warehouse.                |

by Rs 3,547,328, an increase of 10 per cent. The increase was divided as follows:—

	TOTAL RS	PERCENTAGE RS
Imports	2,254,001	9.1
Exports	1,278,997	14.9
Sundries	14,330	26.8

The total of Rs 36,859,240 was made up of imports duties, Rs 26,984,090, export duties, Rs 9,821,946, and sundries, Rs 53,198.

**EXPORT DUTIES.**—The following duties are levied on various products exported: Cacao, Rs 1.50 per 100 lb, chanks (live), Rs 6 per 1,000 lb, chanks (dead), Rs 3 per 1,000 lb, chanks (inferior), Rs 2 per 1,000 lb, coconut (desiccated), 84 cents per cwt, coconut (fresh), Rs 3 per 1,000, coconut oil, 75 cents per cwt, copra, 60 cents per cwt, elephants (not tuskers), royalty of Rs 200 per head, elephants (tuskers), royalty of Rs 300 per head, poonac, 35 cents per cwt, rubber (except rubber exported in the form of latex), Rs 2.50 per 100 lb, tea, Rs 3 per 100 lb.

The export duty of 3 per cent ad valorem on plumbago was removed as from October 2, 1925.

No elephants may be shipped for export without a permit from the district in which they have been captured.

**IMPORT DUTIES.**—The following are leading special import duties:—

**AGRICULTURAL IMPLEMENTS**—2½ per cent ad valorem.

**ARMS AND AMMUNITION** Guns, single-barrel, Rs 5, double-barrel, Rs 10, carbines and rifles, Rs 5 and Rs 10, revolvers, Rs 4.50, air guns, rifles and pistols, not being toys, each Rs 5, other guns, Rs 10 each, shot, 10 per cent ad valorem, percussion caps, 20 per cent ad valorem, gunpowder (fine), 30 cents per lb, coarse for blasting, 10 cents per lb.

**BEER, ALE, & L.C.**—Beer, ale, porter, and all other malt liquors in wood, 25 cents per gallon, in bottle, 30 cents per gallon.

**BENZINE**—30 cents per gallon.

**CARTRIDGES** Cartridges, fuse dynamite, detonators, and fireworks, 20 per cent ad valorem.

**CEMENT**—30 cents per cwt.

**COTTON GOODS**—Cotton piece goods, yarn and twist, 5½ per cent ad valorem.

**EXPLOSIVES**—20 per cent ad valorem.

**FISH**—Dried or salted, 75 cents per cwt, fish, Maldiva (Umbala Kada), Rs 2 per cwt, frozen fish, 2 per cent ad valorem.

**FLOUR**—Wheat flour, Rs 1 per cwt.

**HOPS**—Hops for brewing, 2½ per cent ad valorem.

**KEROSENE**—30 cents per gallon.

**MACHINERY**—Machinery and belting for machinery, 2½ per cent ad valorem.

**MATCHES.**—Boxes containing not more than 75 safety matches, 60 cents per gross, non-safety, Rs 1.

**METALS.**—Brass bars, rods, wire, tubes, sheets and plates, 7½ per cent ad valorem, brass ingots and chains, 10 per cent ad valorem; copper bars, etc., 7½ per cent ad valorem; copper ingots, 10 per cent ad valorem, iron and steel, plain or galvanised, chains, wire, rivets, screws, nails, tacks, washers, bolts and nuts, sheets, plates, joints, girders, bars, angles, bulbs, beams, shapes, sections, pillars, rods, slabs, Rs 2.50 per cent ad valorem; tin and zinc, 2½ per cent ad valorem; all other metals 10 per cent ad valorem.

**MOIOT VEHICLES**—7½ per cent ad valorem.

**NAILS**—Nails for tea boxes, 2½ per cent ad valorem.

**OIL**—Lubricating oil, other than castor oil, 20 cents per gallon.

**PADDY** Paddy rice pays a duty of 60 cents per cwt.

**PERFUMES**—All perfumed spirits, Rs 30 per gallon or 30 per cent ad valorem, whichever produces the higher duty. Perfumery, including toilet soaps, powders, and other scented preparations which do not contain spirit, 10 per cent ad valorem.

**PETROL**—30 cents per gallon.

**RICE**—Rs 1 per cwt.

**SALT**—Unrefined, Rs 3 per cwt.

**SPIRITS**—Brandy, gin, rum, whisky, and other alcoholic spirits, Rs 14.50 per gallon, cordials and liqueurs, Rs 18 per gallon.

**SUGAR**—Candy and refined, Rs 3.50 per cwt, unrefined and jagged, 75 cents per cwt.

**TEA**—25 cents per lb.

**TOBACCO**—Cigars, Rs 4 per lb, snuff, Rs 3.50 per lb, manufactured tobacco, Rs 4 per lb, unmanufactured, Rs 1.75 per lb, hookah tobacco, Rs 2 per lb, cigarettes and beedies, Rs 5 per lb.

**TYRES**—Solid, 7½ per cent ad valorem.

**WINES** Sparkling wines, Rs 5 per gallon, other wines, in bottle, Rs 3 per gallon, in wood, Rs 2.50 per gallon.

**LIST OF EXEMPTIONS.**—The following articles are duty free: Advertising matter, including trade catalogues and circulars, aeroplanes, airships and parts, apparatus, drugs and chemicals for educational or research work or for the purpose of the campaign against ankylostomiasis, artificial limbs and eyes, books, and maps, canes and rattans, coal, coconut oil, com, copra, coke and patent fuel, cotton raw, kapok and cotton seed, dogs, fresh fish and fruit and game, Government stores, gunnies and gunny cloths, instruments, scientific, surgical or mathematical, iron, hoop, scrap or pig, lead, pig or sheets, liquid fuel, metals (unwrought), natural history specimens, other than sporting trophies, naval stores, passengers' baggage as defined by Customs regulations, patent fuel, petroleum, plants, trees, and seeds intended for agricultural and horticultural purposes, precious stones the produce of Ceylon, quinine, raw rubber, raw silk and cotton, regimental clothing and necessities, saltpetre, sand, tea boxes and material for making them and tea lead, timber (not prepared), tin, trees, plants and vegetables, wool (raw), zinc.

**PROHIBITED AND RESTRICTED ARTICLES.**—The principal imports prohibited or restricted are: ammunition, arms, gunpowder, etc., for merchandise, except under licence, coin that is false or counterfeit; dangerous substances, infected cattle, opium, ganja and bhang, Japanese shaving brushes, dogs from any Eastern country except under licence. The importation of cacao plants from any part of the Dutch East Indies, of seeds or plants of any species of Hevea from the Western Hemisphere, and of pepper plants and tea seed from India is forbidden. The importation of cocaine is forbidden, except for scientific or medicinal purposes.

Prohibitions of exports refer chiefly to certain varieties of birds, or the plumage thereof, antiquities of the island, except by permission of the Governor, wheat flour, rice, lubricating oils, and sugar.

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### MACKWOODS LTD.

**Inception.**—This firm of estate agents and general merchants was founded in 1844 by Messrs William Mackwood and Francis Mackwood. The mills and stores premises cover an area of 12 acres.

**Estates Department.**—This department acts as shipping and managing agents for tea, rubber, cocoa and coconut estates, the principal product handled being tea, which is shipped to all countries in various forms of packing and blending.

**Export Department.**—The firm exports copra, coconut oil, desiccated coconut, coconuts in bags, rubber, cocoa, cinnamon, citronella oil, fibres, etc. A hydraulic baling press is used in the baling for shipment of mattress and bristle fibres, cinnamon chips, etc.

**Import Department.**—Among the articles imported are textiles, in which class the principal materials handled are cotton, woollen, artificial silk and silk goods, hardware, including corrugated ironings, barbed wire, wire and rose nails, iron and steel bars, hoop iron, metal sheets, hoes, files, cart bushes, cement, and acetic acid, sundries, such as crockery, cutlery, enamel ware, Eau de Cologne, camphor, biscuits, toys and other small articles, and also rice, sugar, flour, etc.

**Agencies.**—Messrs Mackwoods Ltd represent the following insurance companies: Royal Exchange Assurance for marine, fire, life, consequential loss, motor car and all classes, The Northern Assurance Co Ltd, for burglary, all-risks, personal accident and sickness, and motor car insurance, The Law Union and Rock for fire, and the Provident Accident and Guarantee Co Ltd, fidelity guarantee.

The firm also acts as agents for the Central Province Ceylon Tea Co Ltd, Hewagama Rubber Co Ltd, The Beau Sejour (Ceylon) Tea and Rubber Co Ltd, and as agents and secretaries for The Rayigam Co Ltd, The Pine Hill Estates Co Ltd, The St James Uva Tea Co Ltd, The Uva Highlands Tea Co Ltd, The Uva Ketawella Tea Co Ltd, The Gallebadde Estates Co of Ceylon Ltd, and The Girindi Ella Tea Co Ltd.

**Directorate.**—Messrs F. M. Mackwood, F. O. Mackwood, F. E. Mackwood, E. O. Mackwood, R. F. Darby, H. F. Parfit, and J. C. Kelly Secretary. Mr K. W. Taylor, A.C.A.

**Offices.**—Gaffoor's Building, Fort, Colombo.

### CLARK YOUNG & CO.

**Inception.**—Founded in 1894 by Messrs. T. S. Clark, S. D. Young, and E. S. Clark, this firm operates as general import and export merchants, and shipping and commission agents.

**Activities.**—The company handles for export all the general products of Ceylon, but primarily plumbago, tea, and rubber; while the principal imports in which it deals are coal, teak, flour, rice, Java and China

sugar, piece goods, etc. It also does a considerable business as agents for rubber and tea estate owners, and has a special department for handling that branch of the business concerned with insurance representation.

**Agencies.** Among the firms for which Messrs Clark Young & Co. act as agents are Andrew Yule & Co., Calcutta, Carr & Co.,

Morrean Spiegelberg, James Taylor & Co. (Merchants) Ltd., The Farnham Estate Co. Ltd., and various rubber and tea estates.

The insurance companies are General Accident, Fire and Life Assurance Corporation Ltd., Eagle Star and British Dominions Insurance Co. Ltd., Yorkshire Insurance Co. Ltd., Scottish Metropolitan Assurance Co. Ltd., China Underwriters, Ltd.



CLARK YOUNG & CO., Colombo.

1. Warehouses on Lake Shore.

2. General view in Warehouses.

Ltd., Carlisle, C. W. Goodwin & Son, Manchester, Slater, Roger & Co. Ltd., Glasgow, John Jefferies & Co., Edinburgh, J. T. Beukers, Shiedam, Societe Anonyme des Usines Destree, Belgium, Abdulla & Co. Ltd., New Bond Street, London, Steel Bros. & Co. Ltd., Rangoon, Bullock Bros. & Co. Ltd., The Ellerman Arracan Rice and Trading Co. Ltd., Thos. G. Hill & Co. Ltd.,

**Management.**—Partners Messrs T. S. Clark and E. S. Clark, Mr. A. N. L. Clark, B.A. (who is also a member of the firm), is Siamese Consul in Ceylon.

**Offices.** Lloyds Buildings, Prince Street, Cables "Centrum," Colombo Codes used, A.B.C. (4th and 5th Editions), Scott, Laeber, Bentley, Western Union and Private.

**Bankers.** National Bank of India Ltd.

## WHITTALL & CO.

**Activities.** The firm of Whittall & Co. carries on business as importers and exporters, insurance and steamship agents, and as managing agents, agents and secretaries for a large number of estates companies in Ceylon engaged in the production of tea, rubber, coconuts and other products of the island.

**Agencies.** Messrs Whittall & Co. are agents for the following:

**Shipping.** The Orient S.N. Co. Ltd., The Dollar Line, The Glen Line, and the Admiral Oriental Line of Steamers.

**Insurance.** The Yorkshire Insurance Co. Ltd. (fire and marine), Hong Kong Fire Insurance Co. Ltd. (fire), Canton Insurance Office Ltd. (marine), Triton Insurance Co. Ltd. (fire and marine), Northern Assurance Co. Ltd. (fire, burglary, housebreaking and theft), London Guarantee & Accident Co. Ltd. (motor car, motor cycle and motor vehicle and fidelity guarantee), North China Insurance Co. Ltd. (fire and marine), Eagle Star and British Dominions Insurance Co. Ltd. (fire, consequential loss, marine and luggage insurance).

**Sterling Companies.** (Managing agents)—The Panawatte Tea & Rubber Estates Ltd. and The Vativantota Ceylon Tea Co. Ltd.

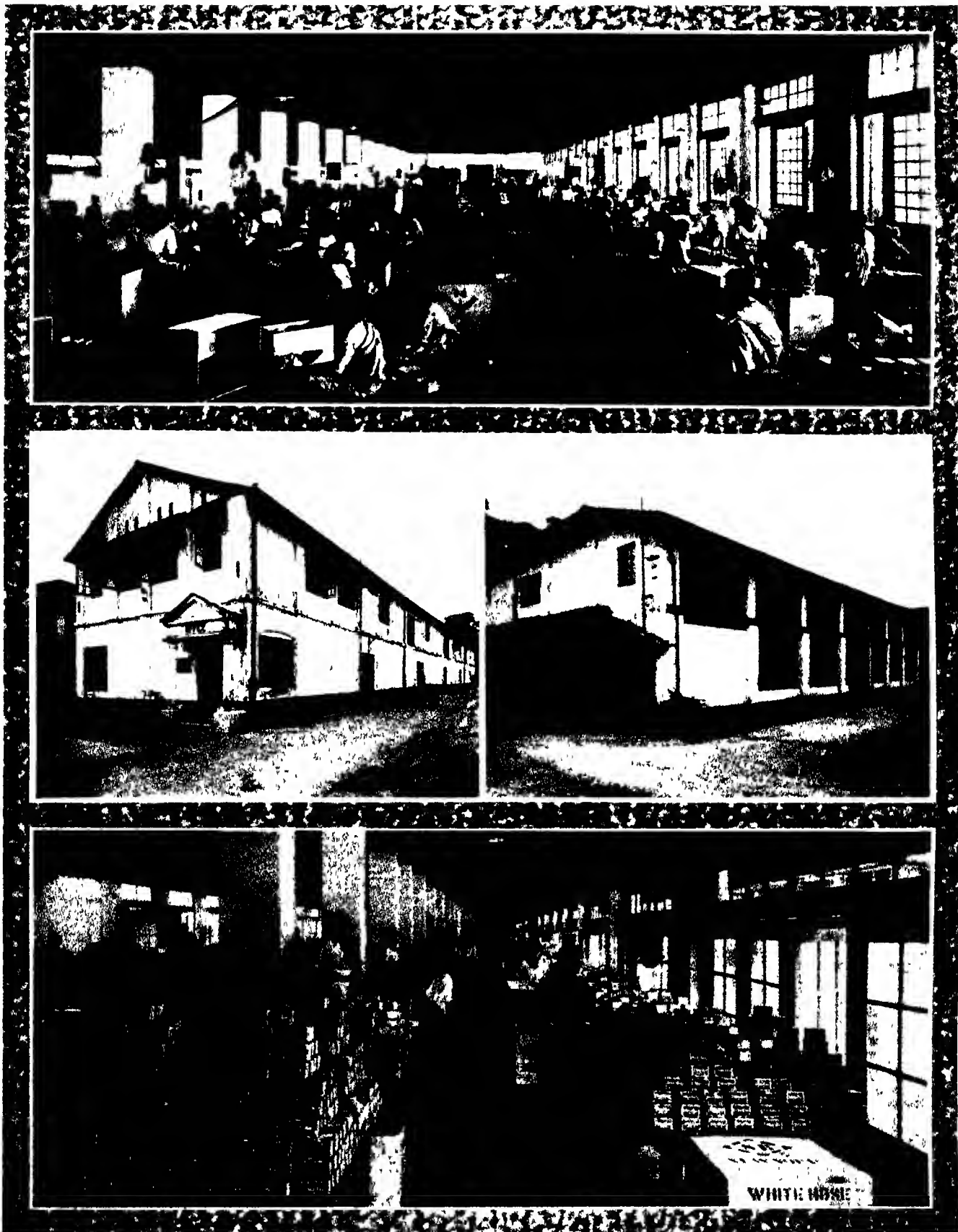
**Sterling Companies.** (Agents)—The Alliance Tea Co. of Ceylon Ltd., The Demodera Tea Co. Ltd., The Kobonella Estates Company of Ceylon Ltd., The Haydella Tea & Rubber Estates Ltd., The Balmoral (Ceylon) Estates Co. Ltd., The Bible Rubber Co. Ltd., The Ganapalla Estates Co. Ltd., The Bandarapola Ceylon Tea Co. Ltd., The Imperial Ceylon Tea Estates Ltd., The Mazawatte Tea Co. (Densham & Sons Ltd.), Scremban Rubber Estates Ltd.

**Rupes Companies.** (Agents and Secretaries)—The Agra Ouyah Estates Co. Ltd., The Drayton (Ceylon) Estates Co. Ltd., The Estates Company of Uva Ltd., The Gohnda Tea & Rubber Co. Ltd., The Hatbawa Rubber Co. Ltd., The Kanana Rubber Estates Co. Ltd., The High Forest Estate Co. Ltd., The Oonoogloya Tea Co. Ltd., The Ruwanwella Tea Co. Ltd., The Torrington Tea Estates Ltd., The Uplands Tea Estates of Ceylon Ltd., Ament Tea & Rubber Co. Ltd., The Lady Havelock Gardens Co. Ltd., The Chimes Estates Company of Ceylon Ltd., The Dorset Rubber Estates Co. Ltd., The Fernlands Tea Co. Ltd., The Glasgow Estates Co. Ltd., The Kalutara Co. Ltd., The Maha Uva Estate Co. Ltd., The Pimbura Rubber Co. Ltd., The Sunderland (Ceylon) Rubber Co. Ltd., The Upper Maskeliya Estates Co. Ltd., The Colombo Fort Land and Building Co. Ltd., The Coconut Estates of Perak Ltd., The Telok Bharu Coconut Co. Ltd., The Niriwatte Co. Ltd.

**Branches.**—Whittall & Co., Klang, Selangor, Federated Malay States, Whittall & Co. of Ceylon (inc.), 135, Front Street, New York, U.S.A. London correspondents: Thomson Alston & Co., 2, 3, 4, Idol Lane, Eastcheap, E.C.3.

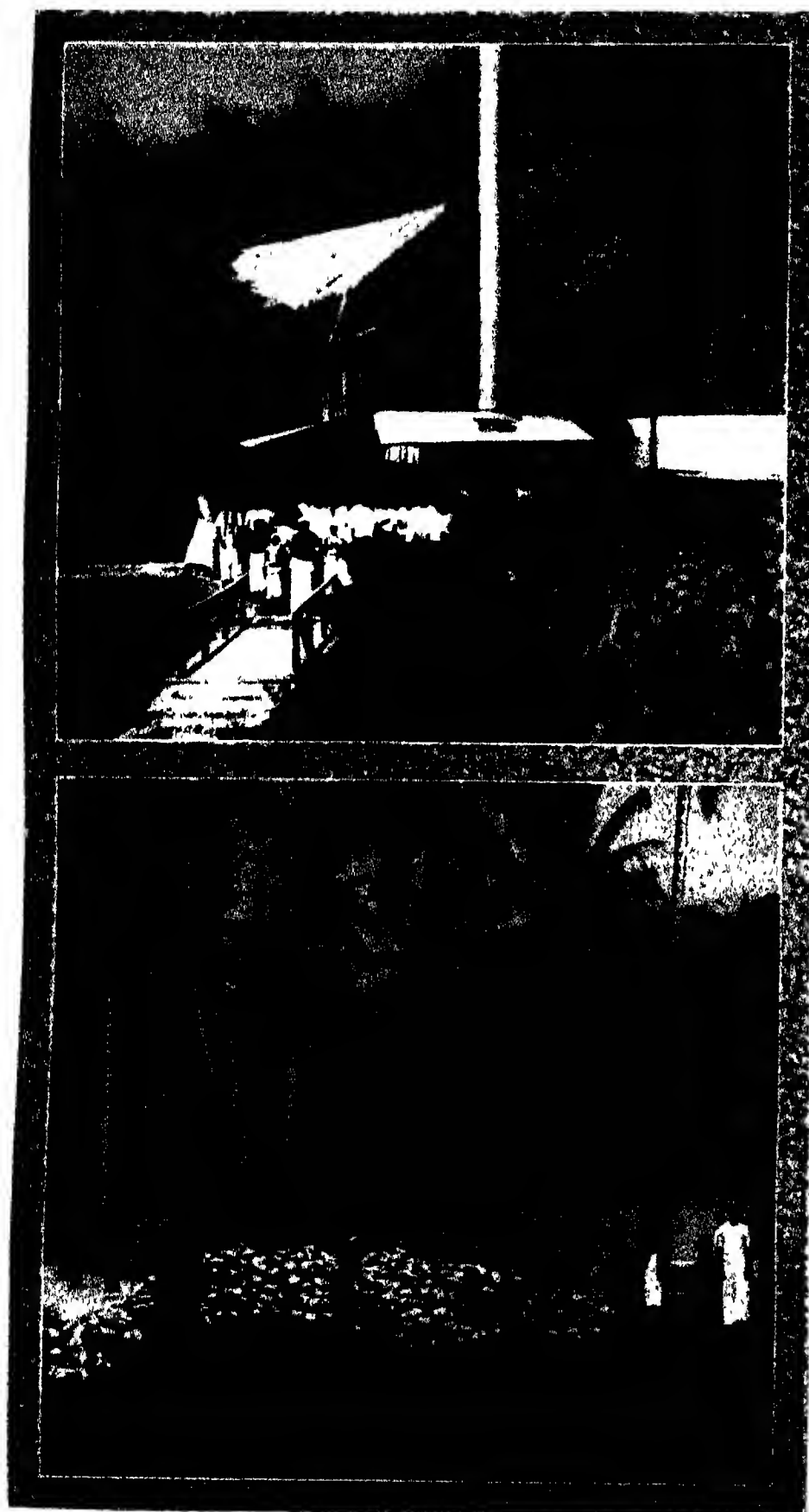
**Partners.**—Hon. Mr. W. H. Figg, Sir James T. Broom, and Messrs C. H. Figg and A. S. Collett.

**Offices.**—Head Office, No. 2, Queen Street, Fort, Colombo. Cables "Whittall," Colombo Codes: A.B.C. (4th and 5th Editions), Agers, Liebers, A.L., Broomhalls (Commercial), Broomhalls (Rubber), Bentley's and Private.



WHITTALL & CO., Colombo.

1. View in the Firm's Tea Packing Stores.
- 2 and 3. Mortlake Stores.
4. Another View in the Tea Packing Store.



H. L. DE MEL & CO., Colombo.

1. Shaft No. 1, Ragedera Plumbago Mine, Kurunegala, Ceylon.
2. Coconut Estate, Kurunegala, Ceylon.

#### H. L. DE MEL & CO.

**Inception.**—This firm was established in 1870 by the late Mr Jacob De Mel, who was the pioneer of plumbago mining in the Kurunegala District, and opened the well known Ragedera Mines.

**Development.**—The firm progressed, and in 1900 Mr H. L. De Mel, who had been practising as a qualified lawyer for a considerable time, joined his father's growing business. Later, Mr H. L. De Mel succeeded entirely to the goodwill and rights of the enterprise, and it is carried on under the style of H. L. De Mel & Co., Mr De Mel's son being now a member of the firm. During the South African and the late European Wars large quantities of plumbago were won from the firm's mines in different quarters of Ceylon. Since the Armistice, Mr De Mel has studied in America, Germany, England and other countries the modern requirements in connection with Ceylon plumbago. The advantages of Ceylon flake graphite and crystalline plumbago have been well proved, and a fairly steady business has been secured.

**Activities.**—To meet the increasing demand for the products of the firm, H. L. De Mel & Co. have installed machinery for the proper manipulation and refinement of Ceylon plumbago, and, in addition to large curing establishments in Colombo, Kurunegala, Ragedera and Ruwanwella, they have a well equipped factory in Colombo, with a chemical laboratory where all grades are tested and guaranteed to contain a specified percentage of graphitic carbon, while for certain purposes guarantees are made of the minimum percentage of iron, sulphur or ash. Most of the plumbago is packed in wooden barrels, and the equipment includes barrel-making, shooks and staving departments. The experience of 55 years has secured for the firm great facility in catering for the varying needs of different countries, and to-day a very large export trade is handled, shipments being made regularly to America, London, Germany, Japan, Australia, Holland, Italy, Calcutta, Rangoon and Hongkong. The firm, as proprietors of coconut, rubber, tea and other estates, is also well placed for the export and import trade, in which it is largely interested.

**Personal.**—During the Great War, Mr De Mel's services were at the disposal of the Government in business matters, for which he was created a Commander of the Most Excellent Order of the Empire. He was also created a Chevalier de l'Ordre de la Couronne by the King of the Belgians for services rendered.

**Agencies.**—Principal agencies held are Arthur Branwell & Co Ltd, London, Geo F Pettinos, of New York and Philadelphia, Freudenberg, Boehringer & Co, of Bremen. The firm also acts as agent for the New India Assurance Co., and holds several estates agencies.

**Administration.**—Principal, The Hon. Mr H. L. De Mel, C.B.E., J.P., M.L.C., M.M.C. Manager Mr J. R. Sri Chandrasekera.

**Offices.**—Head office: De Mel Buildings, Fort, Colombo. Branch office and head works: Pollathapitiya, Kurunegala. Curing yard and factory: Model Farm Stores, Kanatte, Colombo. Cables: "Elsmere," Colombo. Codes: A.B.C. (5th and 6th Editions), Bentley's, Western Union, Shipping and Private.

**Bankers.**—The National Bank of India Ltd. and the Eastern Bank Ltd.



**THE HOLLAND-CEYLON COMMERCIAL CO.**

**Inception.**—This company was established under its present title in 1916 with a capital of 1,000,000 guilders, and is an importer of piece goods and sundries, and exporter of Ceylon produce.

**Activities.**—The firm acts for the well-known house of Jurgens Ltd in Ceylon, which is an indication of the importance of the business which it transacts. It exports all kinds of Ceylon produce, but the principal product handled is copra. In this a very extensive business is done. The company's copra store has a capacity of about twelve thousand tons. The staff consists of six Europeans and about twenty-five native clerks.

**Agencies.** Jurgens Ltd, Nymegen and London, Nederlandsche Plantenboter Fabriek, Amsterdam, Koninklijke Weefgoederen Fabriek v/h C. T. Stork & Co, Hengelo, H. P. Gelderman & Zonen Oldenzaal, P. F. Van Vliet & Co, Helmond, The Phoenix Insurance Co Ltd, Liverpool (Marine Dept), Batavia Sea and Fire

currie stuffs, flour, matches, etc. The export department is occupied chiefly with coconut oil, cinnamon oil, coconuts, tea, and citronella oil. The firm is also interested in the export of ebony (Ceylon ebony), and particularly invites enquiries from firms in other countries interested in this product. A speciality of the house is the supply of provisions of all kinds to numerous plantations and estates in the Southern Province of Ceylon. There are four separate godowns for the stocks of oil, fertilizers, timber, and rice, and there are generally about 200 tons of both rice and fertilizer on hand. There is a branch, of which Mr V. D. Palis Fernando is manager at 53, Maliban Street, Colombo, at Galle, Mr V. D. Sinnatchy Fernando represents the firm, and V. D. David Fernando is in charge of the rubber section at Galle. Cables "Samitichy," Galle (for the head office), "Palmer," Colombo (for the Colombo branch) (Code A B C (5th Edition)).

**NESTLE AND ANGLO-SWISS CONDENSED MILK CO.**—"Nestle House," Union Place, Colombo. This company opened its depôt in Colombo towards the

Malted Milk, which is also largely used in the Government hospitals, Lactogen, the famous milk food, Nestle's Milk, Nut Milk, and Plain Chocolates, Nestle's, Cailler's, and Kohler's specially selected Bonbons, Cailler's Cream Toffee, Nestle's Cream Caramels, "Nasco" Ice Cream Mixture, Cailler's Cocoa and other well-known products of the organization. The size and importance of the business done by this depôt may be gauged from the fact that the company's sales are about 90 per cent of the total annual consumption of tinned milk throughout the whole of Ceylon, which amounts to approximately one million tins. Bankers: The National Bank of India, Head office 6/8, Eastcheap, London, E.C. Cables "Nestanglo," Colombo. Codes A B C (6th Edition), Western Union, and Bentley's.

**BRITISH CEYLON CORPORATION LTD.**

—Gaffoor Buildings, Main Street, Colombo. This company took over in 1918 an old established business in Colombo. The principal operations of the firm are confined to the milling of coconut oil, desiccated coconut, and fibre for export to various parts



THE HOLLAND-CEYLON COMMERCIAL CO., Colombo.  
View of Jurgens Ltd, Copra Stores.

Insurance Co, Batavia, The Netherlands Insurance Co, The Hague.

**Directorate.**—Messrs. H. L. Bekker, M. H. T. Bury, W. J. H. Oderwald, W. Stork, Dr. Th. M. Verster, D. H. Wallis de Vries, G. J. Van Hoolwerf (managing director, Amsterdam), and L. Van der Spoel (managing director, Colombo).

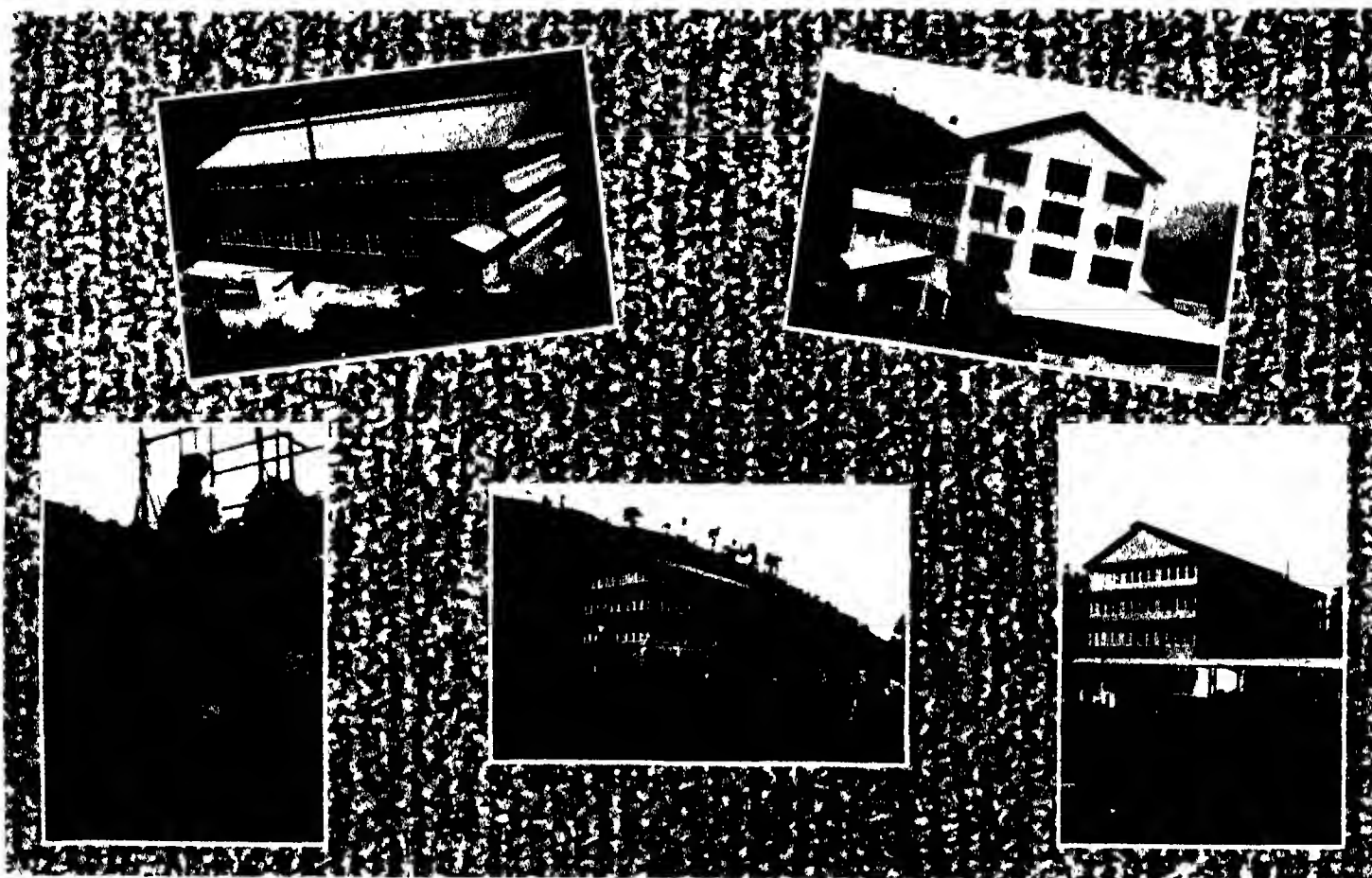
**Offices.**—Gaffoor Buildings, Colombo. Cables: "Hollandco" Codes Bentley's and A B C. (5th and 6th Editions).

**Bankers.**—Chartered Bank and National Bank of India Ltd.

**V. D. S. FERNANDO.**—Established by the present proprietor, Mr V. D. S. Fernando, in 1880, the firm operates as importer and exporter, rubber dealer and grower, commission agent and general produce merchant. In imports, the principal are rice, groceries, drugs, sugar, ebony wood, roofing tiles, manure (crushed bone), potatoes, onions,

end of 1912 to further its interests in Ceylon, having been previously represented by agents. The depôt receives regular monthly shipments from the company's factories in various parts of the world, such as England, Switzerland, Norway, Holland, America, and Australia. The office at Nestle House in Colombo is the only one which the company possesses in Ceylon, and the staff at present comprises a European manager and about 30 clerks, canvassers, coolies, etc. Practically the whole of the sales business is done through nine distributing agents in Colombo itself, but by means of its staff of five canvassers every town in Ceylon is visited at least three times during the year. The principal brand which the company supplies is the well-known "Milkmaid Condensed Milk." Other brands distributed are Ideal Milk (unsweetened), which is used in all Government hospitals, Milkmaid Sterilised Milk; Nestle's Rich Cream, Nestle's Milk Food, Nestle's

of the world. Until lately the chief countries to which shipments have been made were Europe, America and Australia, but with the progressive widening of the market for these products the operations of the company are extending to many other countries which are only just beginning to require these goods, and where a large increase of trade may be anticipated. The coconut oil mills are the Hultsdorf Mills, Colombo, while the desiccating and fibre mills (desiccated coconut, coir fibre matting, etc.) are at Veyangoda, Kochchikade, and Kudawewa. The overseas representatives are The Orient Co Ltd, "Orient House," 21, Budge Row, London, E.C.4, Grace Bros, New York, U.S.A., and Gollin & Co, Bourke Street, Melbourne, Australia. The company's bankers are the Imperial Bank of India, Colombo and London. Cables "Gelatinous," Colombo. Codes. All those in general use.



THE EASTERN PRODUCE & ESTATES CO. LTD. Colombo  
Some recently completed Tea Factories built by the F. P. & E. Co. Ltd.

#### THE EASTERN PRODUCE & ESTATES CO. LTD.

**Inception.** Founded in February 1888, this company carries on business as estate proprietors and agents, and engineers.

**Activities.**—The workshops at San Sebastian Mills, Colombo, cover an area of three acres and employ a large number of hands. The company is fully equipped for the building of factories, of which many have been erected at Yullefield, Campion, Yaderiya, Hemmingford, Rangalla, Goomera, etc. for the installation and erection of all kinds of plant and machinery, and for the supply of every sort of estate requirements, including water power and hydro electric schemes. The firm makes a feature of the construction of aerial ropeways, as at Monte Cristo, Beaumont, Pita Ratmalie Hope, etc., and some 100 miles of such ropeways are now running in Ceylon. About 16 estates in all are controlled by the company, the total planted area of which is nearly 14,000 acres. The firm also acts as agent for tea and rubber companies in Ceylon.

**Staff.**—The employees (European and Native) total about 300 at the works and 6,000 at the estates.

**Directorate.**—Messrs Norman W Grieve (chairman), John Hamilton, T G Hayes, Arthur E Savill and T P Simpson. **Manager** in Ceylon: Mr R F Battams. **Manager** of works: Mr H N Atkinson.

**Offices.**—Head office: Mincing Lane House, 50, Eastcheap, London, E.C. Address in Ceylon: Prince Building, Prince Street, Fort, Colombo.

**Cables.** "Entropius," Colombo.

**Bankers.**—The National Bank.

**Agencies.** The Yaderiya Rubber & Tea Company Ltd., Castlereagh Tea Co. of Ceylon Ltd., The Atlas Assurance Co. Ltd., Scandinavia Belting Ltd., Ransome & Marles Bearings, Paterson's Clensel, Brooklands Brand Tea Lead, Craddock's Wire Ropes and Chutes.

**Estates.** Arapolakande, Doombagastalawa, Hope, Ingurugalla, Berawalla, Kirmuttia, Kumaradola, Kumbukkan, Labookelle and Condegalla, Meddecombra, Matale West Group, Norwood and Rockwood, Rothschild, Sogama, Urumutta, Vellai Oya, Wevekelle.

**BOOTY & EDWARDS.** Colombo, Singapore and Penang. This firm of architects and land surveyors has a very extensive practice in Ceylon, the Straits Settlements, and the Federated Malay States. In architectural competitions the following prizes have been won during the last three years: Colombo Town Hall and Municipal Offices—first prize, Singapore Golf Club—first and second prizes, Singapore Cricket Club—first prize, Chinese Assembly Rooms, Kuala Lumpur—second prize. Amongst the more important works recently completed or in hand are: Colombo Town Hall and Municipal Offices, Victoria Park, Colombo; Chinese Assembly Rooms, Kuala Lumpur, F.M.S.; Chartered Bank of India, Australia and China, Ipoh, Perak, F.M.S.; Grand Oriental Hotel, Colombo; Hotel Suisse, Kandy, Ceylon; Singapore Tramway Terminus and Offices, S.S.; Block of flats, Galle Face, Colombo; offices for Messrs Lee Hedges & Co., Colombo. Accompanying the

article devoted to Messrs J. C. Gammon & Sons in this section will be found a reproduction of the perspective of the new Colombo Town Hall and Municipal Offices. This building when completed, will be one of the finest of its kind in the East—it is 400 feet long, 200 feet wide, and about 175 feet high to the top of the dome. It is of a bold classic design of noble and dignified proportions. Work of a less imposing kind by the firm includes domestic and ecclesiastical buildings, shops and warehouses. For many years Messrs. Booty & Edwards have also carried out extensive land surveys in the Straits Settlements and the Federated Malay States, both jungle and rubber plantation surveys, and also surveys for the Government and Railways. The European staff consists of three qualified architects and three qualified land surveyors. The partners are Mr S. J. Edwards, M.A. (Cantab.), F.R.I.B.A., P.A.S.I., in Colombo and Mr Ralph Booty, in Singapore. Cables: "Column," Colombo. Code: A.B.C. (5th Edition).

**VOLKART BROS.**—Imperial Bank Buildings, Prince Street, Colombo. This firm was established in Switzerland and Bombay in 1851, the Colombo branch being opened in 1857. Volkart Bros. carry on a large trade as general import merchants of all kinds of British and foreign goods, and as exporters of Ceylon products, such as copra, coconut oil, rubber, tea, cinnamon, desiccated coconut, coir yarn, coir fibre, citronella oil, cinnamon bark oil, sapan wood, and sandal wood. They are also agents for Volkart's United Press Co. Ltd., India, Nichizui Trading Coy. Ltd., Osaka, Japan; "Fohka" Swiss-

Chinese Trading Coy. Ltd., Shanghai, China; The Norwegian-Africa and Australia Line, Christiania; The Swedish East Asiatic Co. Ltd., Gothenburg; The Holland British India Line, Rotterdam; The D.D.G. "Hansa" Bremen; The Hamburg Amerika Line, Hamburg; The Kerr Steamship Coy. Inc., New York; Cia. Transatlantica, Barcelona; Lloyd Sanbaudo S.A., Genoa; Società Veneziana di Navigazione a Vapore, Venice; Lloyd Triestino, Trieste; Holland Amerika Line (Java-New York Service), Rotterdam; The Stoomvaart Maatschappij "Nederland" (Java-New York Service), Amsterdam; Rotterdam Lloyd (Java-New York Service), Rotterdam; Compania General de Tabacos de Filipinas, Manila; Navigazione Generale Italiana, Genoa; The Hugo Stinnes Line; The Balesse Fire Insurance Coy., Basel; The North British and Mercantile Insurance Coy., London and Edinburgh; and The Northern Assurance Coy. Ltd. The partners in the firm are Messrs Geo. Reinhart, Werner Reinhart, and Oscar Reinhart, all of whom are in Switzerland. Mr. H. Frei is the manager in Ceylon and is also Swiss Consul. Head office: Winterthur, Switzerland. Branches: London, Bombay, Karachi, Tellicherry, Calcutta, Cochin, Tuticorin, Madras, Calcutta, Singapore, Osaka, New York, and Bremen. The stores, known as Volkart Brothers' Grandpass Stores, are at de Waas Lane, Grandpass, and there is a sub-branch, Volkart Brothers' Agency, at Galle (con. yarn press and oil yards). Cables: "Volkart," Colombo Codes. All those in use. Bankers: All Colombo banks.

#### THE DUNLOP RUBBER CO. LTD.

No. 1, Lake Road, Slave Island, Colombo. The Ceylon branch of this company, founders of the pneumatic tyre industry, is a part of the Indian organisation of the famous firm, the head office being "Dunlop House," Apollo Bunder, Bombay. As manufacturers of motor car, motor cycle, and cycle pneumatic tyres, solid tyres for commercial vehicles and accessories, the Dunlop Company is well known in all countries. It is also engaged in the production of mechanical rubber goods, golf balls, etc. Other branches of the Indian organisation are at Calcutta, Delhi, Madras, Rangoon, and Karachi. In Ceylon, the estates belonging to the company extend to about 2,300 acres, while in the Malay Peninsula nearly 70,000 acres are possessed by this organization, and factories are also situated in China, Japan, Australia, and various other countries not included in the Indian section. These vast estates enable the Dunlop company to produce a very large proportion of its total requirements in raw rubber, the firm being persuaded that, to make a really satisfactory tyre for modern motorists, raw materials of consistently fine quality are needed, and can only be obtained by careful isolation from bulk deliveries of the highest average. In pursuance of this policy the whole of the cotton material used in the manufacture of Dunlop tyres is produced by the company's mills at Rochdale, which have a floor space of 30 acres, the spinning section alone being a seven storeyed building covering 3½ acres, while the tyres themselves are made at Fort Dunlop com-

prising 48½ acres, of which 115 are devoted to the manufacturing site. The total number of employees throughout the world is approximately 28,000, of which 14,000 are in Birmingham. The company is at all times pleased to give assistance to the motorist in every way possible, and visitors to Colombo will find the Ceylon Branch ready to serve them in any way. District manager: Mr. J. W. England. Bankers: National Bank. Cables: "Dunlop."

**HENRY DON DAVIT.** This proprietary company, which until 1926 traded as M. W. Martin de Silva, is owned by Mr. A. W. P. Henry, son of the late Mr. A. W. P. Don Davit, who founded the firm in 1870 under the style Don Davit & Sons. The principal imports are rice, currie stuffs, sugar (from Java), flour (Australian), chilis, saffron, onions, pomegranate, cement, coffee, and coriander seeds. The firm acts as agent in Galle for the Standard Oil Co. of New York, and sub-agent for Jonokoping Nylans, Three Globes Matches, Sweden-Pahawan Brand, Australian Flagon, Three Gems Matches, H. Don Carols & Co., Colombo, and the Foyo Match Co. Ltd., Kobe, Japan. The godowns or warehouses, which are situated in High Street and Dangedara Street, have a storage capacity of some 5,000 bags or more. The importance of the business done by this firm may be gauged from the fact that the annual turnover is about 3 lakhs of rupees. The oil section of the business is under the management of Mr. K. H. L. de Silva. The firm has a branch establishment in Colombo at 16 Fourth Cross Street. Bankers: The Mercantile Bank of India, Galle, and the National Bank, Colombo. Head office: High Street, Galle. Cables: "Davits," Galle Codes. Bentley's, A.B.C. (4th and 5th Editions) and Private.

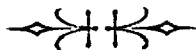
**CLARK, SPENCE & CO.** Ceylon Bann Street, Galle. This firm was established in Galle by Messrs Clark & Spence in 1860 to carry on business as general produce merchants, shipping agents, coal bunkering and insurance agents. There is a clerical staff of 12 and about 500 coolies are employed. The chief import of the company is coal for the purposes of its extensive coal-bunkering business. Agencies held are: Lloyds, London; National Bank of India; Royal Dutch Steamship Coy.; "Nederland" Steamship Coy., Amsterdam; Clan Line Ltd., London; Rotterdam Lloyd, Rotterdam; The British & Colonial Steam Navigation Coy. Ltd. (Bucknall Bros.); The American and Indian Line, Ilciman & Bucknall S.S. Co. Ltd.; Ceylon Steamship Co.; East Asiatic Coy. Ltd., Copenhagen; Batavia Sea and Fire Insurance Coy.; Commercial Assurance Coy. Ltd.; Queensland Insurance Co. Ltd.; Imperial Insurance Coy. Ltd.; Boston Association of Underwriters; Bombay Underwriters' Association; Salvage Association, London; Royal Insurance Company Ltd., Liverpool; Alliance Assurance Co. Ltd., London; Norwich Union Life Insurance Society (Accident Department); Commonwealth Trust Ltd., Calcutta; Gladstone, Wyllie & Co., Calcutta; The Arracan Co. Ltd., Burma; Steel Bros., Rangoon; Pierce, Leslie & Co., Cochin and Calcutta; International Credit in Handels

Vereeniging, Batavia; Ireland, Fraser & Co., Mauritius; Steel, Murray & Co., Durban and Natal Branch at Colombo. Aitken, Spence & Co. Cables: "Spence," Galle. Bankers: Mercantile Bank of India and National Bank of India.

#### WALKERS AND CLARK SPENCE.

Galle. Founded in 1920, this firm employs two European and three native fully qualified engineers. It does a very extensive business as estate, electrical and motor engineers, builders and contractors, and ship repairers. Messrs Walkers and Clark Spence are agents for Ford, Austin, Overland, Rover and Dodge cars, and also hold representations for Jackson's tea machinery, Nat. Suction gas engines, Vicker's Petter oil engines, Walker's tea and rubber machinery, and Dunlop, Michelin, Goodyear, Goodrich, and Wood. Motor tyres, cables. Spence, Galle Codes. All those in use.

**F. X. PEREIRA & SONS.** - Ridgeway Building, 1st Cross Street, Colombo. This firm carries on business as general importers, insurance agents, shipping agents, manufacturers' representatives, and commission agents. The principal imports handled are drapery, soft goods, wearing apparel, travelling goods, silver, electro-plate, etc., and the agencies held are as follow: Sindhia Steam Navigation Co. Ltd., Bombay; The Universal Fire and General Insurance Co. Ltd., Bombay; Burma Fire and Marine Insurance Co. Ltd., Rangoon; J. & N. Phillips & Co. Ltd., Manchester (soft goods); Sisson Bros. & Co. Ltd., Hull (paints and varnishes and distempers, etc.); Goodwin & Co., Birmingham (soft goods); Lewis, Binks & Co. Ltd., London (soft goods); Deutsche Linkaufs Gesellschaft M.B.H., Hanover (hazaar sundries); Luft Maack & Co., Hamburg (shawls, hosiery, etc.); Plati & Van Heusler, Amsterdam (Dutch provisions and sundries); Dodge & Seymour Ltd., New York (various); Inda & Co. Ltd., Yokohama (silks); Cornes & Co., Kobe (underwear, cotton, and silk goods); Evans & Weale Ltd., London (fancy dress goods); H. F. Travis & Co., Manchester (scores, blankets, etc.). The firm has branches at Galle, Ceylon (shipping holding representation of the Sindhia Steam Navigation Co. Ltd.); Quilon, S. India (shipping); Trevandrum, S. India (shipping); Colachel, S. India (shipping); and at Tuticorin, S. India, where it represents the Universal Fire & General Insurance Co. Ltd. and the Sindhia Steam Navigation Co. Ltd. The branch at Tuticorin has a baling press for senna leaves and bristle fibre, and does a considerable business in shipping, insurance, general engineering, export of senna and South Indian produce; it also has a clearing and forwarding department. Agents abroad: Abel & Katz Ltd., Atlantic House, 45/50, Holborn Viaduct, London, E.C. 3; John Shaw & Sons (Wolverhampton) Ltd. The present partners are The Hon. F. X. Pereira, M.L.C., and Messrs R. G. and J. E. A. Pereira, and the Colombo staff comprises 15 clerks and about 90 hands. Cables: "Perlex," Colombo Codes. A.B.C. (5th and 6th Editions) and Bentley's. Bankers: The Chartered Bank of India, Australia and China, and The National Bank of India.





GENERAL VIEW OF KANDY.

## CITY OF KANDY

**C**APITAL of the former kingdom of that name, Kandy is now the second city in importance in the island of Ceylon. It is beautifully situated in the midst of magnificent scenery, on the banks of a small artificial lake, overhung by trees. The Kandyan country is famous for its hills and valleys, which contain many scenes of almost majestic beauty, and these are easily accessible either by driving or walking.

Kandy has not the ancient history that belongs to some cities of Ceylon, having been adopted as the capital of the island in the 16th century. During the wars between the Portuguese and Dutch, Kandy was so often burned that scarcely any of the ancient buildings except the temples and the royal residence remained when the English took it in 1815. The last Kandyan King—Sri Vikrama Raja Sinha—was taken captive, and with his formal deposition, the ceremony of which was performed in the Audience Hall, the whole of Ceylon became vested in the British Crown.

**BUILDINGS.**—Besides the Temple of the Tooth and the Audience Hall, which are separately mentioned, there are many old and important buildings in Kandy. To the north of the Uda Wahalkada is the "Old Palace," now the residence of the Government Agent. This was formerly the King's Palace, or Maha Vasala. Vasala means "gate," literally, but the term was frequently used to denote a palace. The present drawing room of the Old Palace—the walls of which are decorated with representations of the sacred goose and figures—is said to have been in former times the Dakina Salwa, a reception room for chiefs, where they were received by the King on occasions less formal than the ceremonies of the Audience Hall.

To the north of the Audience Hall is the District Court, a modern building erected in

imitation of the Audience Hall, while opposite the Audience Hall is the Kachcheri, or Office of the Government Agent, a large Palladian building erected in 1890, "remarkable," it has been said, "for its striking inappropriateness to its surroundings." To the south of the Kachcheri stand the Office Assistant's bungalow and the Kandyan Art Museum, formerly known as the Meda Vahala and Palle Vahala, and used as quarters for the King's relations and the officers of the household, the latter being said also to have housed the royal harem. More modern buildings include the Post Office, the Kandy Club, the Queen's Hotel, and the offices of the Planters' Association of Ceylon.

**MUSEUM.**—The Kandyan Art Museum is open on week days from 10 to 4-30, and contains a considerable collection of antiquities, as well as a large stock of modern brass, silver, and copper work, Kandyan embroidery, ivory carving, pottery, and lacquered woodwork. The modern articles are made by Kandyan workmen both on the Museum premises and outside. The men can be seen at work, and the articles made by them can be purchased at reasonable prices, while the quality of the material can be taken as guaranteed.

**PERADENIYA.**—Three and a half miles from Kandy are the Royal Botanic Gardens of Peradeniya, said to be unrivalled in the world. In an ideally beautiful situation, on which once stood a royal residence of the Kandyan Kings, is a marvellous collection of living specimens of the flora of the whole tropical world. At the same time, these gardens serve as a great Government research department, under whose direction all agricultural possibilities are put to the test and experimental culture carried on in various parts of the country. The gardens cover 150

acres. Among the most notable specimens are the grove of Assam rubber-trees, the avenues of Talipot palms, screw pines, rattans, and rain trees, and a wonderful collection of spice trees. Near to the Gardens, which contain also an interesting Museum, are the Kandy racecourse and golf-links.

**POPULATION.**—The population of the municipality of Kandy at the last census of 1921 was 32,562, of which number 18,894 were males and 13,668 females. The District of Kandy, excluding the municipal area, had a total population of 401,431.

**STREETS, ETC.**—Ward Street is the main thoroughfare of the town, and contains the principal European stores, banks, the Queen's Hotel, the Kandy Club, and the Victoria Commemoration Buildings, which are used as the headquarters of the Planters' Association of Ceylon. Malabar Street is so named from the fact that it was at one time set apart for the dwellings of the "Malabar" or Tamil relatives of the later Kings. Many of the streets of Kandy are interesting for the glimpses they afford of native life and customs in the bazaars. In this respect, Colombo Street and Trincomalee Street are especially attractive. The part of Kandy situated near the Railway Station is known as the Vale of Bogambra, and was the scene of many a tragedy in the time of the Kandyan monarchy. The Victoria Esplanade, with its charming lawn that stretches from the Queen's Hotel to the Temple, is the public rendezvous on all occasions of festivity.

**TEMPLE OF THE TOOTH.**—Known in Sinhalese as Dala-da Maligawa, this is perhaps the most famous building in Kandy. It stands on the opposite side of the road to the United Services Library. The main entrance is to the west of the building, and, on the way

to it, the striking Pattirippuwa, or Octagon, contains a valuable Oriental library. The Octagon was built during the reign of the last King of Kandy, Sri Vikrama Raja Sinha, being possibly completed about 1810. It is said to have been erected on the site of the old temple kitchen, and to have been intended as a place from which the King could exhibit the Tooth Relic to the people, when carried round the verandah.

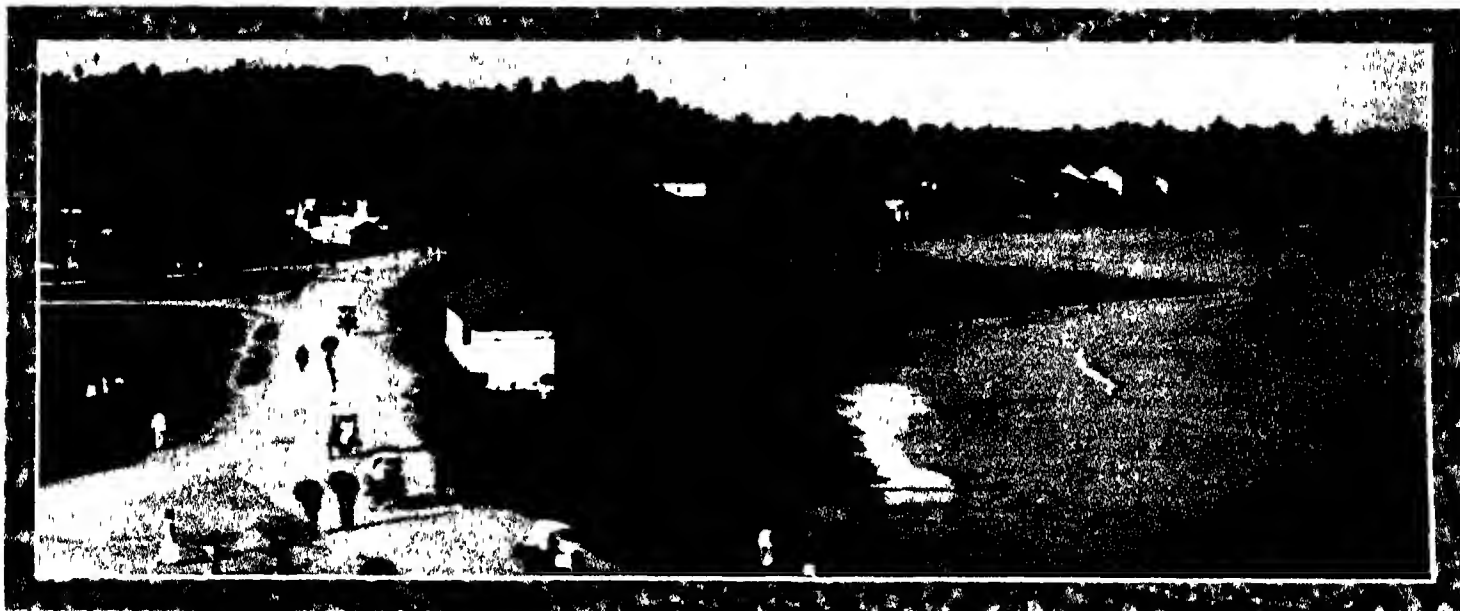
The main entrance to the Mahigawa has in front a typical example of a Kandyan "moon-stone" step. Here too are two handsome brass lamps given by Sir William Gregory, a former Governor. More moonstone steps

lead to the temple, and at their top is an upper verandah, the wall of which is decorated with modern frescoes representing the torments awaiting wrong-doers in a future state. Straight across the courtyard from the main entrance stands the edifice which holds the shrine (Udamale) of the Tooth Relic, the entrance to the chamber being guarded by a door inlaid with silver and ivory, while in an inner room is seen the large silver gilt outer karanduva, or casket within its cage of iron bars. Within the outer karanduva are seven minor karandus of pure gold, studded with emeralds, rubies, pearls and catseyes, the smallest of all, quite covered with rubies,

forming the sheath for the venerated Tooth of Buddha which gives the Temple its name.

The Tooth Relic is rarely exposed to public view, and, in fact, has not left the precincts of the Temple since 1828. But during the annual festival of the Perahera, which takes place every August, other relics are taken in procession with elephants and devil dancers, and with great pomp and ceremony.

Near the Temple is the Audience Hall (Magul Maduwa), a typically Kandyan structure with a double sloped roof on elaborately carved pillars. It was here that the Kandyan King had his throne and held ceremonial audiences of foreign ambassadors.



VIEW OF SEASHORE FROM RAMPARTS, GALLE

## CITY AND PORT OF GALLE

**T**HE chief town of the Southern Province of Ceylon and the seat of the Provincial Government, Galle claims considerable attention, combining as it does a wealth of historical associations with great natural advantages. The first mention of Point de Galle as a place of European settlement occurs as far back as 1512, when it was a small Spanish fortification. Towards the end of the 16th century the Portuguese held the place for a time, but gave way in 1640 to the Dutch, who greatly strengthened the fortifications and were in possession for 150 years, to lose the settlement in turn to the English. Galle has thus had an eventful history, and there still remain many interesting records in stone of the various occupations. The name Galle is popularly held to have had its origin from the Sinhalese "gala," a rock, another theory being that it comes from "gala," a cattle pen. The Portuguese and Dutch settlers, however, derived it from the Latin "gallus," a cock, and carved an image of a cock on the front of the old Government House now occupied by a European firm. The present town, which at the last census of 1921 had a population of 39,100, consists of two parts, the one situated within the belt of the old fortifications (known as the Fort), the other embracing the outer

town and populated solely by the native community.

**BUILDINGS.** Apart from the fortifications (see later), the principal public buildings of Galle are the Government House or "Residency," a handsome building standing in well kept grounds about three-quarters of a mile from the Fort, the old Dutch Church, All Saints Church, the Kachecheri, or Government Offices, the Police and District Courts, and the Railway Station.

**CHURCHES.** All Saints Church (Anglican) is about 400 yards from the port. It is a handsome stone building of pointed architecture, and can seat 500 persons. Near to it is the Dutch Church, which was commenced in 1757, and is famous for its high vaulted ceiling painted with a beautiful cerulean blue and studded with stars to represent the heavens. There is a fine organ with an elaborately carved front, also many interesting monuments. Underneath the floor is the burial vault of the church. There are also churches belonging to the Roman Catholics, the Wesleyans, and the Buddhists and Mohammedans.

**CLUBS.**—The principal clubs or associations in Galle are the Galle Association, formed in 1917, with headquarters at the New Oriental Hotel, the Galle Club, Fort, the

Galle Muslim Association, the Galle Sinhalese Young Men's Association (Pedlar Street, Fort), the Galle Y.M.C.A., Pedlar Street, the Galle Young Muslim League, and the Galle Y.W.C.A.

**FORTIFICATIONS.**—These considering that they were commenced by the Portuguese in 1580, are in good state of preservation, presenting even yet a grim and imposing appearance. They lie close to the port, the main gate of the "water-bastion" being to the west of the landing jetty. The gateway is surmounted by the arms of Great Britain and Ireland of the reign of George III, and the heavy old doors which used to close the gateway are still in a fairly sound condition. Inside and above the interior gateway is another finely executed coat of arms of the Dutch East India Company. On either side are the Kachecheri, or Government Offices, the Club, and the District Court. Where the first Portuguese "Fortaleza" used to stand, the Police Station has been erected. The remaining bastions are known as "Acker's Sloop" (now the residence of the Master Attendant of the Port), "Eolus," "Utrecht," "Triton," "Neptune," and the "Sun," "Moon," and "Star" bastions, the latter names having been given by the Dutch in 1667 in place of the old Portuguese ones of



"St. Jago," "Conceicao," and "St. Antonio."

**LIGHTING.**—An electric lighting scheme has been approved and was to be in operation about the middle of 1929.

**MUNICIPALITY.**—The Galle Municipality is composed of the Government Agent for the Southern Province (Mr. T. B. Russell), who is chairman, four nominated members, and five elected members. The Standing Committees are four viz. Law and General Subjects, Markets and Sanitation, Finance and Assessment, and Municipal Works. The area administered by the municipality is nearly 1,200 acres.

**PUBLIC SERVICES.**—Galle is on the coast line of railway running from Colombo to Matara and is 72 miles from the capital. In addition to the regular trains, there are excellent motor bus services throughout the Province including those to Colombo, Matara, Hambantota, Deniyaya, etc. These services are not used by Europeans.

**SPORT.** Galle is proud of its new race-course which was constructed from reclaimed land formerly under water outside the Port and was opened by the late Governor, Sir William Manning, on December 27, 1923. It is controlled by the Galle Gymkhana Club, formed in 1880. Sport flourishes in Galle both the Galle Cricket Club and the Galle Municipal Cricket Club having large memberships. The Galle Tennis Club dates from 1923, there is an excellent golf-course and the Galle Football Athletic Ground Association has recently been formed of representatives of the leading football, hockey and athletic clubs. Many of the principal commercial houses have their own sports clubs. Safe sea bathing can be indulged in all the year round and there is good snipe shooting during the season a short distance away.

**WATER SUPPLY.** The Port of Galle was originally supplied with water from the Bikke reservoir, situated at Kumbalwella, 1½ miles from the town. This reservoir has an area of 2½ acres and a capacity of 6,220,000 gallons, the water being derived from rainfall alone. It was completed in 1892 at a cost of Rs 73,448, defrayed out of a loan by the Government. Owing to the presence of an excessive quantity of albumenoid ammonia in the water and its inadequacy for the needs of the town, the municipality some 15 years ago decided to construct a reservoir at Hiyare, 11 miles from Galle, and this was completed in 1911 at a cost of Rs 351,000. The reservoir at Bikke being now utilised only as a subsidiary one. The site of the new storage reservoir at Hiyare, formerly in all probability a natural lake, was under paddy cultivation when it was acquired by the municipality. The area of the impounded reservoir at top-water level is 43.7 acres. It has an average depth of about 9 ft., the maximum depth near the valve well being 25 ft. The cubic content of the reservoir, when full, is calculated at 126,000,000 gallons. The catchment area serving the reservoir is 269 acres, with a forest reservation of 4,000 acres. The average yearly rainfall at Hiyare is 95 inches.

## VISITORS' GUIDE

**CLUB.**—Galle—Fort

**CONSULATE.**—Norway—Messrs E. Coates and Co. Ltd.

**HOTELS.**—New Oriental—Fort; Sydney Hotel—Havelock Place.

**SCHOOLS.**—St. Aloysius (R.C.), A. Saints (C. of E.); Richmond College (Wesleyan); Mahinda (Buddhist).

## PORT OF GALLE

For more than a thousand years before Colombo attained any degree of mercantile importance Galle was known to the Eastern world as a famous emporium and antiquarians claim that the long-sought locality of Tarshish may be found to be identical with that of Point de Galle. The most flourishing period of Galle during the British occupation was that immediately preceding the construction of the harbour at Colombo. Then Galle obtained most of the modern steamship trade of Ceylon, and it was a rare thing to see steamers lying in the Colombo roadstead. Its harbour was always regarded as dangerous owing to rocks and currents about the mouth, but it was preferred to the open roadstead of Colombo, and the P. & O. and other companies made use of it. To-day the port of Galle is comparatively small, but there is sufficient water for the largest ships though the harbour is somewhat difficult to make in rough weather. Point de Galle is situated in lat. 6° 1' N. long. 80° 13' E. its distance by sea from Liverpool being 10,168 miles, or by the Suez Canal, 6,740 miles.

**ACCOMMODATION.** The harbour can accommodate vessels drawing up to 27 ft. the entrance lying from 6 to 8 fathoms of water. Vessels are loaded and discharged by means of cargo boats for which there are three jetties, 230 ft., 250 ft., and 280 ft. long respectively, fitted with small cranes.

**ANCHORAGE.** The anchorage is in 5 to 6 fathoms, sandy bottom on the west side of the bay. Vessels calling for orders may anchor in 14 fathoms with lighthouse bearing N N E and distant from 1 to 1½ miles. Vessels making the port for cargo, coal, or stores will find good anchorage in the harbour itself, in from 5 to 6 fathoms. The area of anchorage has recently been considerably increased.

**LOADING.** Vessels coming to Point de Galle for orders should always enter it during the S.W. monsoon (that is from May to September) in preference to keeping under weigh outside, as they are liable to get to leeward, leaving their masters on shore.

**BUNKERING.** The coaling facilities here are poor, almost all bunkering being done at Colombo.

**PILOTAGE.**—All vessels entering or leaving the port pay on the following scale in rupees: of 600 tons and upwards, 30 00; 400 tons and less than 600, 22 50; 200 tons and less than 400, 15 00; 100 tons and less than 200, 11 25; under 100 tons, 7 50. Native vessels under 200 tons are free.

Vessels may enter the harbour only between the hours of 6 a.m. and 6 p.m., but they may leave at any hour if weather permits of lighting the buoys. Pilotage is compulsory.

**PORT CHARGES.** Vessels loading or discharging cargo above 10 tons or passengers, 8 cents per reg. ton, under 10 tons, free. Vessels in ballast, or calling for orders or coal, are free of port dues. In the case of mail steamers of whatsoever tonnage, the dues either inwards or outwards shall not exceed Rs 50.

**BALLAST.**—Sand, Rs 5 per ton.

**BILL OF HEALTH.** 10 Rs 50 cents.

**BOAT HIRE.**—This varies from Rs 0 62 for a boat of 2½ tons inside the harbour to Rs 5 for a boat of 10 tons outside.

**COMMISSIONS.**—On ship's disbursements, 2½ per cent.; collecting freight inward (and outward), 5 per cent.

**MOORING.**—Vessels are moored with stern hawsers supplied by the Government at Rs 5 per day. Laying down and weighing anchor, Rs 10.

**WATER.**—Fresh water at Rs 5 per ton from Messrs. Clark, Spence and Co.'s water-boat, delivered alongside vessel.

**PORT REGULATIONS.** The following are the more important regulations for the port of Point de Galle.

No vessel of above 100 tons shall enter the port or leave it, or move from one place to another within it, between sunset and sunrise without the permission of the Master Attendant. Mail steamers or other public vessels, should the public service require it, may on extraordinary occasions leave the port until midnight on application to the Master Attendant, who may give the necessary orders.

Masters of vessels shall furnish the Master Attendant and Collector of Customs with a list of all passengers arriving at, or about to embark from, the port on board such vessels.

Masters of vessels are required by law to attend the Custom House within 24 hours after their arrival and report their ships, whether bound for the port or only seeking shelter, by neglect of such requirement they subject themselves to a fine of Rs 1,000.

All vessels at anchor within the Port of Galle shall exhibit between sunset and sunrise, at a height not exceeding 20 ft. above the hull, a white light in globular lantern of 8 inches in diameter, and so constructed as to show a clear, uniform, and unbroken light visible all round the horizon for at least one mile.

No hawkers, touts, money changers, dhobies, bunboatmen, or dubashes shall be allowed on board of any vessel within the port without the consent of the commander of such vessel in writing.

No boats shall be moored to or between the jetties, or in the fairway leading to or from the jetties, except when actually engaged in loading or discharging cargo.

**TIDES.**—The rise and fall of ordinary spring tides is 2 ft.

**TRADE AND SHIPPING.**—Customs revenue collected at the Port of Galle during 1924 amounted to Rs 820,402, as against Rs 788,669 in 1923 and Rs 595,463 in 1922. Of the 1924 total, Rs 685,485 was derived from import duties on grain, which totalled 694,003 cwt. Exports of coconut oil aggregated 58,699 cwt., and of citronella oil 297,920 cwt. The number of steam vessels entered in 1924 was 85, aggregating 257,809 tons, while sailing vessels totalled 11 of 1,527 tons.

**BLACK, JOHN, & CO.**—Galle Agents for Asiatic Steam Navigation Co. Ltd. Cables: "Black," Galle Codes: A B C 5th Edition, Bentley's Bankers, Mercantile Bank, Chartered Bank, and Imperial Bank.

**COATES, E., & CO.**—Galle Export merchants, shipping, banking and insurance agents. London correspondents: J. H. Vavasour & Co. Ltd., 15, America Square, E.C.3. Cables: "Devonia," Galle Bankers, Mercantile Bank, Hongkong & Shanghai Bank, and P. & O. Banking Corporation.

**HAYLEY, CHAS. P., & CO.**—Galle Export and general produce merchants, insurance and estate agents. Cables: "Hayley," Galle Codes: A B C 6th Edition, Bentley's.

**MERCANTILE BANK OF INDIA LTD.**—Church Street, Galle. Acting agent: Mr. R. W. Stanes. Cables: "Paradise," Galle. (See also article following "Finance," in this section.)

**VOLKART BROS.**—Galle Exporters, shipping and insurance agents (Northern Insurance Coy. Ltd. and London & Lancashire Insurance Coy.). Cables: "Volkart," Galle Bankers. All Colombo banks. (See also article following "Commerce.")

## CITY OF NUWARA ELIYA

**C**EYLON'S far-famed health resort, Nuwara Eliya, is situated some 6,000 ft above sea level in the midst of a tropical and beautiful country. The plateau on which the town stands is surrounded by steep mountain ridges, in which there are four gaps—that on the north-east leading into Kotmale valley, that on the south-east to the province of Uva, that on the west to the Dimbula Valley, and that on the east to Kandapolla and Idapussellawa. The tops of these mountains are mostly covered with forest, and still provide good sport with the leopard and the elk. The Nuwara Eliya plateau is frequently referred to locally as the Sanatorium, on account of its restorative and health-giving properties. It is essentially a hot weather resort, the season lasting from January to May, February and March being the favourite months. Every variety of sport and amusement is offered to residents and visitors, and so beautifully situated is the town that the neighbourhood provides many delightful excursions either by motor-car or on foot.

**BOARD OF IMPROVEMENT.** The Local Board of Nuwara Eliya was abolished in 1895, and in its place a Board of Improvement was established consisting of the Government Agent of the Province, two official and three unofficial members appointed by the Governor with the Assistant Government Agent of the District as executive officer. Since 1924 the Board has consisted of five nominated members and five elected members, its powers and functions being much the same as those of the Local Boards. The revenue for 1924 amounted to Rs 139,407, compared with Rs 110,120 in 1923, and the expenditure to Rs 132,695, as against Rs 110,573. In 1896 the revenue and expenditure were Rs 23,533 and Rs 21,638 respectively.

**BUILDINGS.** The summer residence of the Governor is known as Queen's Cottage, and is surrounded by beautifully kept grounds. The more important public buildings are those of the Military Depot (Nuwara Eliya being the headquarters of the Command Staff during the hot season), the Kachcheri (Government Offices) and the Civil Hospital. To the north-west of the lake are the Keena Hotel and the Golf Club.

**CHURCHES.**—The Anglican Church of the Holy Trinity is the chief ecclesiastical edifice of Nuwara Eliya. It is charmingly situated not far from the railway station, is built in the late Gothic style and contains some very good stained glass. In Lady McCallum's Drive is the handsome Roman Catholic Church of St. Francis Xavier with the convent of the Good Shepherd adjoining.

**CLUBS.** The United Club admits both sexes, and is the chief social and sporting rendezvous of the town. It is well housed in a substantial building surrounded by spacious grounds, and includes a library, reading room, ball room and concert hall. In the grounds are golf links, and croquet and lawn tennis courts. The Hill Club offers comfortable accommodation for gentlemen only, and visitors are admitted as honorary members.

**FISHING.** The streams and lakes round Nuwara Eliya abound with trout (both rainbow and Loch Loven) and salmon. There is also carp fishing in Lake Gregory. A very successful fishing club attends to the requirements of visitors, having leased from the Government the rights to all waters at an elevation of over 5,000 ft above sea level.

**GOLF.** The premier attraction for visitors who are intent on playing games at Nuwara Eliya is golf. There are no less than three good courses. The Nuwara Eliya Golf Links of 18 holes provide a thoroughly sporting and really beautiful course, which is often referred to as the finest of its kind in the East, comparing favourably with many far better known links in Scotland and England. It is under the control of the Nuwara Eliya Golf Club, and has two pavilions, one for ladies and one for men. The rates of subscription are, for men, one day free thereafter, Rs 2 50 per diem, Rs 10 per week, Rs 30 per month, or Rs 50 per quarter; for ladies, Rs 1 per diem, Rs 5 per week, Rs 20 per month, or Rs 30 per quarter. The Ladies' Golf Course, though used by both sexes, is open only to members of the United Club. The Anderson Golf Course, some three miles out of town in the Moon Plains, has only recently been laid out, and promises to be one of the best in the island.

**HAKGALLA.** Six miles from Nuwara is the majestic rock of Hakgalla (so called from its resemblance to a human jaw), at whose foot nestles the Botanic Gardens, which are as beautiful in their contents as in their surroundings. Numerous experiments have been made in the acclimatisation of foreign trees and plants, and there is a unique collection of the fine native tree ferns, the favourite food of the wild elephant.

**HUNTING.** The Nuwara Eliya Hunt Club was established in 1917 and maintains a pack of hounds for hunting sambar during the open season (November 1 to May 31) and hare throughout the year, hounds meeting once a week.

**LAKE.** One of the most pleasant features of the Sanatorium is Lake Gregory, which has a surface of 142 acres, and round which is the Park laid out with beautiful avenues of cypress trees and gay flower beds.

**LIBRARY.**—There is a good subscription lending library at Platt's Bristol Studio, and libraries are also attached to the United Club and the Public Service Club.

**POPULATION.**—At the last census, taken in 1921, the total population of Nuwara Eliya was 7,525, of which 4,490 were males and 3,035 females.

**SCHOOLS AND COLLEGES.**—As befits a most popular residential centre, Nuwara Eliya has a large number of excellent and up-to-date educational institutions, foremost among which are the Nazareth School (R.C.) for boys and girls, Holy Trinity School and St. Agatha's School (C of E), St. Xavier's School (R.C.), and Haddon Hill School for European children only. This latter is preparatory for the English public schools. The Union School is undenominational, and there is a vernacular school attached to the Holy Trinity Church.

### VISITORS' GUIDE

**BANK.**—National Bank of India.

**CLUBS.**—United Club, Hill Club, Public Service Club.

**HOTELS.**—St. Andrew's, Carlton, Grand, Maryhill.

## OTHER CITIES AND PORTS

**ANURADHAPURA.** Anuradhapura, the "Buried City of Ceylon," is famous throughout the East for its ancient and most interesting ruins—the relics of a civilization which existed more than 2,000 years ago, when the city was the capital of a succession of kings. Its history is intimately connected with that of Buddha, and the building of the monuments for which it is so famous was directly due to the adoption of that cult by the Sinhalese nation in the third century B.C. The city was founded by King Pandukabhaya in 437 B.C., and called after the name of the constellation Anuradha. It became the capital of Ceylon in the fourth century B.C., and attained its highest magnificence about the commencement of the Christian era. It suffered much during the earlier Tamil invasions, and was finally deserted as a royal residence in the 9th century.

During the last 40 or 50 years Anuradhapura has developed from a small village to a

prosperous and healthy town, and it is now the centre of an important agricultural district. The population in 1921 was 7,781.

**SACRED PLACES.** There are at Anuradhapura eight Sacred Places regarded with the greatest veneration by all Buddhists. These are the Bo Tree, the Brazen Palace, and the Abhayagiriya, Jetavanarama, Lankarama, Muiswetiya, Ruanwelli, and Thuparama Dagobas, a dagoba being a bell-shaped construction, more or less magnificent, erected over some relic of Buddha or a disciple. The sacred Pipal or Bo Tree (*Ficus religiosa*) is probably the oldest historical tree in existence, though only a fragment of it now exists. It was originally brought as a branch of the bo-tree under which Buddha sat and was planted about 240 B.C., since which time it has been tended by an uninterrupted succession of guardians. The Brazen Palace is a famous nine-storeyed monastery erected by King Dutthagamani, 161 B.C., of which the most interesting

remains are the 1,000 stone pillars about 12 ft. high, and only a few feet distant from each other arranged in forty parallel rows. Of the six large dagobas mentioned, the largest is the Abhayagiriya (Mount of Safety) dating from about 300 A.D., which stands on a great paved platform eight acres in extent, and the bricks of which have been reckoned sufficient to build an English town the size of Ipswich or Coventry, or a wall 16 ft. high from London to Edinburgh. Another interesting dagoba, the Temple of the Tooth, contains a relic highly venerated, and, indeed, the monastic buildings of Anuradhapura are almost countless, as are the elaborate "pokunas" or water tanks. Eight miles east of Anuradhapura is Mihintale, an interesting centre of Buddhist pilgrimage, noted for its huge dagobas and Mahinda's Bed, the cell occupied by the apostle of Buddhism in Ceylon.

**BADULLA.** This is the capital of the Province of Uva, and one of the oldest and

most attractive towns in Ceylon. The situation is a fine one, the town lying in a hollow entirely surrounded by green paddy-fields, and in the vicinity of a river, with mountains in the background. Badulla, the population of which is over 8,000, has, besides the usual Government buildings, a handsome market, a hospital, a church erected to the memory of Major Rogers, and a pretty racecourse. The fine Dunhinde Waterfall is only a few miles away.

**BATTICALOA.**—This is a small port on the east coast, with few facilities, vessels anchoring in the roadstead and discharging by means of boats. At the time of the north-east monsoon there is good sheltered anchorage at Kalkudah, 13 miles to the north.

During 1924 there were 137 arrivals at and the same number of departures from the port, the revenues of which amounted to Rs 21,195, as against Rs 17,333 in 1923. Exports are chiefly coconuts, paddy, rice, tobacco, locally made cotton goods, ghee, grass bags and baskets and timber.

**CHILAW.**—In the North-Western Province, Chilaw has one of the largest Roman Catholic churches in Ceylon and there is an interesting Hindu temple in the neighbourhood. Population, 6,642.

**GALLE.**—See separate article.

**HAMBANTOTA.**—This small town and port is on an open bay of the south coast. Here are the headquarters of the district, the Assistant Agent's residence, the Kacheri, Court-house, etc. The port is only used by the island steamers and coasting vessels, and has no foreign export trade.

**JAFFNA.**—The port of Jaffna is on the north coast, and is connected with Ceylon by railway. The town, which is a large and flourishing one of some 42,000 inhabitants, is the seat of a Roman Catholic bishop, and also the seat of the Government Agent of the Northern Province. There is not much foreign trade, but considerable local exports of avaram bark, cuttle-fish bones, tobacco, palmyra timber, bêche-de-mer, coconuts, dried fish, honey, and salt. The old Dutch fort, of great size, is in perfect preservation, and is a splendid specimen of 17th century fortification. The Governor has a residence here, and there are some interesting Dutch buildings, as well as Hindu temples. Jaffna is noted for its mangoes, and there is a considerable fishing industry in turtles and bêche-de-mer.

**KAITS.**—This place is situated on the northern side of the island of Velanai, and is an open port throughout the year. It is especially used during the N.W. monsoon season, when there are from 30 to 40 vessels in the anchorage at one time. The quarantine station for the port is at Fort Hammonheil, and small coasting vessels can be hauled up and repaired there. Pilotage is not required. The principal exports are palmyra timber and tobacco.

**KALUTARA.**—This is an important town in the Western Province, with a population

of 13,596. The station is approached by a fine iron bridge, 1,200 ft long, over the Kalu Ganga. Kalutara is a good starting point for many excursions, and the country round is famous for its shooting. Plumbago, or graphite, is mined in the district.

**KANKESANTURAI.**—A small open roadstead, 14 miles north of Jaffna, Kankesanturai is the chief port of call for steamers during the north-west monsoon. Two stone piers, in ruins, are on the beach on the western one of which a lighthouse is built. There is a small wooden pier which can be used by boats during the S.W. monsoon. Coal is obtainable, and from 350 to 400 tons can be loaded in 24 hours.

**KURUNEGALA.**—The chief town of the North-Western Province, Kurunegala is situated at the back of a curiously shaped chain of rocks, known as Elephant Rock, Tortoise Rock, Iel Rock, etc. From Ettagala, or Elephant Rock, an enormous black boulder over 1,000 ft in height, a grand view is obtained. Twelve miles south-east of Kurunegala is the Ridi Vihare, an ancient Buddhist Monastery which contains a large and rare collection of ancient ola (palm-leaf) volumes of the Buddhist Scriptures. The population of Kurunegala at the 1921 census was 10,187.

**MATARA.**—A large and flourishing town of 17,000 inhabitants, Matara is known as the birthplace of Sir Henry Lawrence (1806) and Sir George Lawrence (1805), and is a residential centre for wealthy Sinhalese families. There is a noted Buddhist hermit age, Chula Lanka, here.

**MORATUWA.** On the main line from Colombo to Galle, this town is famous for its wood-carving, and has a population of 28,608. There is a large Sinhalese College here.

**NEGOMBO.** A thriving town of 21,349 inhabitants in the Western Province, Negombo is picturesquely and singularly situated among lagoons and canals. It was founded by the Dutch, and there still remain a Dutch gateway, dated 1672, and an old Dutch House built ten years later, which is now occupied by the Deputy Judge. The brass work of Negombo is celebrated, and the place is famous for its crabs and prawns.

**PUTTALAM.**—With a population of 7,000, Puttalam is noted for its salterns, the salt from which is conveyed by canal to Negombo and Colombo. The Court-house here was designed by Sir Arthur Gordon (Lord Stanmore), when Governor.

**RATNAPURA.**—This, the City of Gems, is the capital of the province of Sabaragamuwa, and is situated in the midst of some of the finest scenery in Ceylon, the best views of Adam's Peak being obtained from here. The population is 7,000, and the place derives its importance mainly from the industry in gems, sapphires, topazes, and cat's-eyes being those most commonly found in the neighbourhood. The Maha Saman

Dewale, one of the richest Buddhist temples in Ceylon, stands a mile or more west of Ratnapura.

**TRINCOMALEE.**—"There are," it has been said, "some five or six magnificent harbours in the world, and Trincomalee is one of them." Situated on the north-east of the island, it faces the Bay of Bengal, and overlooks the whole eastern coast of India. The entrance, which points south-east, is guarded by two projecting headlands, approaching to within about 700 yards of each other. When it is remembered that the monsoons blow from the north east and south-west, the importance of this is obvious. These two rocky headlands have a beautiful effect upon the landscape, which is made up of a placid expanse of water dotted with wooded islets which seem to float on its surface, rich tropical forest covering the hills that border its coasts, and a distant background of lofty mountains. The form of the harbour is irregular, and the numerous indentations of its coast line supply many a charming feature. Some of the islands are romantic in appearance as well as by association, notably Sober Island, once the favourite resort of the officers of the East Indies Squadron, who built a ward room, a billiard room and gun room upon it.

Trincomalee was once regarded as a very important naval station, and as such it was strongly fortified, but as a commercial port it has not developed, for the simple reason that the cinnamon trade, so attractive to the early colonists, could only be carried on at Colombo, and the importance which the latter harbour has attained as a junction and a port of call has seriously diminished that of Trincomalee. The Ceylon Steamship Co.'s vessels call here weekly.

Trincomalee was one of the earliest settlements of the Tamil race in Ceylon. Where Fort Frederick now stands they built a great temple, which was destroyed in 1622 by the Portuguese, who used the materials to build the fort. The site is still held in great veneration, and every week a Brahman priest, in the presence of a large crowd, throws offerings into the sea from a ledge near the summit of a huge precipice of black rock. The Mahaweli-ganga, the largest river in the island, taking its rise near Adam's Peak, discharges at Trincomalee. Good shooting is to be had in the neighbourhood, and at Kanniya, 6 miles away, are hot springs.

The total revenue of the port for 1924 was Rs 25,419, an increase of Rs 6,308 over the revenue of 1923. Vessels from foreign ports entering the harbour were 38 in number, with a tonnage of 48,915 tons, while vessels clearing for foreign ports numbered 34, with a tonnage of 52,482 tons.

**WEILIGAMA.**—This is a town of some 9,000 inhabitants on the coast of the Western Province, 91 miles south of Colombo. At the entrance to the town, on the right hand side of the high road from Galle, is a remarkable rock-cut colossal statue of a Sinhalese King in perfect preservation. This statue is known as the "Lepet King."



# TRANSPORT

## SHIPPING

### SHIPPING

**C**ALLE was the chief commercial port of Ceylon until the development of Colombo Harbour, which superseded the former in point of importance towards 1889. Among the other ports of the island are Lalaimanar, Trincomalee, Jaffna, Hambantota, Batticaloa, Kankasanturai, Kaits, Point Pedro, Bereuwala, and Valvedditturai. Trincomalee, which is one of the finest natural harbours in the East, and the old naval base of the East Indies Squadron, is now being linked up by railway.

**PASSENGER LINES.**—Among the better known lines which maintain a regular service with Colombo are the following—

Bibby Line, between England and Rangoon, via Colombo and vice-versa. Only saloon passengers are carried, steamers sailing from Liverpool and calling at Marseilles and Port Said.

Commonwealth Government Line of Steamers between Australia and Europe. A more regular service with Ceylon is likely to be maintained in accordance with the growth of traffic.

Messageries Maritimes Service, between France and the Far East.

Nippon Yusen Kaisha (Japan Mail Steamship Co.), between the Far East and Europe.

Orient Line of Royal Mail Steamers, between Australia and Europe.

P & O and B.I.S.N. Co. Lines, between England and Australia, China, and Japan.

**MOVEMENT OF VESSELS.**—The following table shows the total net tonnage of all classes of shipping entered at Ceylon ports during 1924.

Merchant vessels (with cargo and in ballast)	2,599	9,196,469
Merchant vessels (called to coal or oil)	365	1,195,543
Native sailing vessels	836	81,131
Warships and transports*	58	176,414

Totals . . . . . 3,858 10,649,557

\*Warships' displacement tonnage.

In 1923 the number of vessels entering was 3,677, with a tonnage of 9,602,984. Of these, 2,339 were merchant vessels (with cargo and in ballast), while 387 merchant vessels called to coal or oil. Native sailing vessels totalled 901, and warships and transports 50.

In 1924, 3,816 vessels cleared, with an aggregate tonnage of 10,599,766, as against 3,630 vessels, of 9,566,773 tons, in 1923.

The share of the United Kingdom in the shipping trade of Ceylon during the two years named is shown in the following table.

ENTERED	1923	1924
Number of vessels	258	284
Tonnage ..	1,328,563	1,498,806
CLEARED		
Number of Vessels	183	180
Tonnage ..	851,930	856,485

The number and tonnage of all steam vessels (excluding those calling to coal and oil, warships, transports, and coasting craft) which entered at Ceylon ports in 1924, according to the national flags flown, were as under:—

NATIONALITY	NUMBER	1924 TONS
British ..	1,768	5,732,009
British Colonial ..	836	81,131
Total British Vessels	2,604	5,813,140

## RAILWAYS

NATIONALITY	NUMBER	1921 TONS
American	38	197,543
Danish	19	53,721
Dutch	181	785,155
French	133	631,527
German	129	514,071
Italian	76	288,394
Japanese	170	789,885
Norwegian	51	98,854
Panamanian	1	7,990
Russian ..	1	2,953
Spanish	10	38,021
Swedish	16	56,346

Total Foreign Vessels 831 3,464,460

**SHIPPING BY PORTS.**—Following was the distribution as to ports of the steam vessels (excluding those calling to coal and oil, warships, transports, and coasting vessels) entered at the ports of Ceylon in 1924.

	No	TONNAGE
Colombo	2,123	8,788,562
Lalaimanar	374	98,165
Galle	85	257,899
Trincomalee	11	40,385
Jaffna	4	8,053
Kankasanturai	2	2,805
	2,599	9,196,469

Of sailing vessels (excluding coasters) entered at Ceylon ports in 1924, they were distributed among the various harbours as follows:—Colombo, 286; Kaits, 273; Point Pedro, 56; Kankasanturai, 46; Jaffna, 37; Lalaimanar, 35; Bereuwala, 34; Trincomalee, 26; Valvedditturai, 16; Batticaloa, 12; Galle, 11; and Mannar, 4.

## REPRESENTATIVE ENGINEERING, SHIPPING, EXPORTING AND IMPORTING FIRMS

### HOARE & CO. (ENGINEERS) LTD.

**Activities.**—This prominent firm, with engineering works and showrooms at Colombo, carries on business as marine, manufacturing and general engineers, machinists, boiler-makers, fergemasters, constructional ironworkers, barge, launch and boat builders, ship repairers, iron and brass founders, motor engineers, builders and contractors, general machinery and hardware merchants, manufacturers of Hoare's improved steam pumps, steam and hand winches, tea and rubber machinery, and woodworking machinery. Messrs Hoare & Co. are also sole manufacturers of Cameron Wilkin's (patent) latex spouts and cup-holders, and of several patented mechanical accessories for use in tea, rubber, and coconut factories. The company is on the Admiralty list for refits and repairs to H.M. ships and transports, and on Lloyd's and the War Office lists.

**Engineering Work.**—Every kind of engineering work is undertaken by the firm, and a speciality is made of repairs, estates' electrical and wiring work, building, drainage and water works contracts, hydraulic installations, marine and salvage operations, electric and oxy-acetylene welding, and all work connected with Diesel, internal combustion, gas and automobile engines, etc. Messrs Hoare & Co. are also licensed boiler inspectors, and undertake operations as distillery engineers, coppersmiths, plumbers

## ROAD AND WATER

and sheet metal workers, blacksmiths, patternmakers, millwrights and machinists, and as motor launch builders and repairers, in addition, the firm has always on hand a stock of machinery and stores suitable for ships, mills, mines, factories, estates, etc.

**Agencies.**—Messrs Hoare & Co. are agents for Crossley Bros Ltd (oil and suction gas engines and gas producers), Premier Gas Engine Co Ltd (large suction gas engine), Jno Hy Andrew & Co Ltd (steels, tools, etc.), William Briggs & Sons Ltd (roofing and bituminous paints), Shipowners' Compensation Co Ltd ("Greyhound" brand ship's anti-corrosive, anti-fouling and all ironwork paints), Sanderson Tractor & Implement Co Ltd (tractors and implements), Stanrocks Patent Bridge & Engineering Co (lift bridges for natural and forced draught), Daimler Co Ltd (cars and lorries), Crossley Motors Ltd (cars), Filling Stevens Motors Ltd (commercial motor vehicles), Mulcott Belting Co Ltd (camel hair and solid woven cotton belting), Tuck & Co Ltd (packing, jointing and rubber goods), Creswells Ltd (brake and clutch linings), Johnson Pickett Rope Co (Manila ropes), Vislok Ltd (Vislok nuts), Hoare & Sons (monumental and ecclesiastical designers and sculptors).

**Directorate and Staff.**—Permanent directors: H. J. Hoare, M.I. Mech. E., J. M. Dick, M.I. Mech. E., and H. J. Adkins.

Engineers: H. J. Hoare, M.I. Mech. E. (chief engineer), J. M. Dick (works manager), J. Sheldon, W. J. Le Petit, R. Dick, F. E. Coupland, W. P. McNicol, S. Le Fenve, G. W. Pask (harbour engineer), H. J. Adkins, Gordon Hoare, J. C. Gibson (general offices), W. Steel (stores).

**Offices and Works.**—Registered office: 70, Old Broad Street, London, E.C. 2. London Buying Office: 10, New Broad Street, E.C. 2.

In Colombo the Engineering Works are at Price Park, the Showrooms are opposite the National Bank of India Ltd, in Gaffoor Building, Fort, and the Harbour Office in Victoria Arcade.

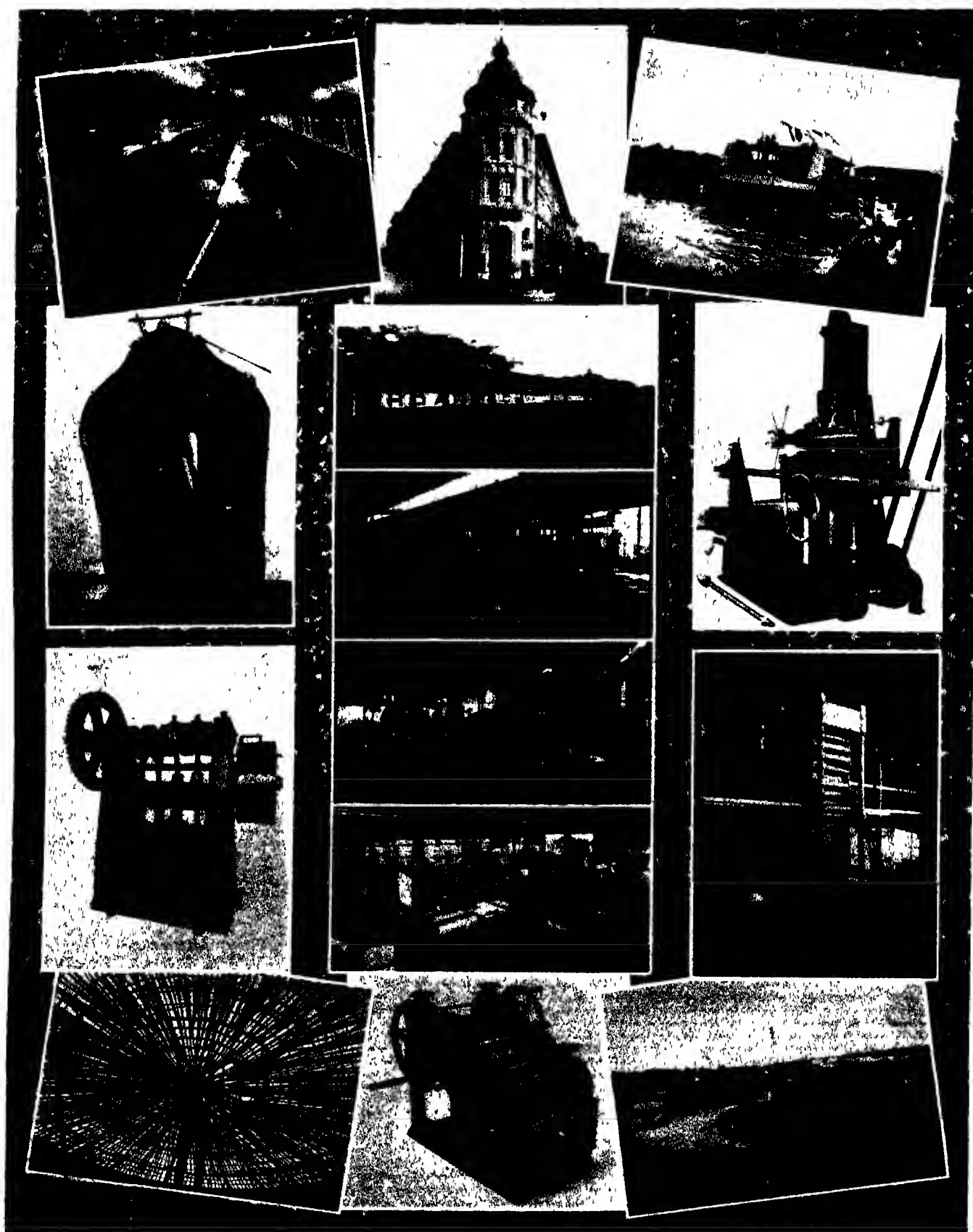
**Cables:** "Hoare & Co." Colombo, and "Hoare & Co." London (Codes: A B C (5th and 6th Editions), Bentley's Engineering Telegraph (2nd Edition), and Private (See illustration page 56)).

### CARSON & CO. LTD.

**Inception.**—Established in 1857, this firm has many interests in Ceylon, the principal of which are its tea, rubber and coconut estates, the area under the control of the company being about 100,000 acres.

**Activities.**—Apart from their very extensive interests in tea, Messrs Carson & Co. hold important shipping agencies, representing the Bibby Line, the Nippon Yusen Kaisha (Japan Mail Line), the White Star Line, the Yamashita S.S. Co., etc. They are also largely interested in the coal bunkering trade, and represent the coaling business of Andrew Weir & Co. and Mitchell Cotts & Co. The London representatives of the firm for bunkering are Phis Van Ommeren (London), Ltd, of Baltic House, Leadenhall Street, E.C., and J. McLaren & Co., of 127, Fenchurch Street.

**Exports.**—Ceylon tea has no superior for quality, flavour and strength, and Colombo as a port is admirably situated to distribute it to the world's markets. The export



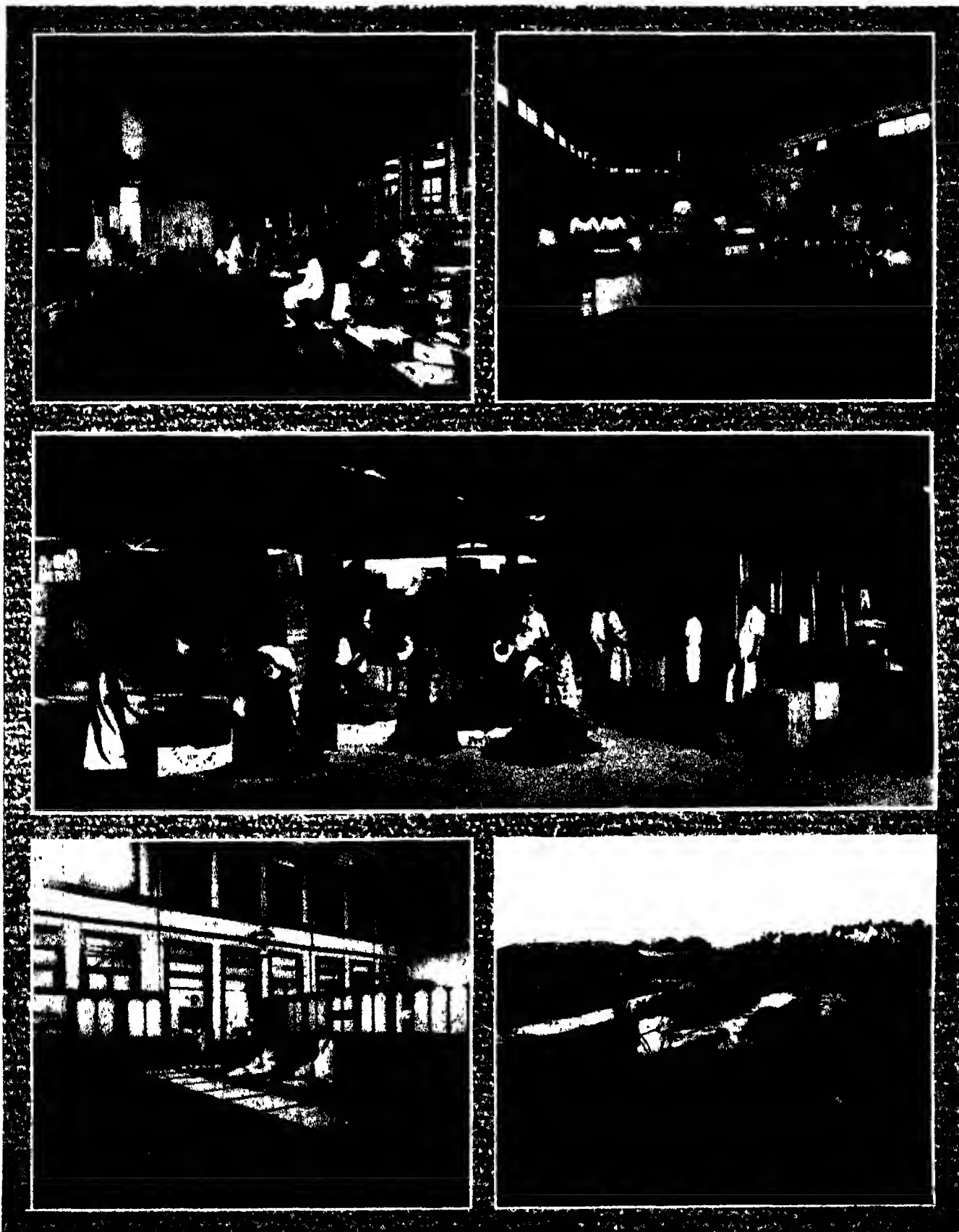
HOARE & CO. (ENGINEERS) LTD., Colombo.

1. A.P.O.C. Barge Deck View.
2. S.S. "Niels Nielsen."
3. Hydraulic Pump.
4. Admiralty Tank Roof.

5. View of the Showrooms.
  6. View of the Works.
  7. Part of Boiler Shop.
  8. View of Machine Shop.
  9. View of Roller Shop.
  10. Multiple Rubber Roller.
- (See letterpress, page 55)

11. Dipper Dredger.
12. Boring Machine.
13. Hydraulic Baling Box.
14. Admiralty Tank Bottom.



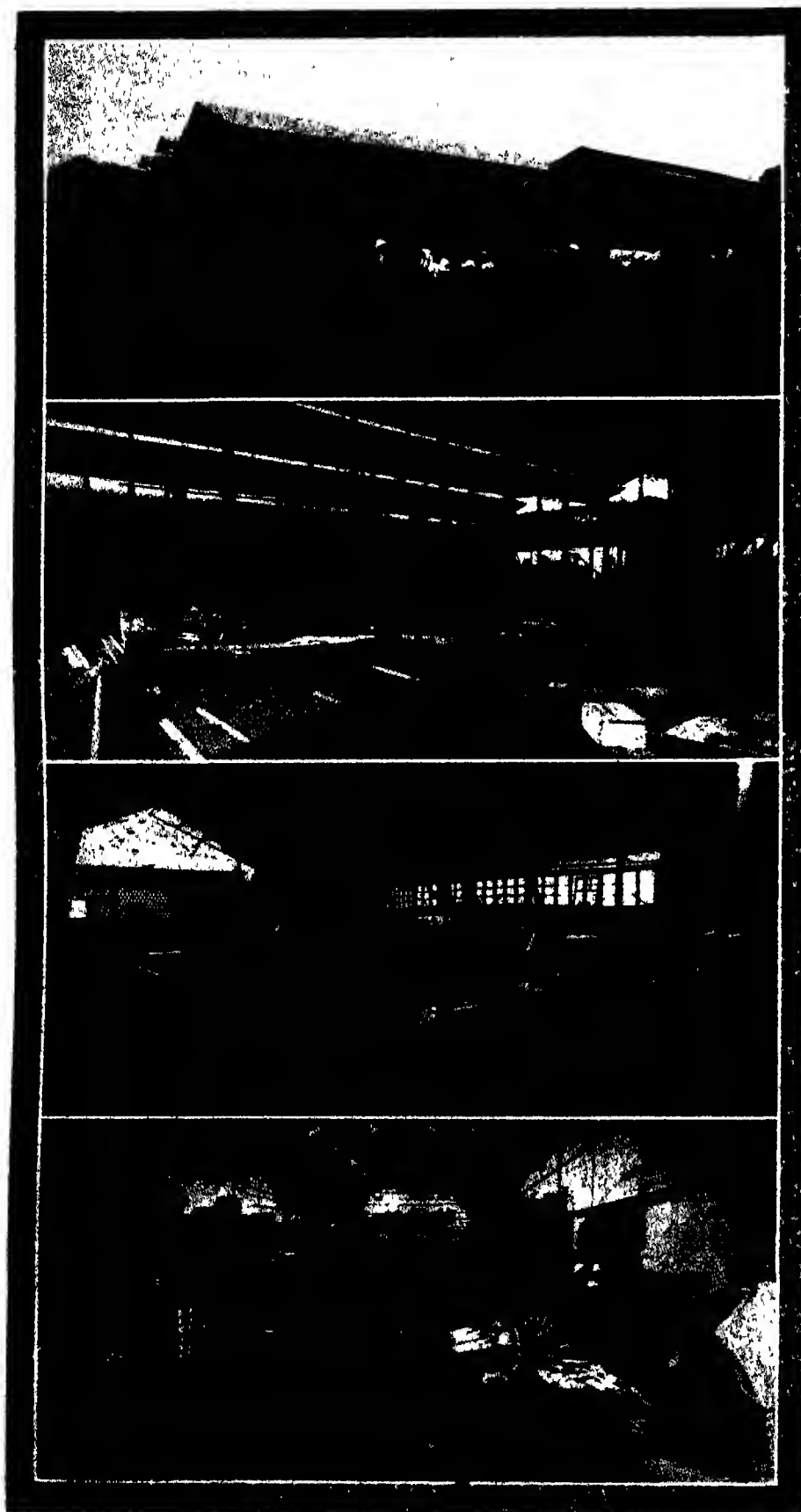


1. Tea Sample Room.  
4. Shipping Department.

CARSON & CO. LTD., Colombo.  
Centre. Rubber Warehouse.

2. Tea Warehouse.  
5. Coal Depot.

(See letterpress, page 58.)



WALKER &amp; GREIG LTD., Colombo.

1. Exterior of Large Workshop.
2. View of the Workshop.
3. The Carpentry Section.
4. View of the Stores.

department of Messrs Carson & Co Ltd, is chiefly interested in the export of tea, but also deals largely in rubber, desiccated coconut, and in a lesser degree coconut oil

**TEA**—The following are undertaken by qualified tea tasters (1) Reports and valuations on any estate teas, (2) Buying for any market, (3) Criticisms and reports with regard to manufacture, (4) Selling and valuing tea for sale by auction and (5) Packing, shipping, and blending for export, the firm shipping to South Africa, America, New Zealand, Canada, Australia, Straits Settlements, the United Kingdom and the Continent

**RUBBER**—This is one of the chief exports from Ceylon, and as dealers Messrs Carson & Co handle all grades, the following being undertaken by the firm (1) Reports and valuations rendered, (2) Criticisms and reports submitted with regard to manufacture, (3) Buying, grading and shipping, and (4) Selling and valuing for sale by auction

**DESICCATED COCONUT AND COCONUT OIL**—The company is favourably placed for the export of these articles, as it has its own desiccating and oil mills, where most of the produce is marked packed and shipped direct The following are manufactured (1) Desiccated coconut—fine, medium, coarse, chips, thread, strips, and (2) Oil—White coconut oil, ordinary coconut oil, and paring oil The firm ships these commodities to all parts of the world

**Estates Department**—The management of estates, including shipment or sale of crops, is undertaken on advantageous terms, and experts connected with the agency are always available to provide reports on and valuations of properties Carson & Co are agents and secretaries and/or managing agents for the following companies and estates —

**COMPANIES**—Grand Central (Ceylon) Rubber Estates, Nagolle (Ceylon) Rubber & Tea Plantations, Doloswella Rubber & Tea Estates, Dangan Rubber Estates, Ceylon Cocoa & Rubber Company, Hunuwella (Pelmadulla) Rubber Co, Avington Tea & Rubber Company, Selmsing Rubber Company, Kuttapitiya Tea & Rubber Co, Udabage Tea & Rubber Co, Kandyan Hills Company, Kelani Tea Garden Co, Sittawaka Tea & Rubber Co, Hinwerella Rubber Company, Lansdowne Rubber Company, Weniwella Rubber Company, Opalgalla Tea & Rubber Estates, Stratheden Tea Co, Tannahena Rubber Estates, Bopitiya Tea Estates, Watapota Rubber & Tea Estates, Rohgill Tea Company, Ceylon Hemp & Produce Co, Gona Adika Tea & Rubber Co, Marigold Tea Estates, Abbotsleigh Tea Co (1899), Mapalagama Rubber Estates, Tientsin Tea Estate Company, Battalgalla Estates, Brae & Chingoor Tea Estates, Dorpet Rubber Co, Poonagalla Valley Ceylon Co., Hornsey Tea Estate Company, Mount Vernon (Ceylon) Tea Co

**ESTATES**—Ambanpitiya, Agra Elbedde, Atherton, Anganaketiya, Agra Oya, Bokkawala, Bossward, Brindaban, Badugama, Bibileoyatenne, Barigoda, Bramley, Broughton, Braughing, Blinkbonnie, Ballagalla Ella, Berna, Batakande, Cattaratenne, Danwalakatuwa, Dicklande West, Daigalla, Danawakande, Dromoland, Dolutenne, Etambahena, Epping Forest, Ernest Valley, Elsmore, Elwalapitiya, Footprint, Gonawilla, Gulanegoda, Great Valley, Galkuwa, Hanguranketta, Halpe, Haragama, Heavana, Hapugastenne, Halwatte, Henfold, Hylton, Hindugalla, Henduwawa, Ilwana, Jonsell, Je-eja, Katukenda, Keenakelle No. 3, Keenakelle No 6, Kusala, Keenakelle Grp, Katukenda (T.R.), Kekiriskande, Kohilawa-

gura, Kadirane, Kinyama, Kosina, Kongoda, Kumbaduwa, Lewelle, Lyndhurst, Maoya, Mary Mount, Mordennus, Mahayaya, Massena, Marion, Makuluwewa, Mapitigama, Mousagalla, Maharapolla, Mudukatuwa No 4, Munuwa, Nugahena, Nella Oolla, Nathandiya, Ninfield, Olahoduwa, Paradise, Palagalla, Peelakande, Palasola, Pingarawa, Phoebeband, Ratmalane, Silver Dale, St Ives, St Aubins, St John Del Rey, Sirisuman, Sir Visto, Tillai, Tellisford, Trosley, Talangaha, Unuwinne, Waterloo, Watagala, Walaboda, Wallawe, Yakdesa.

**Directorate.**—Messrs W Shakspeare, H C Bibby, Sir James Lochore, Messrs A Warden, W Coombe, R A Sharrocks, and M L Hopkins.

**Offices.**—Australia Buildings, York Street, Fort, Colombo Cables "Carsons," Colombo Codes Scott's Universal, A 1, A B C (5th and 6th Editions), Watkin's and Bentley's.

**Bankers.**—National Bank, Chartered Bank, Mercantile Bank, Hong Kong & Shanghai Bank, Eastern Bank, and Imperial Bank of India (See illustration, page 57.)

#### WALKER & GREIG LTD.

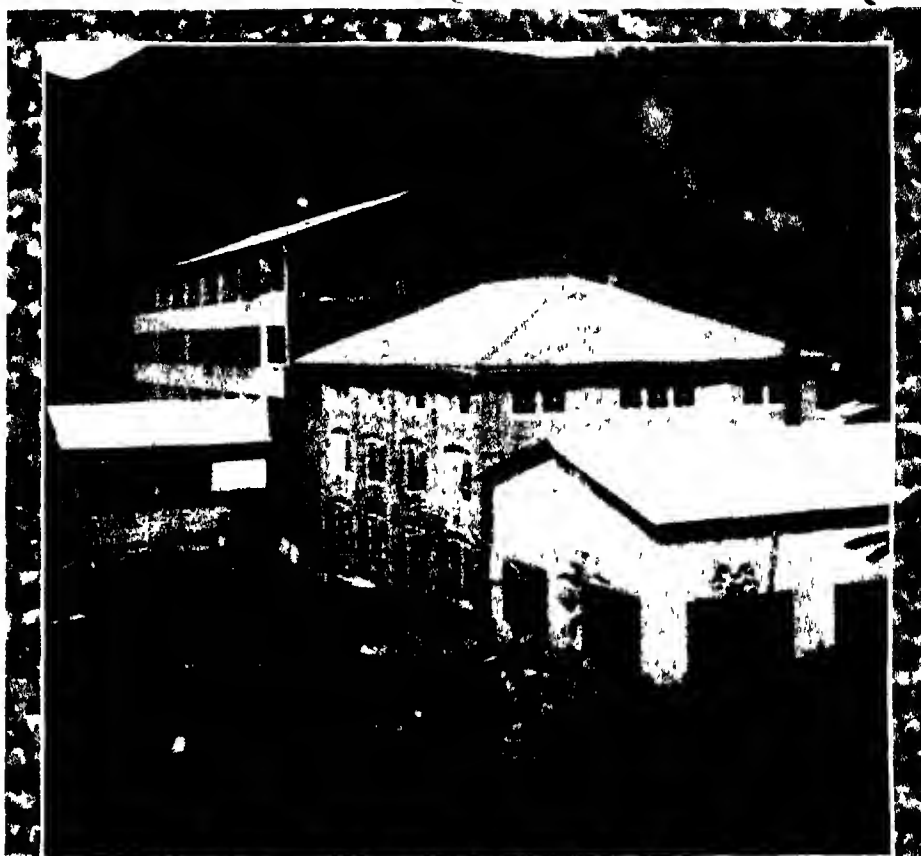
**Inception and Development.**—This firm was first established in 1857 by the late Mr John Walker, who was afterwards joined in partnership by Mr Andrew Greig. In 1910 the concern was formed into a limited liability company, with Mr John Walker's son of the same name, as managing director, and with its head office at Dikoya. In 1913 workshops and offices were acquired in Colombo, and the head office of the company was established there. Mr. John Walker (junr) acted as managing director from its inception to February 1925, when he left the Island, and Mr J S Collett acquired his interest, being appointed chairman and managing director.

**Early History.**—When the company commenced business the railway from Colombo only ran 87 miles inland. During the initial operations the firm, apart from trading as engineers, laid itself out to cater for the wants of residents isolated from main centres, but as transportation facilities increased and the railways spread further inland the general supply business was gradually dropped, and the company specialised in engineering and general constructional work.

**Activities.**—The firm acts as engineers, general importers of estate supplies and sundries, aerial ropeway specialists, importers of Dennis motor lorries, builders and contractors specialising in the building of tea and rubber factories, manufacturers of the Walker & Greig tea sifter (a patent of the company), specialists in the construction of hydraulic power schemes for driving factories, etc. The firm is also in a position to look after the mechanical needs of both tea and rubber planters, especially as it has branches located throughout the Island.

**Colombo Works.**—These cover an area of 5 acres, and employ 420 hands. They have every modern facility, including a lathe which can turn shafting up to a length of 26 feet. The works are divided into engineering, wood-working and stores departments. The latter department has everything in stock for the equipment and supply of tea and rubber estates. The wood-working department specialises in the building of lorry bodies for the Dennis motor lorry chassis which the firm imports, and the construction of tea bins and all woodwork required for the building of factories and bungalows.

**Contracts.**—Some of the more important contracts recently carried out are the construction of two hydraulic power installations



WALKER & GREIG LTD, Colombo.

1. Building new tea factory over old and obsolete plant without interfering with factory operations.
2. New tea factory from other end.



AITKEN SPENCE & CO., Colombo.

1. Accounting Department.
2. Lloyds Building: The Property of the Company.
3. Shipping Office.

4. Warehouse at Colombo.
5. Company's Fine Tea Warehouse.
6. Another View of Warehouse.
7. Preparing Opens for Export.

for driving tea factories at Cartmore Falls and Hatherleigh, also the building of numerous new tea factories over old ones. The latter contracts are a type of constructional work that the company specialises in. Firstly it builds the power house, and then commences on the far end of the new factory building, gradually enveloping the old building, everything being done without stopping work.

**Stock.**—The company carries sufficient material on hand to build and fully equip with machinery and appliances six complete factories.

**Staff.**—As well as the general staff of employees, the firm has 22 certified engineers and a number of draughtsmen, who design buildings, ropeways, turbines and peltons.

**Patent.**—The company manufactures its own tea sifter, which is supplied to estates throughout Ceylon, India, and Java.

**Colombo Address.**—Waverice House, Slave Island.

**Branches.**—These are at Badulla, Dickoya, Haputale, Lundula and Illicoultry. Each one is fully equipped, and is in a position to act as a service station for the planters in its particular district.

**Representations.**—The company is agent in Ceylon for the following firms:—Norris, Henty & Gardners Ltd, Gandy's Belting Co Ltd, J. M. Henderson & Co Ltd (aerial ropeways), Allan, Whyte & Co Ltd (wire ropes and shoots), John Yates & Co Ltd (estate tools), Carrion Ironworks, Vernoleine Paint Co Ltd, Strathclyde Paint Co Ltd, Adolphe Crosbie Ltd, W. Gunther & Sons, Martin Lark & Co Ltd (cement), Bührings Water Purifying Co Ltd (water filters), Dennis Bros Ltd, Planters Engineering Co Ltd, Darlaston Galvanising Co Ltd, Ruston & Hornsby Ltd, Lincoln and F. S. Hindley, Dorset.

**Directors.** Messrs J. S. Collett (chairman and managing director), R. Mylius, W. Benzie, W. Pole-Fletcher, S. P. Hayley.

**London Representative.**—H. Kemish, 11 Mech L., 30, Basinghall Street, E.C.

**Bankers.**—The National Bank of India Ltd.

**Cable Address:** "Reklaw," Colombo (See illustration, pages 58 and 59.)

#### AITKIN SPENCE & CO.

**Inception.**—The firm of Aitkin Spence & Co. was founded in 1870 by Messrs Edward Aitkin and P. G. Spence.

**Activities.**—Messrs Aitkin Spence & Co. are general merchants, importers, exporters, coaling, insurance, estate and steamship agents, and representatives for various other concerns, notably for Lloyd's and the Salvage Association, London.

**Exports.**—During the years in which the plumbago industry was in a prosperous state Messrs Aitkin Spence & Co. were the largest exporters of the product in Ceylon, and at the present time, in addition to that article, they export regularly to all parts of the world large quantities of tea, rubber, coconut oil, desiccated coconut, copra, fibre, coir yarn, cocoa, cinnamon, citronella and cinnamon oils.

**Imports.**—Apart from its extensive export business, the firm is also a general importer on an extensive scale.

**Agencies.**—Messrs Aitkin Spence & Co., besides being the representatives for Lloyd's and the Salvage Association, London, are also agents for a large number of important concerns as follow: Corporation of Lloyds, London; Salvage Association, London; Bombay Burmah Trading Corporation; East Asiatic Co. Ltd., Copenhagen; Hatton Bank

& Agency Co.; Shalimar Rope Works Ltd., Calcutta; Shalimar Tar Distillery & Waterproof Manufacturing Co. Ltd., Calcutta; American & Indian Line of Steamers, American & Manchurian Line, Asiatic Steam Navigation Co. Ltd., Ben Lane Steamers, "City" Line, East Asiatic Line, Ellerman & Bucknall Steamship Co., Hall Lane, Northern Steamship Co. Ltd. of Petrograd, Oceanic Steamship Co., Russische Baltische Dampf Ges., Riga, Stoomvaart Maatschappij "Nederland", Stoomvaart Maatschappij Rotterdamse Lloyd, Royal Insurance Co., Queensland Insurance Co., Yangtze Insurance Association, Eagle Star & British Dominions Insurance Co., Ceylon Consolidated Estates (1920), Ceylon Estates Investment Assn., Cranley Tea Estate, Dickwella Tea Co., Doolgalla (Ceylon) Rubber Estates, Northumberland (Ceylon) Rubber and Tea Estates, P. P. K. (Ceylon) Rubber Estates, Rubber Securities, Burton, Wyamita & Kingma Estates, Dickwella Tea & Rubber Estates.

**Agents and Secretaries.**—Besides the important representations just enumerated, Messrs Aitkin Spence & Co. also act as agents and secretaries in connection with the following: Ceylon Coconut Co. Ltd., Dependence Tea Co. Ltd., Horawala (Kahitara) Rubber Co., Kendawe Tea & Rubber Co., Kinniersley (Kahitara) Rubber Co., Lassahena Rubber Co., Mayen (Ceylon) Tea & Rubber Co., Meall Mor (Ceylon) Estates, Neuchatel Estates, Panama (Kegalle) Rubber Co., Ullswater Rubber Co. of Ceylon, Usk Valley (Kahitara) Rubber Co., Motor Launches Ltd.

**Partners.**—The partners of the firm are Messrs W. E. Moncrieff Paterson, B. W. C. Lee, Ian W. Aitkin, J. J. Dickson, R. W. Fowke and R. D. Kenyon.

**Offices.**—At Colombo, Aitkin Spence & Co., Prince Street, Fort, at Galle, Clarke Spence & Co., and in London, Spence Walls & Co., 17, Philip Lane, E.C. 3. In New York the firm is represented by Mr. L. F. Chevalier.

**Cables:** "Aitkin," Colombo.

#### HULL, BLYTH & CO. (COLOMBO) LTD.

**Inception.**—This company was established in Colombo over thirty years ago to carry on business as coal depot proprietors and steamship agents, the parent company being Hull, Blyth & Co. Ltd., 1, Lloyd's Avenue, London, E.C. 4.

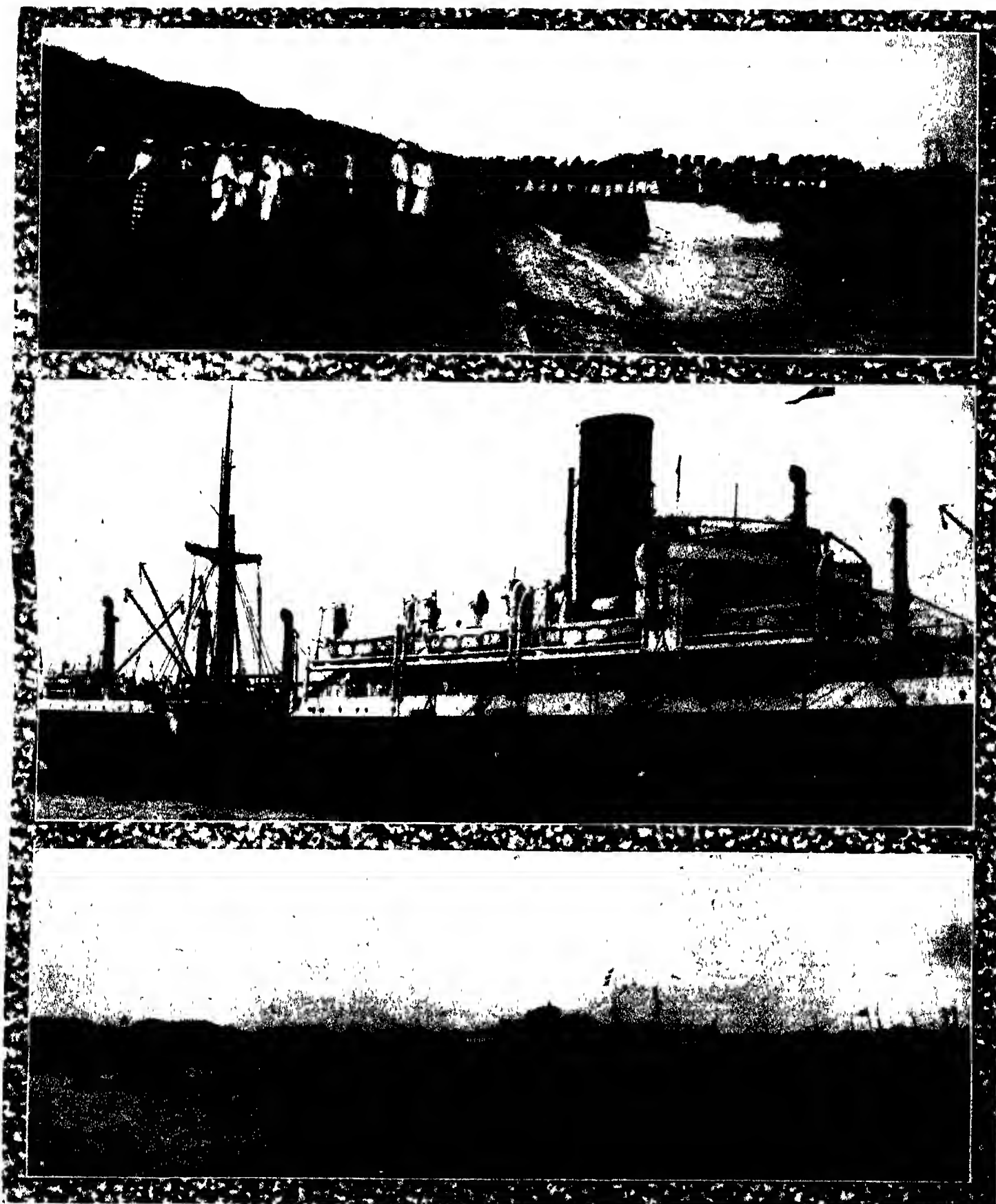
**Activities.**—In addition to coal contracting, the firm acts as shipping and insurance agents, and general import and export merchants. Its principal activity, however, is coal bunkering, and it has storage accommodation for 25,000 tons, with a lighter capacity of 15,000 tons.

**Coal Constituents.**—Messrs Hull, Blyth & Co. are bunker suppliers to the following concerns: "Adria" Società Anonima di Navigazione Marittima of Finme, Albion Line, Sunderland, Annung Bros., Cardiff, Australian Commonwealth Line of Steamers, Ashburnham Steamship & Coal Co., Cardiff, Aster Shipping Co., Cardiff, Rederi A/B Aktiv and Rederi A/B Aurora of Helsingborg, James Bell & Co., Hull, A. S. Bogen Stelvik, A. S. Borgestad of Porsgrund, Bolton Steam Shipping Co., London, Brunsgaard Kiøsterud & Co., Drammen, Boe & Pedersen, Oslo; Wm. Crosby & Co., Melbourne, Compania de Navegacion Vezcaya El Gerente, Bilbao, R. Chapman & Son, Newcastle-on-Tyne, Commonwealth & Dominion Line, London, Dalghesh Steam Shipping Co., Robert Stanley Steam Shipping Co., Watergate Steam Shipping Co., W. R. Davies Steamship Co., Liverpool, Elswick Steam Shipping Co., Newcastle-on-

Tyne, Elder Dempster & Co., Liverpool; Lurene Steamship Co. Ltd., of London; Eastern Telegraph Co. Ltd., London; Furness Withly & Co. and Associated Companies, Glen Line, London, Gillespie & Nicol, Glasgow, Su John Gunn & Co., Cardiff, Grove Line (Glasgow) Ltd., Glasgow, G. Heyn & Sons, Belfast, Houlder Brothers & Co., Empire Transport Co., British Empire Steam Nav. Co., Furness Houlder Argentine Lines, British & Argentine Steam Navigation Co., Hall Brothers Steamship Co., Newcastle-on-Tyne, King Warriner & Co., Arundale Steamship Co., London, Lamport & Holt, Liverpool, Lewis Steamship Co., Cardiff, Melsom, Capt. H. G. Nottiero, John N. Moraitis, Manchester Liners Ltd., Manchester, Merlin Shipping Co. Ltd., Cardiff, John Morrison & Son of Newcastle-upon-Tyne, Marittima Peninsular Ltda., Vigo, Spain, "Nivoso" Società Anonima di Navigazione, Naples, Onis Steamship Co. Ltd., London, Stoomvaart Maatsch. "Oostzee" and Stoomboot Maatschappij Hillegersberg, Amsterdam, Thomas Platt & Co., Newcastle-on-Tyne, Prickomorska Plovdba d.d., Susak, Chr. D. Paschalis, Alexandria, The Prince Line, Ltd., London, C. Petzalis, Piraeus, Scheepvaart Maatschappij "Palm Lijn," Amsterdam, Arturo Pardo, Santander, George T. Readhead & Co., Newcastle-on-Tyne, Rickmers, Rhederei Aktiengesellschaft Hamburg, Roedlde Steamship Co., Cardiff, Rethymnis & Kulukundis, London, Charles Radcliffe & Co., Cardiff, Società Anonima di Armamento Marittimo "Oriente," Finme, Skibs A. S. Christen Smiths Rederi, Oslo, Harald Schussler, Stockholm, Shakespear Shipping Co., London, Sanderson Matthew Shipping Co. Ltd., Cardiff, Sutton Shipping Co. Ltd., London, B. J. Sutherland & Co., Newcastle-on-Tyne, Sir Wm. Reardon Smith & Sons, Cardiff, Leeds Shipping Co., Unity Shipping & Trading Co., Oakwin Steamship Co. Ltd., St. Just Steamship Co. Ltd., "Atlantide" Società per Imprese Marittime, Genoa, Aktiebolaget Svenska Ostasiatiska Kompaniet, Gothenburg, C. A. Tsiropinas & Sons of Syra, Stanley & John Thompson, London, Union Castle Mail Steamship Co., London, West Hartlepool Steam Navigation Co., West Hartlepool, P. Wigham-Richardson & Co., London, Wythe, Ross & Co., London, N. V. Bureau Wijnmuller, Rotterdam.

**Branches.**—The company has branches at the following centres: Aden, Alexandria, Algiers, Amsterdam, Antwerp, Bahia, Balua Blanca, Baltimore, Barcelona, Bergen, Bermuda, Bilbao, Bombay, Boua, Boston, Bremen, Brunsbuttelkoog, Buenos Ayres, Calcutta, Cape Town, Charleston, Chingwangtao or Tongku Chittagong, Colombo, Constantinople, Copenhagen, Coronel, Corcubion, Corinna, Dakar, Dartmouth, Delagoa Bay, Durban (Port Natal), Dunkirk, Falmouth, Fayal, Ferdinandina, Ferrol, Galveston, Genoa, Gibraltar, Halifax, N.S., Hamburg, Havana, Havre, Hongkong, Honolulu, Hook of Holland, Jacksonville, Keelung, Kingston, Jau, Karachi, Karatsu, Kobe, Las Palmas, La Plata, Loughorn, Liban, Lisbon, Louanda, London, Lousburg, Madeira, Madras, Malta, Marselles, Mauritius, Mobile, Montreal, Monte Video, Moji, Miroran, Nagasaki, Nanamo, Naples, New Orleans, Newport News, New York, Norfolk, North Sydney, Oran, Otaru, Padang, Pensacola, Perim, Pernambuco, Philadelphia, Pietou, N.S., Piraeus, Plymouth, Portland, (Dorset), Portland (Maine), Portland (Oregon), Port Said, Pulo Laut, Quebec, Rangoon, Rio de Janeiro, Rosario, Rotterdam, Rouen, Sabang, San Francisco, Santos, Savannah, St. John, N.B., St. John's, N.F.,





HULL, BLYTH & CO. (COLOMBO) LTD.  
 1. Loading Coal into Lighters at Coal Depot.  
 2. Coaling a Steamer.  
 3. Lighter Conveying Coal from Depot to Steamer.  
 (See *Illustration*, page 61.)

St Michael's, St Lucia, St Thomas, St Vincent (C.V.I.), Seattle, Sewall's Point, Shanghai, Singapore, Sydney, C.B., Taku Bar, Tenerife, Torre Anunziata, Trinidad (Port of Spain), Vancouver, Vigo, Wakamatsu, Wilmington, Yokohama, Zongouldak

**Insurance.**—Messrs Hull, Blyth & Co are agents for The Aviation & General Insurance Co. Ltd., London

**Offices.**—Imperial Bank Buildings, Colombo. Cables "Collicries," Colombo, "Vapor," London. Codes A.B.C. (4th and 5th Editions), Scott's 10th, Watkins and Western Union, Bentley's. Manager Mr. A. H. King

**Bankers.**—The Chartered Bank of India, Australia and China, and the Imperial Bank of India

#### THE CARGO BOAT DESPATCH CO.

**Inception.**—This company was established in Colombo in the year 1866

**Activities.**—It operates as general wharfingers, stevedores, coal contractors, water suppliers, landing, shipping and forwarding agents, etc., and has a large fleet of cargo and coal lighters, water boats with steam boilers and pumps, steam tugs, motor lorries and other appliances for undertaking and expediting work in Colombo harbour. In this connection, it works for a large number of well-known shipping firms

**Agencies.**—The company acts as landing agents, stevedores and water suppliers for the following: The Bibby Line, The N.Y.K. Line, Royal Dutch Mail Lines, Hansa Line, The Ellerman & Bucknall

Steam Ship Co. Ltd.; Andrew Weir, The Ocean Transport Co. Ltd., Lloyd Sabaude Steamers (Italian), Societe d'Armement, R. Van Hemelryck & Co's (Belgian Line) Steamers, The Holland America Line (India service), Swedish Line, Spanish Line, etc. It also lands and ships coal for the N.Y.K. Ltd., Asiatic Steam Navigation Ltd., Royal Dutch Mail, etc.

**Administration.**—Proprietors Messrs H. P. Cosmas, Anthony Zarephie and John Cosmas. Manager Mr. P. Müller

**Offices.**—The Wharf, Colombo. Cables: "Despatcho," Colombo. Code A.B.C. (5th Edition)

**Bankers.**—Chartered Bank of India, Australia and China



THE CARGO BOAT DESPATCH CO., Colombo  
One of the Company's Launches with Lighters in Tow



## RAILWAYS

**T**HE Ceylon Government Railways are State owned, as their name implies, and provide throughout an effective and even luxurious means of transport, rendering accessible not only the most beautiful scenery and strikingly interesting antiquities, but all those fields of agricultural industry—the tea, the coconut, and the rubber—that have brought about the advanced state of prosperity which the island enjoys.

**ADMINISTRATION.**—The Government Railways are administered by a special Department of the Ceylon Civil Service, the General Manager being Mr T. E. Dutton, under whom are three Deputy General Managers (Administrative, Operating, and Commercial). There are three Sub-Departments—those of the Chief Accountant, the Engineer of Ways and Works and the Locomotive Department. There is also a Railway Advisory Board, consisting of the Colonial Treasurer (as Chairman), the General Manager of the Railway, two representatives of the Ceylon Chamber of Commerce, one representative each of the Planters' Association of Ceylon, the Low Country Products Association of Ceylon, and the Ceylonese Trading Interests, and three co-opted members.

**BEGINNING OF CONSTRUCTION.**—Railway construction in Ceylon dates from February 2, 1863, when the line from Colombo to Ambepussa (34 m) was begun. It was opened on October 2, 1865, had been extended as far as Kandy by August, 1867, and to Nawalapitiya by December 1, 1874, the total cost of construction up to that date being Rs 20,053,458. On July 16, 1874, the short line from Colombo to the Fort was opened. The South Coast line from the Fort to Matara was laid between 1875 and 1894, at a cost of Rs 10,142,321, the last section being opened on June 7 of the latter year. The years between 1884 and 1894 also saw the construction of the Main Line extensions to Hatton and Baudarawela. From that time onwards railway construction in Ceylon has been steadily progressive.

**CAPITAL COST.**—The capital cost of the several lines, including additional accommodation and improvements, up to September 30, 1924, was Rs 160,369,876 (£10,691,325).

**LINE.**—The Ceylon railways have been built in sections according as the development and settlement of various parts of the island have warranted their construction. These sections are generally known as the Main, the Northern, the North Coast, the South Coast, and the Kelani Valley lines.

**KELANI VALLEY LINE.**—The Kelani Valley line (2½ ft gauge) leaves Colombo in a southerly direction, but soon turns east to Padukka, and north to Avisawella, where the line branches, one track holding northward to Dehiowita and Yatiyantota, while the other runs south to Ratnapura, Kehawatta, and Opanake. As the line—known locally as the K.V.—runs through the heart of one of the principal rubber districts of Ceylon, all the stations are more or less important centres for the requirements and produce of the numerous rubber estates. The distance covered by the line is 85 miles from Colombo to Opanake, and 11 miles from Avisawella to Yatiyantota.

**MAIN LINE.**—The main line of the Ceylon Railways is laid throughout on the

broad gauge (5½ ft), and runs from Colombo in a north-easterly direction for about 45 miles, when, after Polgahawela has been reached, it gradually returns, until at the terminus of Badulla (190 miles) it is in almost the same latitude as Colombo. This line is by far the busiest and most profitable of the railways, due to the fact that it serves the great tea districts of the mountain zone. It was the first section of the railways to be constructed, and in its later stages, after the foot hills of Rambukkana (52 m) are reached, the line shows great engineering skill, rising 1,400 ft in the 13 miles to Kadugannawa with a ruling gradient of 1 in 45. From Nawalapitiya, the principal railway centre of the hill districts (87 m) and 1,013 ft above sea level, the line rises further almost continuously with a maximum gradient of 1 in 44 till it reaches a height of 5,225 ft at Pattipola, 139 miles from Colombo, whence it falls by similar gradients to Baudarawela and thence to Badulla, passing over Rossett Viaduct, the highest in the colony.

**NORTH COAST LINE.**—The north coast line from Colombo to Negombo and Chilaw (5½ ft gauge) branches from the main line at Ragama, 9 miles from Colombo, and passes through rich coconut districts to Negombo, Marawila, and Chilaw. It has a length of 50½ miles. The line is now being extended to Puttalam, 32½ miles north of Chilaw. This extension will serve an important coconut area, and will carry large quantities of salt, which is manufactured on a fairly extensive scale at Puttalam.

**NORTHERN LINE.**—The northern railway to Jaffna and Talaimanar (for India) —5½ ft gauge—leaves the main line at Polgahawela, whence it runs north through the rubber and coconut districts of Kurunegala. Shortly after leaving this station it enters the dry zone, where the rainfall is below 75 in yearly, and cultivation, except occasional paddy, gradually disappears. About 16 miles north of Anuradhapura one branch of the line runs north-west from Madawachchi to Mannar and Talaimanar. From the latter point the steamers of the South Indian Railway convey passengers and goods a distance of 22 miles to Dhanush Kodi on the South Indian Railway. From Madawachchi the other portion of the line continues north to Kankasanturai, passing the more cultivated region of Jaffna. The length of the line from Polgahawela to Kankasanturai is 211 miles and from Madawachchi to Talaimanar Pier 66 miles.

**SOUTH COAST LINE.**—The sea-coast line to Galle and Matara (5½ ft gauge) runs in a southerly direction from Colombo for 98½ miles through an almost continuous belt of coconuts. For the first seven miles it passes through the rapidly extending suburbs of Colombo, then over what is known as the distillery area, which extends from Panadura to Matara. At Alutgama the Southern Province is entered, and the chief villages of the Galle district are passed, Galle itself being some 72 miles from Colombo. Thence the line proceeds to Matara, passing the town of Weligama. Though the railway runs almost exclusively through coconut groves, it supplies tea and rubber areas as well, in particular the important rubber districts of Kalutara and Elpitiya and the tea plantations of Deniyaya. The total length of the line is 98½ miles.

**MILEAGE.**—The total extent of the Ceylon Railways in 1924 was 742½ miles, of which 625½ were broad gauge (5 ft 6 in) and 117 narrow gauge (2 ft 6 in). In addition, the following lines were under construction: (1) a connecting line between Colombo Harbour and the main line, (2) an extension of the north coast line from Chilaw to Puttalam, (3) new lines from Maho (on the Northern line) to Batticaloa and Trincomalee respectively, in connection with the development of local food production, the Batticaloa line to be later extended 30 miles north to Nitavur, (4) a line to the Kolonnawa Oil Depot, and (5) the duplication of the main line to Rambukkana. A line to Horana and Agalawatta has been surveyed, and the Hambantota line was under survey in 1924.

**PARCEL RATES.**—The parcel rates on the Ceylon Railways vary according to the weight and distance carried. A 7 lb parcel is charged from 10 cents, a 14 lb parcel from 20 cents, and so on, according to distance, one hundredweight being charged from 80 cents upwards. Goods traffic is divided into six classes, according to the nature of the traffic, the charge for each class varying according to the section of the line, from 9½ cents per mile to 50 cents per mile. The minimum distance on which a charge is made is ten miles.

**PASSENGER FARES.**—Single fare, first class, 10½ cents per mile (16 cents Main Line above Nawalapitiya, 17 cents Uda Pusselawa line). Second class, 6½ cents per mile (10 cents Main Line above Nawalapitiya, 12 cents Uda Pusselawa line). Third class, 3½ cents per mile (2½ cents Pallar to Kankasanturai, 4 cents Uda Pusselawa line). Return tickets are issued at double the single fare, less 1 cent, except in the case of the Uda Pusselawa line, on which section double the single fare is charged. Reductions are made for children, pioneers, and coolies of any nationality, and for season tickets.

**REVENUE AND EXPENDITURE.**—The receipts for 1924 amounted to Rs 27,188,145, or an increase of Rs 2,590,555 as compared with the previous year. Items of revenue were: coaching receipts, Rs 12,203,422; goods and live stock, Rs 14,670,702; miscellaneous and motor-services, Rs 314,021. The total expenditure for 1924 amounted to Rs 17,614,067, as against Rs 16,108,248 in 1923. The net revenue of the railways amounted therefore to Rs 9,574,078 in 1924, as against Rs 8,489,342 in 1923.

**ROLLING STOCK.** The rolling stock of the railways is constructed in the workshops at Colombo, where over 1,000 workmen are employed. The older types of English built carriages are being gradually replaced by the standard type of bogie carriage, 42 ft long. These modern and handsome carriages, which are built of native teak, are not of the Indian type with longitudinal seats, but of the English. They are thoroughly well equipped with sleeping and refreshment cars and lavatory accommodation. Passengers to whom time is an object, and who wish to pay a visit to Nuwara Eliya, can leave Colombo after dinner, travel in a comfortable sleeping berth (Rs. 5 in addition to first class fare), get an early breakfast in the refreshment car before arriving at Nuwara Eliya, and be in Nuwara Eliya before 8.30 next morning. The return journey can be made in the same

The return journey can be made in the same way. In 1925 a sum of Rs 1,080,000 was included in the 1925-26 Budget to be expended on the purchase of six locomotives to replace scrapped engines and to others to meet the growing traffic requirements, and a further

sum of Rs 984,718 was to be expended on wagon under-frames.

**TRAFFIC.** - The number of passengers conveyed by the Government Railways in 1923 was 11,100,251 as against 12,189,203

in 1922 while the total tonnage of goods carried was 1,157,886 tons, or an increase of 25,760 tons over the previous year.

In 1924 the passengers carried numbered approximately 11,500,000, while the total goods tonnage carried was 1,493,777.

## ROAD AND WATER

### ROAD

**C** EYLON has on the whole good highways, the total length of main or "cart" roads being about 12,500 miles. The mileage maintained by the Public Works Department is rather more than 4,000. The metalled roads (about 4,000 miles) are kept in good order, and are passable to all kinds of traffic. Gravelled roads are admirable in dry weather but cannot be relied upon in very wet seasons. There are also some 4,800 miles of cart roads and bridle paths maintained by the Village Committees. The only direct charge made on those who travel by road is that levied for the use of ferry boats, but these ferries are fast disappearing as the result of the building of bridges. Indirect charges are made for the upkeep of roads in the form of taxes on wheeled vehicles of every kind.

**MAIN ROADS.** The principal roads in the Colombo District are those radiating from the capital, and are four in number, as follow:

1. The north-coast road to Negombo, Chilaw, and Puttalam, and thence to Anuradhapura, a total distance of 129 miles.

2. The up-country road to Kandy, via the Kaduganwa Pass, running north east from Colombo and branching at Ambanpitiya to Polgahawela and Kurunegala.

3. The Kelani Valley road to Ratnapura etc., running east from Colombo, branching at Avissawella to Yatiyantota, and thence up to the Gangathena Pass to Hatton and the up-country.

4. The south-coast road to Kalutara, Galle, Matara, and Hambantota.

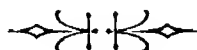
All these roads carry considerable traffic to the railway and across country. In the Central Province there are many important roads east of Kandy, and serving the rich tea districts which the railway does not always reach; there are four main roads leading into the Eastern Province and serving the important ports of Trincomalee and Batticaloa, and in the North Central Province roads run almost parallel with the railway. The longest main road in Ceylon is that from Kandy to Jaffna via Dambulla and Mihintale, 199 miles.

**ROAD SERVICES.** In addition to the railways there are an ever-increasing number of motor bus services along most of the main roads of the island. What is known as the Contract Motor Service is maintained by the Railway Department in connection with the railway services, and joins up many of the smaller towns with the larger centres. There are also many excellent private motor services out of Colombo and other towns, the longest route covered being that from Batticaloa to Bandarawela, 122 miles. The

chief means of transport for goods by road are the wooden springless carts yoked to a pair of bullocks, which were formerly the only means of conveyance, and the motor lorry, the use of which has greatly increased during the last five years. There were in 1923 over 300 in use in the island, and about 30,000 single and double carts. Until recently the work of motor lorries was confined to transport between railway goods sheds and interior estates, but now collecting and distributing depots are being established in practically every important centre of the island, so that full loads may be obtained both outgoing and incoming.

### WATER

A means of transport available and much used in certain districts is afforded by the 153 miles of canals. This system, largely the work of the early Dutch settlers, is connected with Colombo, and the facilities offered have been considerably enhanced by the completion of the Lake Harbour scheme. Owing to the hilly nature of the country, the rivers of Ceylon are not navigable for commercial traffic to any extent, but are utilised on the west coast in some parts, constant communication by boat being kept up on the Kalu Ganga between Kalutara and Ratnapura.



# AGRICULTURE

## GENERAL DATA

**3**N its agriculture, as in its flora, Ceylon shows a great variety for so small an area. In early Sinhalese times the cultivation of rice, then almost the only form of agriculture, was probably carried out entirely in the "dry" northern and eastern plains. So long as dependence was placed upon the rains, there was only one crop reaped during the year, and there was a considerable element of precariousness in the situation, for the rains were liable to fail. Then came the formation of the large tanks or artificial lakes, in which the rainfall of the north-east monsoon could be stored up, and the dry zone became largely cultivated and settled. With the Tamil invasion, the irrigation works broke down and agriculture was practised without their aid, the remainder of the island being at the time of the Portuguese landing mostly forest country, throughout most of which the practice of

of the first road into the hills, when an experimental estate was opened near Peradeniya, close to Kandy, by the then Governor, Sir Richard Barnes, in 1824. From this resulted in a few years the rush to plant coffee by Europeans, which led to the destruction of much of the mountain forests. Coffee was the principal culture until about 1880, when it began to fail rapidly under the attacks of the coffee-leaf disease and was replaced by cinchona, later by tea, and last of all by rubber, during the whole of which time the planting of coconuts has never ceased, so that the area under this product is the largest of all.

**GROWTH OF CO-OPERATIVE SOCIETIES.**—At the end of 1921 there were 222 Co-operative Societies in Ceylon, as against 208 twelve months previously. The total number of members of these societies was 26,757, and amount to the value of Rs 26,422 was distributed to members during

registered gardens at the end of 1924 being 479. Seeds and implements are supplied by the Department, and prizes are offered for competition among schools in the various districts. There is a Training School at Peradeniya, where 12 teachers from vernacular schools are instructed for one year in elementary agriculture. The Farm School at Peradeniya also provides a practical training in tropical agriculture, and another is to be opened at Jaffna.

## PRODUCTS

**CACAO.**—Cacao (29,400 acres) is mostly grown between Kandy and Matale, and at Badulla, thriving best at an elevation of between 1,000 and 2,000 ft. Partly owing to the particular variety which has been much cultivated in Ceylon, but mainly to the care taken in its preparation, the prices of Ceylon cocoa are usually the highest in the market.



RUBBER TAPPING

RUBBER MEASING AND FILTERING.

chena went (and still goes) on. Chena consists in felling the smaller trees, burning off the dead wood, and cultivating a crop for two or three years on the land thus exposed. But after this period the ground becomes so weedy that it is less trouble to chena a new portion, and the old is left to its fate. In the greater part of Ceylon the old chenas simply present a sea of low scrub, which is once again chena-ed after ten to fifteen years, the time depending upon the dampness of the neighbourhood and other factors.

**EUROPEAN CULTURES.**—The change to a modern "planting" country, containing numerous "estates" of different products under European (and native) management, and exporting large quantities of produce to other countries, dates from the completion

of the year. These societies are making steady progress.

**LABOUR.**—The manual labour of most of the area devoted to export crops is performed by Tamil coolies imported from Southern India, of whom there are some 5,000 in Ceylon. The Sinhalese work but little on the European estates, devoting themselves mainly to their own rice fields and coconut gardens and to transport work. (See also special article on "Tea.")

**SCHOOLS.**—Elementary agricultural education is given in Government and assisted vernacular schools by a scheme of schools gardens which has operated for many years with great success. The work is under the supervision of the Department of Agriculture, the total number of

**CAMPHOR.**—The area under this tree in the higher planting districts (where rubber will not grow) increased some years ago, but has since declined owing to the extension of tea plantations. Only 50 acres were under cultivation in 1924.

**CARDAMOMS.**—In 1924 the area under cardamoms was 7,000 acres, and exports totalled 298,704 lb., against 312,256 lb. in 1923. The output has shown a tendency to decline in recent years. (See also under "Commerce.")

**CINNAMON.**—There were in 1924 about 25,000 acres planted with cinnamon, which is grown on the sandy soil of the south-west coast, and is prepared by peeling off the bark and rolling it up. Output in 1924 amounted to 3,141,717 lb. The growth of



this spice has been practically a monopoly of Ceylon for a very long period (See also under "Commerce")

**CITRONELLA GRASS.**—It was estimated in 1924 that 40,000 acres were planted with citronella grass and other essential oil grasses, several new areas having been cropped round Tangalla in the Southern Province. Exports and values alike showed improvement.

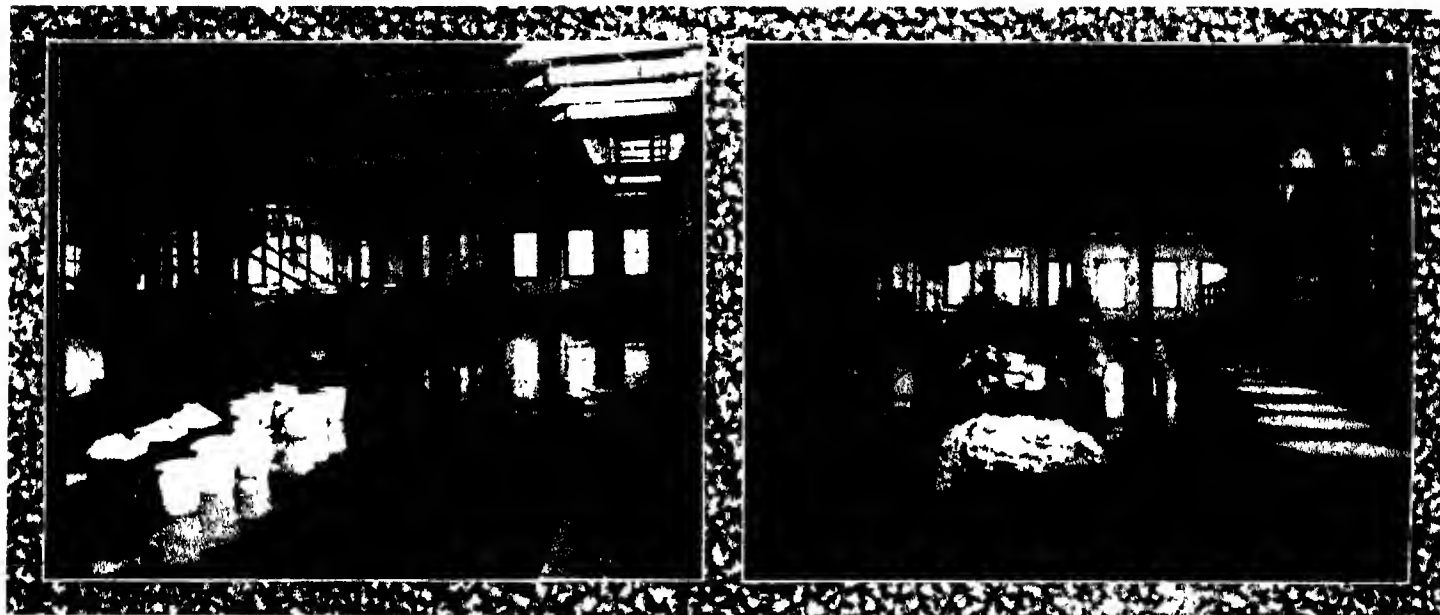
**COCONUTS.**—In 1924 there were about 850,000 acres devoted to coconut palms, but only a small percentage of this area is cultivated systematically. They are grown on large estates in the western and southern country from Puttalam to Tangalla, and near Jaffna and Batticaloa, while every native garden, however small, contains a few of these palms, which are used universally for food, drink (toddy and arrack), building utensils, oil, and other necessities. In 1923 the number of coconuts exported was 15,093,670, valued at Rs 1,338,533, of which nearly 90 per cent went to the United Kingdom. Copra is the principal product of the coconut for export. It is very generally prepared by contract, the contractor being paid Rs 150 per 1,000 dried nuts

yielding on a full bearing crop 25 per cent on the outlay. Cheap Tamil labour flowed in from India, and a railway was opened from Colombo to Kandy in order to aid the growing industry, which was further fostered by a great rise in the price of coffee abroad. Within ten years from 1869 ten square miles of virgin forest in the district of the Wilderness of the Peak were opened up for the cultivation of coffee, and over 4,000,000 acres of land were sold by the Government to capitalists with hope of ample profit on the investment.

All this time, however, an insidious lungoid growth (*Heimleia vastatrix*) was creeping over the coffee plant. It arose in one centre, then spread far and wide, attacking plants new and old, weak and vigorous, with equal impartiality. Estates were sold recklessly and fortunes were lost. The coffee industry in Ceylon then practically died, many thousands of acres of the old coffee shoots were grubbed out, tea was planted, new machinery introduced, and the labourers were taught a new industry. In 1924 there were only 500 acres under coffee in the whole of the island, and only 15 cwt of plantation coffee was exported.

been planted along the boundaries of gardens or estates. It is not cultivated in regular areas, but a certain amount of planting has been done recently on account of the high prices ruling for the product. The quality of Ceylon kapok is good, and it is estimated that 300 to 440 lb of the cleaned article could be secured per acre from regular plantations.

**LIVE STOCK.**—The cattle in Ceylon consist of imported animals, crossbred and country stock. Cattle are imported from Australia for dairy purposes, and from India for both milk and draught. The indigenous stock consists of a small breed of humped cattle, which is slowly being improved by the infusion of new blood. Sheep and goats are imported from India for slaughter, and pigs are reared. A large quantity of frozen meat and dairy produce from Australia is consumed in the island. Buffaloes are kept in considerable numbers, as they constitute the agricultural cattle of the paddy-growers and of many coconut estates. The figures of live stock in a recent year were as follow:—Horned cattle, 1,383,000, horses, 2,000, sheep, 50,000, swine, 50,000, goats, 158,000. (See also under "Commerce")



RUBBER ROLLERS AND FINISHING MACHINERY.

COAGULATING PANS, ETC.

supplied to him in husk. It is as a rule sorted into three grades, the usual percentages being 95 per cent. of No. 1, 4 per cent. of No. 2, and 1 per cent. of No. 3. The production and export of copra have increased considerably. A candy (5 lb) of copra yields about 3 cwt. of oil, the price of the latter being double that of copra. The poonac, or cake left after the removal of the oil from the copra, is largely used locally as a cattle food, and is also exported as manure. (See also under "Commerce," "Coconut Products," and under "Mining and other Industries.")

**COFFEE.**—Although the coffee shrub was first introduced by Arab traders, very little trade was done in connection with it by either Sinhalese, Portuguese, or Dutch, and it was not until 1825 that the first plantation was opened at Kandy. Cultivation increased rapidly, and by 1870 there was an export trade in coffee of four millions sterling. There were then 106,000 acres under cultivation.

**COTTON.**—In the earlier Sinhalese times cotton was grown in various parts of the island, and hand-woven cloths of excellent quality and great durability were made. Now only a small number of cotton plants are to be found in the villages throughout the greater part of Ceylon. At Ambalantota, on the banks of the Walawe River in the Hambantota District, the Director of Agriculture has initiated some cotton growing experiments which give promise of a successful return, the profit for the 54 acres under cultivation being reckoned in 1924-25 at Rs 237 88c per acre. Cotton is naturally suggested for the opening up of the large areas of unoccupied lands in the Dry Zone, and the new railway extensions to Trincomalee and Batticaloa are expected to give the industry a decided impetus. In all, about 1,000 acres were under cultivation in 1924. (See also under "Commerce.")

**KAPOK.**—This fibre is collected from trees which grow in village gardens or have

**RICE.**—There is a large area under rice (paddy)—between 800,000 and 900,000 acres—but it is a purely native culture, grown in little fields terraced to suit the slopes. The methods employed are primitive, and the return of the crop is poor, probably on the average not exceeding eight-fold.

**RUBBER.**—See article following.

**SUGAR.**—There were roughly 20,000 acres under sugar-cane in 1924, but this is not a European culture to any extent, and the sugar extracted is of a low grade for native consumption. (See also under "Commerce.")

**TEA.**—See special article.

**TIMBER.**—Ceylon is fortunate in its forests, which yield large quantities of valuable timber. The ships of Tarshish, of King Solomon's time, are supposed to have been the vessels that sailed from Point de Galle. Ebony, the popular timber for expensive furniture, piano keys and art ware, is the best known of Ceylon woods, and has long been an item of export. Satinwood,

ramai, milla, palu, and halmilla are all found in abundance in the dry-zone forests, and are in constant demand for Public Departments, which consume them at the rate of 250,000 cubic feet annually in logs, sawn timber, and railway sleepers. The wood known as Jak (*Artocarpus integrifolia*) is a largely-used Ceylon product, though now supplied only from private sources. With the opening of estates the forests have decreased in size, but the Forest Department is engaged in conservation and re-afforestation work which will lay the foundation of an ultimately adequate and sustained output of this and other profitable timbers. During 1923 the area of plantations was increased from 9,036 to 11,151 acres.

**RAILWAY SLEEPERS**—Between 1906 and 1924 the Forest Department supplied the Railway Department with 980,491 broad gauge and 379,060 narrow gauge sleepers at an average rate of Rs. 3.82 and Rs. 1.77, respectively. In this way a very large saving over the cost of imported sleepers has been effected, and the indigenous material

has proved more durable than imported supplies.

**ATTLE PLANTING**—Attention has recently been directed to the possibilities of planting acacias for the tanning industry, and representations have been made by interested parties from England and Australia. It is believed that, with cheap labour available, Ceylon can successfully enter this field of commercial enterprise while there are large extents of patana land in up-country districts which might be made available. Another scheme is to combine the afforestation of Crown estates having fuel bearing trees with the commercial planting of acacias.

**TOBACCO.**—The 13,000 acres devoted to tobacco culture are mostly in the neighbourhood of Jaffna, though also in the Dumbura district and in the drier country a little east of Kandy. The leaf is unfit for a European palate, it is coarse and rank, and finds a special market among the people of Travancore. The South Indian market for tobacco has in recent years been some-

what uncertain, and in consequence a series of tobacco experiments have been carried out by the Department of Agriculture in Jaffna and also in the Dumbura valley in the hope of securing a type of tobacco which will grow satisfactorily and yield a product which would be marketable in Europe. The results of these experiments have, it is claimed, shown that the White Burley type of tobacco can be grown satisfactorily, and that Ceylon grown leaf of this type commands a ready sale at remunerative prices in the United Kingdom. (See also under "Commerce.")

**VARIOUS.**—Areca nuts, Palmyra palms, and cinchona are cultivated in a casual manner and need no special mention. The marked feature of native cultivation is the casual intermixture of crops, by which some of the advantages of rotation are obtained, while at the same time capital is not required in any large amount, any tree that dies being simply replaced by another, and the jungle of cultivated plants perpetually presenting the same aspect.

## RUBBER

**T**HE rubber planting industry of Ceylon—that is, the growth of trees furnishing the indiarubber of commerce—dates from 1876, when plants were sent from Kew (England) to the Henaratgodia Gardens, where some of the trees, now 49 years of age, are to be seen. But, owing to the feverish attention given during the "eighties" to tea planting, little in the way of rubber planting was accomplished, except by a fortunate few, chiefly in the Kalutara district. When in 1899 and 1900 there was a slump in the price of tea, planters in the Kalutara and Kelani Valley districts began to plant rubber among the tea, and there was a jump from 25 acres planted in 1904 to 100,000 acres in 1906 and 180,000 acres in 1908, the productive area rising 600 per cent during that period. In 1910-11 there

was a boom in prices, and, later, the European War sent up production, exports rising to 45,000 tons in 1919. After the War, restriction of output throughout the Empire was resolved upon, and in 1925 it was still adhered to. The area under cultivation in 1924 was approximately 433,100 acres, of which 430,000 acres were productive.

**DISTRIBUTION**—The leading rubber-growing districts of Ceylon, in their order, according to acreage in rubber alone, are: Kelani Valley, Kalutara, Ratnapura, Galle, Kegalla, Kurunegala, Matale North, Matale East, Matale West, Galagedara, Haputale, Kadugannawa, Monapagala, Morawak Korale, Matale South, Badulla, Passara, Madulsima, Alagala, Nilambe, Pussellawa, Ambagamuwa, Dolosbage, Rakwana, Wattagama, and Dumbura.

**LOCAL RUBBER SALES**—Following are the quantities of rubber sold at local auctions from 1920 to 1924, with the average prices realised—

	QUANTITIES lbs.	AVERAGE Cents.
1920	39,078,693	0.80
1921	37,383,634	0.52
1922	40,202,708	0.53
1923	32,767,305	0.88
1924	35,734,720	0.75

The highest prices ever paid for Ceylon rubber in the London and Colombo markets were 12/8 (for Meegama Estate smoked sheet and/or biscuits on April 19, 1910) and Rs. 9.50 (April 14, 1910) respectively.

Towards the end of 1925 the official notification of the release of restriction in 1926 had a strong effect on prices, there



RUBBER VACUUM DRIER.

RUBBER READY FOR EXPORT.

being a keen demand at round about Rs 2 50, while the average price realised for the nine months January—September, 1925, was Rs 1 45.

**RUBBER ACREAGES AND EXPORTS**—Following are the estimated acreages in bearing and actual exports for selected years up to 1924 —

	PLANTED ACRES	BEARING ACRES	EXPORTS Tons
1904	25,000	600	35
1909	184,000	5,500	681
1914	240,500	170,000	15,800
1919	385,000	275,000	45,010
1923	411,400	400,000	37,112
1924	433,100	430,000	37,351

**RUBBER DISEASES**—*Hevea brasiliensis* is, under plantation conditions, subject to various diseases, which have been fully

and carefully investigated by the scientific offices attached to the Department of Agriculture. Root diseases occur chiefly in areas which have not been cleared of all jungle stumps, and bark diseases are not uncommon in wet seasons. The causes of the various diseases, except that known as brown-pest, are now well known, and all diseases receive appropriate treatment on properly managed estates. A special scheme for Rubber Research has recently been organised by the Government of Ceylon, the Rubber Growers' Association and Rubber Estate Proprietors. This scheme provides for investigations into the origin of and remedies for the various diseases, for chemical and botanical research in Ceylon, and for vulcanisation experiments and tests at the Imperial Institute, London. The present staff in Ceylon consists of an organising secretary,

who visits all estates which are incorporated in the scheme, a mycologist, and a physiological botanist.

**RUBBER ESTIMATES, 1925**—The production of rubber in Ceylon for 1925 was estimated at 44,000 tons, compared with 190,000 tons from Malaya and 193,000 tons from the Dutch East Indies.

**YIELD OF RUBBER**—The yield of rubber per acre varies considerably with the soil, age of trees, rainfall, planting, treatment, etc., but may be said to range from 150 to 700 lb. per acre, 400 lb. to 500 lb. per acre being considered a good all round result for an estate in full bearing. A very good tree over 12 years old will yield 10 lb. of dry rubber per annum while the average tree in full bearing may be put at 4 to 5 lb. per annum. (See also under "Commerce.")

## TEA

**TEA** as a beverage is known to the majority of the world's population. The plant from which it is prepared has been cultivated in China for over 1,000 years, both black and green tea being made from the same kind of bush, which is a tropical shrub of the order Ternstramiaceae called *Thea sinensis*. Another variety of the tea plant is indigenous to Assam, and it is this type that is cultivated in Ceylon. It is interesting to bear in mind that as far back as 1687 about 5,000 lb. of tea were imported into

England by the East India Company and that during the reign of William and Mary an import duty on the luxury was first imposed, this being at the rate of 5/- per lb., and 5 per cent ad valorem.

Towards the close of the 17th century about 20,000 lb. of tea a year were being imported. At that time and for some years after, tea was drawn mainly from China and Japan, only occasional shipments coming from Java. Cultivation in India was not established until about 1830, when experi-

ments were carried out by the East India Company in Assam from which province the first sample was despatched to London in 1836, followed by 5 lb. in the next year. In 1840 a hundred boxes were exported to England, and in that year tea cultivation in India was started as a commercial enterprise by the Assam Company. From this small beginning the tea industry in India has grown to its present position of exporting 300,000,000 lbs. of tea annually, approximately one-half of the world's net supply. With an equally



LIPTON LTD., Colombo  
Dambatenne Tea Estate: Plucking Tea.  
(See letterpress, page 81.)

small start in Ceylon some years later, when the coffee plantations were destroyed by disease, tea has now come to be by far the most important industry of the colony, the annual exports being in the neighbourhood of 200,000,000 lbs

**AREA AND PRODUCTION.**—The following table shows the total acreage planted with tea, the estimated acres in full bearing (5 years and upwards), and the production per acre (both for the whole acreage and only for mature trees) since the establishment of the tea plantation industry in 1886 —

YEAR	TOTAL ACRES PLANTED	ESTIMATED ACRES IN FULL BEARING	PRODUCTION PER ACRE
1886-87	170,000	22,000	47-531
1887-88	183,000	32,000	70-546
1888-89	200,000	70,000	120-687
1889	205,000	70,000	120-700
1890	220,000	102,000	120-750
1891	250,000	150,000	"
1892	262,000	170,000	"
1893	273,000	183,000	"
1894	280,000	205,000	"
1895	305,000	220,000	"
1896	330,000	250,000	"
1897	350,000	262,000	"
1898	364,000	288,000	"
1899	378,000	305,000	"
1900	384,000	330,000	"
1901	387,000	345,000	"
1902	383,000	360,000	"
1903	380,000	375,000	"
1904	380,000	376,000	"
1905	390,000	378,000	"
1906	386,000	379,000	"
1907	390,000	382,000	"
1908	392,000	382,000	"
1909	395,000	383,000	"
1910	385,775	385,000	"
1911	395,000	386,000	"
1912	399,500	390,000	"
1913	409,450	400,000	"
1914	409,500	401,000	"
1915	409,500	402,000	"
1916	409,500	403,000	"
1917	408,000	402,000	"
1918	400,000	401,000	"
1919	403,500	400,000	"
1920	404,500	400,000	"
1921	404,400	402,000	"
1922	405,850	403,000	"
1923	409,200	404,000	"
1924	411,500	405,000	"

The area under tea, it will be observed, has for some years remained practically stationary, but was reduced to a certain extent owing to the large interplanting of rubber in 1910. The decrease in the shipments of tea in 1918 was, as in the case of all products, due to a scarcity of tonnage. No private shipments to the United Kingdom were allowed, all tea for that country being requisitioned by the Food Controller. The decrease in the 1921 crop was due to unfavourable climatic conditions, resulting in short crops, as well as to finer plucking.

The area (411,500 acres) under crop in 1924 includes perhaps 8,000 acres in tea gardens of small estates. It also covers half the acreage (roughly 19,000 acres) of mixed tea and rubber plantations. Much of this, while the rubber is young, yields as freely as unfixed fields, while, when the rubber trees mature, it has been found that the tea is adversely affected. It is considered probable that the poorer leaf product will soon be abandoned altogether on these plantations if rubber keeps to its present price.

**BEGINNING OF INDUSTRY.**—The tea tree was first introduced into Ceylon about 1840, when some 200 plants were received from India, and later from China and Assam.

The results of the first experiments, however, were far from satisfactory, few inducements were offered to cultivate on a large scale, and progress was slow until experience was brought from India. At that time, too, the coffee industry of the island was at its zenith and, indeed, seemed likely to be a permanent source of wealth. The growing and manufacture of tea were improved but it was not until the seventies, the years of the wholesale destruction of the coffee plantations, that the cultivation of tea became really progressive, and was taken up by those planters who were fortunate enough to survive the disaster to their previous product. In 1867 there were only ten acres under tea in the whole of Ceylon, but in 1875 this had grown to 1,080 acres, in 1895 to 305,000 acres, in 1905 to 390,000 acres, in 1915 to 409,500 acres, and in 1924 to 411,500 acres, of which 405,000 were estimated to be in full bearing.

**CULTIVATION.**—The tea plant is invariably grown from seed attempts to propagate it on a large scale from cuttings or from layerings never having been very successful. It is difficult in fact to get the cuttings to strike, and the method of layering does not allow of rapid enough increase of plants to be ever used. The real reason, however, of the avoidance of these methods is the ease with which plants are grown from seed, and for the supply of seed special bushes or even special seed-gardens are reserved.

**CLEARING THE LAND.**—In order to secure a good result it is necessary to bestow much care on the preparation of land for tea. If, as is usually the case in Ceylon, it has previously been under forest, the whole of the trees must be cut down, the stumps removed as far as possible (since many of them are liable to cause root disease in the shrubs), and the land hoed carefully all over. If grass land is to be planted, the roots must be carefully removed when the land is being hoed. If hillsides are to be put out, it is advisable before planting to arrange for terraces running along the contour of the slopes. If stones exist in the soil, they must be brought to the surface and utilised in making the terraces. On level land, the lines of drainage have to be arranged, and, where necessary, narrow drains, 3 ft deep, are put in before the tea is planted out.

**NURSERIES.**—The sowing of the tea seed is now almost universally made in nurseries. The seed, sometimes previously germinated, is deposited in holes either 4 or 6 inches apart and one inch deep. A piece of particularly good land is chosen, and formed into beds from 3 to 5 ft wide. Such a nursery must be well drained and very careful attention given to the preparation of the soil, which should be raked as for a flower-bed. If previously under tea-culture, the ground must be richly manured with cattle-fertiliser. If the situation is hot and dry, the beds should be covered with grass immediately after sowing; in any case water must be accessible for the nurseries. Forty pounds of seed may be expected to give about 10,000 plants, and will put some 2 to 2½ acres of land under tea. As soon as the young plants are visible above the surface, the beds are usually shaded by raised frames covered with grass or mats, are frequently weeded, and (if the weather be dry) watered in the evenings. As a rule, the plants sown in the nurseries in November or December can be planted out in the following May or June (six months old), or, when a year old, in the following November or December.

**PLANTING OUT.**—The land having been thus carefully prepared, the process of plant-

ing commences. In order to secure regularity, lines are marked out and the seedlings are placed at definite distances apart along these lines. What these distances should be varies with the type of plant, the richness of the land, and the method of planting. Speaking generally, it is not usual to put the plants nearer than 4 ft apart in any direction, or wider than 5 ft apart. If planted in rows at right angles to one another (square planting), this means in the one case 2,722 and in the other 1,742 plants to the acre. On some estates the method known as triangular planting is followed, that is, the plants are placed in rows at an angle of 60 degrees to one another, thus making the plants equidistant from each other. When the spacing and condition have been decided upon, lines are formed, and stakes are put at definite distances on these lines to mark where holes are to be dug and the plants to be placed. Prior to planting out, a hole is dug at each of the stakes at least a foot deep and 10 inches wide. The young plants are then removed from the nursery and deposited in the prepared holes.

Planting may be done either when the seedlings are six months old or when they have been in the nursery a year. In ordinary circumstances, six-months planting is being more and more adopted. Under this system the plants are taken from the nursery when 4 to 8 inches high, and have a small ball of earth 6 to 8 inches deep attached. They are conveyed to the holes which have been made ready as above described, but if the ends of the tap-roots are seen to be protruding or bent they are either straightened or nipped off. Each ball of earth with its plant is then placed in the centre of a hole, loose earth being filled in all round, and rammed down moderately. If rain follows immediately, the only attention required afterwards will be to see that weeds are cleared from about the plants and that the surface earth is kept loose. If rain does not come at once the plants will need watering. If planting be done with older seedlings in November or December it is necessary to have a much larger block of earth (at least 12 inches deep and 6 inches in diameter) attached to the root, and correspondingly larger holes in which the seedlings are to be deposited. In this case, a considerable quantity of water needs to be given, and a mulch of dry grass placed round the plants.

**PLUCKING.**—Plucking takes place every year. When the tea bushes have been pruned new shoots begin to grow, and after two or three months attain a length of 3 inches or more. At this stage the bushes can be "tipped," that is to say, the first lot of leaf can be taken off, the object being not so much to get the leaf as to force the production of secondary shoots on the plant. After about three weeks the secondary growth is ready to pluck, the uppermost two leaves and the unopened bud only being taken, and two mature leaves left on each of the secondary shoots. This plucking brings about the growth of a third series of shoots, and on these one mature leaf is usually left behind when plucking the youngest two leaves and a bud as before. A fourth, fifth, sixth, and seventh series of shoots arise in similar manner, and are known as "flushes." Eight distinct series of shoots is usually the largest number given by bushes in one season.

Plucking, which requires practice and careful supervision, is nearly always done by the women and older children, the men doing the heavy labour, such as pruning, forking, and cutting drains.

**PRUNING.**—The pruning of tea is an extremely technical process, which is usually carried out during the non-growing period of

the plant, that is from one to 4½ years after the seedling has been planted out. The time varies according to soil and elevation. As soon as it is apparent that a field is ceasing to yield well, the bushes are pruned down to within 10 to 18 inches from the ground, and the young shoots are then given, according to elevation, 3 to 5 months to grow before the bush is again brought into the plucking round. In its natural state the tea shrub would grow to a height of from 15 to 30 ft or more, which would render the labour of gathering the leaves practically impossible, and the chief object of pruning is to fashion it into a low flat bush generally kept about three feet in height. The object of tea planting is to secure the maximum quantity of the best quality leaf and the aim of every tea planter is to produce regular, frequent and plentiful "flushes" of young tender shoots on the tops of the bushes.

soil erosion, whilst artificial manuring is employed with the object of maintaining the vigour of the bushes and of encouraging good average yields.

**SOILS.** The tea plant will grow on many kinds of soil, but those which give the best returns in quantity and quality are deep reddish-coloured sandy loams, with a free sub-soil, which allows the roots of the plant to penetrate and secure natural drainage. From this kind of soil, in which many districts of Ceylon are particularly rich, the finest quality of tea is produced. Two descriptions of soil are especially to be avoided: a stiff clay of any kind, which is impervious to rain and which cakes and hardens in the sun, and a very loose sand which generally overlies gravel. Such soils produce a stunted bush yielding little leaf.

**TEA PESTS.** The tea plant is attacked by quite a number of pests and blights, but

eradicated from isolated gardens by spraying the bushes soon after pruning with kerosene emulsion and also by putting on chickens to catch the insects throughout the year. The green fly pest chiefly attacks and stunts the second, third and fourth flushes of the season, but it is a curious fact that tea made from shoots so stunted is often of higher quality than that made from freely growing shoots.

Caterpillar pests are numerous, and the so called "red rust," a blight of vegetable origin, is widely distributed and does great harm. Its treatment consists largely in increasing the vitality of the bushes by manuring, better drainage, and improved methods of pruning and plucking. Another disease known as Thread Blight caused by a fungus on the leaves and twigs of the bushes, has often done considerable damage to individual plants, but can be got rid of by



A FIELD OF TEA PLUCKERS.

**SCIENTIFIC MANURING.**—In common with most carefully cultivated crops, manuring is necessary to maintain the yield and condition of the bushes. This is carried out in most cases scientifically and systematically, and in accordance with the advice of expert agricultural chemists. Experience has shown that quality does not deteriorate through this practice, provided the ingredients employed are not of a forcing character. The effect of scientific manuring in Ceylon has been to equalise the crops throughout the year and to enhance the general standard of quality and flavour. Green manuring is used to improve the physical conditions of the soil, and to prevent

owing to the fact that the tea crop is a continuous one for 8 or 9 months in the year, it is never wholly destroyed. In the worst cases the yield is reduced possibly by 20 or 30 per cent. The chief insect pests are the red spider pest, the mosquito blight, and the green fly. The first, which attacks young plants, is usually counteracted by means of sulphur. The mosquito blight, which in India has often caused immense damage to the crops, is really a plant bug which feeds on the leaves of the tea plant, working by puncturing the youngest leaf and sucking the juice. The leaves thus quickly become a mass of brown, dry, and withered material. The blight can be apparently combated and almost entirely

treatment with sulphide of lime (made by boiling sulphur and lime together in water). Grey blight is another serious and widely distributed leaf blight. Root Rot has often caused the death of great numbers of bushes, more particularly round the dead and unremoved stumps of certain trees.

**WEEDING.** Owing to the extremely granular nature of the soil in Ceylon, and to the fact that there is no prolonged season of drought, such as is experienced in Northern India, much less cultivation of the land by hoeing is required, and weeding is very generally done by hand. On many estates green manure plants are now cultivated between the tea rows.



**YIELD**—As previously stated, the object of the tea grower is to get the maximum number of young shoots, or "flushes," on the bushes in each year, as it is only the two, three, or at most four youngest leaves on any shoot which can be made into tea. A very small leaf crop can be obtained, under a scientific system of pruning, in the second year after planting, in the third year about 120 lb. may be secured, if in a good locality. By the sixth year the tea on the best estates is yielding a full crop, which varies, according to the soil, from 150 to 800 lb. per acre per annum. But any crop above 800 lb. is abnormal, and the average for Ceylon is not more than 500 lb. per acre.

**ESTATES.** The number of properties or estates in private hands throughout Ceylon in 1925 was returned at 2,394, having a total acreage in cultivation of 808,073 acres. Of this acreage, 394,126 acres were planted with tea alone, and 18,719 with tea and rubber. The estimated number of coolies required to work the tea plantations was put at 500,000.

**EXPORTS.**—The year 1924 constituted a record in the annals of the tea industry in Ceylon, the total exports amounting to 204,930,307 lb., being 22,900,576 lb. ahead of 1923 and well in front of previous years. (See also under "Commerce.")

**FACTORY CONDITIONS.** Very considerable improvements have been made in the tea factories of Ceylon during recent years, and many new factories equipped with the latest types of machinery have been erected. The greatest care is exercised in the manufacture

of Ceylon tea, only the most up-to-date and hygienic methods being followed in order to avoid handling, and so lessen the risk of contamination.

**LABOUR.**—The labour on the large majority of tea estates in Ceylon, and on all those up-country is provided by Tamils from Southern India. The conditions of estate life and the wages now earned offer great inducement to these South Indian peasants to leave their villages, where as a rule they are dependent on a fair season for the crops which are often their sole means of existence. In 1925 there were about 500,000 Tamils employed on tea and other estates in the island.

During recent years considerable attention has been given to the general conditions of estate labour in Ceylon. Estate Schools are provided, and housing and sanitation are carried out according to Government regulations. Many estates have established creches for the care of infants while their mothers are away in the fields. The larger properties have their own well equipped hospitals, and there is a resident dispenser on every estate qualified to treat and prescribe for minor illnesses and to carry out the instructions of the District Medical Officer who is available in serious cases. Rice is supplied by the estates usually at less than cost price and housing accommodation and medical attendance are furnished free. Gardens are also provided and the keeping of cows is encouraged.

**MANUFACTURE.** The green tea when plucked, is carried by the pluckers to the

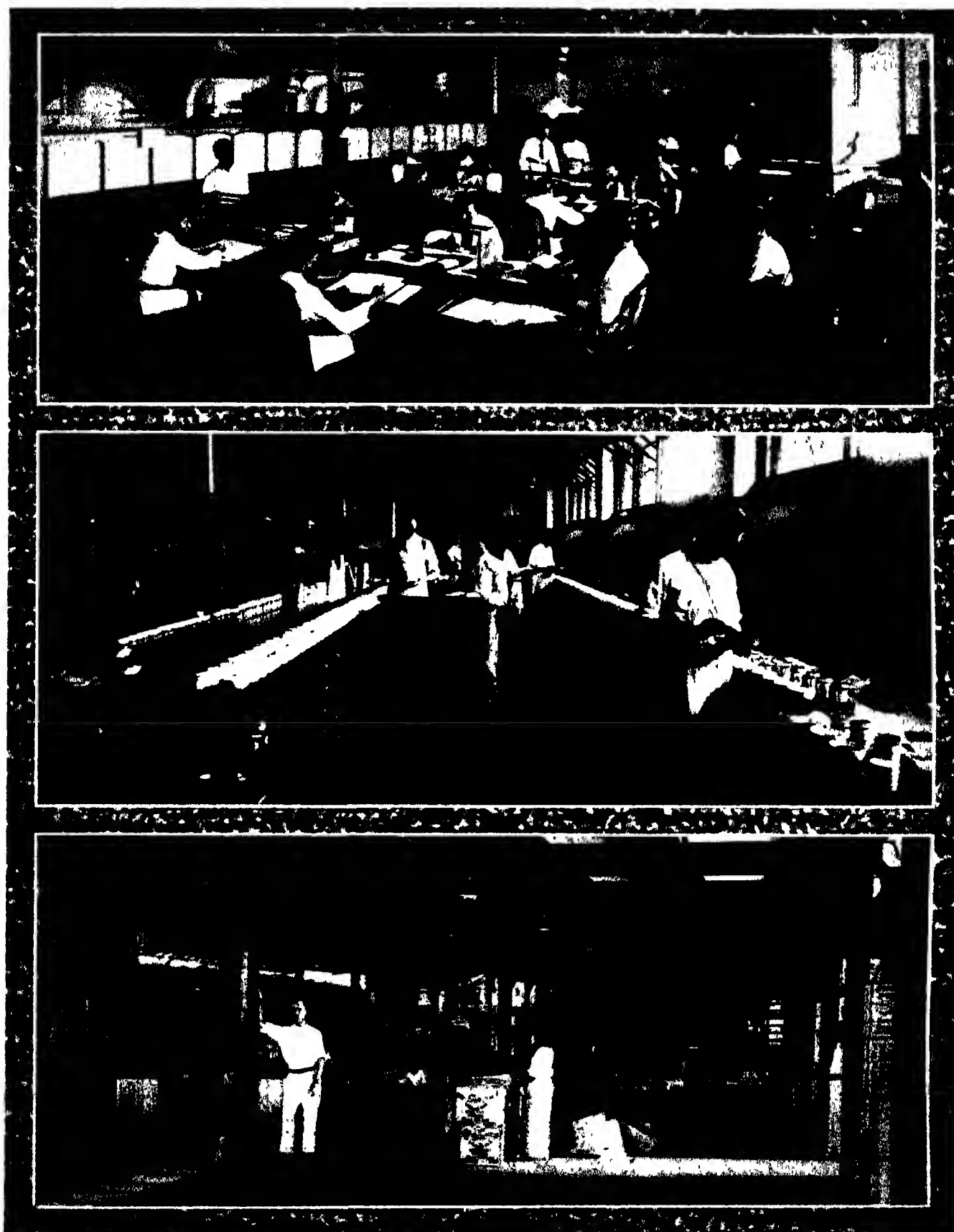
factories in baskets, where it is weighed. On some estates the leaf is transported by means of wire shoots and travelling ropeways.

The leaf is next spread in the upper floor of the factory on shelves of tightly drawn hessian called "Tats," and allowed to wither from 16 to 24 hours, according to climatic conditions. Through this process the leaf loses a great deal of its moisture, and becoming soft and pliable is then ready to be placed in the rollers. These twist the leaf and also break the cells containing the properties which give colour, flavour, and strength to the cup of tea as drunk in the ordinary household. The process of rolling breaks up the leaf and makes it ready for fermentation. During this process of fermentation the leaf assumes a coppery colour, and in due course it is dried to arrest this fermentation, which if allowed to go too far, destroys the quality and flavour. A tea drying machine is composed of wide-bottomed trays, on which the leaf is spread and subjected to a continuous current of dry hot air from an adjoining furnace by means of a mechanically driven fan. The fermented leaf, which has previously been through the rollers for from 2½ to 3 hours, and is in a damp sticky condition when spread on the trays of the drying machine, is dried at a temperature sufficient to drive off the moisture. This process takes from 20 minutes to half-an-hour, during which the tea assumes the black appearance familiar to the public. This final process is known as "firing."

**GRADING.**—After being dried, the tea is graded. The marks known on the market are



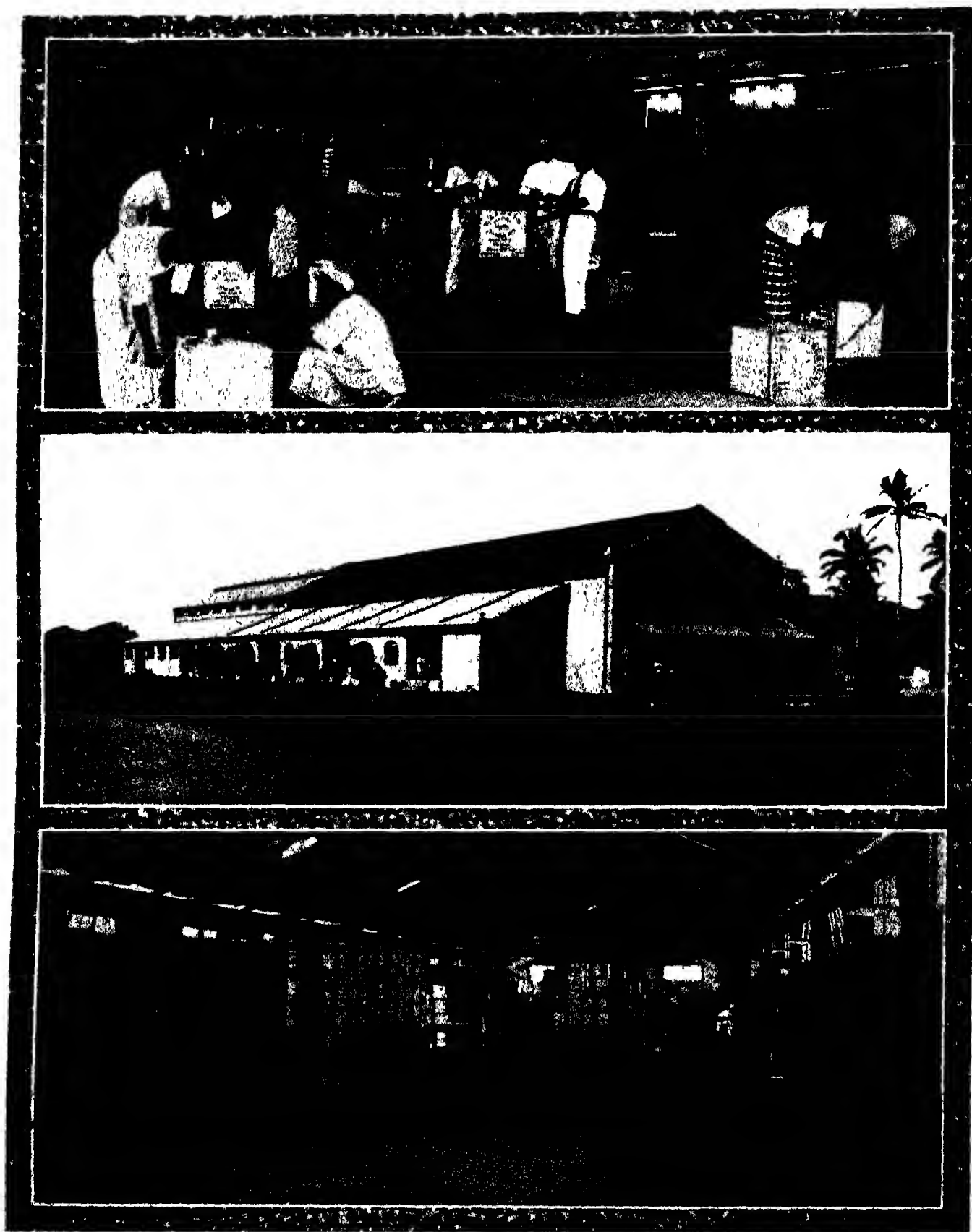
TEA SEED BEARERS.



DODWELL & CO, LTD , Colombo.

1. The General Office.
2. Tea Sample Room.
3. The Ground Floor.

(See letterpress, page 70)



DODWELL & CO. LTD., Colombo

1. View of the Ground Floor.
2. The Main Store.
2. The First Floor.

(See *Interpress*, page 76.)

"Orange Pekoe," "Pekoe," "Souchong," "Cougou," etc. These are old Chinese terms, but are now used somewhat loosely on the supposition that certain leaves on the shoot form the bulk of the grade named. Thus the unopened tip (bud) and the first opened leaf are generally supposed to constitute the "Orange Pekoe," the next in descent is the "Pekoe" leaf, and still lower the "Souchong" leaf. The grades, however, are now merely commercial terms which have little relationship to any particular leaves. There is a corresponding class for the fine particles, or so called "Broken" leaf of each grade, which generally gives a stronger tea than the grade itself, and is consequently higher in price. Generally speaking, estates in Ceylon confine their grading to the following:

- 1 Broken Orange Pekoe the small leaf containing tips
- 2 Broken Pekoe the rather larger leaf than the Broken Orange Pekoe, without tips
- 3 Orange Pekoe the twisted, long, thin, wiry leaf
- 4 Pekoe the large twisted black leaf
- 5 Pekoe Souchong the very bold, black leaf
- 6 Fannings the grainy very small leaf
- 7 Dust practically tea in powder form

Though the above grades are usually adopted, it depends on the estate as to whether certain of these are eliminated and only two or three grades manufactured. Some estates even make fancy teas such as Golden Tips, Flowery Orange Pekoe and Flowery Pekoe but these are not in such general use as the recognised standard grades.

These various grades are obtained from the tea just after it has been fired, and by systematic sowing through sieves of various sizes, generally machine driven, coupled with the passage of the tea through "breakers" or "equalisers," in which the coarser leaf is broken down to a uniform length.

The percentage of the various grades in relation to the aggregate of leaf plucked depends on the method of plucking and manufacture, but the following table will indicate the proportion turned out by the average estate —

	PER CENT
Broken Orange Pekoe ..	30
Broken Pekoe ..	40
Orange Pekoe, and Pekoe	20
Dust ..	3
Wastage ..	1

In the course of manufacture the green leaf loses weight to the extent of 75 per cent., so that one pound of green leaf gives only a quarter of a pound of finished tea. From this ratio can be estimated the enormous amount of work entailed in handling Ceylon's yearly green leaf crop of roughly 700 to 750 million pounds, which goes to make the annual export.

**GRINDING** — Green tea of which only a small quantity is manufactured in Ceylon consists of the freshly plucked green leaf which has been softened and made ready for rolling by a steaming process. A rotating cylinder is used for this. The steaming must be very short or the leaf gets a boiled cabbage appearance, and is then useless and yet it must be treated long enough to ensure the destruction of the ferment (enzyme). About  $1\frac{1}{2}$  to 2 minutes under a steam pressure of 20 lb. to the square inch is generally sufficient.

After steaming the excess of water is usually got rid of in a centrifugal machine, though much juice is lost at the same time. The leaf is then dried off as quickly as possible by methods and appliances similar to those used in the manufacture of black tea. The comparatively small quantity of green tea made in Ceylon (1,742,388 lb. were exported in 1924) finds its way mostly to America, but formerly to Russia where it is usually drunk plain and with a slice of lemon. It is graded as "Young Hyson," "Hyson No. 1," "Hyson No. 2" and "Gimpowder."

**PACKING.** After the tea has been graded, each grade is packed separately in wooden boxes lined with sheet lead. Almost all the woods found in the tea districts of India and Ceylon have been used at one time or another for making tea boxes, or tea shooks as they are called, the tendency of later years having been to employ cheaper and inferior woods. Steel chests were tried, but were abandoned. It may be mentioned that the wood of which

the chest is made is by no means a matter of indifference. Some timbers have the reputation of tainting the tea placed in them, giving it a sort of "cheesy" flavour, and quite a large number of timbers can only be used after long seasoning under water.

Chests are now always lined with thin sheet-lead, carefully soldered. It is of the utmost importance that the package should be as airtight as possible, since tea is exceedingly quick in absorbing moisture from the air (up to the amount of 16 to 17 per cent.), and then becomes rapidly mouldy and useless. Before packing, each grade of tea is always refined at a temperature of 180° to 200° Fahr., and packed while still just warm. As put in the boxes, it commonly contains from 2 to 3 per cent. of moisture.

#### IMPROVED METHODS OF PACKING

Owing to complaints made by the Institute of London Underwriters and the Government of Australia, the Ceylon Planters' Association has instructed planters always to pack tea in lead, as thin aluminium sheets and aluminium foil made partly of paper easily get damaged if touched by sea water, and to use Ceylon made tea chests only if they are double hooped and made of certain specified woods, as otherwise they get damaged badly in transshipment at Port Said. The packing conditions detailed above, the growing scarcity of good-class wood within easy reach, and the marketing at very favourable rates of the fairly well made Japanese *momi* chest have hit the Ceylon tea chest industry very much of late. Although the price of the patent chest is higher than that of the Ceylon chest, its greater durability and good appearance are so generally recognized that about 500,000 patent chests are now imported yearly, and there is room for further expansion.

**RESEARCH INSTITUTE.** — Ceylon planters have for some time past realised the need for a Tea Research Institute, and strong representations have been made to the Government to establish a research scheme on the lines of the rubber research scheme already working. It was pointed out in 1925 that, with fair support, a levy of 1-12th of a cent. on the



COLOMBO COMMERCIAL CO. LTD., Colombo.

Tea Tasting.

(See Letterpress, page 78)

pound of tea would provide sufficient funds to build and equip an up-to-date laboratory and to support a staff of six technical experts. The work of such a Research Institute would be very largely concerned with the scientific and economic use of manures, which are at present only imperfectly understood.

**TEA BLENDING AND TASTING.** While Ceylon tea is usually exported as received from the estates, it is rarely available to the consumer in its pure state, being usually blended at destination with teas from other countries in order to meet the demands of a large section of tea buyers.

Prior to the weekly auction the Colombo Brokers send samples of the teas in their catalogues to the local export houses. Both brokers and exporters have expert tea tasters on their staffs who have usually received their training with one of the large tea dealers in London. The exporter having bought the requirements of his firm at the auction, examines these purchases and allocates the various teas suitable to the requirements of his customers, who may be situated in many parts of the world. Here the expert must have information as to the properties of the water in the various centres, as soft or hard water and other variations will entirely alter the character of the liquor of the same tea. It is therefore necessary to be acquainted with the existing conditions in order to supply customers with teas suitable to their locality.

The accurate tasting of teas demands many years of experience, and the best judges are those who are naturally favoured with a sensitive palate. A tea taster in Ceylon has to taste anything from 1,000 to 1,200 teas a week, and this is repeated throughout the year, except during the holiday periods. The Colombo tea experts must also have a knowledge of the scientific side of the manufacture, in order to be able to report on the samples sent to Colombo for advice by the estates. In the tasting of tea, a weight of tea equal to a sixpenny piece is dropped into a small pot and about an eighth of a pint of boiling water is poured thereon. The lid is then placed on the top of the pot, and after standing from five to six minutes all the liquid is poured into a small china bowl of suitable size. The infused leaf (tea leaves) is tapped from the pot on to the lid, which is inverted for this purpose. The taster then starts his examination, testing the tea firstly by the liquor, secondly by the scent or brightness of the infused leaf, and thirdly by the appearance of the dry leaf of the sample. The combination of the points noticed enables the taster to form his opinion. Generally speaking, a tea may be judged by the brightness of the infused leaf, a dark or black infusion denotes a tea of pure quality, and irregular infusion shows defective manufacture, while a fine quality is indicated by a bright coppery colour.

**VARIATIONS IN FLAVOUR.** Ceylon tea varies considerably in flavour, according to the elevation and district in which the estate is situated, teas from the estates in the low-country have practically no distinctive flavour, while a choice flavour is produced by estates of medium elevation, and a very choice lemon flavour is characteristic of tea grown in certain areas and in districts over 6,000 ft. above sea-level.

**TEA CONSUMPTION.**—In 1921 the yearly consumption of tea in Australia was 8 lb. per person, then the highest in the world, and this was nearly equalled in 1923 by New Zealand with 7½ lb. According to recent statistics, however, the yearly consumption of tea in the United Kingdom has lately reached the record figure of 9 lb. per capita of population.

**TEA PRICES.** In 1886-87 the average price of Ceylon tea on the London market was 1 1½ per lb., from which date there was a gradual fall in price until 1905 when the lowest recorded average of 7d. per lb. was reached. During the War the price reached 1 ½ per lb., and after the Armistice soared to over 2 ½ per lb. the highest level being reached towards the end of 1924, when the price recorded was 2 1½ and the average touched 1 8½, the average for North Indian tea at the same time being over 2 ½. The duty on tea in Great Britain was reduced by 4d. a lb. in April 1924, but by the end of the year the advance in prices had exceeded the amount of the reduction in the duty.

**TEA SALES.** The public auctions of Ceylon tea both in London and Colombo are held on Tuesdays, and on an average between 1½ to 2 million pounds are listed at these sales. The greater portion of the tea shipped to London is sold in Mincing Lane to distributors who either re-pack the tea into small packets or send it to the provinces in bulk to be packaged there. A comparatively small quantity of Ceylon tea shipped to London is eventually re-exported to America or the Continent. The following table shows the export distribution of black and green teas from Ceylon in 1913, 1923 and 1924. It will be observed that while some countries have decreased their purchases (China is a notable instance) and Russia (which was a very large purchaser in 1913) only came into the market again in 1924 to a very small extent, the United States' share of exports has very nearly doubled itself.

	1913 lb.	1923 lb.	1924 lb.
United Kingdom	112,120,807	110,768,284	132,886,382
United States	8,841,880	15,550,430	16,309,413
Australia	21,203,148	10,515,635	15,460,636
Canada & Newfoundland	7,902,834	7,010,020	8,603,614
New Zealand	5,999,810	6,386,188	5,884,136
Russia	10,829,876		131,183
Continent of Europe	2,352,840	2,128,942	2,952,095
China (including Hongkong)	8,444,721	317,715	376,103
Other Countries	6,040,238	10,062,512	22,266,745

Total 192,176,160 181,929,731 204,930,307

**CONTROL OF INFERIOR TEAS.**—The Government of Ceylon recently appointed a Committee to frame rules and regulations with a view to controlling the export of inferior teas and their sale in Ceylon, a series of experiments being carried out by the Government Analyst to facilitate the work of the Committee. Strong efforts have been made by the Committee and various Planters' Associations to induce tea estate proprietors to instruct their employees to discontinue the sale of factory sweepings and the manufacture of inferior teas blended with other leaves and colouring matter, the police also having been instructed to prevent, as far as possible, the sale of rubbishy tea to passengers at Colombo harbour. The control measures will include the licensing of petty shopkeepers, who are the main consumers in Ceylon of factory sweepings.

**TEA TRADERS' ASSOCIATION.**—This important and flourishing organisation comprises all the well known business houses associated with the tea industry. The chairman or vice-chairman of the Ceylon Chamber of Commerce is the ex-officio Chairman of the Committee of the Association.

**WORLD PRODUCTION AND CONSUMPTION.**—The following table is of interest as showing the position which Ceylon occupies with regard to the other tea-producing countries of the world. The figures are those for 1923.

PRODUCTION	lb.
India	345,000,000
Ceylon	205,000,000
Netherlands East Indies	123,000,000
China (Exports)	70,000,000
Japan	23,000,000
Formosa	12,000,000
French Indo China	4,000,000
CONSUMPTION	lb.
United Kingdom	450,000,000
United States	95,000,000
Australia	52,000,000
Canada	40,000,000
India	37,000,000
Africa	32,000,000
European Continent	30,000,000
South America	10,000,000

**WORLD'S TEA EXPORTS.** Shipments from the chief tea-producing countries in 1923 and 1924 were as follow:

	1923 lb.	1924 lb.
India	345,170,000	343,700,000
Ceylon	182,000,000	205,000,000
Netherlands East Indies	100,620,000	122,870,000
China	82,120,000	68,320,000
Japan	25,500,000	22,268,000
Formosa		12,000,000

## REPRESENTATIVE TEA COMPANIES

### DODWELL & CO. LTD.

**Inception.**—Mr. George B. Dodwell, founder of the business of Dodwell & Co. Ltd., was for many years in Hongkong and Shanghai with the firm of Messrs. Adamson, Bell & Co. When that concern went out of business in 1891 Mr. Dodwell with Mr. Carhill, formed a partnership styled Dodwell, Carhill & Co., taking over the business interests of Messrs. Adamson, Bell & Co. and securing the services of many of that firm's employees.

**Development.** The new organisation was immediately successful, and in 1899 it became Dodwell & Co. Ltd. The history of the company is one of rapid growth and development, with the result that the firm is now directly represented in about fourteen commercial centres, while in many others it is served by agents. With a capital to day of £300,000, the company's ramifications extend throughout the Far East, and embrace practically every branch of trade and commerce.

**Activities.**—Messrs. Dodwell & Co. Ltd. are not only merchants, importers and exporters, but they are actively engaged in shipping, chartering, in all branches of insurance, in general agency business, in engineering and contracting, in the coal business, and many other departments of industry and trade.

**Colombo Business.**—The Colombo branch of the firm is one of the largest operators in the export of tea, desiccated coconut, coconut oil, mattress and bristle fibres, cocoa, cinnamon, cardamoms, papaine, and various other lines of produce to all parts of the world, while it acts as agents for



estate and milling interests established in the island, and holds a number of insurance agencies

**Produce Interests.**—For the rapid handling of produce of such a diversified nature as is dealt with by the Ceylon branch of the firm, extensive store space is an imperative necessity, and in the Point Stores property situated in Glenne Street Slave Island, this requirement is fully met. The main store is a two-storeyed building, providing 35 720 superficial feet, standing on the lake-side and in direct communication by both road and water with the harbour and railway. The advantages of such a geographical position in connection with the expeditious despatch of orders are very material. In addition to the main store, there are other commodious stores and godowns standing on the property to facilitate operations which are under the personal supervision of a resident European storekeeper, assisted by a separate clerical staff. In connection with their importing interests Messrs. Dodwell & Co. Ltd. have the sole selling agencies for such popular lines as Gerrard wire, largely used in the strengthening of packages for shipment and "carbo lastic," an asbestos liquid roofing which is filling a long-felt want in Ceylon.

**Estate and Milling Interests.** Messrs. Dodwell & Co. Ltd. act as agents and secretaries for the Ceylon Coconut Oil & Desiccating Co. Ltd., which owns the Hunupitiya Mills, Negombo. Andambalama Coconut Mills, Minuwangoda, Kelanganga Mills, Colombo. Ellundale Tea Estate, Maskeliya. Rambodde Tea Estate Ramboda and Nelella Coconut Estate, Kutangala. The firm also acts in the same capacity for the Karandipona Estates Company Ltd., producers of tea and rubber and in addition is selling agent for many well-known estate teas, including Ottery, Blair Athol, St. Leys, Epalawa, Handrookande, etc.

**Insurance and Shipping.**—The insurance agencies held by Messrs. Dodwell & Co. Ltd. are those of the Union Insurance Company of Canton Ltd. (marine and fire) and the Union Assurance Society Ltd. (fire), while the local agency of the Dodwell Line of steamers from the Far East to America is naturally with the Colombo Branch of the firm under notice.

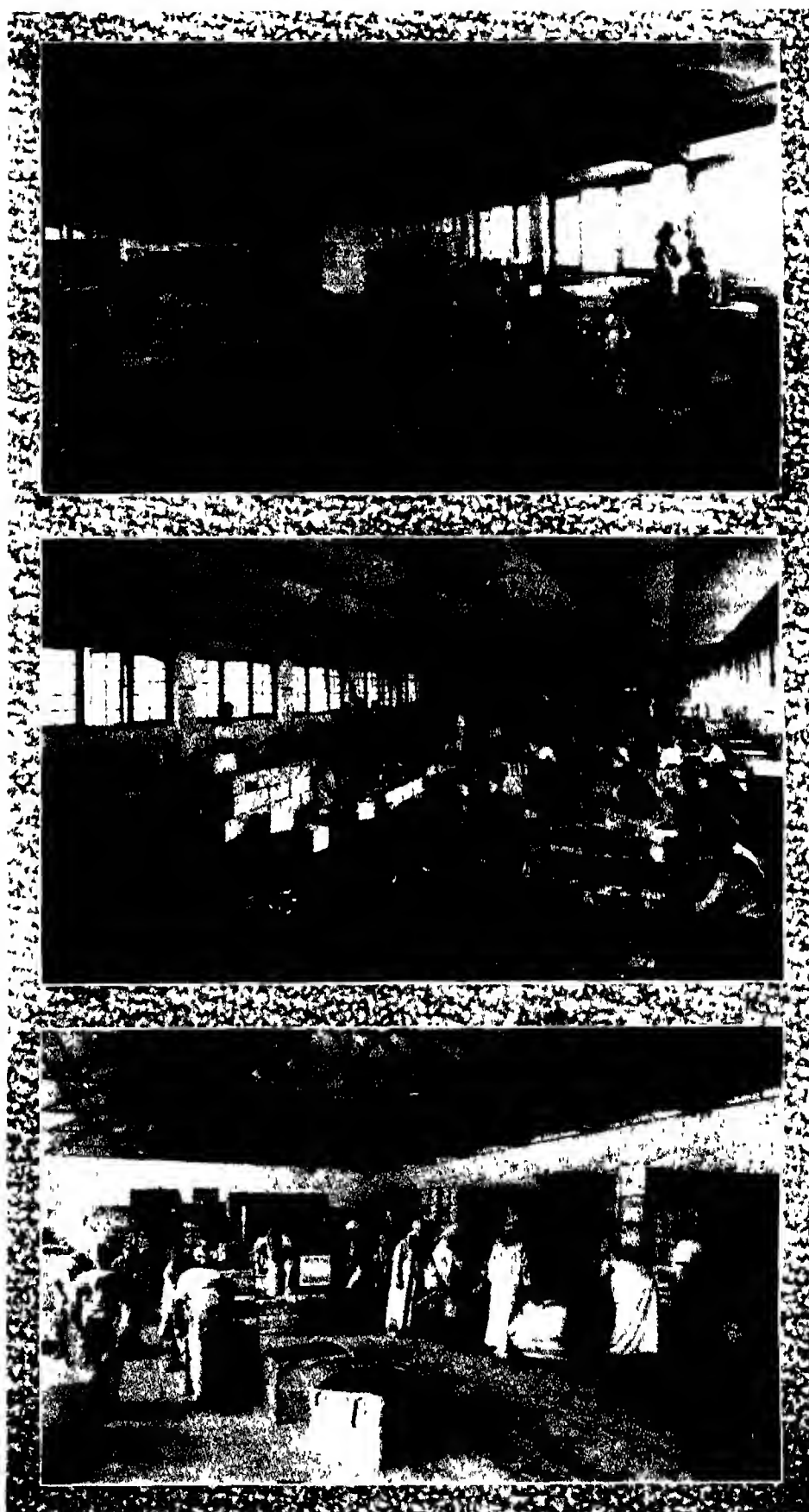
**Branches.**—The company has branches at the following centres: Hongkong, Canton, Foochow, Shanghai and Hankow, in China; Kobe and Tokio, in Japan; New York, San Francisco, and Seattle, in the United States; Vancouver, in British Columbia; and Antwerp, in Belgium. Messrs. Barry & Dodwell Ltd. are the representatives at Chungking, in China.

**Management.**—At the Colombo branch, Messrs. Percy Ball and Henry Herbert Dulling are joint managers, while Mr. Robert Shaw is head of the Tea Department. Mr. George B. Dodwell, founder of the business, is chairman of directors in London.

**Offices.**—Head Office: Exchange Chambers, 24, St. Mary Axe, London, E.C. 3. Colombo Branch Offices: National Bank of India Building, York Street, Fort Stores, Glenne Street, Slave Island.

**Cables.**—"Dodwell," Colombo. Codes: A.B.C. (5th and 6th Editions), A 1 Code 1888 Edition, Lieber's, Bentley's, Standard Shipping, Scott's 10th Edition, Western Union and Private.

(See illustrations, pages 73, 74.)



COLOMBO COMMERCIAL CO. LTD., Colombo.

Packing.

(See letterpress page 78.)

**COLOMBO COMMERCIAL CO. LTD.**

**Inception.**—The Colombo Commercial Co Ltd was founded in London in 1876 to acquire estates in Ceylon for the purpose of cultivating, curing, and exporting coffee.

**Development.**—In the year 1875 the export of coffee from Ceylon reached its greatest volume, but in the succeeding years there was a decline in this former staple industry owing to the spread of the coffee-leaf disease. As a consequence the Colombo Commercial Co turned its attention to the growing of tea for export, with the result that it now ranks among the largest and most important concerns so engaged in the colony.

**Capital.**—The capital of the company is £500,000.

**Activities.**—The Colombo Commercial Company is not only concerned with the cultivation of tea, but it deals also in rubber and various other products of the island. In addition, it acts as agent for a number of owners of estates, and purchases largely for export from the teas offered in the local market. It also carries on a very large engineering business in the manufacture of machinery for the complete equipment of tea and rubber factories, both on its own estates and on other properties.

**Fertilizing Department.**—This department supplies large quantities of fertilizer of all kinds which are used in the cultivation of tea, rubber, coconuts, etc., in Ceylon. Of these fertilizers, many are imported from Europe, while others are obtained locally and mixed to meet the various requirements of the estates.

**Tea Buying Department.**—This is an important branch of the company's business, four expert tea-tasters being engaged in the work of selecting teas from those put up for sale at the weekly auctions in Colombo. These teas are then blended, packed, and exported by the company to all parts of the world. The volume of trade controlled by this purchasing department is now very considerable and steadily increasing, orders

being received from Australia, America, South Africa, the United Kingdom and Europe, and this steady expansion of the business done by the department, which is quite distinct from the estate agency section, is ample evidence that the company is in a position to carry out its important operation satisfactorily. On adjoining premises, the Colombo Lead Mills roll imported pig lead into sheets, from which the linings of the tea chests are cut, and there is therefore no delay in the packing and shipment of all orders received.

**Agencies.**—The company acts as agents in Colombo and London for Colombo Lead Mills Ltd, Ellawatte Ceylon Tea Estates Ltd, Hunasgeria Tea Co Ltd, Mayheld (Dimbula) Tea Co of Ceylon Ltd, Moolova Estates Ltd, Ouvah Ceylon Estates Ltd, Rani Travancore Rubber Co Ltd, Spring Valley Ceylon Estates Ltd, Agra Tea Co of Ceylon Ltd, Baddegama Estate Co of Ceylon Ltd, Bank of Uva Ltd, Cullen Estates Ltd, Kalkudah Coconut Estate Co Ltd, Pitakande Tea Co of Ceylon Ltd, Rye Estates Co of Ceylon Ltd, London and Lancashire Insurance Co Ltd, London and Liverpool, Thames and Mersey Marine Insurance Co Ltd, London.

The Colombo Commercial Co is sole agent for Birkmyre Bros, Calcutta (hessians and gunnies), "Carrimore" Trailers, C C C Tea Rollers (rollbreakers and desiccators), David Bridge & Co (rubber machinery), "Day Elder" lorries, Gillingham "Red Hand" cement, INI pruning knives, Leyland Motors Ltd, Savage's tea cutters, Solignum wood preservative, Southwark cotton belting, Tangyes Ltd (oil and suction gas engines), Venesta Ltd, "Vulcan" disinfectant, W Gunther & Sons' turbine pelton wheels.

**Directorate.**—Messrs Alfred Brown (chairman), A Young (managing director), J G Wardrop, W Shakspeare, and A A Prideaux, Secretary F A Kup.

**Bankers.**—Bank of Scotland, 30, Bishopsgate, E C 2.

**Offices.**—Union Place, Slave Island, Imperial Bank Building, Fort London office, Thames House, Queen Street Place, E C.

**Branches.**—At Bandarawela, Badulla, and Kandapola. The fertilizer works are at Hunupitiya.

(See illustration, page 77.)

**BOSANQUET & CO. LTD.**

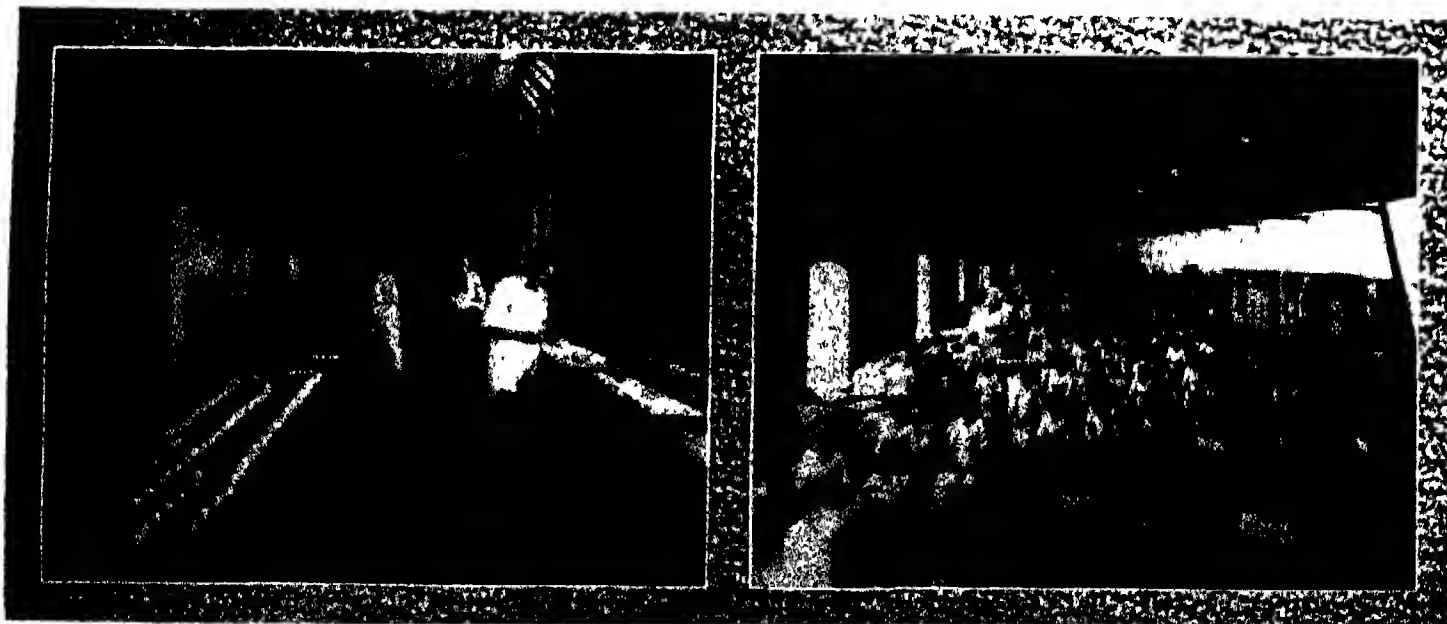
**Inception.**—This firm, which is one of the oldest in Ceylon, was founded some 75 years ago by the late Mr Geo Wall.

**Tea Industry.**—The company has always been closely identified with the planting industries of the island, being at first concerned with the cultivation of coffee and cinchona. In the late seventies, when the coffee industry failed owing to leaf disease, the firm took up tea-planting with such success that it now owns and controls some of the finest tea estates in Ceylon, and in addition possesses large acreages under rubber and coconuts.

The company is also actively engaged in the purchase of tea at the weekly auctions for shipments to all parts of the world. This class of business was, in fact, being conducted in 1881, the company having been one of the first shippers of Ceylon tea to Australia. Orders are also executed for rubber, cocoa, and products of the coconut for shipment abroad.

**Import Interests.**—In addition to their export business, Messrs Bosanquet & Co Ltd have large import interests, especially in piece goods, these interests dating back to the days before the opening of the Suez Canal, and when consignments used to be brought to the island in sailing ships. Imports are also made of high explosives, of which large quantities are required in the plumbago mining industry, and "Dicks" balata belting.

**Other Interests.**—In their capacity as private bankers, Messrs Bosanquet & Co Ltd act for absent proprietors and administrators of deceased estates.



BOSANQUET & CO., Colombo.

1. Tea Sample Room.

2. Preparing Shipments for all parts of the world.

**Agencies and Correspondents.**—The company is agent for Messrs Nobel's Ltd. (high explosives), "Dicks" balata belting, and amongst the firm's correspondents are Messrs Bosanquet Traill & Co., Antony Gibbs & Sons, Matheson & Co., London, Glazebrook Steel & Co. Ltd., Thos. G. Hill & Co. Ltd., Ashton Hoare & Co. Ltd., Manchester, Gibbs Bright & Co., Australasia, Gibbs & Co., South America, Jardine Matheson & Co., New York and Shanghai, D. & S. S. Rejwan, Bagdad, The World Marine Insurance Co. Ltd., British Traders Insurance Coy. Ltd., Northern Assurance Co. Ltd.

**Directorate.**—Messrs D. W. Watson, G. B. Traill, W. R. Mathew, H. J. Bromley, and G. O. Hunt Secretary Mr L. P. Lerway Day

**Offices.**—National Mutual Building, Fort, Colombo Cables "Bosanquet," Colombo Codes A.B.C. and Bentley's

**London Office.**—Bosanquet Traill & Co., 4, Market Buildings, 29, Mincing Lane, E.C.

**Bankers.**—Mercantile Bank of India Ltd

#### LEE, HEDGES & CO. LTD.

**Inception.**—Founded in 1858 as Lee, Hedges and Co., this firm was incorporated as Lee, Hedges & Co. Ltd in 1917

**Capital.**—The authorised capital of the company is Rs 1,500,000 the paid up capital being Rs 1,100,000, and the general reserve, Rs 100,000

**Activities.**—Messrs Lee, Hedges & Co. are managing agents of tea, rubber, cacao, and coconut estates, steamship and insurance agents, tea merchants, exporters and importers, and attorneys for absentee proprietors

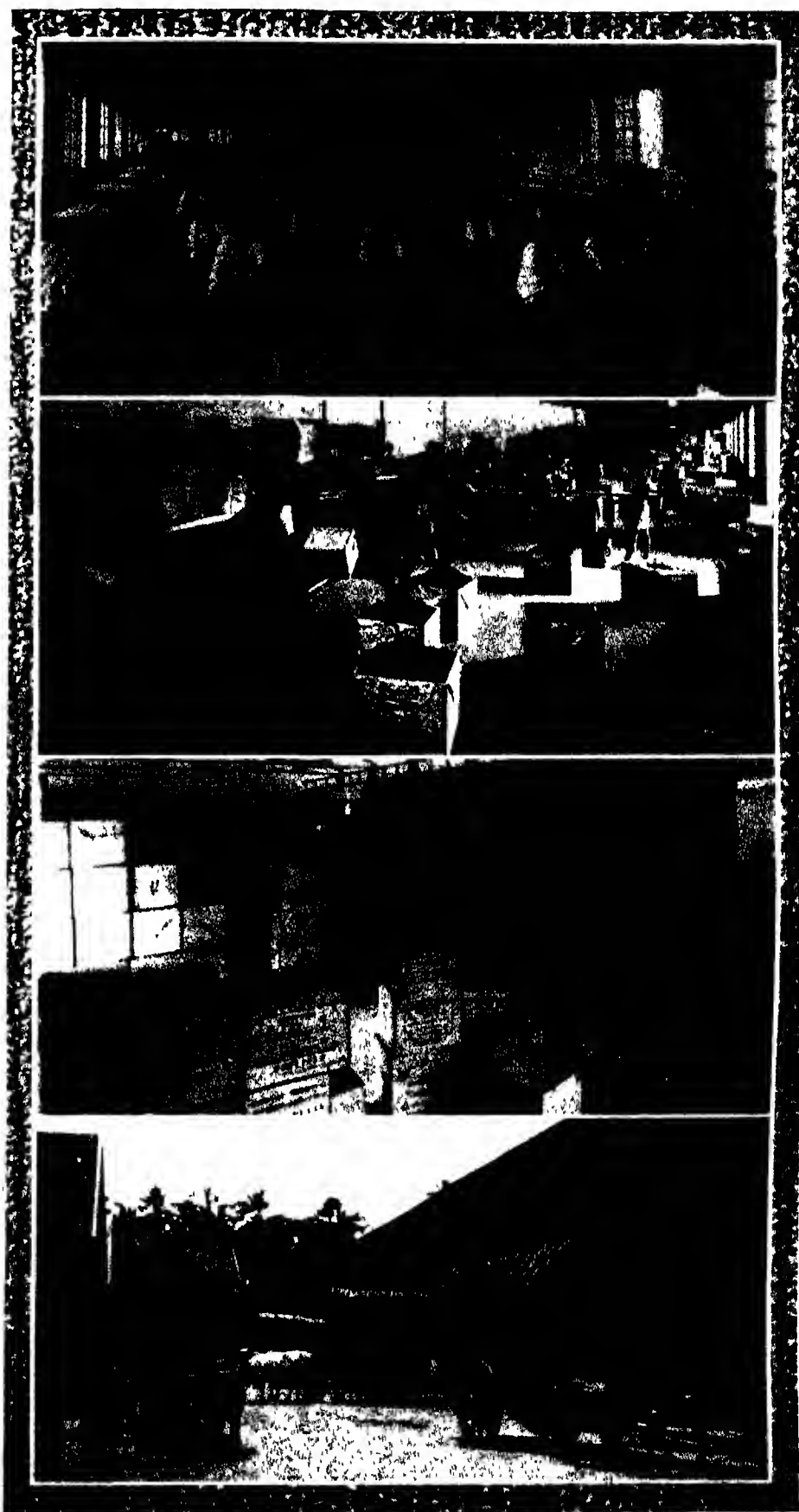
**Export Trade.**—The firm is one of the oldest of the larger European houses in Ceylon, and does a very extensive business in tea, it is also particularly well placed to handle orders for cinnamon and rubber. Other exports are plumbago, fibres, and coconut products

**Import Trade.**—Messrs Lee, Hedges & Co. carry on a large import trade, principally in timber, teak, powellized karri and jarrah, steel joists, galvanized iron, cement, hoop iron and estate requisites, asbestos cement roofing and pipes, "Gripoly" belting, "Atlas" preservatives and paints, explosives and cartridges

**Tea and Rubber Agencies.**—As managing agents and secretaries, Messrs Lee, Hedges & Co. Ltd represent the following important tea and rubber companies: The Vogan Tea Co. of Ceylon Ltd., the Hatton Tea Co. Ltd.; the Kanapediwattie Tea Co. Ltd., the Pelmadulla Valley Tea and Rubber Co. Ltd., the Honiton Rubber Co. Ltd., the Lanka Rubber Co. Ltd., the Marishena (Kalutara) Rubber Co. Ltd.; and the Kandy Rubber and Tea Estates Ltd

**Insurance Agencies.**—The company is also agent for The Commercial Union Assurance Co. Ltd.; the Union Assurance Society of Canton Ltd., Underwriters at Lloyd's; the Imperial Live Stock and General Insurance Co. Ltd.; the Standard Steamship Owners' Protection and Indemnity Association; the Standard Steamship Owners' Mutual Freight, Dead Freight, Demurrage and Defence Association Ltd.; the Standard Steamship Owners' Mutual War Risks Association Ltd

**Shipping Agencies.**—The company is agent for the Pacific Mail S.S. Co.; Societa Nazionale di Navigazione; Dollar Steamship



BOSANQUET & CO, Colombo,

1. Tea Packing Department
2. Preparing Shipments for all Parts of the World
3. View in Godowns.
4. Exterior of Godowns.



LEE, HEDGES & CO. LTD., Colombo.  
 1 and 2. The Company's Warehouse at Colombo.  
 Centre. New Office Premises nearing Completion.  
 4. Packing Tea at Colombo. 5. Packing a well-known Brand of Tea.  
 (See *Literpress*, page 79.)



LIPTON LTD., Colombo.

1. Dambatenne Tea Estate.
2. Indian Girls Sorting over the Tea before Passing it into the Factory
3. Dambatenne Tea Estate, showing the Factory.

(See also illustration, page 69.)

Line (Pacific Service), Grace Steamship Co., Atlantic and Pacific S S Co., New York and Pacific S S Co

**Other Agencies.**—Among other companies represented by the firm are The State Saw Mills Dept., Government of Western Australia, the Morgan Crucible Co. Ltd., Bells United Asbestos (India) Ltd., Curtis's & Harvey Ltd., Atlas Preservative Co. Ltd., Gripoly Belting Co., etc.

**Directors.**—Messrs C S Burns, A S Berwick, A P Woldock, J M Pittendigh and Major J W Oldfield, O B E., M C Secretary Mr J C Robinson

**Offices.**—Head Office "Hedges Buildings," 74, 75, and 76 Colpetty Road, Colombo where are also situated the company's Colpetty mills, tea, etc., factories and warehouses, covering over 5 acres. It is anticipated that in the near future Colpetty Road will be widened to the same extent as Colpetty between the Galle Face and Turret Road. When this takes place it will give the firm a fine roadway on which it will have a considerable frontage. The shipping and insurance business of the company is transacted at the city branch 12 Queen Street, Fort, Colombo.

The London representatives of the firm are Messrs Grace Bros & Co. Ltd. bankers, 144, Leadenhall Street, London, E C 3, and The British & Foreign Machinery Co. Ltd., Friars House, 30-41, New Broad Street E C 2, and there are agents and correspondents in all the principal cities abroad.

**Cables:** "Hedges," Colombo. Codes Bentley's Complete Phrase A 1 A B C 4th Edition, Lieber's, Western Union, Marconi International, McNichol's and Private.

**Bankers:** National Bank of India Ltd.

#### LIPTON LTD.

**Activities.**—By actively associating himself many years ago with the tea industry of Ceylon Sir Thomas Lipton gave practical force to the principle on which the tea business of that very important firm is conducted—that of furnishing the consumer with the leaf direct from the estate. As an outcome of that far-sighted enterprise one property has been added to another until the company possesses a very considerable extent of tea land in the island.

The fine advertisement Messrs Lipton Limited have given to the Ceylon leaf is largely responsible for the present flourishing condition of the trade. No other undertaking has done more to popularise the tea of the island, or has won for it a higher reputation in the world's markets.

**Capital.**—The capital of the company is £1,250,000, in ordinary shares.

**Estates.**—The land, as is necessary for the best tea production, is situated at a high elevation, the principal estates being in the Haputale district, in the province of Uva, an upland country with a dry invigorating air, exceptionally favourable for the planting of tea of the highest quality. In this region is the famous Dambatenne group of estates, consisting of Dambatenne, Maha Dambatenne, Bandara Eliya, and Sunn Peak, the total acreage being 1,535, of which 1,251 acres are under cultivation. Another and even more extensive property in Haputale is the Monerakande group, comprising Leymasotte, Nhakettia, and Upper Lyegrove. Here the acreage is 1,808, and of this area 1,432 acres are under cultivation. There are also in the Haputale district the Keenipitiya





HENDERSON & CO., Colombo.

1. Tea Sample Room.
2. Showing Tea ready for Shipment.

estates, with a total acreage of 634, of which 352 acres are under tea, and the Oakfield estate with an area of 1,060, 430 acres of which are under tea.

Among other estates owned by the company are the Pooprassie group, in Pusellawa, with an acreage of 1,365, of which 1,120 are under cultivation, the Karadagalla estate in Dumbura, of 160 acres, and the Panilkande estate in the Morawak Korale, with an area of 852 acres, of which 750 acres are under cultivation.

**Cultivation.**—All the estates are under the supervision of experienced planters, and cultivation is conducted on thoroughly approved scientific lines, the equipment being of the most up-to-date kind.

**Other Estates.** In addition to their very extensive tea estates, Messrs Lipton Ltd are largely interested in rubber and cocoa, and also conduct a considerable business as general produce merchants and importers of Monu tea boxes and all estate goods.

**Agencies.**—Among the companies for which Messrs Lipton Ltd act as agents are Lipton Ltd, London, etc (high class provisions), the Manufacturers' Life Insurance Co., Western Assurance Co. (marine), Guardian Assurance Co. Ltd., Ocean Accident and Guarantee Corporation Ltd., Charles Macintosh & Co (N.A.P. tyres), R & J Hill (tobacco and cigarettes), and Quirk Barton's tea lead.

**Directorate.**—Sir Thomas J. Lipton, Bart., K.C.V.O. (chairman), Messrs Alfred Bowker, C.P. Tomlin (managing director), and H.A. Snelling Secretary. Mr S.B. Sledmere.

**Offices.**—Maddema Mills, Cinnamon Gardens, Colombo. Cables "Lipton," Colombo.

#### HENDERSON & CO.

**Inception.**—This firm of export merchants and estate agents was founded by Mr J.A. Henderson, who has been in business in Ceylon for over thirty years.

**Activities.**—Messrs Henderson & Co were amongst the pioneers of the tea trade with Australia, and have done much to popularise Ceylon tea in that market. They have also taken an active part in the opening up of lands in connection with rubber, tea, and coconuts. The cocoa crop produced in Ceylon, though not large, is of good quality, and is extensively handled by this firm; while its operations are fairly large in spices, such as cinnamon and cardamoms. Other exports of the company are copra, desiccated coconut, coconut oil, essential oils, etc., and the firm has agents or correspondents in all the principal business centres of the world.

**Agencies.**—Messrs Henderson & Co. act as agents for the following produce companies. The Dalkeith (Ceylon) Rubber Estates Ltd., Pindemoya Rubber & Tea Estates Ltd., Allerton Estates (Ceylon) Ltd., Kudaganga Rubber Co. (of Ceylon) Ltd.; Trafford Hill Rubber Estates Ltd.; Walagama Rubber Co. Ltd.; Balahela Rubber Co. Ltd.; Richlands Ceylon Tea Estates Ltd.; Hangranoya Tea Estates Ltd.; Tilton (Ceylon) Tea Estates Ltd.; Kirivaula Coconut Plantation Co. Ltd.; Danzil Estates Co. Ltd.

The firm is also agent in Ceylon for marine and fire insurance offices, such as the Union Marine Insurance Co. Ltd.; State Assurance Co. Ltd.; Queensland Insurance Co. Ltd.; Western Insurance Co., and others.

**Partners.**—Messrs J A Henderson, H J Hanscomb, and O K Logan

**Offices.**—Chartered Bank Building, Colombo Tea packing and packeting factory Nilwatte Mills, Colombo

**London Correspondents.**—Messrs J A Henderson & Co Ltd, "Ocean House," 24-25, Great Tower Street, E.C.3

**Cables:** "Quality," Colombo

**Bankers:** The Chartered Bank of India, Australia and China, and the National Bank of India Ltd, Colombo

#### HEATH & CO.

**Inception.**—The business of Messrs Heath & Co was founded in China in the year 1862 by Mr Rodewald, who was subsequently joined by Mr A H Heath, the firm then being for many years styled Rodewald & Heath

**Development.**—With the extension of the tea trade in Ceylon and India the firm opened branches in those countries, the Colombo branch being established in 1896, and that at Calcutta in 1904, while an office was also established in Batavia in 1920. In 1900 Mr Rodewald retired, and the business was then transferred to Messrs A H and A R A Heath, since which date it has been carried on under the name of Heath & Co

**Activities.**—The company is wholly concerned with the export of tea, and the expansion of its business now involves the despatch of orders to almost all the countries of the world

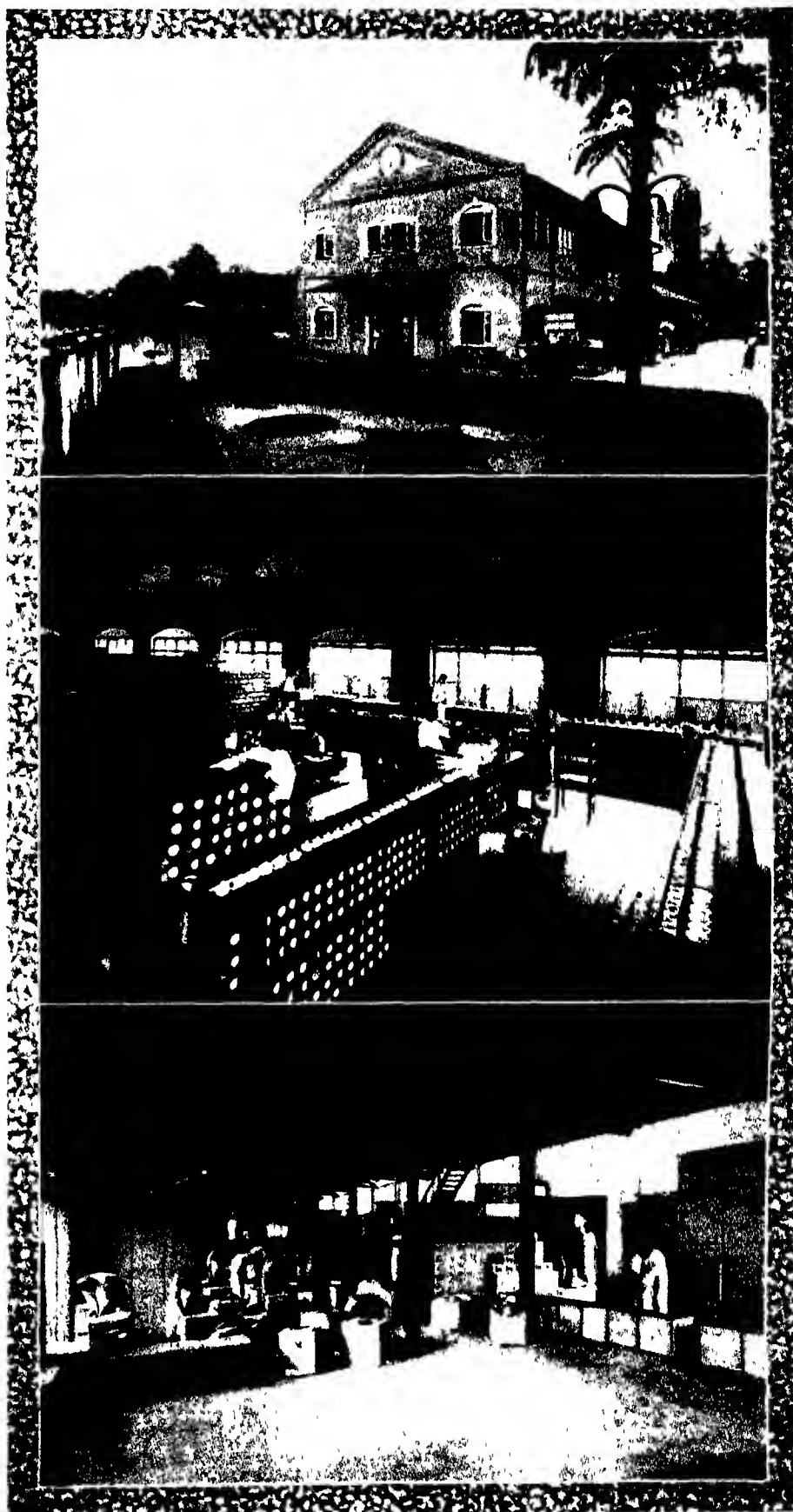
**Partners.**—Messrs A R A Heath, G L Lyon, and C H Griggs

**Offices.**—Colombo branch No 9 Park Street

**Bankers.**—Chartered Bank and National Bank

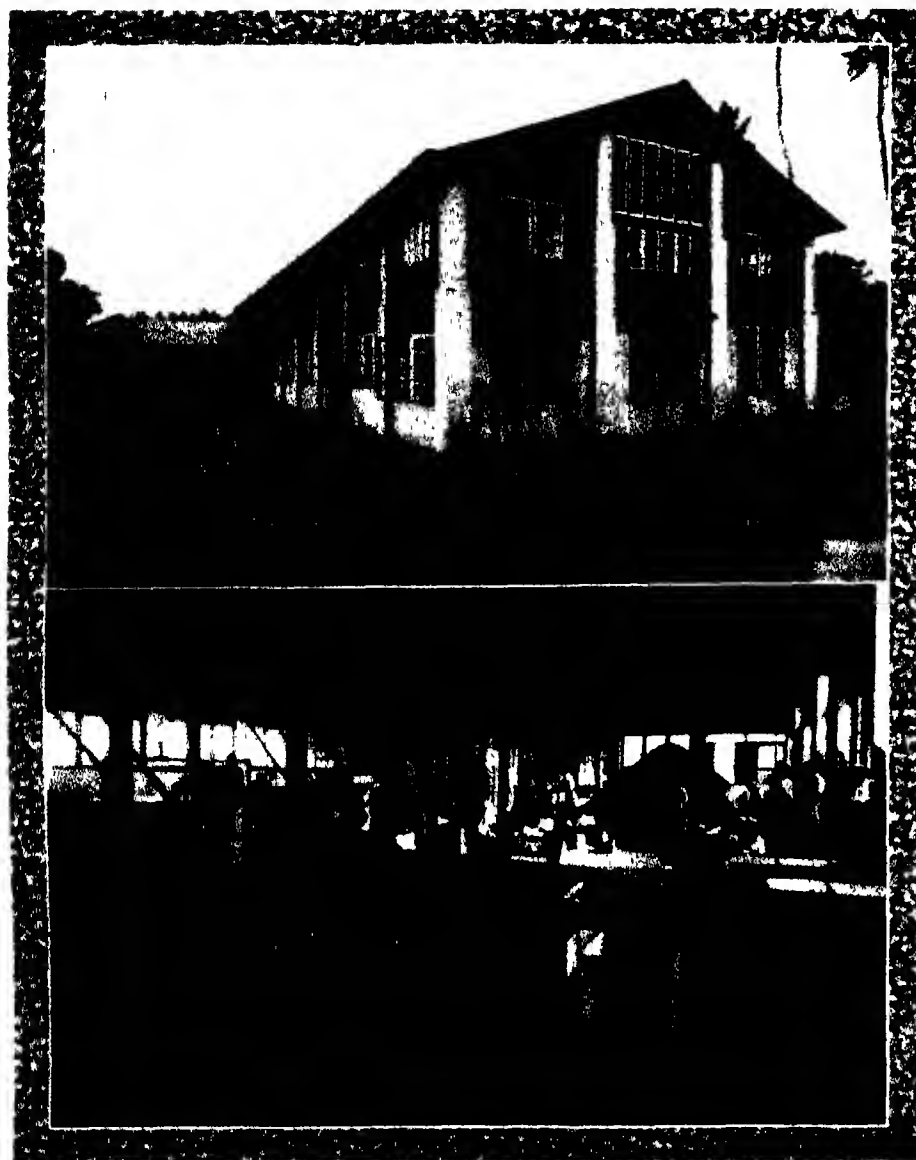
**Cables.**—"Heather," Colombo Codes Bentley's, A B C 4th, 5th, and 6th Editions

**MACY, COCQ & MENNELL LTD.**—Established as a buying office in Colombo by an amalgamation of the interests of three overseas organisations, this firm commenced operations in 1923. Although the chief interests of the company are in the purchase of tea for export to all markets of the world, it also does a certain amount of buying in other Ceylon primary products, the most important of which are rubber, desiccated coconut, cinnamon, citronella oil, cocoa and cardamoms. The firm acts in Ceylon for and exports on behalf of the following well-known organisations, with all of which it has been intimately connected since its inception: Oliver C Macy Inc, 98, Wall Street, New York, U.S.A.—one of the largest tea importers in the United States; R O Mennell & Co, St Dunstan's Buildings, St Dunstan's Hill, London, E.C.3—a firm whose name has long been connected with the tea business in Great Britain, and which is well-known both as an importer and exporter of the product; C H R Cocq, P.O. Box 140, Batavia, Java, Dutch East Indies—an important firm of general merchants handling for export most Java products, its principal operations being in tea and rubber. The company's bankers are The Mercantile Bank of India Ltd; the cable address is "Macycocq," Colombo, and the codes used are Commercial, Bentley's, A.B.C. 6th Edition, Voller's 12 Figure System, and Private.



HEATH & CO., Colombo.

1. Office and Godowns.
- Centre. Tea Sample Room.
3. Tea Warehouse.



JAMES FINLAY &amp; COMPANY LTD

1. General view of Godowns
2. View of Tea Godowns

**JAMES FINLAY & CO. LTD.**

**Inception.**—Founded by Mr James Finlay in Glasgow about the year 1750, it was not until 1876 that the firm turned its attention to India, being one of the first houses in Scotland to open up direct connection with that country, which has since become its great trading centre.

**Development.**—After Mr John Muir joined the firm, it was known in the East under the style of Finlay Muir & Co., retaining in Europe the name of James Finlay & Co. In 1907, however, the concern was formed into a private limited company, and the style James Finlay & Co Ltd became general.

**Agencies.**—The following agencies are held by the firm in Ceylon:

**TEA AND RUBBER LSTATLS.** Consolidated Tea & Lands Co Ltd, Amalgamated Tea Estates Co Ltd, Kanan Devan Hills Produce Co Ltd, Anglo-American Direct Tea Trading Co Ltd, Pelmadulla Rubber Co Ltd, Mahawale Rubber Co Ltd, Wellandura Tea & Rubber Co Ltd, and Ceylon Land Development Co Ltd. These Companies represent a total area of 34,564 acres, of which 25,872 acres are under cultivation.

**SHIPPING.** Clan Line Steamers Ltd, Osaka Shosen Kaisha Ltd, Houston Line of Steamers, and the Scottish Shire Line of Steamers.

**INSURANCE.** South British Insurance Co Ltd, National Insurance Co of Great Britain Ltd, Glasgow, United Insurance Co Ltd, Sydney, Australia, Ulster Marine Insurance Co Ltd, Osaka Marine & Fire Insurance Co Ltd, Automobile Insurance Co Ltd, Insurance Co of North America, Samarang Sea & Fire Insurance Co Ltd.

The firm also acts as agents for Messrs Morrison, Pollexfen & Blair Ltd.

**Management.**—The manager in Ceylon is Mr George Turnbull, while the staff comprises nine Europeans and 150 native clerks, and there are 200 at the mills.

**Branches.**—London, Liverpool, Bombay, Karachi, Colombo and Chittagong. Head office in the East: Calcutta.

**Offices.**—Head office: Glasgow. Colombo office: Queen Street. Fort Cables: "Mercator," Colombo. Codes: Scott's, A 1, A B C (5th and 6th Editions), Western Union, Broomhall's Rubber, Marconi, Bentley's, Watkins.

## MINING AND OTHER INDUSTRIES

**C** EYLON has no very great mineral wealth, and tea production overshadows its many industries. The only serious mining in the country is for plumbago, or graphite, mica, and gems. Though other minerals, some of them valuable, are known to exist, no real export trade in such has yet been developed. Between two and three hundred graphite mines are in active operation. Mica occurs in veins near the crystalline limestone, and good sheet mica is valuable, being used for insulation and other purposes. Monazite, ilmenite (titaniferous iron-ore) and zircon, which contain the rare metal thorium, used in the manufacture of gas mantles, are known to exist in some quantities, but only monazite has as yet been exported.

**FISHING INDUSTRY.** The marine fisheries of Ceylon are carried on entirely by local fishermen in their catamarans and outrigger canoes. As a rule, the appliances used are primitive, the most effective of them being the long lines. In the inshore waters nets of various kinds are utilised, but in the open sea line fishing only is practised with any success. Properly exploited, the fishing industry of Ceylon offers great possibilities. About half of the 7,000 square miles which the fisheries cover is within reach of the railway, and here the fish are put on ice and sent to the big centres of population. The fish caught in the other half are either consumed locally or are dried for sale in other parts of the island. (See also "Pearl Fisheries.")

**MANUFACTURING INDUSTRIES.**—Industrial and manufacturing interest in Ceylon are connected in the main, with the production of tea, copra, coconut oil, rubber, and cocoa. In addition, there are a few engineering works in the island engaged in the manufacture of estate machinery on a small scale, and in repair work for the shipping. Rolling mills also prepare lead for tea chests, while the low price of rubber prior to 1925 directed attention to the manufacture and supply of rubber soles for boots and shoes. In 1924 the first sisal hemp factory to be established in Ceylon was opened by Sir William Manning, the Governor, at Maha Illupalama; it is equipped with machinery capable of treating 2½ tons of raw hemp leaves per day. This is the

outcome of a sisal growing venture which controls an area of 2,040 acres, and it seems probable that more land in the neighbourhood may soon be bought for the same purpose. Among thriving indigenous trades are the carpentry, cabinet work and wood carving of Moratuwa, the basket and hat industry of Kalutara, the brass and silver work of Kandy, the rattan (cane) work, in the hands chiefly of the Malays of Colombo, the tortoise-shell ware of Galle and Cotta, the pottery of Kelaniya, and the gold filigree work of Jaffna.

In 1924 there were 1,412 factories of all kinds in Ceylon, an increase of 43 on the number recorded in 1923. In the fifteen years preceding 1923 there was an increase of 344, or 33.50 per cent. Steam power is extensively used.

#### DESICCATED COCONUT INDUSTRY

—The desiccated coconut industry was started in the colony in the early eighties. Originally it was in the hands of a few European firms, to whom orders came from Europe and America, but gradually the Sinhalese took to its manufacture, and mills are now scattered over the Western and North-Western Provinces, and, to some extent, the Southern Province. The manufacture of "D.C." as it is called for short, needs specially selected and well-matured nuts, and those which yield over 350 lb. of desiccated coconut per 1,000 are much sought after. The shelling of the nuts is largely done by hand with a light hatchet, though in some mills the circular saw is employed to do the work. Sinhalese shellers are very expert in the use of the hatchet and are able to shell 2,000 nuts a day.

**OIL AND FIBRE.**—The expression of coconut oil by means of the "chekku," or bullock mill, has been carried on in Ceylon from comparatively remote times. The chekku deals with a load of about 30 to 40 lb. of copra, a day's work of six full charges resulting in about 1½ cwt. of oil, the residue being called poonac, and sold for manure. These crude mills are now being superseded by up-to-date oil extracting machines, though in many parts the chekku is still at work. In modern oil factories there is first a macerating process, and then the expression of the oil by powerful presses. Sometimes there is first cold pressure for the best quality of oil, and afterwards pressure with heat. The oil is thereafter left standing to clear by sedimentation, or is clarified by means of pressure fillers.

From the husks of the coconut a growing industry has been developed in the making of coir fibre, and of recent years a number of fibre mills have been set up in the coconut growing districts, chiefly round about Colombo, Negombo, and Kurunegala.

**PEARL FISHERIES.**—The Pearl Banks of Ceylon are situated in the Gulf of Manaar, between Manaar and Puttalam, and they appear to be worked under much the same conditions as they were 2,000 to 3,000 years ago. A notable feature of these fisheries is their uncertainty and their intermittent periods of activity, a number of blank years succeeding the prosperous ones. The record year was 1905, when 81,580,716 oysters were fished, giving an actual Government revenue, apart from the divers' share, of Rs 2,510,727 (1167/381). From 1908 to 1921 there was no fishing, but a new series was expected to begin with 1925.

Edible oysters, bêche-de-mer and chank (the shells of which are used in the manufacture of cheap bracelets) are also fished for, but their value as commercial products has declined of recent years.

**PLUMBAGO.**—Known elsewhere as "graphite" and "black lead," this mineral was first described as existing in Ceylon by Robert Knox, the historian, in 1681. Ceylon plumbago consists mostly of carbon, the proportion of impurity being very small. The graphite occurs as a true vein mineral, the veins generally following natural planes of division in the country rock quartz, gneiss, or diabase. The plumbago veins in Ceylon on the surface are very uncertain and rarely run for a great distance, but pinch out. It followed, they may again widen, while sometimes small veins lead to a pocket of pure plumbago.

**DISTRIBUTION.**—The occurrence of plumbago in Ceylon is almost invariably associated with quartz, mica, and pyrites of various descriptions, though large and continuous veins have been discovered in the low country in the crystalline limestone. The oldest regular working mines in the island were in the Pasdum and Raigam Korles of the Kalutara District, and some in the Kelani Valley of the Western Province. Important discoveries were made about 50 years ago at Ragedera, Maduragoda, Pitakande, and Meepitakande, in the Kurunegala District, less valuable mines being worked with varying success in several other districts in the Western, Southern, and Sabaragamuwa Provinces.

**METHOD OF MINING.**—In several mines up-to-date machinery has been established, though the method of mining adopted is one peculiar to Ceylon. In deep mines (800 ft.) artificial ventilation has been installed, while "adits" and tunnels from the base of a mining hill have been successfully opened to draw off the water from troublesome mines and run trolleys for the transport of rubble and mineral. The labour employed in the mines is Sinhalese throughout, the

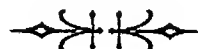
skilled labour always commanding a high wage, and the work of timbering, mechanical hauling, and running the pumping plant is all controlled by Sinhalese capable workers. The output of the mines is transported to Colombo by rail, paddle boat (flat-bottomed river boats) or bullock cart for the purpose of curing or rendering it fit for exportation. Very few mines cure thoroughly to standard market grades at the pit head.

**OUTPUT.**—In the year 1901 the world's output of graphite was nearly 77,100 tons, valued at about 1785,000. Of this Ceylon supplied 29 per cent in quantity and 80 per cent of the value, clearly indicating the superior value of the Ceylon commodity and its use for the best purposes. The high water mark of production was reached during the Great War, in 1916, when 668,216 cwt. were exported from the colony, valued at Rs 22,494,999. Since then, production and exportation have declined, the new deposits discovered in Madagascar having made that island a serious rival to Ceylon in the world's markets. In 1924 the export was 193,017 cwt. valued at Rs 1,329,125 as against 213,384 cwt. valued at Rs 1,518,877 in 1923.

**STANDARD GRADES.**—Plumbago has been standardised into well-known qualities and grades. Large lumps, ordinary lumps, chips, dust, and flying dust are the recognised grades, while X, XB, B, BB, and P are the established qualities.

**PRECIOUS STONES.**—The gems of Ceylon have become proverbial. Though no diamonds have been found, the country near Ratnapura, the City of Gems, is rich in sapphires, beryls, rubies, garnets, cat's eyes and moonstones. The largest find of sapphires ever made in Ceylon was recorded from Palamadulla in 1924, some of the gems weighing as much as half a pound. Generally speaking, all these gems are found in old beds of rivers or in existing rivers, and mining takes the form of sinking pits and washing the "illam," or gem-bearing gravel. In the rivers dredging by hand is the usual process. The Sinhalese take up gemming only at certain seasons, usually from about November to May or June. The cutting is nearly all done by Moors, who use the same primitive apparatus as their ancestors did 60 years ago.

**SALT.**—The local production of salt in Ceylon is considerable, the principal centres of distribution being Hambantota, Puttalam, Trincomalee and Elephant Pass. The total yield for the island in 1923 was 565,576 cwt., against 779,943 cwt. in 1922. The Government saltworks are at Elephant Pass (Jaffna District) and Palayi (Puttalam District), where the method of manufacture is similar to that employed in the large saltworks in the south of France.







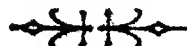
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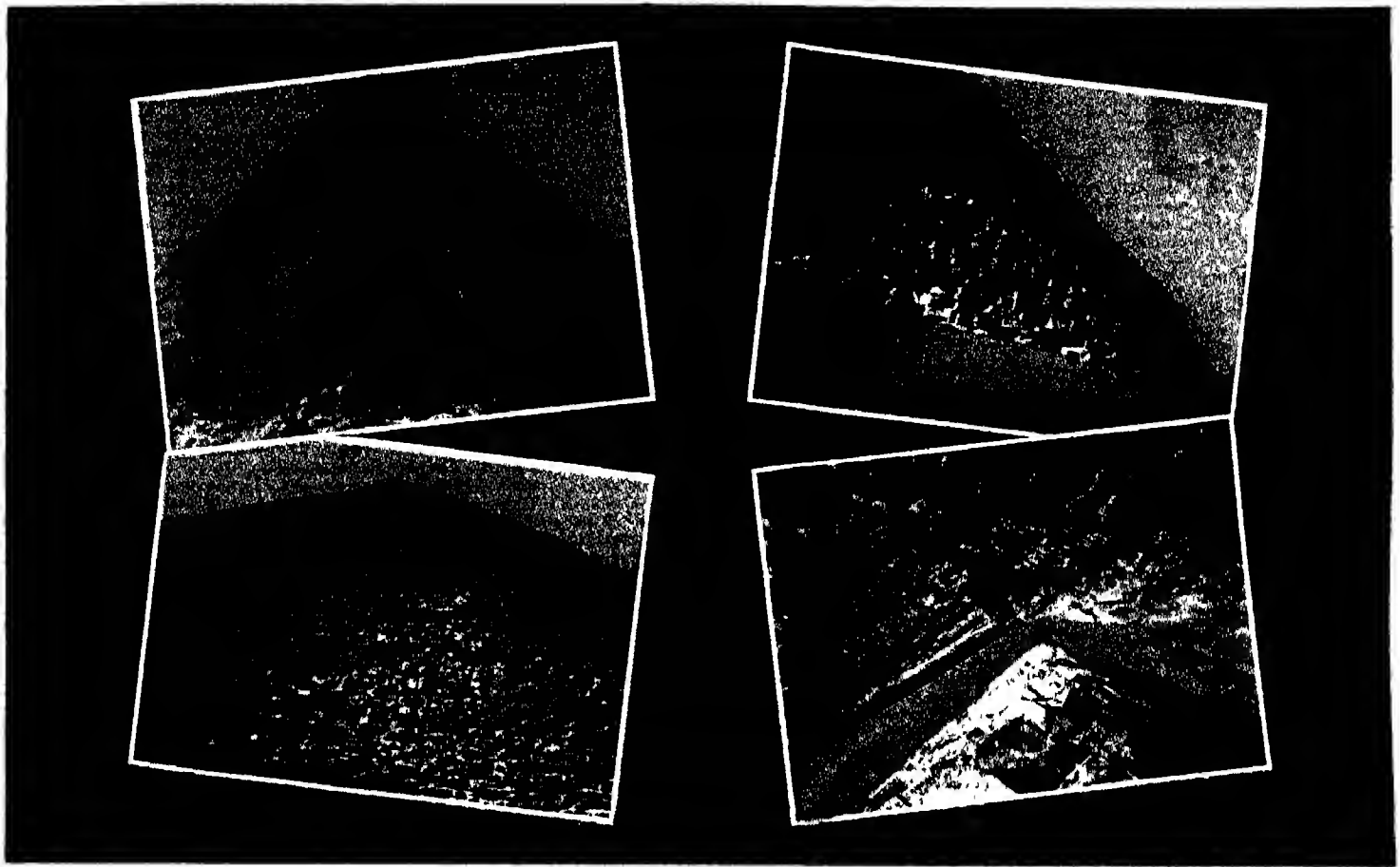
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FOUR UNIQUE ASPECTS OF THE GREAT PYRAMID OF GIZA.  
1 and 2, An Angle.  
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# EGYPT

## PHYSICAL GEOGRAPHY

### CLIMATE

### GEOLOGY

### FAUNA

### FLORA

#### PHYSICAL GEOGRAPHY



EGYPT, the land of the Pharaohs and the cradle of one of the oldest civilisations in the world, lies in the north-east corner of the Continent of Africa. It is bounded by the Mediterranean Sea on the north, by the Sudan on the south, by the Red Sea on the east, and by Cyrenaica and the Libyan Desert on the west. By far the greater part of political Egypt is desert, the inhabited and cultivated portion being confined to the Valley of the Nile and the fan-shaped Delta in the extreme north. Gradually, however, by reason of the improved means of irrigation, the desert area is being put

under cultivation. In form Egypt (that is, the Nile Valley) somewhat resembles a lotus, the Nile from Cairo to Assuan representing the stem and the Delta the flower.

**AREA.**—The total area of Egypt is roughly between 350,000 and 400,000 square miles, its length being about 620 miles and its breadth 600 miles. The greater part of this large area, however, is sandy desert, the cultivated and settled portion (that is, the Nile Valley and Delta) covering only some 12,000 square miles, or about one third of the extent of Ireland.

**COAST.**—The coast line of Egypt, which is about 1,300 miles in length, is washed on the north by the Mediterranean and on the east by the Gulf of Suez and the Red Sea. The coast of the Delta is very flat and sandy, no rocks being found until the district to the west of Alexandria is reached. In the

Gulf of Suez and the Gulf of Abakah, which bound the Sinai Peninsula, the sea in many places washes the feet of the mountains that stand on their shores. Along the Red Sea coast the shore is usually sandy. Alexandria, Port Said and Suez are the chief ports, on the Mediterranean coast are Sollûm and Matrûh, on the Red Sea, Kuser, Safrâgh, and others, and in the Gulf of Suez the small harbours of Tor, Abu Zanimah, Ganusah, Burgadah, etc.

**DESERTS.**—On each side of the Nile Valley, Egypt consists solely of the two great deserts known as the Eastern Desert and the Libyan Desert, the latter being one of the most trackless and inhospitable regions of the world. Except in the oases, nothing grows there. The Arabian or Eastern Desert contains several high mountains, notably Gabaî Shayib (7,200 ft.), Gabaî



Hamata (6,500 ft.), and Gabal Shandib (6,300 ft.). Here wells and springs are found in many places, also patches of stunted shrubs which are nourished by subterranean springs.

There are few parts of the world more savage and cruel in aspect than the northern desert of the Sudan—the flank, as it were, of the Great Sahara. Here are to be seen nothing but vast stretches of sand and ranges of barren rocky hills, waterless and utterly devoid of any sign of life. Only at evening, as the sun sets behind the gaunt hills that border the Nile valley far to the westward, the marvellous colouring of a desert sunset makes an unforgettable picture. If the traveller be fortunate enough to see this dead land by moonlight he will realise to the full the awe and mystery of the great desert.

**DIVISIONS.** In ancient, as in modern times, Egypt was always divided into the Upper and the Lower, or the Southern and the Northern country. A third great division the Heptanomis, was introduced at the time of the geographer Ptolemy. It is now known as Middle Egypt, or Wustân. From the earliest times Egypt was also divided into a number of *nomes*, or departments, varying in different ages from four to fifty, the usual number being 42. The present division of the country is into fourteen *mudriyehs*, or provinces, each province being sub-divided into districts. (See also under "Administration.")

**ISLANDS.** There are a number of islands in the Gulf of Suez and the Red Sea of which the principal are Jubal Shadwan, Kafatin and Zeberged, or St. John's Island. On some of them are lighthouses with their keepers, but there is no other permanent population. Borings for petroleum have been undertaken on the islands of Gaysuni, Mulhaimet and Jubal, near the south end of the Gulf of Suez, but without success. On Zeberged, or St. John's Island situated in the Red Sea, peridots have been successfully mined during recent years.

**LAKES.**—The lagoons or lakes of the Delta, going from west to east, are Mareotis (Marut), Edku, Burlus, Abukir, and Menzala. The land separating them from the Mediterranean is nowhere more than 10 miles wide, and in some places not more than 200 yards. All these lakes are shallow and the water in them is salt or brackish. Lake Mareotis, which bounds Alexandria on the south side, varies considerably in area according to the rise or fall of the Nile, when at its highest, the lake covers about 100 square miles. In ancient times Mareotis was navigable and was joined by various canals to the Nile. The country around was cultivated and produced the famous Mareotic wine. Like all the Delta lakes, Mareotis abounds in wild fowl. Lake Menzala covers over 750 square miles, and is by far the largest of the Delta lakes.

A chain of natron lakes (seven in number) lie in a valley in the western desert, 70 to 90 miles west of Cairo. From these lakes are obtained carbonate and muriate of soda. In the Fayyûm Province further south is the Birket el-Kerun, a lake lying below the level of the Nile, some 30 miles long and five miles at its broadest part. Kerun is all that is left of the Lake of Moeris, an ancient artificial sheet of water which played an important part in the irrigation schemes of the Pharaohs.

**NILE (THE).**—The Nile, the longest river in Africa and, in some respects, the most wonderful river in the world, is intimately associated with the ancient and modern history of Egypt, which country for all

practical purposes is confined to the valley watered by the great stream. Rising in the Tanganyika Territory as the Kagera, it is known under different names until it flows through Southern Sudan as the Bahr-el-Jabel and takes the name of the White Nile between Lake Nô and the town of Khartoum, having been joined by the Bahr-el-Ghazal and Sobat Rivers. At Khartoum the Blue Nile, the river 660 miles in length which rises in the mountains of Abyssinia, joins the White Nile, which from that point onwards to the sea becomes the Nile. About 200 miles north of Khartoum the Atbara flows into the Nile after a course of about 790 miles. North of the Atbara junction the Nile receives no other tributaries, but flows northward to the sea in a solitary stream and enters the Mediterranean by two mouths the Rosetta and Damietta. The other five months which existed in antiquity have long ago silted up, and the triangular-shaped area enclosed by the two streams forms the Delta, the most fertile part of North Africa. The total length of the Nile is 3,600 miles; it is navigable throughout except at the six cataracts between Khartoum and Assuan, and after leaving the Albert Nyanza.

**CATARACTS.** These cataracts vary in length from the one mile of the Sixth Cataract to the 125 miles of the Second Cataract, whilst the drop of the river ranges from 20 feet at the Sixth to 213 at the Second. Near the Second Cataract, at Samnah, are the rocks upon which Lepsius discovered the Nile gauges cut by order of the kings of the XVIIIth dynasty, about 2,300 B.C. and these show that the Nile flood there recorded was 26 feet higher than any flood of to-day.

**INUNDATION.** The chief physical peculiarity of Egypt is the fact that the whole agricultural watershed depends upon the Nile and its annual inundations, not upon rain. The regular increase of the Nile every year is a phenomenon which has excited the wonder of all writers upon Egypt from the earliest times. This rise is due to the rainfall in Abyssinia, which causes the Blue Nile and the Atbara to come down in flood. In the dry season the Blue Nile is only a small stream and the Atbara is reduced to a chain of pools, the White Nile, being fed from the great Victoria Nyanza, still retains sufficient volume to fill the river bed. The current of the White Nile, when the river is at its lowest, is sluggish, and the slow current, combined with the hot sun, favours the growth of organisms in the water, these produce the phenomenon known as "green water," which has a putrid taste and smell.

The heavy rainfall of Abyssinia causes the Blue Nile to rise at the end of June, bringing down in suspension a heavy load of red soil from the mountains. This is the "red water" which, flowing more rapidly than the green water, carries it quickly down to the sea. The Atbara also plays its part in the inundation, but not to so great an extent as the Blue Nile. The actual rise of the Nile is about 23 feet; the amount of water discharged by the river at Assuan is from 17,000 cubic feet per second at its lowest to 323,000 cubic feet per second at the height of the flood. The waters of the inundation, spreading over the country on each side of the river, deposit their loads of silt, the fertilising properties of which are due to the presence of phosphoric acid, potash and nitrogen. The perennial irrigation now practised causes less soil to be deposited, the surplus being swept out to sea, where it is dispersed, forming wide shoals to the east.

By the end of November the Nile subsides within its banks, and the irrigated land, over which the water has been carefully equalised by means of drains and embankments, is sown; soon it is covered with green crops, which are reaped by March. (See article "Control of the Nile" in this Section.)

**OASES.** In the western desert lie the five large oases of Egypt, namely, Siwa, Baharia, Farafra, Dakhla, and Kharga, or Great Oasis, occupying depressions in the plateau, or, in the case of the last three, large indentations in the face of the limestone escarpments. The fertility of these oases is due to a plentiful supply of water furnished by a sandstone bed 300 to 500 ft. below the surface, whence the water rises through natural fissures or artificial bore holes to the ground level and sometimes to several feet above it. These oases were known and occupied by the Egyptians as early as 1000 B.C. and Kharga rose to special importance at the time of the Persian occupation. Here, near the town of Kharga, the ancient Heb is a temple of Ammon built by Darius I., and in the same oases are other ruins of the period of the Ptolemies and Caesars. The oasis of Siwa (Jupiter Ammon) is about six miles long and from a quarter of a mile to four or five miles wide; it is situated about 150 miles south of the Mediterranean and about 300 miles west of the Nile. The other oases lie parallel to and distant 100 to 150 miles from the Nile, Baharia being the most northerly and Kharga the most southerly.

Besides the oases, the desert is remarkable for two other valleys. The first is that of the natron lakes, already mentioned, the other is known as the Bahr-bela-Ma, or "river without water."

**RIVERS.** See "NILE."

**SINAI PENINSULA.** The triangular Sinai Peninsula, which is geographically part of Arabia, but politically belongs to Egypt, has its base on the Mediterranean, the northern part being an arid plateau, the desert of Tib. The apex is occupied by a mass of crystalline rocks, the principal peaks of which rise to heights of over 8,500 ft. These hills support hardly any vegetation and no population, except a few wandering Arabs. There is no town of any size, the principal settlements being at El Arish, Neki and Tîr. The last named is chiefly of importance as a quarantine station.

**SUEZ CANAL.**—The Continents of Africa and Asia are joined together by a relatively very narrow strip of land, the Isthmus of Suez. This isthmus, consisting largely of swamp and sand, was for thousands of years a serious obstacle to communication by ship between Europe and the East. Though it was canalised by the ancient Egyptians as long ago as 600 B.C., and by Darius and Ptolemy II. some 300 years later, the canal later became blocked and useless for navigation. The present Canal is due to French initiative and engineering between 1849 and 1869, the prime mover and constructor being M. Ferdinand de Lesseps. Its original cost was £20,000,000, and enlargements since have been responsible for many millions more.

The Canal is about 100 miles long, and cuts right across the Isthmus, running through Lakes Menzala, Balah, Timsah and the Bitter Lakes. The width of the Canal at the Suez end is about 300 yards in the widest part, between banks it varies from 480 to 525 feet, the depth being between 36 and 40 feet. The time occupied in navigating it is from 16 to 24 hours. (See article, "Suez Canal.")

## CLIMATE

The geographical situation of the country accounts for the marked difference in the climate of Upper Egypt as compared with that of the Delta. The cities of Cairo and Alexandria and the smaller towns of the Delta have what may be termed a South European seaside climate, with a considerable drop in temperature at night and a good deal of humidity in the air; in Upper Egypt, which lies between two great deserts, the climate is exceedingly dry and (an added attraction) remarkably uniform. Indeed, for recuperative qualities the climate of Upper Egypt in the winter is unexcelled.

**DEGREES OF TEMPERATURE.**—The temperature at Cairo ranges usually from 53° to 83° Fahr. though it occasionally reaches 95° in the summer or even 115° during the khamisin. In March and April it is about 85°, a little later it rises by an extent of 10° to 15° degrees, and in winter it averages about 60°. At Assuan the temperature varies from 60° in the winter to 93° in the summer. Here the greatest difference in the temperature during the day takes place, this sometimes being as much as 30 degrees.

**RAIN.** As is well known, Egypt is one of the driest countries in the world, and even though rain now falls oftener in Cairo and Alexandria than formerly, the total annual amount in the first named city only averages two inches. At Alexandria it rains much more often, the mean fall there being about 5.57 inches. In recent years some heavy rains have descended in Upper Egypt during the winter but speaking generally very little falls at Luxor or Assuan, and at the latter place there is practically no dew.

**WINDS.** The prevailing winds in Egypt are northerly from May to October and north-westerly for the remainder of the year, with the khamisin at irregular intervals during March, April and May. The khamisin (meaning "fifty," the usual duration in days of its occurrence) is a hot southerly wind blowing chiefly during the months of March and April. Sometimes it is of terrific violence, and brings with it a mass of sand which has been picked up in the deserts crossed. The simoon is a violent sand-wind commoner in the desert than in the valley, but rare anywhere.

## GEOLOGY

The principal feature of Egyptian geology is the vast extent of the sedimentary deposits of Cretaceous and Tertiary ages covering the crystalline rocks of which a great part of the country is composed. The depth of this deposit nowhere exceeds 110 feet, but is rarely more than 50 feet.

**NILE VALLEY.**—Just as the Nile Valley forms the chief geographical feature of Egypt, so the geology of the country is intimately related to it. The whole valley is said to be due in the first instance to extensive fracturing of the Earth's crust in Miocene times, followed by thick deposits of sand and gravel and masses of broken stony matter from the limestone plateaux which formed along the margins of the valley. Thereafter the deposit of Nile mud began, and has continued ever since.

The oldest rocks, consisting of crystalline schists, with numerous intrusions of granite, porphyry and diorite, occupy the eastern portion of the country between the Nile south of Assuan and the Red Sea. From near Assuan came the red granite of Syene (syenite), of which were built the ancient monuments. From Assuan to Asna the walls of the Nile Valley are composed of

sandstone of Cretaceous age, commonly known as Nubian sandstone, which extends westward from the river to the edge of the great Libyan Desert, where it forms the bed rock. The age of this sandstone has given rise to much dispute. The upper part certainly belongs to the Cretaceous formation, the lower part has been considered to be of Karoo age by some geologists, while others regard the whole formation as Cretaceous.

Below Asna the sandstone is covered by a limestone belonging to the upper chalk series, and in this series between Asna and Cairo are interesting fluviomarine deposits containing mammalian fauna, including fossils of the oldest known elephants. In the southern parts of the limestone region the magnificent cliffs and wild valleys provide most striking scenery, frequent tablelands occur on one of which are built the pyramids of Giza, the material employed being the predominant limestone, while steep sand dunes are met with in parts of the desert. Most of the area outside the valley is hard rock, covered with scanty marl and gravels, in the flat lands bordering the Nile the rock is coated to a depth of about 30 ft. with the alluvium brought down by its waters. The increase of this deposit is estimated at about 4½ inches in a century.

**ROCKS.** The rocks of Egypt furnish the stones used in its edifices and sculptures, granite and syenite (from Assuan), basalt (from Abu Zabel), breccia (from the limestone caves), diorite, verde antique and porphyry (from the mountains of the Arabian desert) sandstone and limestone (from the hills bordering the north), and alabaster (from Fel el Amarna). Emeralds, gold, silver and copper were formerly found near the Red Sea, and salt, natron and sulphur are still among the mineral products.

## FAUNA

The lack of forest or jungle of any kind accounts for the comparative poverty of the Egyptian fauna, few if any of the wild animals common to most parts of Africa being met with, the chief quadrupeds being of the domestic kind.

**ANIMALS.**—The principal domestic animals are the ass, camel, horse, mule, buffalo, ox, pig, sheep and goat. Of these, the camel and the ass are the commonest, the latter being indigenous. It is uncertain when the camel, which is of the one-humped variety, was introduced. Buffaloes and sheep are common, the horses are of an indifferent breed. Dogs are used mostly as scavengers and for watching purposes, the cat has flourished from the very earliest times. The only wild animals in any number are the hyacna, jackal and fox, but the boar is found in the Delta. Wolves are rare, but gazelles abound in the desert and are much hunted. The ibex is found in the Sinaitic peninsula, and the mouflon, or maned sheep, is occasionally seen in the same region. Bats are very numerous. The hippopotamus, in ancient days a frequent inhabitant of the Nile, is no longer found in Egypt.

**BIRDS.**—Many species of birds have existed, and still exist in Egypt, waterfowl being the most numerous, the small gallinaceous poultry, now plentiful, are probably not of older date than the Persian invasion. Pigeons have always been abundant. There are three or four varieties of vultures, and eagles, falcons, hawks, kites, owls, hoopoes, swallows, wagtails, larks, sparrows, plover and quail are common, many of them figuring in the hieroglyphics. The ibis, conjecturally identified with the sacred ibis of which many fables are told, is not uncommon.

**FISHES.**—The Nile is full of fish, generally of rather poor flavour, the best known varieties are the bummy (a species of barbel), the hully, the latius (one of the perch family), and the bayad or silurus. In the lakes of the Delta the dolphin is not uncommon.

**INSECTS.** The sacred beetle (*Scarabæus sacer*) is one of the most remarkable insects, and has always occupied a prominent position in the mythology and religion of the country. The sting of the scorpion is sometimes fatal, and spiders, flies, fleas and mosquitoes abound as they did in the time of the Ten Plagues.

**REPTILES.** Of reptiles, lizards, frogs and toads abound, also chameleons. Snakes are numerous, both poisonous and non-poisonous, among the former are the horned snake, Cerastes, the deadly cobra, and the mianis or rovel serpent of the ancient Egyptians. The trionyx, or soft tortoise, is plentiful in the Nile, the ordinary tortoise is found in the Delta only.

## FLORA

In the absence of woods or undergrowth in Egypt, and in view of the fact that practically the whole of the land which will support vegetation is devoted to agriculture, the flora of the country is limited.

**FLOWERS.**—Of Egyptian flowers the celebrated white and blue lotus lily in ancient times supplied many ideas to Egyptian architects. Though common in older periods, it is now seen only occasionally in neglected canals of the Delta owing to the systematic drainage of marshes and swamps, for the same reason the famous papyrus reed has also disappeared from the country. Among the usually cultivated flowers are the rose, jessamine, narcissus, lily, oleander, chrysanthemum, geranium, dahlia, basil, the henna plant, helianthus, and violet. Wild flowers are rare, the most common being yellow daisies, poppies, ruses, asphodels, and ranunculuses.

**FRUITS.** Among fruit trees, the date palm is found everywhere, and its fruit is naturally one of the commonest articles of food. The lower branches being regularly cut, the tree grows high and assumes a much more elegant form than in its native state. The blossoms appear in March and April, and the fruit is ripe at the end of August or early in September. Some 70 species are said to exist, and in many villages it is possible to find 20 or 30 kinds of date on the market. Among the species grown in Nubia and the Eastern Sudan the *ibrami* and the *sultani* are the most prized. The vine has always flourished in Egypt and in ancient days large quantities of wine were made, the grapes ripen in July. The fig, pomegranate, orange, and lemon abound in special localities, apricots, peaches, and plums are only of poor flavour. Indian figs (prickly pears) and bananas have been naturalised, and watermelons are at once the meat and drink of the people in the hot days.

**TREES.** Timber has always been exceedingly scarce in Egypt, even clumps of trees (except palms) being of rare occurrence, though at one time, until a disease destroyed them, there were shady avenues of labbakh trees which had been planted in the neighbourhood of Cairo. The dôm-palm is, after the date palm, the commonest tree, its trunk, leaves and fibre all being valuable, the *sunt* or acacia, sycamore, and tamarisk are less frequently met with, the myrtle, elm, and cypress are rare, and the mulberry is found only in Lower Egypt.

# HISTORY

**S**OME idea of the antiquity of Egypt may be gathered from the fact that, at the period (B.C. 754) at which legend fixes the foundation of Rome, the country under review already possessed a history dating back for more than forty centuries, and was actually under the twenty-second dynasty of its Pharaohs. The Xerxes who invaded Attica, laid Athens in waste, and annihilated the Greeks at Salamis (B.C. 480) was the nephew of that Cambyses who half a century previously had conquered the last of the Pharaohs and had crushed for centuries to come Egyptian independence. It is obviously impossible to deal more than very cursorily with a history which goes back so deeply into the mists of antiquity, and which has in addition in all its phases been bound up so closely with that of other great Empires and Powers. The earlier periods of Egyptian history and those more immediately preceding the successive Turkish, French and British dominations can, therefore, only be summarised very briefly within the limits of this section.

What is known as the Pre-Dynastic history of Egypt tells of a primitive people who lived chiefly by pastoral pursuits, fishing, hunting, etc., who were grouped in a number of independent states governed by hereditary princes. These kings had their territories between Behn or Wadi Halfa and the Mediterranean Sea, the districts between Behn and the bifurcation of the Nile being regarded as one country and the Delta as another. Gradually there came to be an over-lord or king of each division or country, and these in turn overthrew one another, each aspiring to be master of the whole of Egypt and to unite the lands of the White Crown and the Red Crown, these being the royal insignia of Upper and Lower Egypt respectively. When the first "uniter of the two lands" ascended the throne of Egypt the Pre-Dynastic period ended.

**B.C. 5004-B.C. 332. - THE PHARAOHS.**—All Egyptian chronology prior to B.C. 1500 is necessarily conjectural, and the date selected (B.C. 5004) is that suggested after much patient investigation by the famous French Egyptologist, Mariette, the founder of the Museum of Egyptian Antiquities at Cairo. The First Dynasty of the long line of Pharaohs was inaugurated by Menes, a warrior prince of Thinis, who overthrew the power of the priests and founded the city of Memphis (His tomb was opened in 1897). Under the Second Dynasty the Pharaohs declared themselves to be gods, and took the title of "Son of the Sun." The earlier kings of the Third Dynasty built tombs, and one of them, Seneferu, conquered Sinai, worked its copper mines and built two pyramids. To the Fourth Dynasty belong some of the most famous Egyptian works of art, Cheops having built the Great Pyramid and Chafra the second pyramid at Giza. The Sphinx was probably modelled about this time and the Book of the Dead painted. With the end of the Eighth Dynasty what is known as the Old Kingdom of Egypt came to an end, to be succeeded by the Middle Kingdom, magnificent remains of whose rulers still exist at Thebes and elsewhere. Under the Hyksos or Shepherd

Kings of Lower Egypt, Joseph the son of Jacob is thought to have become chief minister of the Pharaoh of that time.

The new Empire (dynasties XVIII to XX) was founded by kings from Upper Egypt, who overthrew the Shepherd Kings and lasted from B.C. 1703 to B.C. 1110. This was the period of Egypt's greatest power, its dominion extending to the Euphrates, and to it belong the most beautiful buildings now remaining, such as the temples of Luxor and Karnak. Thothmes I transformed Egypt into an empire, and Amenhotep IV. endeavoured to establish the religion of one god. Tutankhamen, the discovery of whose tomb and mummy recently astonished the world, was one of the kings of the XVIIIth Dynasty, while the XIXth and XXth Dynasties were those of the renowned Ramesides, and almost equalled in architectural splendour the age of the Pyramids. Under the last of the race, Rameses XII, Upper Egypt asserted its independence, and after his death the Empire broke up.

The succeeding period of about five hundred years is sometimes known as that of the Egyptian Renaissance. It was at the same time one of constant warfare with the Babylonian and Assyrian Empires, and finally with the Persians, whose King, Cambyses, overthrew Psammetichus III in B.C. 625, their rule lasting for two hundred years.

**B.C. 332-B.C. 31. - ALEXANDER THE GREAT AND THE PTOLEMIES.** The Persian domination in Egypt extended over four dynasties (XXVII to XXX), but its fate was decided by the battle of Issus, which made the conqueror of the Persians, Alexander the Great, also the master of Egypt. On his death in B.C. 323 the Kingdom of Egypt fell to the share of Ptolemy, who, putting an end to the disorder which had reigned for two centuries, was hailed as the founder of a new dynasty and the saviour (*soter*) of the country. Under his wise administration Egypt once more prospered. The new city of Alexandria was his capital, where the body of the great Macedonian was preserved for ages, and under him and the second and third Ptolemies learning and the arts flourished. Some of the most gigantic edifices of the Pharaohs were emulated in Dendera, Edfu, Edna and Philae, while the inner shrines of Karnak and Luxor attest their devotion to the Egyptian gods. Unfortunately, the splendour of the first century of the Ptolemaic rule was succeeded by a gradual decadence of two hundred years. Family strife and a relaxation of national customs and habits slowly reduced the Kingdom to a state of subjection to Rome, whose star was then in the ascendant. Shortly before the dawn of the Christian era, Augustus put the last of the family, Caesarion, the son of Cleopatra and Julius Cæsar, to death, and annexed Egypt to the Roman Empire.

**B.C. 30-A.D. 640. - EGYPT UNDER THE ROMANS.**—Under Rome, Egypt was for a time well governed and prosperous, but its importance in the history of early Christianity gives it an interest beyond that derived from its actual condition. Though losing its independence, the country gained a new political and economic importance;

it was known as the granary of Rome, it was the natural entrepot of trade with the Indies, and it was the starting point of the expedition of Titus which ended in the destruction of Jerusalem. The Egyptian gods became entitled to a place in the Roman Olympus, and in A.D. 212 the Egyptians themselves were granted the title of "Cives Romani." The old religion had, however, suffered severely from the incision of Antinous, the Emperor Hadrian's favourite, amongst its deities, and from the rapid spread of Christianity, the latter gaining strength from the persecution of Diocletian. Alexandria became a nursery of rival sects, whose quarrels seem to-day curiously unedifying, but to whom the modern world owes the collection and preservation of the books of the New Testament. Zenobia, Queen of Palmyra, annexed Egypt to her short-lived realm (A.D. 270), but at her defeat Rome was again supreme. Though Constantine made Christianity the established religion of his empire, heathenism, especially under a modified Gnostic form, still lingered in Egypt until the edict of Theodosius (A.D. 379) made it unlawful. Yet proofs exist that in the sacred isle of Philae and other places the altars of Osiris and Isis were not wholly destroyed until nearly a century later. The period of Egyptian decline culminated under the feeble rule of Byzantine emperors, a succession of famines followed an era of misadministration, and though another Asiatic invasion under Chosroes the Persian gave the country comparative rest for ten years (A.D. 610-629), its resources, like its ancient civilisation, were wholly exhausted, and it fell an easy prey to the Mohammedan or Arab invasion.

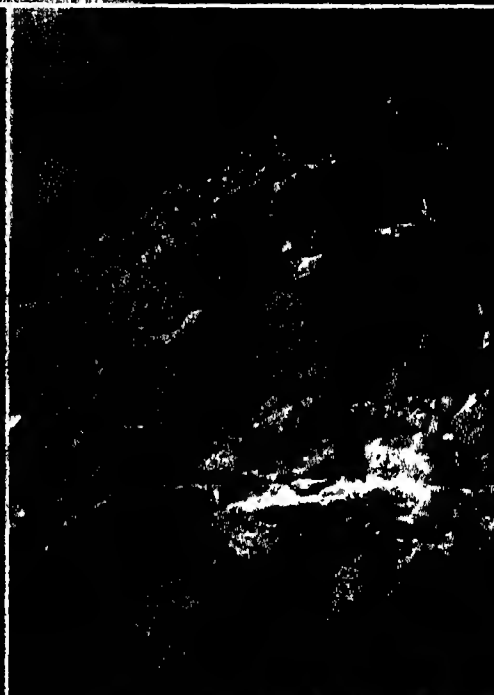
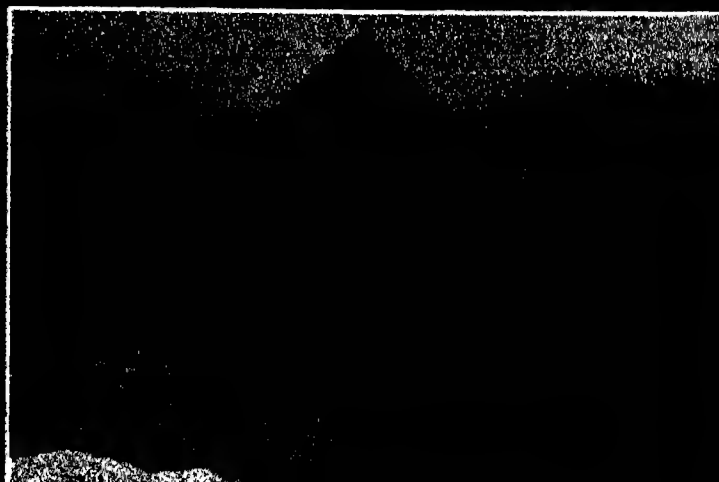
**640-1517. - THE RULE OF THE KHALIFES.** The first three centuries of this period were years of acute suffering for Egypt. In many parts of the country the conquering hordes of 'Amr ibn al-'As almost exterminated the old inhabitants. For fourteen months Alexandria resisted the Mussulman investment, and after the destruction of its famous library gradually declined in importance, Cairo slowly rising to the position which it has ever since maintained. The Abbasid Khalifs, indeed, promoted learning and architecture, El-Mamun, a son of the celebrated Harun-el-Rashid, directed the translation of Greek mathematical and astronomical works, and his nephew, El-Mutawakkil, established the Nilometer at Roda. On the accession of the Tulunid Kings (A.D. 868-906) Egypt became really independent of the Khalif, who latterly resided, as a kind of Pope, in semi-obscurity under their protection. Ahmed ibn-Tulun built the great mosque which bears his name within the walls of Fostat, and the first of the Fatemides to reign in Egypt, Abu Tammam (or El-Muizz), laid out the city which he called Al-Kahurah, or "the victorious." The great mosque of El-Hakim was built in A.D. 1003.

In 1176 the Frank Crusaders attacked and partly burned Cairo, but Yusuf, called Saladin, erected the fortifications which still remain and left marks of his munificence and taste in many places. The Bahr Yusuf, a canal which he made or restored, runs

for nearly 400 miles parallel to the Nile, and irrigates vast tracts. In 1249 the French king Louis IX. was taken prisoner in Egypt, about the same time that the dynasty of Saladin came to an end. The Biharide Mameluke Sultans, however, continued the great public works which he had commenced, and the mosques of Sultan Kalaun and Sultan Hasan are so fine as almost to make amends for the destruction of the ancient monuments from whose materials they were built. The government during the succeeding years of this period passed from sultan to sultan and from family to family with a frequency which is bewildering. The mosque of Barkuk, the first of the Circassian Mamelukes, dates from before 1399, that of Kart Bay from a century later. This was the period of the growth of the Ottoman Empire. In 1501 the Khalif El-Ghuri was defeated at Aleppo by the Turks, his nephew, Tuman Bey, was hanged in 1517, when the conquerors were already in possession of Cairo, and in 1538, the last Abbasid Khalif having bequeathed his title and rights to the Sultan of Turkey, Egypt became a province of the Turkish Empire.

**1518-1797. TURKISH RULE IN EGYPT**—Not content with having made Egypt an Ottoman province, the Sultan Selim, as already stated, obtained the title of Khalif or Vicar of the Prophet and from then onwards the Khalifate was hereditary in the Dynasty of the Sultans of Turkey. Egypt became what was known as a pashalik, power being exercised through twenty-four Mameluke Beys, or Emirs, who governed that number of provinces, into which the country was divided, and paid to the Pasha of Cairo a tribute, which was remitted to Constantinople. This system lasted for nearly two centuries, but the desire of each Bey to become the Pasha provoked much intrigue and many murders, though gradually as the Beys increased their power that of the Pasha declined. In 1768, when Turkey was at war with Russia, Ali Bey, with the support of a strong army, ejected the Pasha and declared himself ruler of Egypt, he conquered a part of Arabia and of Syria, but was murdered in 1772. In 1773 Ismail, Ibrahim, Murad and other Mamelukes contended for the mastery of Egypt, and in 1790 a Turkish army, invading the country, seized Cairo.

**1798-1805. NAPOLEON IN EGYPT -- BATTLE OF ABOUKIR BAY**—In 1798 Napoleon Bonaparte, whose aim at that time was to destroy England's trade in the Mediterranean and to strike a blow at its growing power in the Indies, decided on the expedition to Egypt which was to prove so costly a failure. On July 1 he landed near Alexandria with an army of 36,000 men and stormed the city on July 5. The Battle of the Pyramids, in which the flower of the Mameluke army was destroyed, was fought on July 21, and the French Consul entered Cairo in triumph. Of greater ultimate importance to history than were his victories was the impetus which Napoleon gave to the scientific exploration of the country of the Pharaohs. As a result of the destruction of the French fleet at Aboukir Bay and the need for his presence in Europe, Napoleon returned to France, leaving behind General Kleber, who in 1800 routed a Turkish army at Matarieh. On March 21, 1801, Sir Ralph Abercrombie defeated the French at the Battle of Alexandria, and after capitulating at Cairo the latter evacuated the country in the same year. In 1805 England restored Egypt to the Turks.



1. The Second Pyramid of Giza, showing alabaster top, taken from the summit of the Great Pyramid.
2. An Angle of the Great Pyramid, giving some idea of its immensity.
3. The Sphinx under repair, with the Great Pyramid of Giza in the background.

**1805-1882. - EGYPT AS A VASSAL OF TURKEY - MOHAMMED ALI AND KHEDIVE ISMAIL.** We hear now for the first time of Mohammed (Mehemet) Ali, whose long reign was to prove so beneficial to the country. Born in 1769 at Kavala, in Rumelia, he had served in the Turkish army and had married the daughter of the Governor of his native town. In 1805, yielding to the prayers of the people of Cairo, he proclaimed himself Pasha of Egypt, a title which was confirmed by the Sublime Porte. His reign was to a great extent tarnished by his treacherous slaughter of the Mameluke Beys and their followers in the Citadel of Cairo (1811), but under his wise and progressive rule Egypt gradually rose in importance; in 1831 he declared war against the Sultan with the view of obtaining complete independence. His efforts would probably have been successful but for the intervention of the European Powers, who obliged him to evacuate Syria, which had been wrested from the Turks by his son Ibrahim, and to acknowledge the Sultan as his sovereign. On receiving his submission in 1841, the Sultan Abdul Medjid made the vicereignty hereditary in his family. During his long reign Mohammed Ali sought in many ways to improve the material and moral condition of the country. Schools were founded, Europeans were encouraged to settle in Egypt, and were even appointed to public offices; canals and embankments were restored, and the cultivation of the cotton plant was introduced.

In the reign of Said Pasha, Mohammed Ali's third son, Egypt progressed still farther along the path of reform, though unfortunately the finances of the country were unequal to the many demands made on them and recourse was had to extensive loans, with many to follow. Railways were begun in this reign; the scheme for cutting through the Isthmus of Suez assumed a definite shape, and an actual commencement of the Canal was made. The first steps were also taken towards making the study and preservation of the ancient monuments a national care.

**INAUGURATION OF THE SUEZ CANAL.** - At the death of Said in 1863, Ismail Pasha, the second son of Ibrahim Pasha, a nephew of Said, succeeded to the vicereignty. Able and energetic in a remarkable degree, he endeavoured to carry out all his grandfather's schemes for the introduction of European civilisation, and indeed went far beyond them. He continued the support which Said Pasha had first accorded to Ferdinand de Lesseps, and it was during his reign that the Suez Canal was opened in 1869. In order the better to succeed in his plans he aimed at securing virtual, if not actual, independence of the Porte. By the firman of 1866 giving him the title of Khedive, and making the succession direct from father to son, instead of its descending according to Turkish law to the eldest heir, also by a subsequent firman of 1873 giving him the power to make treaties and otherwise act independently, his object was nearly attained.

The reforms accomplished during Ismail's reign were many and important, and numerous public works to-day bear witness to his zeal. But these costly undertakings necessitated much borrowing, and a huge public debt and the impoverishment of the peasantry were two of the causes of his deposition at the dictation of the European Powers in 1879. At the end of 1875 his liabilities amounted to nearly seventy-eight millions sterling, and he was forced in that year to sell to the British Government 176,000 Suez Canal shares for £3,976,582. These shares are now worth more than £25,000,000.

**1882-1884 : BRITISH INTERVENTION -- BOMBARDMENT OF ALEXANDRIA AND BATTLE OF TEL EL-KEBIR** - A Law of Liquidations for regulating the conditions of the Public Debt had been passed at the instance of five European Powers in 1880. The next year saw the military revolt of Arabi Pasha, the leader of a large following bent on freeing Egypt from foreign interference and control. He became practically a military dictator, and in 1882 British and French warships were despatched to Alexandria to overawe the rebels, their appearance being immediately followed by serious rioting and murders of Europeans in the streets. This was on June 11. Meanwhile Arabi was strengthening the fortifications and his power was increasing. The British admiral, Sir Beauchamp Seymour, afterwards Lord Alcester, demanded that the work should be discontinued. Arabi persisted, the French ships, owing to the refusal of a vote of credit by the Chamber of Deputies, sailed away, and the British fleet bombarded Alexandria on July 11, 1882. The Egyptian troops were suddenly withdrawn, whereupon the city was plundered and partly burned by Egyptian rioters, the British admiral being apparently unable to land a force to restore order until the third day, when he occupied the place until the arrival of troops under Sir Archibald Alison, who kept Arabi in check behind his lines at Kahi Dewar.

**BATTLE OF TEL EL-KEBIR** - Meanwhile Sir Garnet (afterwards Viscount) Wolseley hurried out with more troops from England and other regiments were despatched from India, the point of embarkation being Ismailia on the Suez Canal. In twenty-five days the British forces had traversed the desert, utterly defeated the main body of Arabi's army at Tel el-Kebir (September 13), and occupied Cairo. Arabi was tried, pleaded guilty and was banished to Ceylon, where he remained till 1901, dying in obscurity in Egypt in 1911. The authority of the Khedive being thus restored, most of the British troops were withdrawn and measures taken for the reorganisation of the country. Lord Dufferin went to Cairo and drew up a Constitution which remained largely illusory, and Sir Edward Baring (afterwards Lord Cromer and one of the modern makers of Egypt) continued the task of reorganisation. But the attempt to persuade the Khedive's Government to rule according to British ideas, and to get British officials and their Egyptian colleagues to work smoothly together, led to repeated crises and changes of plan. A conference of the Great Powers in 1884 and a subsequent negotiation with Turkey did not relieve Britain of her exclusive responsibility, and though at that time there was no general desire in England for a permanent, or even for a long temporary, occupation, British statesmen saw themselves confronted with the plain duty to remain in Egypt until "the elements of order and progress should be established."

**1884-1898 : LOSS AND RE-CONQUEST OF THE SUDAN - THE MAHDI, GORDON AND KITCHENER** - It becomes necessary at this point to mention that vast territory lying to the south of Upper Egypt, known formerly as Nubia and now as the Anglo-Egyptian Sudan. It had been invaded and conquered in 1820 by Mohammed Ali, partly to obtain possession of the mines of gold and precious stones which it was believed then to contain, and partly to recapture its valuable caravan trade which had recently been diverted from the Nile to Red Sea ports. As a matter of fact, the Sudan was always a drain on

the Egyptian exchequer, although Baker, by extending its frontiers to the shores of the Victoria Nyanza, and Gordon, by his suppression of several revolts, had both done much to consolidate Egyptian rule. At the moment when the British Government intervened in the affairs of Egypt the whole country was in a state of rebellion, stirred up by a religious fanatic who proclaimed himself the Mahdi ("Guided by God"). The Mahdist movement, which was to overthrow Egyptian rule, derived its strength from two different causes: the oppression under which the Sud. nese suffered and the measures taken by Gordon and others to prevent the Baggara (cattle-owning Arabs) from trading in slaves.

**EL-OBEDI** The British Government, which had at first declared its intention of excluding the Sudan from the problem of reorganisation, soon found such a position quite untenable. In 1883 Hicks Pasha, a retired Indian officer, was appointed head of the army in the Sudan, the recapture of El-Obedi being his main objective. Lack of water and guides who misled him ended in the annihilation of the force and the death of its leader, the battle being fought near El-Obedi on November 5, 1883. This victory and others gained at El Fih and Tokar made the Mahdi master of the greater part of the Sudan.

**GENERAL GORDON - FALL OF KHARTOUM** - On hearing of the disaster to Hicks' army, the British Government insisted that the Egyptian Government should evacuate such parts of the Sudan as they still held, and General Gordon was despatched with Sir Herbert Stewart to Khartoum to arrange the withdrawal of the Egyptian civil and military population. Gordon's instructions, based largely on his own suggestions, were not wholly consistent; they seem to have contemplated vaguely the establishment of some form of stable government on the surrender of Egyptian authority, and among the documents with which he was furnished was a fuman creating him Governor-General of the Sudan. Gordon reached Khartoum on February 18, 1884, and at first his mission, which had aroused great enthusiasm in Egypt, promised success. He soon found, however, that he had attempted an impossible task; he could not leave the garrison to fall into the hands of the Mahdi, and the British Government refused or delayed to send him the reinforcements he requested.

Meanwhile the Mahdist movement swept northward; Berber was captured by the dervishes and Khartoum was isolated in May, 1884. Too late, in October of the same year, a British expedition under Lord Wolseley was despatched, and selected the difficult and tedious route up the Nile, instead of making a rapid dash from Suakin to Berber. The pitched battle of Abu Klea (January 17, 1885) resulted in a British victory, but also in the loss of Sir Herbert Stewart and General Burnaby. When Sir Charles Wilson's relief party eventually reached Khartoum, it was to learn that it had fallen and that Gordon had been killed on January 26. The relief party was forced to retreat, the whole British army was hurriedly withdrawn, and the Sudan was left to its fate.

**KITCHENER AND THE EGYPTIAN ARMY - RECONQUEST OF THE SUDAN.** - For eleven years the Sudan was abandoned to an appalling reign of terror, which left it desolate, devastated, depopulated and paralysed with dread. The Sudanese had but exchanged the whips of Egyptian misgovernment for the scor-



pions of the Mahdi's savage rule. Though the latter died in 1885, his successor, 'Abdallah, was even a worse despot. Reconquest was of course inevitable, for the Sudan commanded the water and hence the wealth of the Nile, and added to the necessity for securing control over the same was the natural desire of the Egyptian Government to recover lost territory and also that of Great Britain to avenge the death of Gordon.

It took, however, many years to organise an Egyptian army that could be trusted, and for four of these (1885-1889) all that could be done was to hold the frontier at Wadi Halfa and keep the dervishes out of Egypt proper. General Grenfell's victory with Egyptian troops over the dervishes at Toki on August 3, 1889, showed that the persistent weak of British administration in Egypt had at length produced an efficient native force, and this was confirmed by the defeat of Osman Digna at Toki in 1891, which freed the Red Sea littoral. In 1892 Sir Herbert (Earl) Kitchener became Sudan of the Egyptian army, and after ten years of steady preparation he made a move to the south. The victory over the dervishes at Fuka on June 7, 1896, was followed by the capture of Dongola in September. A railway was thrown across the desert to Abu Hamed, the dervishes retreated from Beber, and on April 7, 1898, they were driven out of their encampments on the Atbara by a combined British and Egyptian army. On September 2, 1898, Kitchener, ably supported by Macdonald, Hunter and others, won his crowning victory at Omdurman over 40,000 of the enemy. Khartoum was taken, the Khalid escaped, but was run to earth and died fighting in the following year.

The victory of Omdurman and the re-occupation of Khartoum were followed by the so-called Fashoda incident, which might have led to trouble with France, but was diplomatically settled by Kitchener. From that time onward the condominium or combined British and Egyptian rule over the Sudan was inaugurated, Lord Kitchener being the first Governor-General.

**1899-1914. PERIOD OF PROGRESS -- LORD CROMER. ANGLO-FRENCH AGREEMENT - IRRIGATION WORKS.** - Meanwhile Egypt, relieved from the apprehension of the Mahdi, was gradually recovering from the state of anarchy and debt into which the extravagances of Ismail had plunged her. This restoration to order and solvency was mainly the work of one man, Earl Cromer, who has been justly called "the maker of modern Egypt." A financier by birth, he had early perceived that the key to the whole difficulty lay in the financial mudslide. It was for many years a fight with bankruptcy, and this was the explanation of the abandonment of the Sudan in 1883. Money was wanted for irrigation, the prime necessity of Egypt, as well as for every kind of reform. The great schemes of irrigation, which commenced with the repair of the Nile Barrage in 1890 and included the construction of the great dams at Assuan and Assuit, were put in hand, and these, spread over a period of twenty years or more, added, it is estimated, at least £3,500,000 a year to the value of the country's productiveness. Taxes, no longer collected under the whip, were in great measure remitted, the amount spent on education was quadrupled, and the iniquitous corvée was gradually abolished.

Such was the triumph of Lord Cromer's unremitting toil for nearly a quarter of a century. He found Egypt ruined, outraged and miserable; he left it prosperous, wealthy

and one of the most highly taxed countries in the civilised world. His work was accomplished in the face of strenuous opposition from the Powers, the Sultan and the native press, and international restrictions hampered him at every turn.

**ANGLO-FRENCH AGREEMENT.** The Anglo-French Agreement of 1904, which at last removed all causes of friction between English and French interests in Egypt, together with most of the financial restrictions which had impeded progress, was not the least of Lord Cromer's conspicuous successes. This agreement virtually recognised the dominant positions of France in Morocco and Great Britain in Egypt. The British Government declared that it had no intention of altering the political status of Egypt, and on her side France undertook not to obstruct the action of Great Britain in that country by asking for a time limit to be fixed for the British occupation, or in any other manner. In effect, this was European recognition of Great Britain as the dominant power in Egypt. Further, by a Khedivial decree, which came into force at the same time, Egypt obtained practically financial independence, being free henceforth to control her own revenue and to take advantage of the financial prosperity of the country.

**FURTHER PROGRESS AND REFORMS.** It was perhaps fortunate that the recognition and consolidation of Great Britain's influence occurred when it did. Nationalist propaganda, intrigues and risings were frequent during the early years of the present century and British garrisons had to be strengthened. Lord Cromer resigned in 1907 and was succeeded by Sir Eldon Gorst, who had long served under him. In that year Provincial Councils were established. Sir Eldon Gorst died in 1911, and Lord Kitchener, who enjoyed remarkable prestige in Egypt, followed him as British Agent and Minister-Plenipotentiary. The salient features of his administration were the revision of the Organic Law of 1883 and the institution of a Legislative Assembly on a broad electoral basis. Roads were made everywhere, and the Five Feddan Law did immense service to the fellah by protecting him against expropriation of his land, house and utensils for debt. The inauguration of the new Legislative Assembly in 1913 brought first into public notice the ex-Premier and present leader of the opposition, Saïd Zaghlul Pasha, who, as the champion of Egyptian Nationalism, was elected Vice-President.

**1914-1919. EGYPT DURING THE WAR.** - When the European War broke out in 1914 martial law was at once declared, and there was no disturbance either in Egypt or the Sudan. On account of his amercement to the King's enemies, the Khedive Abbas Hilmi, who was at the time in Constantinople, was deposed, a British Protectorate over Egypt was proclaimed, and the Turkish suzerainty was terminated. Prince Hussein Kamel, uncle of the deposed Khedive, was also proclaimed Sultan of Egypt. The arbitrary and corrupt methods of Abbas II had rendered him generally unpopular with the Egyptians, who had also little reason to regret the severance of the last link with the Turks.

Lord Kitchener having accepted office as British Minister of War, Sir Henry MacMahon was appointed first High Commissioner of the new Protectorate. Egyptian feeling was far from being unanimously favourable to the British occupation, and several attempts were made on the Sultan's life. Nationalist propaganda became increasingly active, and the mahenable sympathy of

the Moslem with Turkey was a factor always to be reckoned with. A Turkish attack on the Suez Canal early in 1915 was signally defeated, as was an attack by the Senussi on the Egyptian forces at the end of the same year. On August 4, 1916, a great battle was fought between the Turks and the British in the Peninsula of Sinai, in which the Turkish army of 18,000 was utterly defeated. In December of the same year Sir Reginald Wingate succeeded Sir Henry MacMahon as High Commissioner.

The years 1917 and 1918 brought great prosperity to Egypt. Enemy attacks had weakened and Allenby's successful campaign in Palestine relieved the country from all fear of further trouble from outside. The Sultan died on October 9, 1918, and was succeeded by his brother, the present King Fuad I. Towards the close of the War the principles formulated by President Wilson had a far-reaching and even decisive effect on educated opinion in Egypt. The long-voiced aspirations of the Nationalists to govern themselves were considered to have received international sanction, and it was further urged that the attitude adopted by England during the War and the very real sacrifices made by the people of Egypt justified a claim for special consideration, in short, that the time had now come to reconsider the relations between that country and Great Britain. Furthermore, an independent Kingdom had already been established in Arabia, and Egyptians were not slow to insist that they were at least as able to manage their own affairs.

**1918-1922. STEADY GROWTH OF NATIONALISM - THE MILNER COMMISSION.** Towards the end of 1918 the spirit of discontent and unrest pervaded all classes, and it was as strong among the fellahs as with the "Effendi" classes. A powerful Nationalist committee was appointed under the chairmanship of Zaghlul Pasha, who now became definitely the leader of the party. A request that he and others should proceed to London to discuss the affairs of Egypt was refused, on the ground that the forthcoming Peace Conference demanded the full time and attention of the British Foreign Secretary and other Ministers. The immediate result was the presentation of a petition to the Sultan disavowing the Protectorate and clearly assigned to intimidate His Highness. Vigorous action was taken by the British Authorities, and on March 8, 1919, serious rioting in many parts having ensued, Zaghlul Pasha and three of his adherents were arrested, being deported the following day to Malta.

During the absence of Sir Reginald Wingate in 1919, Lord Allenby, the Commander-in-Chief of the British forces, returned to Cairo as High Commissioner. He was able quickly to get the situation in hand, and his proclamation of November 15 of that year did a lot to allay the agitation, which was as much the result of economic as of political causes. His policy was in the main one of conciliation, and, as a result of the removal of the embargo on the free movement of Egyptians, Zaghlul Pasha and his associates were liberated, proceeding to Paris, where their efforts to obtain a hearing at the Peace Conference were disappointed.

**THE MILNER COMMISSION.** The British Government in December 1919 sent to Egypt a special mission to enquire into the causes of the recent disorders, also to report on the existing situation of the country and the form of the Constitution which, under the protectorate, would be best calculated to promote its peace and

prosperity, the progressive development of self-governing institutions, and the protection of foreign interests." The Milner Commission got quickly to work, but during both 1920 and 1921, though it was known that the British Government were in sympathy with some of the demands of the Nationalists, the extremists continued to stir up riots in Alexandria, Cairo and other towns, and there was much damage to property, with some loss of life. Gradually, however, the best Egyptian opinion came over to the side of Adly Pasha, who was the protagonist of a modified system of independence and to whom Zaghlul Pasha was unalterably opposed. Lord Allenby's policy of conciliation was beginning to bear fruit, the report of the Milner Commission recommended an autonomous Constitution, in which, however, Great Britain should have a controlling influence upon foreign affairs and should maintain a military force of occupation, and in the summer of 1921 Adly Pasha with a number of his supporters visited London to discuss with the British Government exactly what measure of independence should be granted to the Egyptians. In December negotiations were somewhat abruptly broken off and the delegation returned to Egypt. Zaghlul Pasha and four of his colleagues, who had refused to obey a military order to absent themselves from public life, were exiled to the Seychelles, and the year closed on a note of strong anxiety as to the future.

**1922-1924.—EGYPT PROCLAIMED AN INDEPENDENT KINGDOM.** INAUGURATION OF THE EGYPTIAN PARLIAMENT. **MURDER OF THE SIRDAR**—The year 1922 will ever be memorable in the history of Egypt, it was that of the transformation of the country into a sovereign and independent State, and of the formation of the present Constitution. The declaration of the British Authorities terminating the Protectorate and declaring the independence of Egypt was promulgated on February 28, the following matters being reserved entirely to the discretion of

His Majesty's Government: (a) the security of the British Empire's communications in Egypt, (b) the defence of the country, (c) the protection of foreign interests and of minorities, and (d) the administration of the Sudan. In 1923 an Act of Indemnity was passed, and resulted in the return of a large number of persons who had been exiled for political offences. The elections to the first Parliament which followed towards the close of the year were marked by strong partisan feeling, and ended in the return of Zaghlul Pasha and his party.

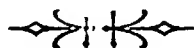
**MURDER OF THE SIRDAR**—The first Egyptian Parliament met on March 15, 1924. The new Premier, who arrogated all the powers of a dictator, claimed from the beginning that the Sudan belonged to Egypt, and demanded from Great Britain its immediate incorporation in the Egyptian Empire. The British Government refused absolutely to admit his claims, serious anti-British disturbances broke out at Khartoum, a large part of the Sudan revolted, and on November 19, 1924, Sir Lee Stack, Sirdar and Governor-General of the Sudan, was assassinated in a street at Cairo by a gang of Egyptian extremists. A British ultimatum was the immediate result, the demands presented by Viscount Allenby being: (a) an immediate apology, (b) the punishment of the criminals, (c) the suppression of popular demonstrations, (d) the payment of a fine of £500,000, (e) the withdrawal of Egyptian officers and units in the Sudan, (f) withdrawal of all opposition concerning the protection of foreign interests in Egypt. Zaghlul Pasha accepted four of the demands only, and found it necessary with his Cabinet, to resign. His successor, SE Ziwari Pasha, accepted the remainder. Six of Sir Lee Stack's murderers were hanged in August 1925.

**1925-1926.—MATERIAL PROGRESS AND POLITICAL UNREST**—Economically, Egypt has made decided progress during the last few years. The development of its resources and of its trade was very evident in 1925, in spite of the general

political unrest which marked that year. Ziwari Pasha had persuaded the King to exercise his constitutional prerogative and to dissolve Parliament, elections were held in March, and Ziwari's Government was returned to power as a Coalition Government. But Zaghlul Pasha was, immediately upon the re-assembling of Parliament, elected President of the Chamber and the Cabinet accordingly advised the King to dissolve it again. The life of this Parliament had lasted exactly fourteen hours, and for a time Egypt was without Parliamentary Government. A new Electoral Law was drawn up, under which the general election fixed for May 1926 was to be held. Lord Allenby left Egypt towards the end of 1925, and was succeeded as High Commissioner by Lord Lloyd of Dolobran, who had for five years held the important post of Governor of Bombay.

The year 1925 was also notable as marking real progress in the realm of scientific research, thanks largely to the foundation of the Egyptian University, the chairs in which are occupied by European professors of repute, as well as in the extension of elementary education. In 1926 the new High Commissioner opened, with great éclat, the new Makwat Dam, near Semna, in the Sudan, which, though primarily intended to benefit the Sudan, will necessarily largely aid Egyptian agricultural development.

The General Election of 1926 resulted in the complete success of the Zaghlulist or Nationalist faction, Zaghlul Pasha himself accepting the Presidency of the Chamber, while the Premiership fell to Adly Pasha Yedim, who selected a Cabinet which, while it was partly composed of members of the Wafd, conformed, in regard to its more important posts, to the wishes of the British Government. The admittedly difficult political situation in June 1926 was further complicated by the resignation of Judge J. F. Kershaw, the President of the Assize Court, in consequence of the acquittal (contrary to the weight of evidence) of four Egyptians accused of political murders.



## PEOPLES

### POPULATION

### IMMIGRATION AND LABOUR

### EDUCATION

#### SPORT

#### PRESS

#### POPULATION

**I**N a country like Egypt, which contains so many people who only live therein for a part of each year, it has always proved difficult to obtain an accurate statement of the exact population. Under the Romans it was estimated that the inhabitants (exclusive of slaves) numbered 8,000,000. In 1800 the population was said to be about 2,500,000 only, and some fifty or sixty years later to have declined by a million. Since then the figures have shown a consistently rising tendency, and at the last census, taken in March 1917, the total was returned at a little over 12,700,000, an increase of 1,400,000 above that recorded ten years previously. Thanks to the ever growing

prosperity of the country, the population continues to expand, and was estimated to have done so by over a million between 1917 and 1924, the figure then being put at 13,885,000. This population, it may be added, is spread over 18,141 different localities, comprising 3,692 cities and towns, 14,061 villages, hamlets or farms, and 433 Bedouin encampments.

**DENSITY**.—If the cultivated portion of Egypt only be taken into account, consisting of some 12,000 square miles, the density of its population will be found to exceed that of any European country, being 1,061 to the square mile, compared with Belgium's 636 3. If the whole of Egypt be considered, the figure of density falls to about 35 per square mile.

**DISTRIBUTION**.—At the last census the population of the country was thus distributed:—

GOVERNORATES	TOTAL POPULATION	POPULATION PER SQ. MILE
Cairo	740,939	18,832
Alexandria	444,617	23,401
Damietta	30,984	2,817
Canal (Port Said and Ismailia)	91,090	30,363
Suez	30,996	10,332
Frontier Districts	80,504	—
<b>MUDIRIYAS. Lower Egypt</b>		
Beheira	892,246	517
Daqahliya	986,643	981
Gharbiya	1,659,313	655
Menufiya	1,072,636	1,770
Qalyubiya	528,581	1,476
Sharqiya	955,497	723

	TOTAL POPULA- TION	POPULA- TION PER SQ. MILE
MUDIRIYAS Upper Egypt		
Assiut	981,107	1,278
Assuan	253,340	1,508
Bent-Suef	452,893	1,107
Fayyum	507,617	759
Girga	863,234	1,499
Giza	524,352	1,317
Minya	763,922	1,173
Qena	840,317	1,114
Total	12,750,918	1,061

#### DISTRIBUTION BY NATIONALITIES.—

The census of 1917 returned the following figures of nationalities in Egypt: Egyptians, 12,404,042; Bedouins, 32,663; Sudanese and Berbers, 107,364; Greeks, 56,731; Turks, 30,797; Italians, 40,198; British, 24,354; French, 21,270; Austrians, 2,789; Russians, 4,225; Persians, 1,496; Germans, 157; other nationalities, 25,932.

**DISTRIBUTION BY RELIGIONS.** At the last census there were 11,624,753 Mohammedans, 1,026,107 Christians (844,474 of these being Coptic Christians), 50,581 Jews, and 8,814 other religions.

**GROWTH OF POPULATION.** The following table shows the increase in the population of Egypt during the last century and to the date of the last census:—

YEAR	POPULATION
1800	2,400,200
1821	2,536,400
1846	1,476,440
1882	6,831,131
1897	9,734,405
1907	11,287,359
1917	12,750,918

The estimated population in 1924 was 13,885,000.

**LANGUAGE.** The present day language of Egypt is Arabic, the older form of characters in which the Arabic language was written is called Kufic. Inscriptions in this character were frequently used as architectural ornamentation. Egyptian Arabic is very different from the classical Arabic, and also differs considerably from the dialects spoken in Syria and Algeria.

It should be noticed that the particle "el" (the) changes the pronunciation of the final consonant before the consonants t, d, g, j, dh, z, r, s, sh, l and n. Hence in phonetic transliteration it is usual to find such phrases as "en-nil," "esh Sherkeess," as they are pronounced, instead of the more correct "el nil," "el Sherkeess." Coptic is practically a dead language, though it is used in a part of the Church service. It is the direct descendant of the ancient Egyptian language and is written in the Greek character, supplemented by five or six characters borrowed from the Demotic.

**RACES.**—The various elements of the motley population of Egypt may be divided into Egyptians, who may again be subdivided into the Fellaheen (country population), the inhabitants of the towns (Oulâ el-Arab) and the Bedouin or wandering tribes, Nubians, Abyssinians and Negroes, Turks, Levantines, Armenians, Jews, and Europeans.

**ABYSSINIANS AND NEGROES.**—There are still a considerable number of these in Egypt, most of whom were formerly slaves. The negroes come chiefly from the Sudan and Darfur. Negresses are frequently employed as domestic servants. Though slavery is officially forbidden in Egypt, there can be little doubt that many negroes are still held in a form of servitude.

**ARMENIANS.**—The Armenians form a small but important community. They are chiefly engaged in commerce and trade, especially as goldsmiths and jewellers, but many of them hold important posts in government offices.

**BLDOUIN.**—These are the wandering Arabs living in the desert on either side of the Nile, and in the Sinaitic Peninsula. The total number dwelling upon Egyptian territory does not now exceed 50,000. They were formerly divided into 75 tribes, mostly speaking Arabic. The Ababda Bisharin and Hadandwa tribes, who live in the most southern part of Upper Egypt and Nubia, speak a different language, which is known as Bedy or Tu-Badhawiya. It has been observed that when the Bedouins settle down to village or town life they appear to lose all the bravery and fine qualities of independent manhood which characterise them when they live in their home, the desert.

**COPTS.**—The Copts are the direct descendants of the ancient Egyptians who early in our era embraced Christianity; they number to-day probably not more than 500,000, and live chiefly in the cities of Upper Egypt, where most of them are engaged in the trades of goldsmiths, cloth-workers, etc., while a large number of the clerks in the postal telegraph and other government offices in Egypt are drawn from their community. Their religion is known as the Monophysite variant of Christianity, and because of their adherence to the heretical doctrine of the one nature of Christ they formerly suffered much persecution. Their churches, festivals and lasts are extremely interesting to the archaeologist and ecclesiologist, and the true Copt considers a visit to Jerusalem once in his life to be obligatory.

**EUROPEANS.**—The Europeans are a most important section of the population of Egypt, especially in Cairo, Alexandria, and the towns of the Delta. Greeks, Italians, English and French formed the majority of the 174,000 inhabitants coming under this head at the last census. The greater part of the business of Alexandria is in the hands of Greek merchants, many of whom are famous for their wealth. The French, British, Austrian and German nations are also represented there by several important business houses. In addition to this, the part that British administrators have played (with the help of the French) in the pacification and re-organization of the country and its finances have made the position of these two nationalities a most important one in the political and commercial life of Egypt.

**FELLAHEEN.** The Fellaheen (Ibn el-Arab) are the most numerous and most important element of Egypt's population, and it is said that about 90 per cent of the native inhabitants belong to this class. They are descended from the Arab tribes which settled in Egypt soon after the Mohammedan conquest of the country. When these tribes left the desert and began to live a non-nomadic life, they married among the indigenous people, and their offspring, most of whom embraced Islam, resembled in many respects the ancient Egyptian people. The fellah is the agriculturist of Egypt, and probably the hardest working agriculturist in the world. He lives on and by the earth, and his house is a little conical mud hut, his only clothes are a strip of blue cloth, his wants are incredibly few and all supplied from his immediate surroundings. Many fellaheen become very rich and owners of large estates, without, however, abandoning the simplicity of their ordinary life.

**JEWS.**—The Jews of Egypt are remarkable for their fair hair, blue eyes and white skin. The street moneychangers (seraf) in the towns are Jews, and there are many wealthy merchants and shopkeepers, though the Jewish quarters are generally poor and miserable-looking. The race is not subject to persecution, and labours under no civil disabilities.

**LEVANTINES.** The Levantines may be described as Arabic-speaking Christians of European and Syrian origin. There are few of them who, in addition to their mother tongue, have not an acquaintance with several other languages. They are chiefly engaged in commerce, many of them being very wealthy.

**NUBIANS.** The Nubians may be considered as the inhabitants of the country between the First Cataract and Khartoum; by the Arabs they are called Berberi. They speak a language which is allied to some of the North African tongues, but often use Arabic well. The Nubians found in Egypt are usually doorkeepers and domestic servants, who can as a rule be depended upon for their honesty and obedience.

**OULÂ.**—The Oulâ, or Egyptian inhabitants of the towns, differ in many respects from the peasantry, though the distinction is chiefly noticeable as regards the Cairenes, who consider themselves and with some justice, the superiors, mentally and physically, of the Fellaheen. No doubt they are a more mixed race, showing signs both of European and African descent, and the colour of their skin varies from a dark brick red to nearly white.

**TURKS.**—The Turks now form a comparatively small portion of the population of Egypt, and the day has gone when they occupied most of the important civil and military posts. Many of them are the children of Circassian slaves, while others are the descendants of Turks born in Egypt and of very mixed origin. Turkish merchants are famous for their civility to foreigners and their keen eye to business.

#### IMMIGRATION AND LABOUR

Of immigration in the generally accepted sense of the word, there is none in Egypt. That is to say, the labour of the fellaheen, Egypt's peasantry, is amply sufficient for the sowing and harvesting of the cotton and other crops, and imported labour under Government supervision is unknown. Within the region of the Delta, however, there has been throughout modern Egyptian history always a stream of indefinite and uncontrolled immigration from what is known as the Levant, the new arrivals (mostly of Syrian or Greek extraction) taking up mercantile pursuits and becoming absorbed in the very mixed population of Alexandria, Cairo and the larger towns. Since the middle of the 19th century, too, there has been a certain amount of what may be called official immigration from England and European countries, since the establishment of autonomous government this has sensibly decreased.

**LABOUR.**—In April 1924 the Labour Conciliation Board, which had been established under the British Administration, was abolished, and its place was taken by Conciliation Commissions set up in the capitals of the Governorates and Provinces, being composed of the Governor or Mudir, as the case may be, as president, a notable of the district, and the employers. In spite of the ubiquitousness of these Conciliation Commissions, as against the limitation of the original Commission to headquarters at Alexandria, with temporary transfers to

Cairo, there was an almost unbroken succession of strikes in the two chief cities and the Canal Zone during 1924 and 1925, the delay in dealing with which was often very pronounced. Many of these so-called labour disputes had little or no economic *raison d'être*, but were either the work of political agitators or trials of strength with the employers.

An attempt made to unite all labour syndicates in one General Egyptian Workers' Federation began very promisingly, but had to be abandoned owing to disputes between its president and the delegates of the various syndicates, who, amongst other things, objected to the former's proposal that 25 per cent of their receipts should be at the disposal of the Federation.

## EDUCATION

Writing in 1901 the late Lord Cromer was able to say: "A very great impulse has been given to education in all its branches the schoolmaster is abroad." In 1907 the sum of £13,371,000 was expended upon education, then an unprecedented amount; in 1923-24 the total so disbursed out of the Public Treasury was £11,272,000. These facts will serve to show how the extension of educational facilities throughout Egypt has definitely, if somewhat slowly, progressed. Especially since 1922 when Egypt became an independent Power, there has been a marked increase in the number of schools of all categories as the movement for education has spread throughout the country. Indeed, quantity is perhaps being secured somewhat at the expense of quality, though it is hoped that this is only a temporary defect. Trained teachers for the primary and secondary schools do not yet exist in adequate numbers, but efforts are being made to increase training colleges for teachers of all kinds, and in a few years the supply of qualified instructors may be expected to equal the demand.

### ELEMENTARY EDUCATION.

Elementary education in Egypt was formerly in the hands of private individuals or of the mosques, the schools attached to the latter and those endowed by the Ministry of Wakfs (Pious Foundations) teaching little but the A B C of grammar and calligraphy and the recitation of the Koran. These elementary schools are, therefore, little more than vernacular institutions for the masses, but the recent development of the Government's educational policy has transferred many of them to the control of the Ministry of Education, which has also created new ones since 1924 to the number of 127. There are also over 700 Provincial Council schools and 2,801 elementary schools receiving the Government grant-in-aid, which is dependent on Government inspection and the inclusion of physical training, civics, general information, and (for girls) needlework and drawing in the syllabus of instruction. In 1925 there were (excluding the men's and women's elementary Training Colleges) 4,567 elementary schools in Egypt, with a total roll of 413,110 pupils.

**PRIMARY SCHOOLS.**—The primary schools may be termed the preparatory schools in the European system of education that Egypt established more than sixty years ago. They correspond to preparatory schools and grammar schools in England, just as the secondary schools in Egypt correspond to the Public Schools in England, with the study of English and French taking the place of that of Latin and Greek. The new scheme of work for boys' primary schools includes the following subjects: Arabic, English or French, arithmetic, physical

training, Arabic penmanship, religion and morals, handwork or school gardening, drawing, geography, English or French penmanship, history, object lessons and elementary science, hygiene and elementary physiology, geometry and civics. The time-table comprises four lessons each morning of 50 minutes each, and three lessons each afternoon of 45 minutes each. Thursday afternoon and the whole of Friday are holidays. From 1902 until 1925 the only European language studied in primary schools was English. With the new syllabus French has been re-introduced as an alternative language in certain schools where its study is deemed advantageous to the pupils. Handwork is now being taught for the first time in boys' primary schools, and a carpenter's workshop is to be installed in every school for light wood-work and metal work. School gardening has been started in five provincial schools where the necessary land is obtainable, and it is hoped to extend this subject to other schools year by year.

The statistics of boys' primary schools for the school-year 1924-25 were as follow:

No.	CONTROLLING AUTHORITY	NUMBER OF SCHOOLS	PUPILS IN ATTENDANCE
1	Ministry of Education	40	14,851
2	Provincial Councils	76	12,078
3	Societies or individual Proprietors	85	17,437
Total		201	45,266

For the 30 Government Schools there was a staff of 702, comprising headmasters and teachers, of whom 480 were in possession of teachers' certificates.

### PRIMARY SCHOOLS FOR GIRLS.

Including eight higher elementary schools, there were 73 primary schools for girls established in Egypt by 1925, with a total attendance roll of 18,740, of these, 52 were under the inspection of the Ministry. During recent years the general standard of education in all girls' schools has been raised, and new syllabuses of instruction have been so framed as to ensure the moral, intellectual and physical education of Egyptian girls, to enable them to acquire knowledge by exercising their powers of observation, reflection and reasoning, and not as in the past by memorising alone.

**PRIVATE SCHOOLS.** In addition to the Government schools, there are a number belonging to public bodies and private individuals. Thus the Provincial Councils maintain elementary, primary and technical schools, religious institutions and societies are responsible for primary and secondary schools, and many private individuals have opened schools of their own. The Orthodox Coptic community maintains 196 schools, containing 18,987 boys and 5,080 girl pupils. The Greek, Syrian, Jewish, and every other foreign community has each its fine schools, well housed and liberally supplied with European teachers, and many of the most distinguished men in the country have been educated at the Jesuit and other foreign schools.

**SECONDARY EDUCATION.**—Secondary education in Egypt is provided partly by Government schools directed by the Ministry of Education, and partly by schools under private management, which are inspected by the inspectors of the Ministry and are in receipt of grants-in-aid from the Government. The number of Government schools in 1925 was 15 and of inspected schools 35, with a total attendance of 12,914 pupils. Five of the Government schools are in Cairo and others are at Alexandria, Tanta, Zagazig, Mansurah, Beni-Suef, Assiut, Dar-el-Ulum

(preparatory to the Training College there), and Hilmya (for girls). The course of study extends over five years. For the first three years a general course is followed, and in the fourth year pupils branch off, according to their choice, into two sections, literary and scientific, in which they receive more specialised instruction fitting them to proceed to the Faculties of Arts, Law or Medicine in the Egyptian State University. At the end of their third year pupils have to pass the Secondary Education Certificate Examination Part I, and at the end of their fifth year Secondary Education Certificate Examination Part II.

The possession of the latter certificate is a necessary condition for admission to the University or any Higher College and it also renders the holder eligible for employment in minor clerical posts in Government Offices. Important secondary schools which are inspected by the Ministry and receive grants in aid are: the Coptic College, Cairo, El Ihania School, Cairo, El Idaria Cairo, Tewfik Coptic School, Cairo, the Royal Awqaf School, Cairo, El Masari-el-Maskura School, Shubra el Khayma, the Coptic El Morcosia School, Alexandria, the Coptic School, Hisset Birma, the Al Raschad Secondary School, Cairo, and the Al Hayatem Secondary School, Cairo.

### TECHNICAL AND COMMERCIAL EDUCATION.

—The Department of Technical, Industrial and Commercial Education controls a number of schools and institutions, the largest of which are the Bulak Technical School with 870 students and the School of Egyptian Arts and Crafts, with 357. The Mansurah Trades School, the Cairo Model Workshops, the Assiut Model Workshops, and the Port Said Government Trades School give practical instruction in various trades. The length of the course is five years. There is no fee, and pupils after the first year receive small wages. The numbers of apprentices in these schools in 1925 were: 462 at the Mansurah Trades School, 115 at the Port Said Trades School, and 316 and 303 at the Cairo and Assiut Workshops respectively. There are also the Schools of Accountancy and Commerce in Cairo with 525 students, evening classes in connection with such schools being held at Alexandria and other centres, the School of Housewifery for women and girls at Kubba, and the Ecole des Beaux Arts at Cairo, founded in 1908 by H.H. Prince Yussuf Kamal Pasha.

**UNIVERSITY EDUCATION.**—The great Egyptian University of El Azhar, which occupies the famous mosque of that name erected in the time of the Fatimite Khalifs (970-972 A.D.), is probably the largest institution of its kind in existence, and is known all over the Mohammedan world. There are commonly not less than 20,000 students at El Azhar, but the education given is confined to commenting the Koran and the Sheri, or Sacred Law. The Egyptian University, comprising faculties of Literature, Criminal Science and Law, was founded by Said Pasha Zaghlul in 1908. One of the most important and flourishing of colleges in Cairo is the School of Medicine and Pharmacy, which admits students between the ages of 16 and 25 who hold the Secondary Education Certificate (scientific side). The number of students in 1924 was 497. The School of Engineering, Gizeh, has accomplished much useful work, especially in the direction of irrigation and civil engineering; in 1925 it had a roll of 581. The Higher Training College, Cairo, with 663 day students, provides a four years' course, based upon the Secondary Education Certificate for teachers

of mathematics, science and literary subjects free education is given to students who undertake to follow the profession of teaching for at least five years after having obtained the diploma. The Dar el Uhm provides a four years' course for Sheikhs, and the Sana Training College a similar course for women teachers, education being free.

### SPORT

Sport in Egypt may be said to have been introduced by Europeans resident in the country. It was until comparatively recently it was wholly maintained. Prior to the Great War the playing of games was also in the main confined to British residents and the Army of Occupation. Since 1914, however, sport has gained a considerable hold on the affections and interests of Egyptians. Football is now the national winter game, and tennis enthusiasts are limited only by the extent of playing facilities. Boxing, too, is becoming increasingly popular. Opportunities for indulging in the sports of big game shooting and hunting are, of course, restricted, Egypt being a country of either irrigated lands or sandy deserts.

**FOOTBALL.**—Rugby football has no attraction for the Egyptians but is played to some extent by units of the British Army and Air Force and an occasional side from the Gezira Sporting Club. The Association code, on the other hand, has become very popular with all classes of Egyptians, and many of the large business houses in Cairo and Alexandria have encouraged the formation among their employees of football clubs and competitions.

**GOLF.**—There are eleven golf courses in Egypt, six of these being situated in and around Cairo, and one each at Alexandria, Port Said, Suez, Ismailia and Assuan. Six of the eleven are 18 hole courses, the others having nine holes only. Two of the former and one of the latter have grass fairways, the rest of the fairways and all the greens are of sand. The all-sand fairway in Egypt, thanks to constant rolling and watering, provides a very good surface, and sand greens, constantly watered and brushed, are very much truer than the European golfer might be led to suppose.

**POLO.**—There are three polo grounds at the Gezira Sporting Club, Cairo, and matches are held every week. This game was introduced, and is still mostly played, by the officers of the British Army and Air Force.

**RACING.**—Racing in Egypt is controlled by the Jockey Club of Egypt, whose headquarters are in Cairo. Meetings are held twice weekly at that city, the course at Helopolis being conveniently and beautifully situated, with admirable arrangements for owners, trainers and the general public. Both horse races and camel races are held here, the horses varying in character from third class Arabs to English thoroughbreds and providing very good sport.

**SHOOTING.**—While Egypt cannot compete with the Sudan and other parts of Africa as a big game country, the opportunities it offers to the gunner are by no means few, quail, duck, snipe, and pigeon shooting being obtainable throughout the country. The months of March and April see the arrival of the quail, and every patch of corn near Cairo holds scores of these little birds, which, if they do not afford the most sporting of shots, make up for this deficiency by their numbers and their succulence on the table. The sand grouse, which abounds in all the desert areas, provides most excellent sport when coming down to water at dawn or in the evening.

Duck shooting is popular because of the large number of varieties that the gunner may find in his bag at the end of the day. At least fourteen species may be met with, the commonest being the teal, pintail, shoveller, pochard, white eye pochard, gadwall, mallard and widgeon. Duck are mostly met with during December and January, and are to be found on every stretch of water or marshland from Alexandria to Luxor. Probably the best part of Egypt for free duck shooting is the Fayyum, as here there are thousands of square miles of water, of which very little is preserved. The best snipe shooting is obtained in the Delta proper and in the vicinity of El el Kebir. Pigeons are found everywhere, and, as they do great damage to crops, permission to shoot (which must always be asked for) is as a rule obtained.

**SHOOTING IN THE DAKHLA OASIS.** One of the most sporting places in Egypt for all-round shooting is the Oasis of Dakhla, which can be reached by rail and car. The scenery of the region is extraordinarily beautiful and it is probably the most charming spot in Egypt. The Dorcas gazelle and another gazelle very similar, but of a distinct species that has not been named, exist in considerable numbers. Snipe, duck and pigeon are found all over the oasis, and as they are not worried by local sportsmen are more abundant than the birds round Cairo. The sand grouse shooting, when one has discovered their feeding and watering haunts, is as good as any in the world. For this trip it is necessary to take tents and mosquito nets, but no great store of supplies, as, with the exception of tea and groceries, all foodstuffs can be bought locally at far lower prices than obtain in the Nile Valley.

### PRESS

The problem of newspaper production in Egypt is necessarily a complicated one, due to the exceedingly cosmopolitan character of its population. On the one hand, Arabic is the *lingua franca* of the country, on the other, French is the language customarily used in all commercial dealings between the nationals of twenty or more different countries, as well as being the medium for diplomatic and official communications, while English is the tongue of the many British officials who have governed Egypt for nearly half a century besides being that of the majority of tourists who flock to the land of the Pharaohs during the winter season. It is not surprising, therefore, to find a Press which is as cosmopolitan as that of any country in the world, a fact to which the existence of important daily newspapers in the Arabic, French, Greek, Italian and English languages offers a sufficient testimony.

**ARABIC PRESS.**—Concurrently with the growth of nationalism as a feature of Egyptian political and social life and with the development of education throughout the country, there is noticeable a distinct tendency towards a rise in importance of the Arabic newspapers. Many of these are admirably managed and edited, present both foreign and local news in the best manner, and are rapidly growing in importance as advertising media. The popularity of the Arabic newspapers cannot be fairly judged by their sales' circulations. The public reader is an age-long institution in Egypt, and in the smaller towns and villages especially the better educated men of the locality will read through the whole of a paper to an appreciative audience in the café or other public rendezvous.

The leading Arabic daily is "Al Ahram," a paper which is published in Cairo and has had an eventful career of nearly 50 years. It has a special news service and correspondents in every European capital. Next in importance are "Al Mokattam," "Al Siassa" and "Al Wadimil" (Alexandria), all first-class newspapers adhering to the best traditions of the native press. There are also a number of other daily sheets of considerably less importance which are used for propaganda purposes, not always of the wisest kind. Of illustrated weeklies, "Al Ihtilal" is at once the oldest and best, it has, however, a strong competitor in "Al Mussawar," a more recent arrival, but a paper that is making marked headway. In the department of magazine literature, "Al Hilla," which has been called the Egyptian "Blackwoods," deserves mention, it is essentially a high class magazine and is deservedly popular.

**BRITISH PRESS.** The two daily newspapers appearing in English are the "Egyptian Gazette," published in Alexandria and the "Egyptian Mail," issued from Cairo. The "Egyptian Gazette" has had a long and honourable career, having been founded in 1880, and it has a deservedly high reputation, not only in Egypt but everywhere Egyptian affairs are studied. The "Mail," which circulates very largely among tourists and the Army of Occupation, has always devoted its columns more to financial and sporting matters than to political or local news, though these latter are by no means disregarded. The "Sphinx" is a high-class English social weekly well written and illustrated, and has attained a very large circulation.

**FRENCH PRESS.** Fully equal to the Arabic in importance are the many admirable newspapers in French that emanate from Cairo and Alexandria. French is the international tongue of the country, all educated Egyptians speak, read and write it, and though the actual French community of Egypt is only small the general acquaintance with the language justifies the existence of a number of really excellent papers. The chief of these are the long-established "La Bourse" of Cairo and "La Bourse" of Alexandria, which rank among Egypt's most informative and respected daily papers. "Le Journal du Caire" and "La Réforme" are also well established dailies, and they may be called the organs of the French colony in Cairo and Alexandria respectively. A French publication that has attained great popularity of recent years is "Le Magazine Egyptien," a weekly which is sold at the low price of 1 P.T. per copy.

**GREEK PRESS.** The Greek daily newspapers, of which there are several, have the reputation of being exceedingly well served and edited. The leading paper from a literary point of view is the "Ephemeris," of Alexandria, from a strictly commercial point of view, the principal is the "Tachydromos," also published in Alexandria. The "Phos" and "Cairon" are likewise daily papers with a large circulation.

**ITALIAN PRESS.**—The leading Italian daily paper is the "Messaggero Egiziano," Alexandria, which has always been famous for the attention it devotes to municipal and Egyptian affairs, in this respect contrasting favourably with most of the journals in European languages which are concerned primarily with foreign news and with the affairs of their own particular colony. Another influential Italian paper is "L'Imparziale," published in Cairo.



# EGYPTIAN SCULPTURE

Chiefly Prior to the XIXth Dynasty

By MAURICE NAHMAN, Cairo

**E**GYPTIAN plastic art is variable in many respects either from a chronological or from a geographical point of view. There are several periods and schools, as for instance the periods of the Pyramids of the Old and Middle Empires, of the twelfth and eighteenth Dynasties, of the Ramesses and the Ramessides and of the Saite Kings, while among the most important schools may be mentioned those of Memphis, Hieropolis and Thebes. In all these, however, as in other local schools, the fundamental principles of Egyptian plastic art are changeless. Where they differ is in technique and composition, in their relation to nature and in the material in which they worked.

**ANCIENT ART (DEVELOPMENT OF).**—Like everything else in the Nile Valley, where natural causes enforce a strict centralisation, the local schools could be developed only when they were brought into contact with political life. It was so with the Memphitic art in the Old Kingdom and with the Theban sculpture of the Empire. But sometimes Egyptian art derived its energy from quite a different cause—the fall of the central power and the aggrandisement of local princes. Often a provincial school owed its development to the King's protection. The school of El Amarna, for instance, was called to life by Amenhotep IV, its fundamental features having been worked out during the preceding period. From the first this school showed a tendency to extreme exaggeration, a tendency seen in the statues of Amenhotep IV recently discovered at Karnak, and now in Cairo. Later on, the school was transferred with the court to the Amarna Valley. There it followed different impulses, either becoming ugly or striving after beautiful and ideal forms. An instance of this groping after a simple naturalism and truth is to be found in the Intankhamen collection.

The Theban reaction which followed and the return to canonical art did not destroy the reformer's achievements. In the Abydos reliefs of the time of Seti I and in the sculptures of Ramesses II and III, typical Amarna features can be distinguished. The last period of independent sculpture in the sixth century B.C. is distinguished by the remarkable school of Saïs, to which we owe some perfect works in greenish and black basalt. (See photos.)

**CANONS OF EGYPTIAN ART.**—In ancient Egypt the sculptor was called "se-ankh," or "reviver." He gave life to anamorphous material—stone, metal, ivory or wood. The divine spirit was supposed to enter the dwelling thus prepared for it. Statues had two characteristics. They were outer forms of the deity when they stood at the holy of holies of a temple, or the doubles of men when they were hidden in the depths of a tomb. Besides these two fundamental types there were other intermediary types, such as the statues of kings which adorned the temple courts and those of noblemen deified during their lifetime, placed before the pylons of a temple. The first received prayers for the benefit of those "Sons of the Sun" whose images they were, the others accepted the

prayers of the people entering the temple in order to transmit them to the gods. Such are the statues of the wise Amenhotep, son of Hâpu, vizier of Amenhotep III and those of Pa-Ramessu, who became later King Ramesses I.

Statues, as well as reliefs, had to follow very strict rules, for their inventors were held to be the gods themselves. Every defection from the canon, which thousands of years had sanctified, was condemned by the orthodox as heretical. The restless search for new forms of art of our time was unknown in ancient Egypt.

The solidity of the materials in which these old sculptors worked—granite, diorite, basalt and sandstone—must be remembered if the statues appear to modern eyes to be lifeless and motionless, as must also the fact they they formed part of an architectural design from which it was never intended they should be separated. Looked at in the strong light of a modern museum, they appear exaggerated, in the twilight of tombs and temples they display a perfect architectural harmony.

**CONVENTIONAL POSITIONS.**—The principal positions of Egyptian statues are confined to four or five fundamental types, viz., (1) statues in a standing position, (2) statues seated on a throne or on a cubical seat, (3) statues kneeling, (4) statues seated with crossed legs, and (5) statues seated on their heels.

Only seldom did the sculptor show a tension of muscles, and even more seldom do the faces express feeling or thought. In general, the impassive features are slightly revived by a mysterious looking smile round the lips. The eyes are fixed looking to the front, but not on empty space as is sometimes thought. The head is on broad massive shoulders. The arms are closely pressed to the body, hanging down or lying on the knees. The statues look very calm inwardly and very balanced and compact outwardly, symmetry reigns everywhere. The fundamental rule is the identity of the right and left halves of a statue—the so-called "frontal law." Movement is absent, even when the statue is represented in motion. The leg moved forward—with rare exceptions (in one case only in the Cairo Museum) always the left—conveys no impression of steps being taken, being purely a conventional gesture. Even primitive Greek sculpture imitated this feature of Egyptian art, but a comparison with the works of Polyclethus and Phidias shows how, later, the Greek sculptors completely rejected this conventional art, and represented continuity of motion, walking, running or flying.

**FAMOUS STATUES OF EARLY DYNASTIES.**—Some heads of the IVth dynasty, and of the Vth and VIth in particular, as well as the reliefs of the IIIrd dynasty from Meidum and Sakkara, show the incomparable skill of the sculptors of those periods and their ability to apprehend and represent individuality of feature. Not to speak of such well-known examples as the Scribe in the Musée du Louvre, the "Sheikh-el-beled," the Cairo Cephren, etc., mention may be made of the head of the

young Shepseskaf and of his father Mycerinus in Boston. How wonderfully are conveyed the child's undeveloped features and the family likeness to his father! A later example is the red painted limestone head of one of the princes of Cheops found by Reisner at Giza.

Among the accompanying photographs are two of the well-known Scribe in red granite which was sold to the Berlin Museum, and one of an Egyptian clad as a Libyan warrior, in diorite found at Giza in Upper Egypt and sold to Mr. Levi de Benzon. These excellent examples of the sculptor's art may be referred to the Vth-VIth dynasty and to the IVth (or even to the IIIrd) dynasty respectively.

**MIDDLE KINGDOM (ART OF).** With the rise of the Middle Kingdom and the appearance of the energetic Amenemhats and Senuserts, Egyptian art which had become decadent and provincial during the transitory period was once more appreciated and favoured in the palace. Some official works of this period are not only superior to the best patterns of the Old Kingdom, but even surpass them in workmanship and expression. Good examples are the relief of Senusert I from Coptos and the obsidian head of Amenemhat III in MacGregor's collection. Very neat to it is a royal head (presumably of the same king) in black stone, now in Berlin, which is shown in the accompanying photo. A good illustration of the sculpture of Senusert III is the accompanying reproduction of his sphinx in diorite, found at Giza. This was sold to the Metropolitan Museum of Fine Arts at New York. These two sculptures can be compared instructively. The Berlin head is imbued with an expression of deep melancholy, while the New York sphinx still wears the external sublimity of the Pyramidal epoch. Admirable also is the stately modelling of the woman's bust in green basalt, presumably that of a queen of the XIIIth dynasty (possibly the queen of Senusert II, named Nefret), which is closely related to those found in Tanis and now in the Cairo Museum. The statues of private persons are in general less perfect, though they show sometimes a high workmanship. The statuette of a king's courtier in red quartz in the British Museum may be mentioned, as also some other statuettes of servants in painted wood, which used to be placed in the tombs.

**CHARACTERISTICS.**—Thus, in mere workmanship, the art of the Middle Kingdom can be compared favourably with that of the period of the Pyramids. From a psychological point of view there is an essential difference, brought about by the general conditions of the time. The decline of the central power at the end of the VIth dynasty and the decay of the state which ensued, as well as foreign invasions, had ruined many great architectural monuments and cast a gloomy shadow on the general outlook of the people. Monuments "of millions of years" created "for eternity and everlastingness" were lying in ruins, the power of the "Son of the Sun," the Pharaoh, was hardly recognised; chaos prevailed,



EGYPTIAN SCULPTURE.

- 1 and 2. Some perfect Works in greenish and black basalt.
3. Royal head in black stone.
4. Stately modelling of Woman's bust in green basalt.
5. Senuert III.'s Sphinx in diorite, found at Gau.
6. Statuette of Queen Tili.
7. Well-known Scribe in red granite, sold to Berlin Museum.
8. An Egyptian clad as a Libyan warrior, in diorite, found at Gau.
9. Another view of Scribe in red granite, sold to Berlin Museum.

and nobody could be sure of the safety of his life or property. Doubts as to the value of life and its result created a pessimistic tendency in literature and art, and in the portrait sculpture of the Middle Kingdom the disappearance of internal balance is noticeable. A marked love of exaggerated motion is evident in the reliefs on the tombs of Beni-Hasan, El Bersheh, and especially of Meir, and in the last named even a painful tendency towards ugliness. Still, however, the bodies preserve their old immobility, only the hands begin to lose their age-old numbness. A kind of gesture begins to appear, though a very mannered and conditional one as yet.

The hanging hand was a very common Amarna gesture and it was favoured until the XXth dynasty. But on the stela of King Amenhotep III three middle fingers are seen between the two extreme ones. This is one of the earliest known instances of Egyptian sculptors breaking away from established routine.

**FOREIGN INFLUENCES**—Generally speaking the sculpture of the XVIIIth dynasty reflects many foreign influences. Syrian, Nubian, Semitic and Asiatic, to name only a few. Whether this was the cause or only a consequence of an individualistic tendency which at that time asserted itself is uncertain. An example of this tendency to represent individual features

and even a spiritual expression is seen in the photo. of the remarkable statuette of Queen Ti in ebony, now in Berlin, reproduced on page 13.

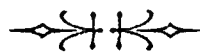
**MONUMENTAL SCULPTURE OF XVIIIth DYNASTY.** The sense of triumph and power produced by the victories and treasures gained from foreign countries created a strong impulse towards the creation of great and enduring monuments, to which the Egyptian genius has always felt itself specially called. New architectural creations at Thebes and elsewhere, erected on a gigantic scale, brought also a fresh triumph to the sculptor. Here we see how brilliantly was solved the problem of colored relief on huge walls. A most striking composition, which will never die, is undoubtedly the representation of a Pharaoh driving a chariot with horses "madly devouring space". The Egyptian gave here, as elsewhere, only a conditional gesture, but it is a typical and original one. Created at the time of the XVIIIth dynasty, it was repeated often during the XIXth and later dynasties.

The enormous statues for which Egypt is famous reached their apogee during the XVIIIth dynasty in the two Colossi of Amenhotep III in the Theban Valley. These are the so called "Colossi of Memnon". The XIXth dynasty produced the Colossi of Rameses II in the Nubian rock temple of Abu-Simbal.

The Amarna sculptures are the highest expression of the art of the XVIIIth dynasty. Amarna art preached the study of nature, the king himself teaching his masters to seek truth in their compositions. But even during his lifetime the art of the sculptor became more conventional, strength giving way to an elegant weakness. Instead of simple and noble forms, the wavy, baroque line appeared.

**TUTANKHAMEN.** The age of Tutankhamen marks the limit of the prevailing art. No further way was open. As in politics, a reaction in art was inevitable.

It may, nevertheless, be urged in conclusion that this later art is more familiar to us than the severe art of the Old Kingdom. It is nearer to our own age and our own intuitions. Those fragile alabaster vases discovered by Mr. Carter we wish to hold in our hands, we long to sit in those elegant armchairs, we are touched by the images of the young king and queen, who lived their intimate life in dreams, while Horemheb, the general, and the Theban priests took the power into their hands and prepared the end of a famous dynasty. The golden mask of Tutankhamen is full of life and of a touching spirituality. If we compare the young fragile face with the imposing diorite Chefred in Cairo we shall understand how far from each other are these two poles of the plastic art and psychology of old Egypt.



## ADMINISTRATION AND COMMUNICATIONS

### CONSTITUTION AND LAW

### ARMY AND NAVY

### PUBLIC HEALTH

### POSTS, TELEGRAPHS AND TELEPHONES

#### CONSTITUTION

**P**RIOR to the Great War, Egypt was a tributary State of the Ottoman Empire, and was ruled by a hereditary prince with the title of Khedive, a Persian appellation regarded as the equal of King. From 1879 to 1883 both France and England exercised considerable powers in the direction of affairs, but in the latter year the joint control was abolished by a Khedivial decree, and an English Financial Adviser was appointed, without whose concurrence no financial decision could be effective. Much of this restrictive power was removed by decree in 1904, but in actual fact no important decision, either in finance or as to internal administration, was ever valid without the concurrence of the British Minister Plenipotentiary.

With the entry of Turkey into the War of 1914-18 as an enemy of Great Britain a curious and intolerable situation was brought about, Egypt was at the same time nominally subject to Turkey and controlled to a large extent by Great Britain. The question of suzerainty might have been determined by annexation, but it was decided by His Majesty's Government to proceed along existing lines and to place Egypt under British protection. On December 18, 1914, the country was made a British Protectorate, the ruling Khedive, Abbas Hilmi, was deposed, and the succession of his uncle, Prince Hussein Kamel, with the title of

Sultan of Egypt, was proclaimed. For nearly nine years Egypt remained under this status, until on April 20, 1923, the present Constitution making the country a free and independent State was promulgated.

**FORM OF GOVERNMENT.** Egypt is a sovereign State, with a hereditary monarchy and a representative Government. All Egyptians have equal legal, civil and political rights, irrespective of race, language or religion. Liberty of the individual and of religious belief is guaranteed, and compulsory elementary education is established for both sexes in free schools. All powers emanate from the nation, the King exercising legislative authority concurrently with the Senate and Chamber of Deputies.

**LEGISLATURE.**—The Egyptian Parliament consists of two chambers, the Senate and the Chamber of Deputies. Two-fifths of the members of the Senate are nominated by the King, the others being elected on the basis of one senator for every 180,000 inhabitants. The members of the Chamber of Deputies are elected on the basis of one deputy for every 60,000 inhabitants and serve for five years. Ordinary sessions of Parliament last six months, and its sittings are public. No new law can be applied to foreigners until it has received the sanction of the Court of Mixed Appeals.

**MINISTERS (COUNCIL OF).**—The Executive Power in Egypt belongs entirely to the King, who governs with his Ministers. The

Council of Ministers corresponds to the Cabinets of other countries, and on June 6, 1926, following a General Election, was constituted as follows: Prime Minister and Minister of the Interior—Adly Pasha Yeghen; Minister of Foreign Affairs—Abdel Khalek Sarwat Pasha; Minister of Justice—Zaki Pasha Abul Send; Minister of Agriculture—Fathallah Pasha Barakat; Minister of Finance—Morcos Pasha Hanna; Minister of Wakfs (Pious Foundations)—Negib Pasha Gharabli; Minister of Education—Aly Bey Shamsy; Minister of Public Works—Osman Bey Moharram; Minister of War—Ahmed Khashbaba Bey; Minister of Communications—Mohamed Pasha Mahmud.

**LOCAL GOVERNMENT.**—The Executive Power is administered throughout the country by Governors (Muhafiz) in the principal cities and by Mudirs, who control respectively the five governorates and fourteen mudiriyas (provinces) into which Egypt is divided. The mudiriyas are sub-divided into markazes, or districts, each under a mamur, who controls the headman (omda) of each village in his district. A Provisional Council operates in each mudiriya, and consists of the mudir as president and of two representatives of each markaz elected by the electors-delegate.

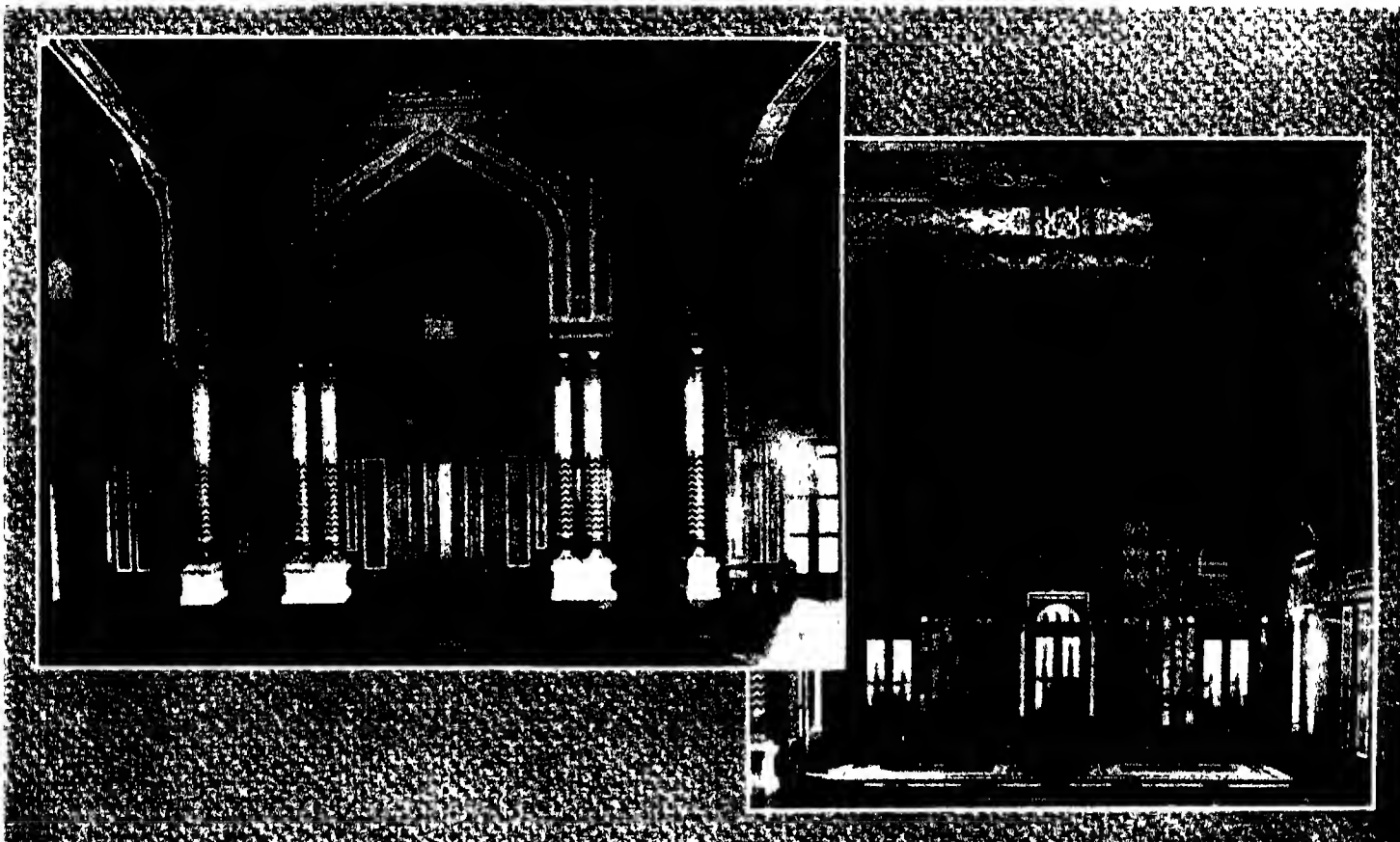
**MONARCHY.**—Under the Constitution of 1923, the ruler of Egypt is designated King, his present Majesty, King Fuad I, being the first to hold that title, though actually the

month of his dynasty, which was founded by Mohammed Ali in 1805. The throne is hereditary in the family of Mohammed Ali, succession being in the male line according to primogeniture. The ex-Khedive, Abbas II, is expressly excluded from the succession, but not his direct and lawful male descendants. The powers of the King are as follow. He can dissolve the Chamber of Deputies, can create and confer decorations, is Commander-in-Chief of the Army and Navy, can alone appoint and dismiss Ministers, nominates two-fifths of the Senate and the President thereof, and can deprive of the rights of succession any prince who marries without his consent, or who is declared unfit to belong to his family.

diction of ecclesiastical courts. Generally speaking, the modifications effected in the Code Napoleon as interpreted in Egypt appear to suit the country, and the administration of justice, while perhaps not up to the best European standards, on the whole works smoothly and well.

**CONSULAR COURTS.**—The Consular Courts try civil and commercial cases between persons of the same nationality, provided such cases are not in reference to landed property in Egypt, criminal cases, where the accused is a subject of the Government concerned, except when the Mixed Courts have jurisdiction and cases touching the personal status of subjects of their own Governments.

It was with the ready consent of the foreign communities that the Egyptian Government put forward a proposal for the creation of a system of international law courts which would command the confidences of Europe and be empowered to try civil and commercial suits between Europeans of different nationalities, and between Europeans and Egyptians or the Egyptian Government. The signatory Powers to the institution of these courts were Austria-Hungary, Belgium, Denmark, France, Germany, Great Britain, Greece, Holland, Italy, Norway, Portugal, Russia, Spain, Sweden and the United States. Germany and Austria having since lost their rights, their judgeships have been divided between England, France and Italy. The



ASPECTS OF HIS MAJESTY KING FUAD'S THRONE ROOM AT RAS EL TIN PALACE, ALEXANDRIA.

**NATIONAL FLAG.** The Egyptian flag consists of a white crescent and three stars on a green ground, the horns of the crescent being directed away from the flagstaff. Flags for all branches of the Army are green bunting with a white crescent and three stars in the centre and white crossed swords in the top left-hand corner.

### LAW

Owing to the presence of large numbers of subjects of Foreign Powers in Egypt, and to the dominant position occupied successively by France and Great Britain in regard to administration, the legal and judicial systems of Egypt have become somewhat complicated. It may be said briefly that Egyptians are in all cases subject to their native court except when concerned in civil litigation with foreigners, but the latter are never subject to the jurisdiction of native courts. Matters of personal status in the case of Moslem and non-Moslem Egyptians are left to the juris-

**COURTS OF PERSONAL STATUTE.**—These comprise the Moslem Religious Courts, the Courts of the different non-Moslem religious communities, and the Maglis Hashi (Courts of Wards), which are especially concerned with the appointment of tutors and guardians.

**MIXED TRIBUNALS.**—These Courts, the jubilee of whose foundation was celebrated with considerable ceremony on February 27, 1926, were founded in 1876, their creation being due to the very unsatisfactory condition of things that prevailed before then in Egypt in regard to the administration of justice. The European communities had difficulty in obtaining justice owing to the conflicting jurisdictions and the diplomatic intrigues that were so prevalent. The Egyptian Government, because of the inefficiency of the Courts, was entirely at the mercy of shady financiers, for whom Egypt had become a happy hunting-ground.

Chambers in the Appeal Courts consist of three foreign and two Egyptian judges, in the lower Courts of two foreigners and one Egyptian judge. The law applied by the Mixed Courts is that contained in the Mixed Codes, and in those permanent police regulations which have been promulgated with the approval of the General Assembly of the Judges of the Mixed Court of Appeal.

The Mixed Tribunals have become an important source of revenue to the Egyptian Government, for a considerable sum accrues from land registration, no transfer or encumbrance, even where the parties are Egyptian, is valid unless it is registered in the Courts. The routine legislation affecting foreigners cannot be changed without the approval of the Mixed Courts sitting as a plenary body. That the tribunals are an effective part of the Egyptian State organisation is evident, since they deliver their judgments in the name of the King of Egypt, and the Egyptian Government lends its

assistance in the execution of its judgments. As an illustration of the independence of the Courts, the Judges, unlike other Egyptian Civil servants, are not allowed by the Constitution to accept decorations from the Sovereign of Egypt.

During the 50 years that the "Tribunaux de la Réforme" have functioned they have more than realized the hopes that were reposed in them when they were created. They have, in fact, established so high a reputation for integrity, impartiality and justice that Egyptians often agree by mutual consent to have their differences settled by the Mixed in preference to the Native Courts.

**NATIVE COURTS.** These courts were first instituted in 1883, but their constitution has since been modified by a number of laws and decrees. They try all civil and commercial cases, other than cases of personal statute, arising between persons who are not accorded treatment as laid down by the Capitulations, and all penal cases where the accused is not a subject of one of the Powers enjoying the Capitulations. The Native Courts consist of the Court of Appeal, in which cases are heard by three judges, the Court of Cassation, a bench of five judges of the Court of Appeal, Assize Courts, Central Tribunals, Summary Tribunals, and Mirkaz and Cantonal Tribunals. Mirkaz Tribunals now exist only in the Governates of Cairo, Alexandria, Port Said, Suez and Ismailia.

### ARMY, NAVY AND AIR FORCE

The defence of Egypt is reserved by the Constitution, and remains under British control. Though this is a sore subject with the more ambitious of the Egyptian Nationalists, there can be little doubt that the presence of a British Army of Occupation and of British officers in the Egyptian regiments is necessary to the well-being of Egypt, and is moreover approved by a large and influential body of the people.

**ARMY OF OCCUPATION.** The strength of the Army of Occupation (which is under the command of a British General Officer) has constantly varied according to the needs of the moment. In 1925 the normal British garrison consisted of three regiments of Cavalry, three batteries of the Royal Horse Artillery, three pack batteries, two companies of Royal Engineers, seven battalions of Infantry and one armoured car company, the total strength of the establishment being 11,414.

**EGYPTIAN ARMY.**—The Egyptian Army consists of about 22,000 men, and is recruited from Egyptian subjects between 19 and 27 years of age who are liable to military service (unless exempt for any of the reasons recognised by decree), Sudanese and Arabs. As by no means all who are liable are required, recruits are chosen by ballot. Exemption may be purchased by any person—by payment of £E 20 before the ballot, or of £E 100 between medical examination and enlistment. Service is for five years, but in the Sudanese battalions service is voluntary and extended. In 1925 the Egyptian Army consisted of two squadrons of cavalry, a camel corps, four batteries and two garrison companies of artillery, eleven battalions of infantry (of which six were Sudanese and one a special "Equatorial" battalion), a railway battalion and various departments. Most of the higher posts are held by British officers.

Much of the work of the Egyptian Army is concerned with the administration of the Frontier Districts, which is controlled by

the Ministry of War, these districts being the Western Desert Province, the Sinai Province (which includes the Kharga and Dakhla Oases), and the Red Sea District. For this work a Camel Corps of three companies and three Light Car Patrols are used.

**NAVY.**—There is no Egyptian Navy in the proper sense of the term, but the Government maintains a sloop of 1,310 tons (used mainly for Customs and lighthouse inspection purposes) and a fleet of twelve stern-wheel gunboats on the Nile.

**ROYAL AIR FORCE.**—Egypt is the headquarters of the British Middle East Air Command, and included in the Army of Occupation are four squadrons of aeroplanes with a number of air depôts. The Royal Air Force in Egypt has been closely identified with the many steps which have been taken during recent years in the development of strategical and commercial services in the Middle and Far East. Towards the end of 1925 three D.H.9 A biplanes made an adventurous and successful trans-continental flight from Cairo to Kano, Nigeria, while in 1926 one of the most memorable flights in the history of the force was accomplished when on June 21 four Fairey III D military two-seater biplanes landed at Leon-Solent after flying from Cairo to Capetown and back, and then continuing the flight to England as seaplanes, over 14,000 miles having been covered without trouble.

### PUBLIC HEALTH

The Public Health Administration of the Ministry of the Interior is housed in the Gardens of the Ministry of Public Works at Cairo. The group of buildings comprises the Central Administration, the Public Health Laboratories, the Vaccine Institute, the Antirabic Institute, the Inspectorate of Pharmacies and the Central Stores. Both during the period of British occupation and since the inauguration of the present régime much has been done to safeguard and improve the public health. Hospitals have been opened and extended, medical dispensaries have been established throughout the country, and in Cairo, Alexandria and Port Said excellent sanitary systems and water supplies are now in working order.

**DRUG TRAFFIC.**—The sale of poisons in Egypt, whether wholesale or retail, is prohibited except to persons duly authorised. The traffic in drugs became so intense and reached such alarming proportions in 1924, in spite of the Royal Decree of 1922 prohibiting import and export of opium, morphine, heroin, cocaine and hashish without the special authorisation of the Minister of the Interior, that another Royal Decree was promulgated on March 21, 1925, applicable to Europeans through the medium of the Mixed Courts, as well as to Egyptian and local subjects, making unauthorised traffic in drugs an offence punishable with a fine or imprisonment, and regulating the conditions under which chemists are allowed to buy and sell them. Further legislation affecting such control by the supervision of chemists' shops, the prevention of unauthorised importation, and the Government monopoly of sale and distribution of drugs was enacted in 1925.

**HOSPITALS.**—The latest statistics available show that there are thirty general, infectious and lock hospitals in Egypt, with a total number of 4,300 beds, treating yearly some 66,000 in-patients and 290,000 out-patients. The largest of these are the Kasr-el-Aini (Cairo) and Alexandria General Hospitals, with 663 and 401 beds respectively,

and the Abbasiya Fever Hospital, which has 900 beds. Other large general hospitals are at Port Said, Suez, Tantah, Kalyub, Damietta, Mensurah, Assuit and Beni Suef. In the larger hospitals Europeans are usually admitted to the first or second class wards according to their means, the scale of fees varying in these from 40 PT to 80 PT per day. Third-class patients are treated at reduced rates.

**INFECTIOUS DISEASES.**—The notification of the following infectious diseases is obligatory for doctors, tenants, proprietors of houses and directors of schools, and must be made within 24 hours of the occurrence of the case: Typhus fever, small pox, anthrax, relapsing fever, typhoid fever, encephalitis lethargica, acute polio encephalitis, acute polio myelitis, cerebro-spinal fever, influenza, diphtheria, measles, whooping cough, mumps, scarlet fever, Mediterranean fever, bilious fever, leprosy, glanders, rabies, tetanus, pulmonary tuberculosis, chicken-pox, and paratyphoid fever.

The Government Fever Hospital for the isolation of infectious diseases is situated at Abbasiya. There is a resident medical staff, and the nursing is controlled by an English matron, assisted by English nursing sisters.

**OPHTHALMIA.**—Ophthalmia has always been common in Egypt, a fact which is proved by the large numbers of natives who are deprived of the sight of one or both eyes. It is due to many causes, and is seriously aggravated by dust, flies and dirt of every kind, also by the glare of the sun. When remedies are quickly applied this disease is not alarming in its progress. Permanent ophthalmic hospitals are now maintained by the Public Health Administration in the cities and chief provincial towns, and ophthalmic treatment is also carried out at all provincial primary schools in the towns where there are permanent ophthalmic hospitals.

**VACCINATION.**—Vaccination is compulsory for both Europeans and natives, and must be carried out before the child attains the age of three months. The operation is effected free of charge in Cairo and all provincial towns. The Vaccine Institute prepares fresh calf-lymph in 5-dose tubes, which are obtainable by any medical practitioner, and even free of charge if circumstances warrant it.

### POSTS, TELEGRAPHS AND TELEPHONES

Egypt is included in the Universal Postal Union, and its post and telegraph administrations are most ably worked by departments of the Ministry of Communications, the control of posts forming a separate department under a Director-General and telegraphs and telephones being administered in conjunction with the railways.

#### POSTS

There is no trace of any attempt at a postal system in Egypt until the reign of the great Viceroy, Mohammed Ali, who established one for official correspondence only. Transport was then effected by runners, and was at first limited to Egypt only, being extended to the Sudan in 1821. The first regular postal service between Cairo and Alexandria was established in 1843, and was for a long time in the hands of private concessionaires. In 1864 the Government purchased all rights in it, and created a public service, which has, year by year, been extended



and improved. In the last year for which statistics are available the department was responsible for 2,524 post-offices in the country, while the total postal matter handled was 123,542,000 items, of these 85,730,000 were internal, 18,255,000 were received from abroad, and 19,557,000 were despatched to foreign countries. Ordinary letters received and forwarded numbered 66,020,000, postcards 7,380,000, registered packages 6,870,000, printed matter, etc., 34,444,000, and State correspondence 8,828,000 items.

**GENERAL POSTAL RATES.**—The following are the inland and foreign postal charges.

For the Interior of Egypt and Sudan—  
Letters—5 milhemes for each unit of 30 grammes or fraction, post cards  $3\frac{1}{2}$  milhemes, post cards (reply paid) 7 milhemes, newspapers and periodicals 1 milheme per number or copy, non-periodicals and printed matter and newspapers and periodical printed matter originating from abroad and posted in Egypt, visiting cards and commercial papers 2 milhemes for each 50 grammes or fraction up to 2,000 grammes (for commercial papers the minimum charge is 2 milhemes), samples 2 milhemes for each 50 grammes or fraction up to 500 grammes (minimum charge 2 milhemes).

For Countries in Postal Union. Letters—15 milhemes for first 20 grammes and 10 milhemes for each succeeding 20 grammes or fraction, post cards—10 milhemes, post cards (reply paid) 20 milhemes, printed matter and commercial papers—minimum charge 15 milhemes, samples 4 milhemes for each 50 grammes or fraction up to 500 grammes, with a minimum charge of 8 milhemes.

Letter postage to Great Britain and her Colonies is 10 milhemes for every 20 grammes or fraction thereof, while 8 milhemes is charged for each postcard. The charge for registration is 10 milhemes for Egypt and the Sudan, and 15 milhemes for countries in the Postal Union.

#### MONEY ORDERS AND POSTAL ORDERS.

The number of internal postal and money orders dealt within a recent year by the Egyptian post offices was 1,306,624, their total value amounting to £F 9,555,145. Orders emanating from or payable abroad numbered 34,754, valued at £E 303,880. Inland money orders are obtainable up to a maximum of £E 100. The maximum amount for foreign money orders varies according to the country to which they are addressed. Telegraphic money orders can be sent up to £E 40. Egyptian postal orders are obtainable at all post offices admitted to the money order service, the values ranging from P.T. 5 to £E 1. British postal orders are issued from 6d to 21s.

**DEPOSIT ACCOUNT SERVICE.**—This service facilitates the postal transactions of banks, commercial houses and individuals by enabling them to maintain a current cash account at a Post Office (or Offices), to which sums due from the depositor to the post office, or from the post office to the depositor, may be debited or credited as the case may be by means of correspondence, thus avoiding loss of time in calling personally at the post office or sending a messenger for the purpose; by its use, the considerable risk attendant upon the transport of funds by hand is entirely eliminated.

There is no limit to the amount which a depositor may place to his credit, but a minimum credit balance of £E.2 must be maintained on each deposit account. This service is at present confined to the Alexandria and Cairo Central Post Offices and Ghûriya (Cairo).

**PARCEL POST TARIFF.**—Inland. Not exceeding one kilo, 30 mill, 3 kilos, 40 mill, 5 kilos, 50 mill. For Dakhla Oasis. Not exceeding one kilo, 40 mill, 3 kilos, 50 mill. For the Sudan. Not exceeding one kilo, 65 mill, 3 kilos, 95 mill, 5 kilos, 125 mill. For Great Britain (via Port Said and Gibraltar). Not exceeding one kilo, 110 mill, 3 kilos, 150 mill, 5 kilos, 185 mill.

**PARCEL SERVICE. C.O.D.** The Cash on Delivery (*contre remboursement*) Parcel Service exists both in the inland service and between Egypt and most European countries, Egypt and Great Britain, and Egypt and the Sudan.

By this means the value of a parcel is collected from the addresser and remitted by the post office to the sender, less the usual commission on a money order if the parcel is for the interior, less the fixed charge (10 mill) and the usual commission on a money order if it is for or from the Sudan.

**SAVINGS BANK.**—The Egyptian Government controls through the Post Office a very efficient and flourishing savings bank system, and all the principal post offices transact savings bank business. The initial deposit must not be less than 50 milhemes (1s), the difference between the deposits and the withdrawals effected by a depositor must not exceed £E 50 in any one year, and in any number of years the total balance to the credit of a depositor must not exceed £E 200, exclusive of interest. The State guarantees deposits and also the repayment of capital and interest, the latter being limited to 3 per cent per annum.

**RURAL SERVICE.** A rural Savings Bank service was inaugurated in 1912. This service now extends to all the country districts in Upper and Lower Egypt, and is carried out by the tax-collectors (*sarrafs*) of the Direct Taxes Department, who act as agents of the Post Office. The number of these rural agencies in 1925 was 1,623, dealing with 3,412 villages. The minimum deposit is 10 milhemes.

In addition to these *sarrafiya* banks, as they are called, there is during the cotton season a rural Savings Bank agent in every Government cotton market (*halaqa*). The latter accepts deposits only, and is not authorised to effect withdrawals. In 1925 the number of these *halaqas* was 94.

**SUDAN AND UPPER NILE MAILS.**—Mails are made up every day at the Central Post Office, Cairo, and sent to Shellâl, where they await the departure of the Sudan Government mail steamers, which as a rule sail twice a week.

#### TELEGRAPHS

Egypt possesses a telegraphic system 7,455 kilometres in extent, which connects the principal towns. It is worked by Egyptian officials for the Egyptian Government, and telegrams may be sent in any European language, except from small local stations, where they must be written in Arabic. The charges for inland telegrams are 20 milhemes for the first six words and 5 milhemes for each additional word, with a minimum charge of 20 milhemes, urgent telegrams being at triple rates. Rates for telegrams to the Sudan are 10 milhemes per word (minimum 60 mill), 30 milhemes per word for urgent messages. The tariff for Palestine is 60 milhemes for the first six words, and 10 milhemes for each additional word. The growth of the telegraphic service in Egypt may be estimated from the fact that in 1877 there were only 151 telegraph offices in Egypt and the Sudan, in 1924 there were 442 in Egypt alone, while 19,451 km. of telegraph wire were laid.

In all, 4,699,054 telegrams were despatched and received during 1924, of which 1,937,556 were internal, 364,244 international, and 2,397,254 service and Government messages.

**CABLES.** Telegrams from Lower Egypt to Europe and other places abroad are despatched via the Eastern Telegraph Company, whose cable offices are at Alexandria, Cairo, Port Said, and Suez. On messages from Lower Egypt to Europe a uniform rate of 48 milhemes per word is charged. The rates to other countries are: Turkey in Asia, 48 milhemes, South Africa, 144 milhemes, China, 163 to 201 milhemes, India, 92 milhemes, Japan, 224 milhemes, Australasia, 163 to 196 milhemes, North America, 87 to 171 milhemes, and South America, 125 to 526 milhemes per word. From Lower Egypt, 5 milhemes per word and from the Sudan 15 milhemes per word additional are charged in all cases. In 1924 the Eastern Telegraph Company received and despatched 469,091 cablegrams.

**DEFERRED CABLEGRAMS.** These are received at half the ordinary charge for all countries which accept such telegrams, on condition that they are written solely in English or French, or in the language of the country of destination, and that they are transmitted only after telegrams charged for at full rate.

**WIRELESS.**—Wireless stations have been erected at Alexandria and Port Sudan and communication from these is with ships within a distance of about 450 miles from Alexandria and within 250 miles from Port Sudan. Radio telegrams written in European languages are accepted at sender's risk at State telegraph offices for transmission to Alexandria or Port Sudan. The words "Alexandria Radio" or "Port Sudan Radio" must be included in the address. About 18,000 radiograms are received and despatched yearly from Alexandria.

**WIRELESS RATES.** Wireless telegrams to England and the Continent can be handed in at any Egyptian telegraph office from which telegrams in European languages are sent. Such messages should be clearly marked with the words "By Wireless". The rate per word to England is—

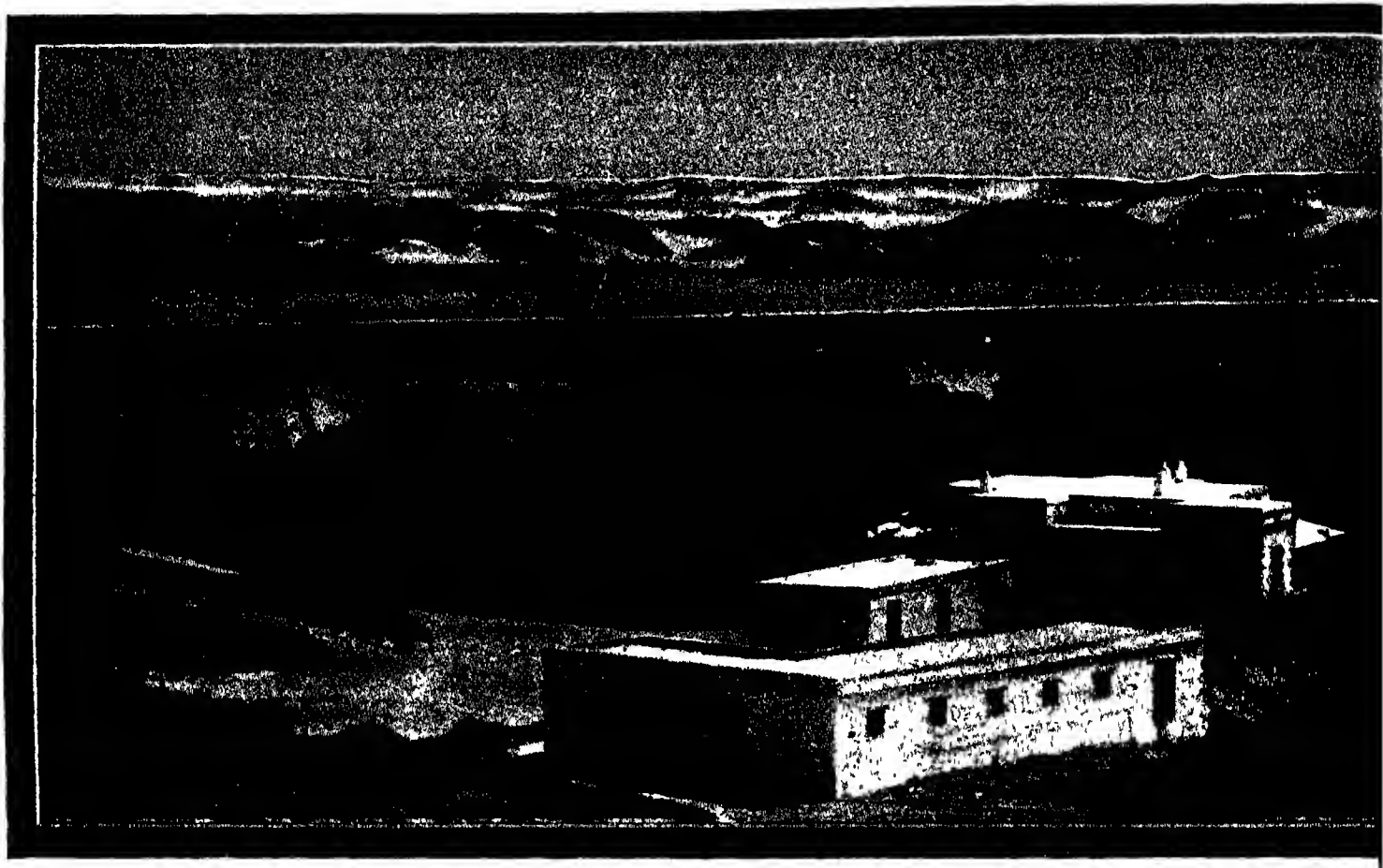
From Lower Egypt, ordinary, 37 milhemes, deferred, 19 milhemes, from Upper Egypt, ordinary, 41 mill, deferred, 21 mill.

The rate per word to the Continent is—  
From Lower Egypt, ordinary, 48 milhemes, deferred 24 milhemes, from Upper Egypt, ordinary, 53 mill, deferred, 27 mill.

#### TELEPHONES

The telephone system of Egypt was acquired by the State as from January 1, 1918, and there is now communication between Cairo, Alexandria and the principal towns, as well as with many smaller towns and villages. In 1925 no less than 101 towns and villages possessed a telephone equipment. For the convenience of the general public there are about 180 telephone cabinets installed throughout the country, where, by payment of the established fee, communication can be obtained, either local or long distance. A system of private branch exchanges also exists throughout the provinces, connecting up the principal villages and all police outposts with their markaz and the mudiriya.

In the last year for which statistics are available receipts from telephones amounted to £E 402,024 and expenditure upon the service to £E 248,265. There were 1,675 operators and other employees, 179,525 km. of telephone wire were in use, the number of telephone offices was 8,475, and private installations totalled 21,527.



GENERAL VIEW OF ASSUAN

## PUBLIC

### DEPARTMENTS

**T**HE Ministry of Public Works, which occupies a handsome building in the Sharia Kasr-el-Aini, controls the following divisions in Egypt: Antiquities Department, Cairo Tanzim Department, Electrical Service, Irrigation Service, Main Drainage Department, Mechanical Department, Opera House, Physical Service, Scavenging and Watering Service, State Buildings Department, Zoological Service. It is, it will be seen, a Ministry of many and varied activities, all of which are of the greatest benefit to the development and progress of the country.

**ANTIQUITIES DEPARTMENT.**—This department is charged with the custody of the temples, tombs and the town sites which have survived from pre-Islamic times. The cemeteries and town mounds throughout the country are very numerous, and the constant repairs which are necessitated by the crumbling away of some of the older monuments involve much work and a regular expenditure of money. On the other hand, the Department obtains a handsome revenue from the sale of tickets to view the monuments and tombs under its care.

It is to be noted that the entrance and ascent of the Giza Pyramids are not controlled by the Antiquities Department. Special tickets for this purpose are issued

by the Giza Mudiriya, and are obtainable at the Mudiriya or near the Pyramids.

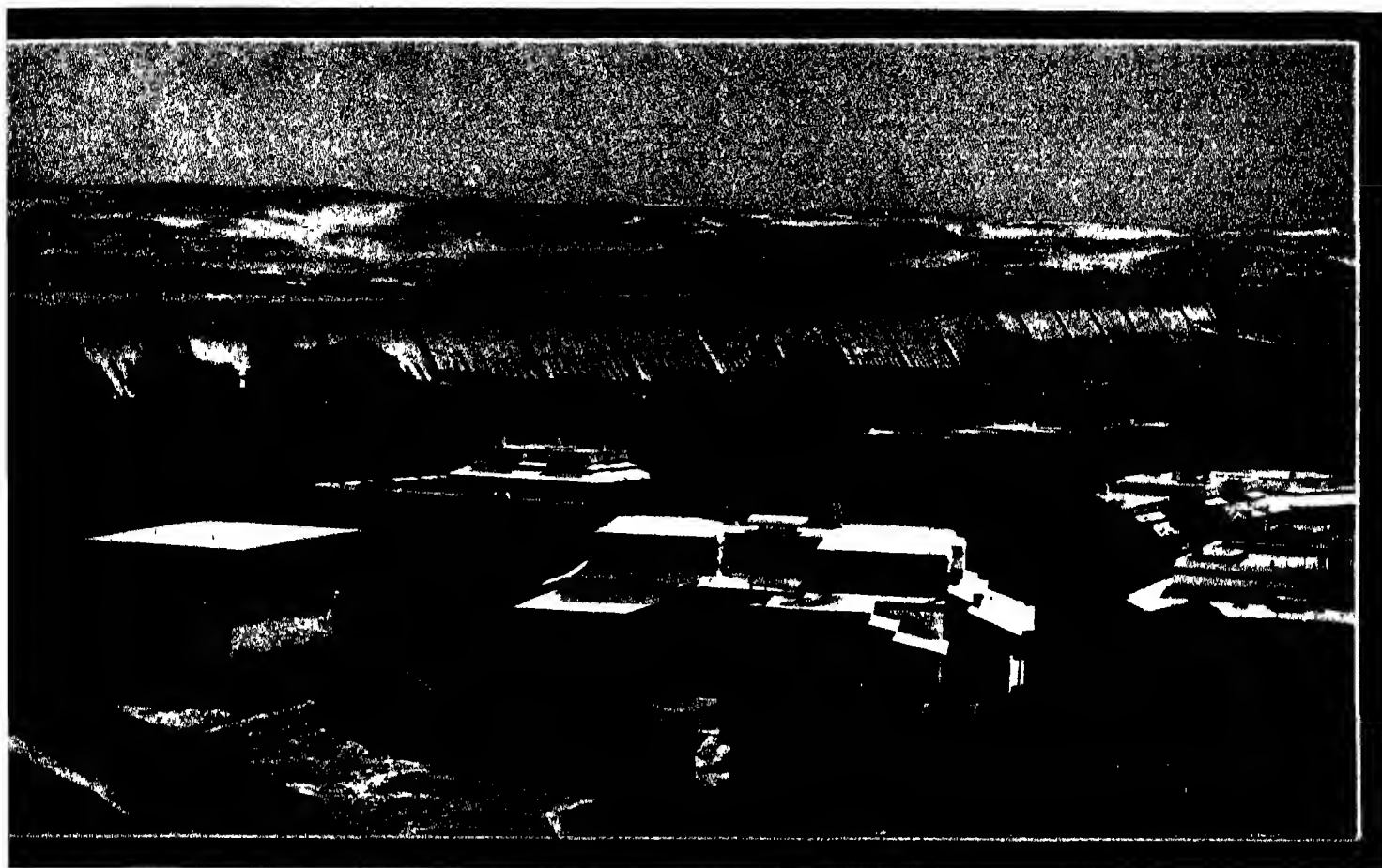
**CAIRO TANZIM DEPARTMENT.**—What would be called elsewhere the municipal control of the city is in Cairo exercised by the Tanzim Department of the Ministry of Public Works, which is responsible for the maintenance and construction of roads and public gardens, the maintenance and control of the Nile banks, the administration of the water and electricity supplies and of the scavenging services, and the care of the Giza Zoological Gardens and Aquarium. (See also article on "Cairo.")

**ELECTRICAL SERVICE.**—Among other duties, this Service is charged with the technical control (as regards electricity) of public companies holding Government concessions, such as tramways, electricity supply, etc. The Service also gives technical advice in electrical matters to other Government Departments.

**IRRIGATION SERVICE.**—The cultivable area of Egypt is approximately 6,500,000 feddans, not including the lakes (660,000 feddans), which may eventually be reclaimed. The area actually under cultivation is approximately 5,500,000 feddans, of which some 4,000,000 are perennially irrigated, and the remainder receives flood or basin irriga-

tion, or one flooding per year and one crop, whereas the 4,000,000 feddans which are watered throughout the year raise two or three crops annually. The Nile supply is controlled by the Assuan Dam, the Esna, Assiut, Delta and Zifta Barrages, and (during summer) by two earthen sads or dams in the Rosetta and Damietta branches of the Nile near the sea. Independent of the Esna and Assiut Barrages are many large feeder canals, which take direct from the river and feed the basin systems dependent on them east and west of the river. Thousands of pumps and saqas on the Nile and canals also raise the water to the land surface, and irrigate those areas which cannot obtain free flow or gravitation from the canals.

The main canals are the Raiyah Beheira, serving the province of that name and part of Giza, the Raiyah Minufiya and Gharbiya, and the Raiyah Taufiqi, serving part of Qalyubiya, Sharqiya, and Daqahliya. Three other canals (nearer Cairo), the Ismailia, Sharqawiya, and Bassusiya, serve Qalyubiya and part of Sharqiya; branches of the Ismailia Canal extend to Port Said and Suez. From these main canals, which are divided into suitable lengths by regulators, ramifications of smaller canals carry the water to all parts of the irrigated area. Extensive drainage operations in the Delta



DAM, ON THE RIVER NILE.

## WORKS

### CONTROL OF THE NILE

and other areas have been carried out, largely by pumping operations, and it is by this means that the reclamation of the lakes and the drainage of the low-lying area adjacent will eventually be undertaken. All those different works are controlled by the Irrigation Service, the administration being divided into two Inspectorates-General of Upper and Lower Egypt, which are again subdivided into Inspectorates and Directorates, five in Lower Egypt and six in Upper Egypt. These inspectorates and directorates are located as under:

CIRCLE	LOWER EGYPT PROVINCE	HEADQUARTERS
First	Qalyubiya, Sharqiya and Mit Ghamer	Cairo
Second	Minufiya and part of Gharbiya	Tanta
Third	Behera and northern part of Giza	Alexandria
Zifta	Daqahliya and part of Gharbiya	El Mansura
Delta Barrage		Delta Barrage
UPPER EGYPT		
El Giza and El Fayyum	Giza and part of Beni Suef	El Fayyum
Fourth	Part of Beni Suef and Minya	Beni Suef and part of Assiut
Assiut Barrage	Part of Minya and part of Assiut	Assiut
Girga	Part of Assiut and Girga	Assiut
Fifth	Qena and Assuan	Qena
And the Assuan Reservoir	Directorate, Assuan.	

**FILLING THE CANALS.** During January practically all the canals are closed, and where necessary cleared of silt. Those in which navigation has to be maintained are dredged. During spring, summer and flood, rotations of varying intensity are imposed on the canals, those in spring and summer being necessitated by the paucity of supply and the need of economising to the utmost the water derived from the dam and river. The average form of these rotations is six days' irrigation in every eighteen days. In flood-time the canals are given a full supply each alternate week, this is sufficient for the needs of irrigation and proves a healthy measure against the waterlogging of the land.

As the flood rises in August the basin canals of Upper Egypt are opened and the basins flooded, being kept under water till October or November, when they are drained off into the falling river. In the summer-time roughly half the total cultivable area remains fallow for lack of water and to conform with the rotation of crops. If the supply of water is good the cultivation of rice is sanctioned in zones fixed by the Ministry.

**NILE DISCHARGES.**—When the Nile flood fails to water any of the basin area, such land is known as *sharâqi* and is exempt

from taxation. The basin land thus produces one crop annually, though a large proportion of the area is now watered in summer from artesian wells and pumps, thus greatly increasing its productivity. The Nile in summer, when below the normal, discharges only thirty to forty million cubic metres of water per day. This is augmented over a period varying from 90 to 130 days by additional volumes released from the Assuan Reservoir. At high flood the Nile discharges as much as 1,000 million cubic metres or tons per day at Assuan. (See also special articles on "The Control of the Nile" and "Cotton".)

**MECHANICAL DEPARTMENT.**—This department of the Ministry of Public Works is principally concerned with the control of the Government Pumping Stations for drainage and irrigation purposes, and with the preparation of plans and specifications required in connection with new pumping installations. The department also functions through a Steam Engine Service controlling the erection and working of all engines, the Government Workshops for steamer and motor services, the maintenance of machinery in hospitals, etc., and the manufacture of various essentials for the Irrigation Service.

**OPERA HOUSE.**—The Royal Opera House at Cairo was founded in 1869 by the Viceroy, Ismail Pasha, on the occasion of the opening of the Suez Canal and is Government-owned and controlled. The performances given every year consist of (1) a series of seventy-five French or Italian operas, as may be stipulated in the agreement with the lessee; (2) performances organised by benevolent societies recognised by the Government; and (3) a series of Arabic performances usually following the opera season. Costumes, scenery and stage properties are supplied to the lessee by the Government from the Opera House Stores. The building contains a Musical Library comprising 700 volumes of opera, operetta and ballet scores, also a library of works relating to the history and the art of the theatre. The Archives contain, besides the ordinary accounts, administrative papers, etc., duplicates of a plentiful correspondence from the Administration of the Opera House under the reign of Ismail Pasha of considerable historical importance.

**PHYSICAL SERVICE.** This department of Public Works is an important one, and includes the Hydrological Service, which receives and registers Nile gauge readings from 82 stations on the river, also the rainfall from 242 stations in Egypt and adjacent countries. Weights and measures and the standards of length for the use of surveyors

are regulated by this department, under whose control is the Observatory at Helwan.

The work of the Hydrological Service is of special importance to Egypt, since by it a general supervision is exercised over the measurement of river discharges. The current-metres employed are rated regularly, and the results of discharge measurements are computed and discussed by the Service. Computations are carried out of the amounts of water available for the various irrigation projects which have been proposed, and of the effect on the river in Egypt of such projects. These computations include the calculation of the contents of the various reservoirs and of the losses which occur in them.

At the beginning of January, and monthly until the beginning of June, a forecast of the discharge of the river until the end of June is made in order to enable a programme of cultivation and irrigation to be arranged. After the beginning of June much more frequent forecasts are made in order that the whole of the water remaining in Assuan Reservoir may be used to the best advantage.

#### STATE BUILDINGS DEPARTMENT.

The erection and upkeep of Government buildings throughout the country are in charge of this Department, which for purposes of administration is divided into an Architectural Office and four Divisions, each under an Inspector.

Architectural Office (headquarters Cairo), in charge of the preparation of designs for new buildings.

Cairo Division (headquarters Cairo), comprising Cairo City and suburbs.

West Division (headquarters Alexandria), comprising Alexandria city and the Mudiriyas of Belbeis, Gharbiya, and Minudhiya.

East Division (headquarters Cairo), comprising the Governorates of the Canal (Port Said, Ismailia, and Suez), Damietta, the Mudiriyas of Sharqiya, Daqahliya, Giza (North), and Qalyubiya, and the district of El Fai.

Upper Egypt Division (headquarters Assuit), comprising the Mudiriyas of Giza (South), Beni Suef, Fayyum, Minya, Assuit, Guga, Qena, and Assuan.

The Director-General's Office, the Architectural Section, the Cairo Division, the East Division and the Upper Egypt Division are housed in the same building as the Ministry of Communications, which is situated in the Ministry of Public Works Garden.

Heads of Administrations are obliged to consult the State Buildings Department before leasing or purchasing buildings to be occupied by Government Services, and no repairs or alterations may be carried out in Government buildings which are in charge of the State Buildings Department except by the said Department.

## THE CONTROL OF THE NILE

By J. B. BARRON

THE importance of the River Nile to Egypt may be summed up in the phrase, which has been passed down to us from Herodotus and other classical authors, "The Nile is Egypt." Without this great waterway the country would be one vast waste of sand, a continuation in fact of the desert within its western frontiers, stretching to the Red Sea and the Sinai Peninsula, with here and there a small oasis to relieve the monotony of the landscape and to provide well-water to passing caravans.

With the exception of the Delta, the cultivable extent of the land is limited by the valley through which the river runs from Khartoum in the Sudan to Cairo at the apex of the Delta. The rising ground that borders the valley on either side marks the limit of expansion. In this narrow area and in the Delta is crowded together a population of over 14 millions, having a density per square mile second only to that of Belgium.

Throughout the whole of its course in Egypt the Nile flows on the eastern side of its valley. The mean slope from Wadi Halfa to Assuan is 1 in 12,500, and from Assuan to Cairo 1 in 13,000.

**CONSERVATION PROBLEM.**—Water is the first and last consideration in a rainless land—it is the life of the people, and thus Egypt has witnessed a continuous struggle to utilise to the fullest extent the water with which nature has provided her. To the Pharaohs of antiquity the problem was no different from that of to-day. During the flood months of late July, August, September and October the problem has always been to conserve and to utilise on

the land the waters pouring into the Mediterranean Sea and in the months of the low river to harness the sluggish, turbid stream to the needs of man. The lowest level at Assuan is reached at the end of May, and at Cairo about the middle of June. This is followed by a slow rise in July and a fairly rapid one in August, the highest point being reached about the beginning of October.

The difficulties to be overcome are increased by the fact that the Nile possesses characteristics which are common to few great rivers. In the first place, most of the water that comes from its tributaries enters the main stream 1,000 miles from its mouth, at or above Khartoum. Other great rivers increase their discharge as they approach their outlets, but the Nile wanders through its narrow valley gradually decreasing in volume through wastage and evaporation. Secondly, it brings down in the period of flood a vast mass of silt, which has been swept into its course from the highlands of Abyssinia. The Blue Nile supplies quantities of water to the parent stream, and most of the silt which is deposited on the land forms the life and wealth of Egypt. In June the water is clear and carries practically no suspended matter, but by August it is full of a dark brown sediment. Thirdly, its second great tributary, the White Nile, stores in its upper reaches great quantities of water whose progress towards the Nile is retarded by masses of vegetation known as "sudd" in the marshy region round Lake No. The water thus held back pours down stream when the waters of the first tributary, the Blue Nile, are receding, thus enabling Egypt to enjoy a longer period of flood.

#### IRRIGATION BY ANCIENT EGYPTIANS.

—Irrigation was first practised where the need for it was compelling, and artificial irrigation from the Nile is perhaps the oldest system of land inundation in the world. The Pharaohs introduced a system which was hardly improved upon until the early years of the nineteenth century. From the river banks were cut channels along which the water flowed during the season of the flood inland to the foot-hills. Across the valley dykes were then built to retain the precious fluid, while other channels were cut to drain off the water to lands lying on a lower level down-stream. By this means a series of basins were formed that allowed the silt to rest on the soil, and at the same time permitted the surplus water either to flow on to other lands or to regain the river. In the Delta the process of flooding was easier, as the low level of the surrounding land made inundation a comparatively simple matter. It was, however, more difficult to relieve the sodden soil of its water-logged condition, for the change in level was insufficient to provide a natural flow. In some parts the river rose above the surface of the surrounding country requiring the construction of embankments to contain the swollen stream until such time as the waters fell to a lower level. Even at this period the importance of drainage was understood, and channels were cut to draw off the water from the flooded land back to the river, or by means of deep cuts to salt lakes and to the sea. For seven thousand years the basin system introduced by the Pharaoh Menes remained in use.

**IRRIGATION SYSTEM OF MOHAMMED ALI.** From this period until the beginning of the nineteenth century cultivation had remained chiefly a one-crop system. The peasant scattered his seed to the wind over an alluvial soil often two feet in depth and reaped a rich harvest, but the changing economic conditions of succeeding centuries altered Egypt's position in the world as the granary of the West. She disappeared from history as a factor of commercial importance until the rise of Mohammed Ali to power in 1811. This able man in casting about for new sources of wealth, conceived the idea of changing the entire system of irrigation in order to cultivate more valuable crops such as cotton, sugar and rice, which require constant watering and scientific methods of cultivation. It became then, necessary to irrigate the land at the period of low water, i.e. during the dry season, and

The use of water on the land continuously during high and low seasons of flood was a reversal of nature's methods, and carried in its train grave disadvantages. It was not only necessary to provide a constant supply during the season of low water, but also to prevent the complete swamping of the land during the season of high water. It was possible to overflow the soil and render it totally unfit for cultivation. Thus it became necessary to construct a scientific and costly system of drainage. Further, by regulating the waters during flood, the land was robbed of much of its rejuvenating silt, which was deposited on the beds of the canals. These became choked and were blocked for miles of their length, great efforts being required annually to keep the water-ways open. More serious even was the decrease in the quantity of silt, as the productivity of the land was diminished

declared that a sufficiency of water for the Delta could only be obtained during the low season by raising the level of the Nile by four metres at its apex near Cairo. To do this it was necessary to construct an immense barrage across both the Damietta and the Rosetta Branches of the river. During the season of flood the sluices would be partially closed and regulated until the required height of water had been obtained. This mass of extra water would then be held behind the barrage and utilised to feed the summer canals whose entrances would be constructed up stream in the high water area. By this means it was hoped that through gravitation the silt would be carried along the canals on to the land, and the necessity for excavating deep cuttings, which required continuous cleaning would also be obviated. It was an immense conception and work was commenced in



ASSUAN DAM, LOOKING WEST

to control the quantity of water flooding the land at high water. To provide summer water he introduced the perennial system of irrigation by constructing a number of deep canals, known as "sefi" or summer canals, to inundate the land at low flood. Miles of these canals were dug throughout the Delta, carrying water for long distances in deep cuttings, from which it was drawn by means of water-wheels or slung up in buckets attached to poles. To control the water at the entrances, locks and regulators were constructed. These changes immediately resulted in a great accession of wealth and prosperity. They lifted Egypt from a backward Oriental state into a country cultivating crops of value capable of exportation to the markets of Europe and America.

through lack of new soil. Added to these difficulties was the ignorance of the peasantry in matters concerning irrigation. Dams were utilised to admit water, canals were stopped to heighten the water level to the detriment of the cultivation down-stream, and confusion reigned owing to the non-existence of a properly qualified irrigation staff to control inundation or to enforce an impartial system of distribution.

**CAIRO BARRAGE**—It was early realised by Mohammed Ali that the new system called for expert assistance. He accordingly invited Mongel Bey, a famous French irrigation engineer, to prepare a project for overcoming the difficulties that were springing up on every side. Besides introducing numerous reforms, Mongel Bey

1842. By 1863 the barrage was in partial use. A series of engineering difficulties and the waning enthusiasm of the authorities held back its completion, while defective construction and bad material also seriously affected its utility. The one branch of the barrage in use proved, however, that, if properly constructed, it would be of untold benefit to the Delta. Difficulties accumulated, and finally the Egyptian Government abandoned the scheme in favour of the costly and extravagant method of lifting water by a series of pumps placed at the heads of the canals.

**INTRODUCTION OF BRITISH ENGINEERS**—The almost complete breakdown of the summer canals and the failure of the Barrage at last compelled the Egyptian

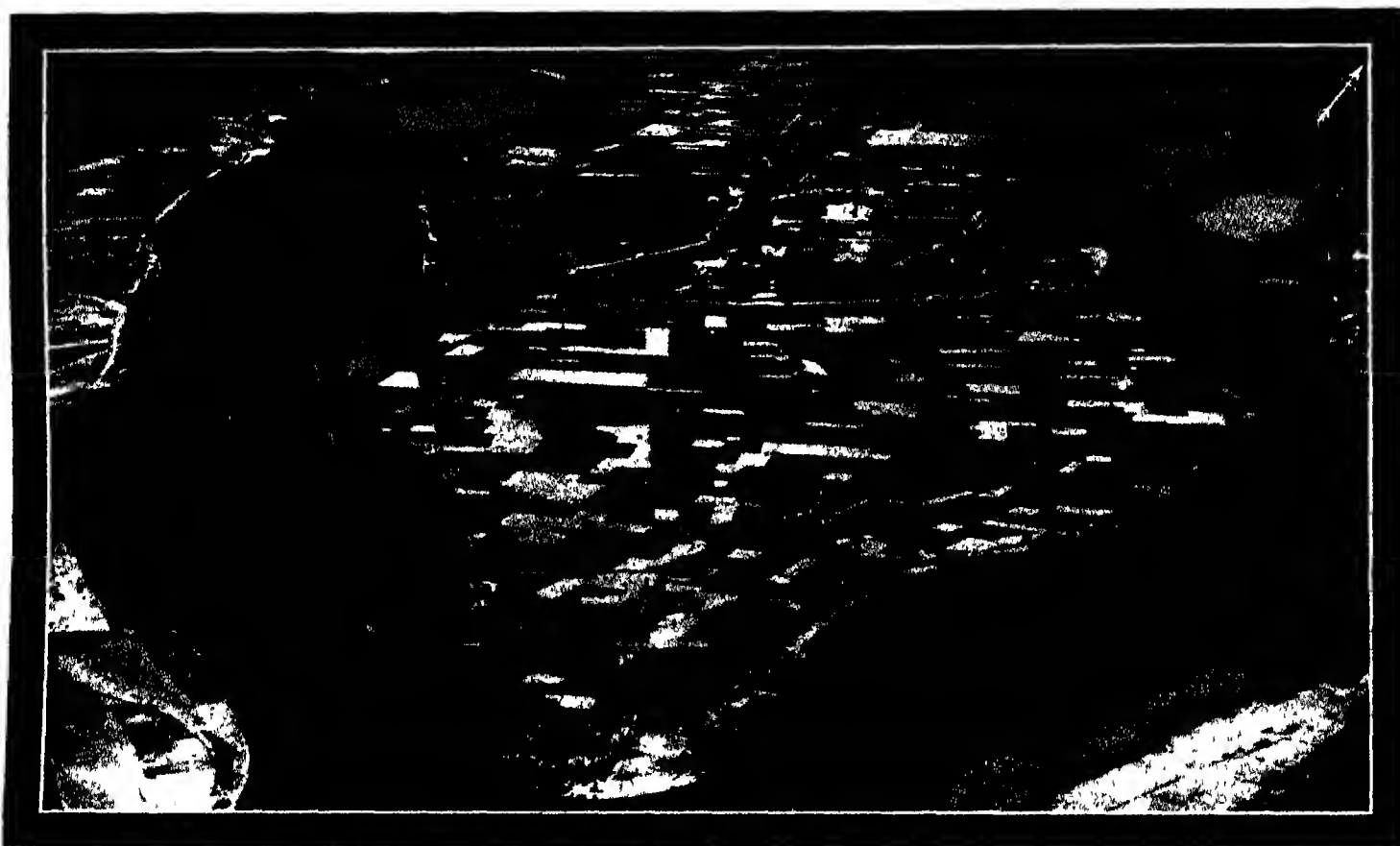


Government to take drastic measures. In 1883 the irrigation services were placed in the hands of a selected band of British engineers from India. It is not possible to enumerate the changes they introduced, beyond stating that they completely overhauled, organised and enlarged the perennial system of irrigation in the Delta. In Upper Egypt, where basin irrigation had continued, a gradual substitution by the perennial system has taken place, bringing much new land under cultivation. But these reforms took many years of patient work, and involved a constant struggle against the ignorant, bigoted and improvident methods of the cultivator. As late as 1922 the Annual Report of the Egyptian Government stated, "Difficulties of distribution are accentuated by theft of water by cultivators out of turn, especially in July, and once again it is seen how defective are the arrangements

**ZIFTAH BARRAGE**—As a supplement to the Delta Barrage, in order to ensure better control of the water released during the low season a smaller barrage has also been constructed at Ziftah on the Damietta Branch. A larger area of the Delta has thus been supplied with summer water, and this has further been increased by blocking the mouths of the Damietta and Rosetta branches of the river during the season of low water. Huge embankments are thrown across the river mouths, ponding up the waters behind them and closing one of the longest rivers in the world from all outlet to the sea from March until August. When the flood arrives the embankments are opened and are gradually swept away into the Mediterranean.

These works regulate the water supply of an area of 2,500,000 feddans (a feddan is 1/3 of an acre), having a population of

**ASSUAN DAM**—By far the most important of these schemes is that of the great dam at Assuan, some 680 miles from the mouth of the Nile. The purpose of the dam is to store up sufficient water during the period following the flood months, to regulate the supply proceeding down stream, and to increase the quantity available during the months of low water. It serves the dual function of preventing over-flooding and of providing against a scarcity. Owing to its position, the dam controls the water supply of the entire river northwards. A number of sites were examined, but Assuan was finally decided upon. The granite bed of the river at this point was capable of bearing the great weight of the structure, and the convenient width of the river allowed for the provision of sufficient sluices through which to pass the overflow. There was also no likelihood of infiltration affecting



OBLIQUE AERIAL PHOTOGRAPH OF THE DELTA BARRAGE, showing the two Branches of the Nile, the Canals and Cultivated Fields

for prompt trial of offenders, and how inadequate are the penalties laid down by law."

Not less important was the reparation of the Great Barrage. At the season of low water, for two or three succeeding years, first one section of the Nile and then another was blanketed off by thick walls of soil. The enclosed space was then pumped dry and the work of reconstruction commenced. The foundations were strengthened, the main structure thickened and tons of cement forced into enormous cracks which had formed under the arches. Eventually the Barrage was restored, and when the work was finished it was found that a greater quantity of water was capable of storage than was at first contemplated.

7,000,000 (excluding Cairo). Most of the inhabitants are cultivators growing cotton and rice. In the Delta there are 5,655 miles of canals, large and small, including 807 miles which are navigable water-ways. The drainage system embraces cuttings having a total length of 2,361 miles. Powerful pumps and dredgers are also utilised to assist drainage.

**MODERN IRRIGATION SCHEMES**—The works constructed in the Delta form only a part of a series of great irrigation projects, completed during the present century by British engineers, which are designed to make the agricultural position of Egypt secure during the months of low water and even during an abnormally dry year.

areas in the vicinity by gradually forming saline deposits. Finally, the engineering problem was also made easier by the convenient depth of the river.

From December to March the sluices are closed, and the waters held until its maximum capacity of  $2\frac{1}{2}$  milliards of cubic metres is attained. Behind the dam for over 200 miles the river is converted into a long narrow lake. Palm trees and ancient monuments disappear beneath its rising waters, whilst villages have long since been moved to higher ground. From March onwards until the floods arrive in July the waters are released as the requirements of irrigation demand. Its effect on the Cairo Barrage is to provide an additional volume of water at a time when the Delta demands are

reducing the water level at the Barrage. Timely and equal distribution of water has thus been made possible to a far greater extent than ever before.

The requirements of crop fertilisation through Egypt are approximately 35,000 millions of cubic metres of water annually. In 1913-1914, a year of exceptionally low flood, about 41,000 million cubic metres passed Assuan between July 1913 and June 1914. It will be seen that this volume of water, which was the lowest ever recorded, was more than ample to meet all present agricultural requirements had it been possible to distribute its volume to meet the needs of the cultivator as they arose. The presence of the dam, which was completed in 1902 and heightened in 1912 undoubtedly saved Egypt from the possibility of a famine in 1913. It regulated distribution to a degree never hitherto attainable and, even so,

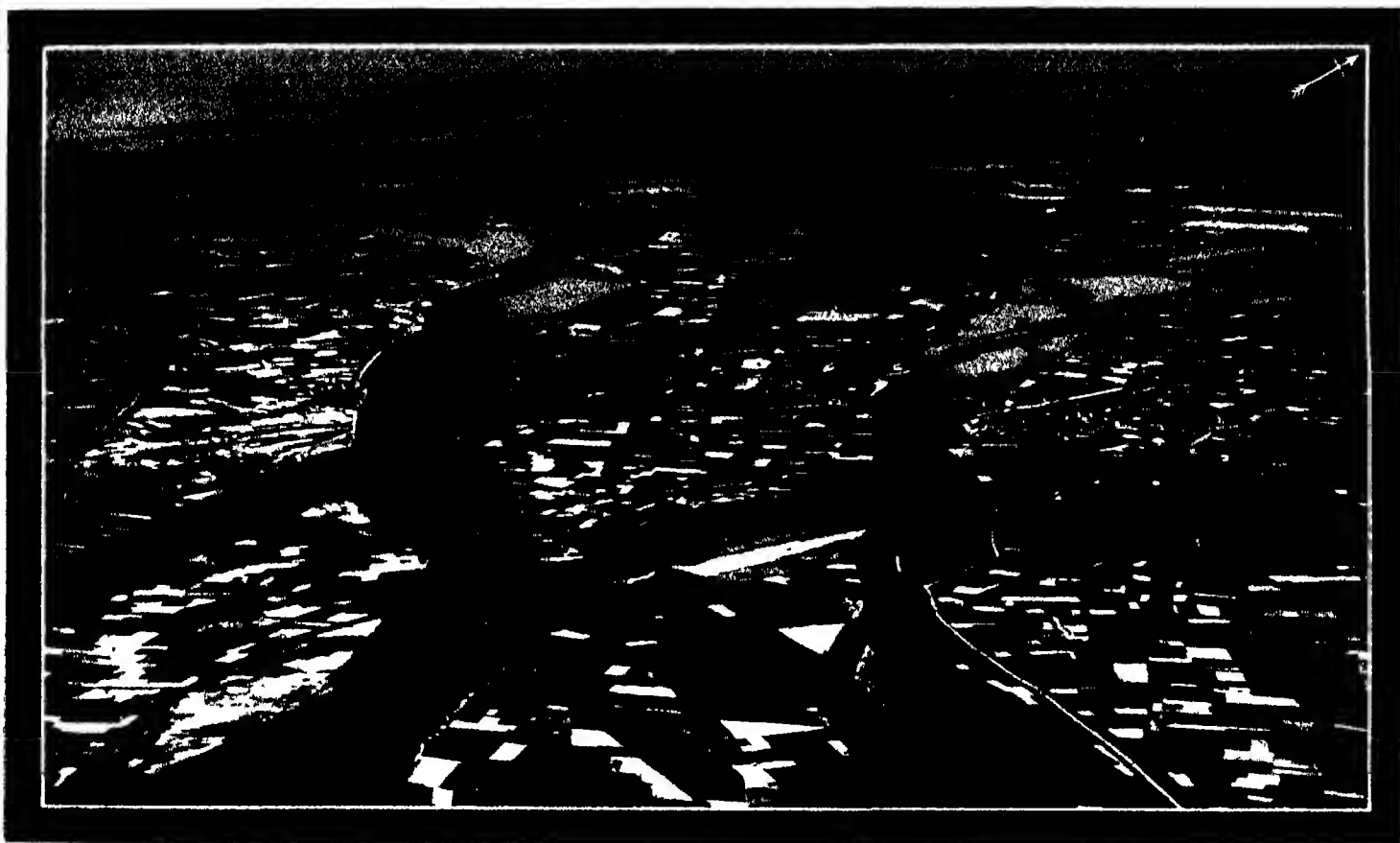
runs the famous Ibrahimieh Canal which supplies Middle Egypt and the Fayyum, and permits large areas to be cultivated on the perennial or two crop system. Some million feddans are reached by the irrigation system of the two barrages, much of which was hitherto uncultivable land or soil cultivated under the wasteful system of basin irrigation.

In addition to the water supplied from the barrages to canals, large quantities are also pumped from the river during the summer months in Upper Egypt. Many sugar plantations are supplied in that way. This method of providing summer water has only recently been allowed on a large scale and dates from the heightening of the Assuan Dam on the strength of the increased storage thereby supplied.

In Middle and Upper Egypt some 5,317 miles of canalisation exist, of which 230

cultural expansion. On the Blue Nile the Sudan Government has recently completed (1925) a large dam at Senaar, near the village of Makwar some 170 miles south of Khartoum. The structure contains 450,000 cubic yards of masonry, and raises the water level of the river 50 feet to enable it to flow into a main canal capable of irrigating 300,000 acres of the Gezira Plain. Up stream a reservoir is formed extending 50 miles and storing some 600 million cubic metres of water. From the Dam the main canal runs for 35 miles parallel to the Blue Nile, and then divides into a system of smaller canals about 600 miles in length. This system of irrigation allows of 100,000 acres of the best cotton to be planted every year in rotation.

When the project was first considered fears were expressed that the Dam would result in the supply of silt, flowing onwards to Egypt, being interrupted. The storage



ANOTHER OBLIQUE AERIAL PHOTOGRAPH OF THE DELTA BARRAGE, showing the two Branches of the Nile, the Canals and Cultivated Fields

much water passed uncontrolled to the sea, allowing serious shortages to occur on the land. As it was, there was practically a complete suppression of the rice crop, the area being reduced from 300,000 feddans to 25,000. Cotton also was seriously affected, the loss being aggravated by insect pests that attacked the weak plants. Other crops such as sugar, wheat and maize were saved.

**ESNA AND ASSIUT BARRAGES**—Between Cairo and Assuan are the subsidiary barrages or weirs of Esna and Assiut. They retain water released from Assuan, and, by increasing the river level, allow it to enter the canals along which gravitation carries the water to distant areas. From Assiut

miles are navigable waterways. In addition, there are 1,865 miles of drains. The total length of the system throughout Egypt is, then, 10,972 miles, with drainage channels of 4,226 miles.

**SENAAR DAM**—The river boundary between Egypt and the Sudan is at Wadi Halfa, from where the Sudan Railways run south to Khartoum and beyond. Between Wadi Halfa and the capital the river runs between cliffs bordered by a limitless desert. Little irrigation is possible in this region until Khartoum is reached, standing at the junction of the two great tributaries, the Blue Nile and the White Nile.

The flat delta formed by these two tributaries presents possibilities of great agri-

of water, however, is commenced after the silt-bearing floods have been allowed to pass through the open sluices of the dam. The quantity of water contained in the reservoir is also water upon which Egypt's irrigation is not dependent, water in fact which would otherwise be carried to sea as an overflow.

#### **PRESENT AREA OF CULTIVATION.**

The political area of Egypt is roughly 214 million feddans, but this includes a vast extent of desert. The total possible agricultural area outside the Nile banks and above high flood level within the banks is approximately 8,200,000 feddans. Of this area, Lower Egypt has 5,350,000 feddans and Upper Egypt 2,750,000. This total includes land still capable of reclamation or conver-

sion to perennial irrigation amounting to 2½ million feddans. With a rapidly increasing population economic pressure will ensure the ultimate conversion of all unreclaimed or improperly irrigated land, but placing larger areas under cultivation will also necessitate an increase in the volume of water available for irrigation. These facts lead to important considerations which embrace the Sudan.

#### PROJECTED IRRIGATION SCHEMES.—

There are two ways in which the volume of water may be increased —

(1) To hold back discharge at selected localities during periods when there is an excess of water for use during critical periods.

(2) To reduce wastage of water.

**GEBEL AUJLI DAM** These problems have occupied the attention of irrigation experts for many years, and the Egyptian Government has now decided to construct another large dam at Gebel Aulia, a few miles south of Khartoum, on the White Nile. Across the river a great wall of masonry will bank up the waters to the extent of 3½ milliards of cubic metres. Evaporation and wastage may reduce it to 2½ or 3 milliards, this quantity being available for Egypt as a supply additional to that at the Assuan Dam. It may be mentioned that the extra volume at present passes through Egypt unused to the sea, since the storage areas at Assuan are insufficient to retain it. The cost of construction will be approximately £3,000,000. The benefit to be derived from the Gebel Aulia Dam was impressed on the Egyptian Government during the seasons of 1922, 1923 and 1924, when the water supply was low, the cultivation of rice being restricted and cotton rotations severely controlled. It is estimated that its cost might be recouped in five or six years through an assured rice crop, easier rotations and an increase in the cultivable area generally. The work should be completed in three or four years.

**NAG HAMADI BARRAGE**—Another barrage is in course of erection at Nag Hamadi in Upper Egypt of the same type as the Esna and Assut works. Parts of the country south of Cairo still suffer by remaining unwatered in low floods, as these do not rise high enough to fill the basins completely. This additional storage area will enable the irrigation system to be placed on a perennial basis. The soil is fertile, the population dense, and there seems no reason why the new barrage should not command an area of 500,000 feddans. The approximate cost is £2,000,000. Nearly a quarter of a million feddans of Upper Egyptian land went without water in 1924 owing to the low level of the river, and in addition to the loss incurred by landowners there was the loss of revenue to the State, which does not levy land tax on the unirrigated lands at high flood. The Nag Hamadi Barrage will, then, confer a double benefit—on the land holders and on the Government. The barrage is expected to take about three years to complete.

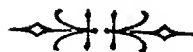
The scheme for constructing the new barrage has always been associated with the project for the Gebel Aulia Dam, as it will be required in order to enable a portion of the storage water provided by the dam to be used on the fields of Upper Egypt. It is also urged that the barrage and the dam must be built at the same time, because, by the withdrawal of water from the river in flood annually required to fill the reservoir, the levels of the river at that time would be lowered, and that this lowering would, if the flood were not a good one, adversely affect the flood crops in the Upper Egypt basins. These considerations have decided the Egyptian Government to proceed with both schemes concurrently in spite of the heavy outlay required.

**LAKE TSANA SCHEME**—To provide for the ultimate necessities of the Sudan and to further conserve Egypt's supplies in years

of a low-level Nile, a scheme has been put forward of forming Lake Tsana in the Abyssinian highlands into a reservoir. It is from this lake that the Blue Nile, known in its upper course as the Abba, issues. The project has been brought within the range of practical politics by the publication of a report (1926) by an Egyptian Commission which has studied the question on the spot. The annual discharge of Lake Tsana during normal years is estimated at 3,500 million cubic metres. But the Commission recommends the excavation of the rock sill at the head of the lake to enable water to be run off below the ordinary flood level. This would increase the storage capacity to 8,000 millions, which would be sufficient to meet the deficiencies of two seasons of low water in succession. The total cost of the works is estimated at £12,500,000, a sum well within the capacity of Egypt to find. It would in fact guarantee, together with the Gebel Aulia project, a sufficiency of water for both Egypt and the Sudan for many years to come. But since the Lake is situated within the Abyssinian frontier, a necessary preliminary to the beginning of any works would be an agreement with Abyssinia. The Egyptian and Sudanese Governments have already commenced negotiations to this end.

**WHITE NILE PROJECT** Of other plans connected with Egypt's supply, experts are studying the possibility of utilising Lake Albert in Uganda as a vast reservoir. The project, however, will entail the clearance of the White Nile and its tributaries of vegetation.

At no very distant date this scheme, or one having similar advantages, will be adopted, since the problem of finding water and land becomes each year more pressing in order to satisfy the requirements of a rapidly increasing population, whose peculiarity is that it refuses to emigrate and remains attached to the soil.









# FINANCE AND BANKING

## FINANCE

THE financial history of Egypt is, in the main, one of progressive development since the administration of the country's finances was taken over by Europeans. To this result the striking acumen and unwearying labours of the late Earl Cromer very largely contributed.

In 1875 the condition of the Egyptian finances appeared to be almost hopelessly involved, and various eminent financiers were sent from England to attempt to arrange a solvent system. After many inquiries and several failures, a dual English and French control was established and the finances were placed entirely under European management. For many years, however, successive expert advisers had to wage war against bankruptcy and Lord Milner's great ability was taxed to the full to effect a recovery from the economic crisis of 1907—a crisis due to over speculation and extravagance following a short period of illusive prosperity. By 1911 the State finances had to a large extent recovered, though at the end of 1913 the liabilities left over from 1907 still weighed heavily on private finance.

The outbreak of the World War in August, 1914, just when the cotton crop was about to be harvested, threatened once more to place Egypt in economic difficulties. The price of cotton fell by one third, and a panic was averted only by the drastic measures taken by the Government. As part of these measures a general moratorium was proclaimed, and an emergency currency obtained by making the notes of the National Bank of Egypt legal tender and inconvertible. By the end of 1915, cotton, stimulated by war demands, had again risen to pre-war prices, and this, together with forced economy and the large sums spent by the armies stationed in the country, restored the situation. A new period of prosperity set in, chiefly due to the soaring price of cotton—which in February, 1920, touched 95d per lb., or nearly ten times its value in 1913. At the same time Egypt (apart from the Public Debt) was still a debtor to foreign countries for a very large sum, chiefly loans on mortgage and capital invested in industrial, transport and other companies. The sudden wave of prosperity—dependent almost entirely on the inflated price of cotton—was not wholly good for Egypt, there was much real distress among the fellahen, and the cost of living in the towns was very high.

The great drop in the price of cotton during the last half of 1920 naturally affected the country, and 1921 was a time of considerable stringency, the financial year 1920-21 closing with a deficit of £12,900,000, which was met by a draft on the reserve, reducing the latter to some £3,000,000, to face a deficit on the 1921-22 Budget. Fortunately it was not needed, the succeeding years have been those of steady recovery and development, the excess of revenue over expenditure varying from £E.400,000 in 1921-22 to nearly £E.8,000,000 in 1924-25.

**MONEY AND COINAGE.**—The Egyptian pound (£E.) contains 100 piastres, and each piastre 10 millimes; the former is worth 20s. 6d., or nearly 26 francs at par

value. The pound being divided into 100 piastres, each piastre, which is called a piastre tarik (P.T.), is worth 2½d., and a millime is therefore of the value of ¼d. The English pound is worth 97½ P.T., the Napoleon, or French franc at normal value, 97 3/20 P.T., and the Turkish pound, 87½ P.T.

Silver coins are the *nyâl*, or dollar, which is worth 20 piastres, the half and quarter *nyâl*, of the value of 10 and 5 piastres respectively, and the 2-piastre and 1-piastre pieces. There are nickel coins worth one piastre, and 1, 2, and 3 millimes respectively. In the old system of coinage a piastre was worth 40 paras and 2-para and 1-para pieces are still struck. These are, however, chiefly used for scattering amongst children as *baksheesh*. The following are the values in English money of the silver and nickel coins in general use:

20 piastre piece	4 1½d
10 " "	2 0½d
5 " "	1 0½d
2 " "	5d
1 " "	2½d
1 " " (nickel)	2½d
½ " " ("little piastre")	1½d
or 5 millimes)	1½d
2 millime-piece	¾d
1 " "	¾d

**PUBLIC DEBT.** The *Caisse de la Dette Publique*, a body representing the creditors of the Egyptian Treasury, has considerable powers and special privileges. It was first appointed in 1880, during a period of national bankruptcy, and for more than twenty years it justified its existence for the purpose of protecting the interests of the bondholders. Then, as Egypt became solvent and prosperous, the stringent regulations which had been necessary in the beginning were found to prevent the proper development of the country out of surplus revenue, a large part of which was held in suspense as contingent security for the service of the debt. These regulations were gradually relaxed, and now, although the *Caisse* still exists, its duties are limited to receiving the revenues necessary for the interest and for the payment of the coupons as they became due, while it also holds a considerable reserve fund, the interest on which reduces the amount of the Treasury contribution. The Commission of the Public Debt is composed of three foreign commissioners representing Great Britain, France and Italy respectively.

At the end of the financial year 1924-25 the situation of the Public Debt was as under—

	DEBT £	CHARGE £E
Guaranteed Loan,		
3 per cent ..	5,072,300	307,125
Privileged Debt,		
3½ per cent ..	31,127,780	1,062,235
Unifed Debt,		
4 per cent ..	55,971,960	2,182,906
Totals ..	£92,172,040	£E 3,552,266

The charges on account of debts of all kinds (including tribute), as shown in the estimates for 1925-26, amounted to £E.4,914,694.

**RESERVE FUND.**—In 1888 and 1890 reserve funds were established, the balances

# INSURANCE

of which, in virtue of the Anglo-French Convention of April 4, 1904, were placed at the disposal of the Egyptian Government in 1905 less certain sums remaining in the hands of the *Caisse de la Dette Publique* for the service of the debt. The amount received by the Egyptian Government was carried to a General Reserve Fund which on March 31, 1925, showed a balance of £E 25,557,175, having risen to this figure from £E 5,570,000 in 1921 and £E 18,000,000 in 1924. About half this sum is invested in Egyptian Government Debt and foreign securities, some £E 10,000,000 being deposited in various banks, while a small amount remains invested in local industrials and Turkish loans.

**REVENUE AND EXPENDITURE.** The progress made in the economic development of Egypt may be judged from the following table, which shows the revenue and expenditure of the country since 1917-18.

YEAR	REVENUE £	EXPENDITURE £
1917-18	23,166,074	22,496,948
1918-19	27,001,280	23,384,320
1919-20	33,077,101	28,001,934
1920-21	40,446,021	62,051,182
1921-22	41,803,166	37,747,112
1922-23	35,703,744	28,247,171
1923-24	30,254,947	31,466,480
1924-25	37,608,601	29,076,185
1925-26	30,870,000	36,288,266

The years 1920-21 and, in a lesser degree, 1921-22 were "boom" periods, and should be so considered in estimating the general rise in revenue.

In 1925-26 the estimated excess of receipts over expenditure was only £E 581,734, compared with credit balances of £E 7,722,470 in 1924-25 and £E 4,788,407 in 1923-24. The extraordinary expenditure on new works in 1925-26 was almost entirely responsible for the lessened excess figure in the year named.

**EXPENDITURE 1925-26.** The largest item in the outcast in total expenditure by £E 6,312,081 to £E 30,288,266 was that on new works (£E 4,394,121). Administrative expenses increased from £E 13,784,428 to £E 15,406,433, railways from £E 3,434,701 to £E 5,073,554, post office from £E 538,874 to £E 618,748, telephones from £E 243,760 to £E 340,270, army from £E 1,036,059 to £E 1,680,062, tribute from £E 152,302 to £E 604,826, and debt payments from £E 3,808,047 to £E 4,207,138.

**REVENUE 1925-26.**—Revenue in 1925-26 was £E 820,000 less than in 1924-25 if the reserve relating to the capital account of the Egyptian State Railways, Telegraphs and Telephones (£E 1,037,800) be included. The total ordinary revenue for the year was £E 35,489,140, compared with £E 37,204,520 in 1924-25. Direct taxes, etc., rose from £E 5,718,125 to £E 5,720,000, excise from £E 241,201 to £E 260,000, post office receipts from £E 643,366 to £E 650,000, telephones from £E 422,291 to £E 515,000, and judicial and registration fees from £E 1,877,566 to £E 1,951,000. On the other hand, Customs declined from £E 6,044,132 to £E 5,110,000, tobacco from £E 5,858,760 to £E 5,700,000, miscellaneous taxes from

£E 474,507 to £E 435,000, railways from £E 7,105,753 to £E 7,000,000, telegraphs from £E 304,853 to £E 205,000; ports and lighthouses from £E 351,659 to £E 320,000, and miscellaneous revenue from £E 8,162,280 to £E 7,623,140.

**TAXATION.**—The reform of Egyptian taxation, the inequality and uncertainty attaching to which were largely responsible for the bad state of the country's finances prior to the period of British control, dates from 1880, and has continued ever since. One peculiar form of "inequality," to which

in the same manner as local subjects, but if a new tax is imposed the consent of all the Powers is necessary before a foreigner is obliged to pay. In regard to Egyptian subjects, the Organic Law of 1924 declares that no new direct tax, whether land or personal, may be imposed without the approval of the Legislative Assembly. The land tax, house tax and cotton tax are the principal sources of revenue, the amount received from direct taxation in 1925-26 being £E 15,406,433 as against £E 13,784,428 in the preceding year.

the annual rental value of the premises, except in the case of Cairo, where it is 10 per cent. In Alexandria, municipal taxes on house property are levied in addition to the above.

**LAND TAX.**—The land-tax is one of the principal sources of Egyptian revenue and is payable at the rate of 28 64 per cent of the rental value of fully developed lands. A super-tax of P.T. 50 per feddan on lands irrigated by flood from the Assuan Reservoir and its subsidiary works and P.T. 30 per feddan for lands watered by lifting machines is also imposed.

### BANKING

Egypt owes its excellent banking system entirely to foreign interests, almost all the European Powers being represented by their leading banking institutions. The principal banks operating in the country had satisfactory years in 1924 and 1925, and in some cases were able to increase their dividends.

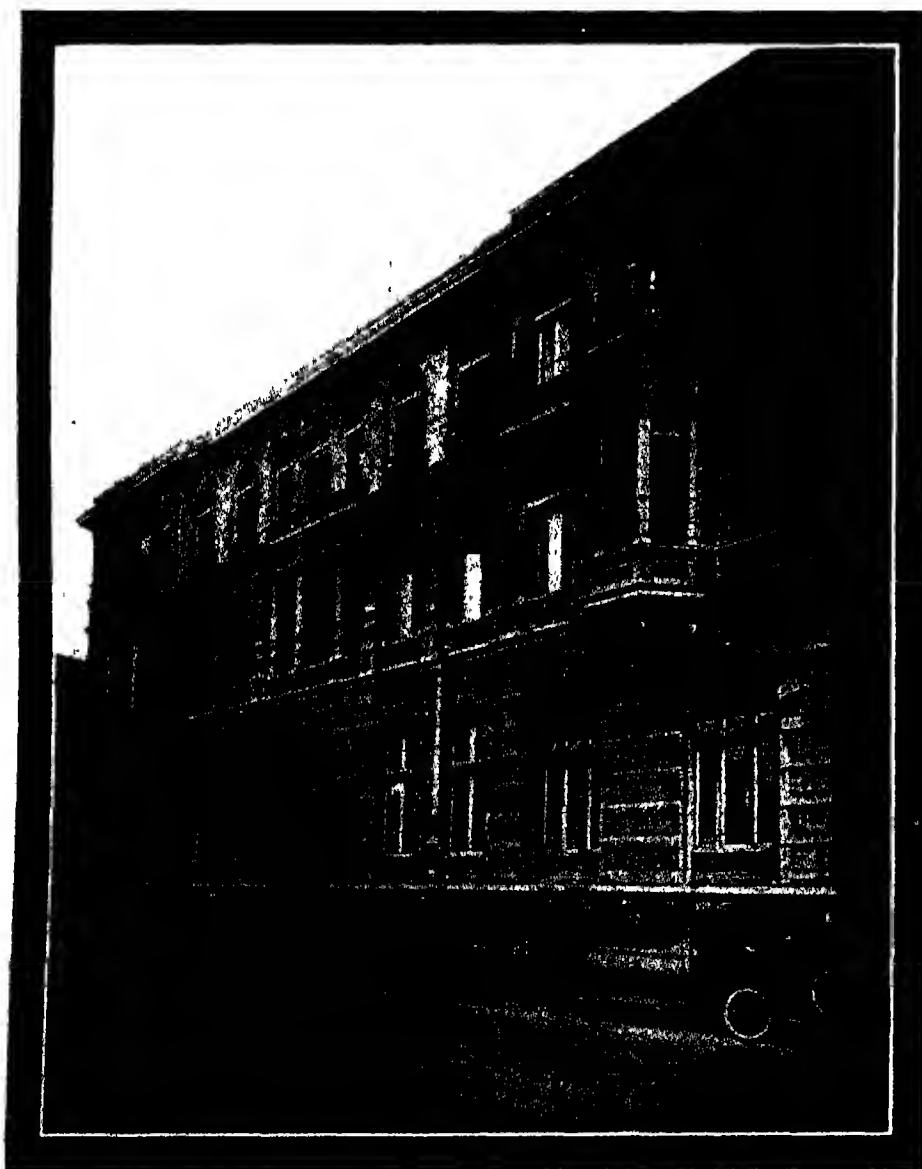
**BANKS.**—The following is a complete list of the banks operating in Egypt, with the locations of their head offices: Agricultural Bank of Egypt, Cairo; Alexandria Banking and Trading Company, Ltd., Alexandria; American Express Company, Inc., New York; Banca Commerciale Italiana per l'Egitto, Alexandria; Banco Italo Egiziano, Alexandria; Bank of Abyssinia, Addis Ababa; Bank of Athens, Athens; Banque Belge pour l'Etranger, Brussels; Banque Misr, Cairo; Banque d'Orient, Athens; Barclays Bank (Dominion, Colonial and Overseas), London; Caisse Hypothécaire d'Egypte, Brussels; Cassa di Sconto e di Risparmio, Alexandria; Commercial Bank of Egypt, Alexandria; Commercial Bank of Greece, Athens; Commercial Bank of the Near East, London; Comptoir Financier et Commercial d'Egypte, Alexandria; Comptoir National d'Escompte de Paris, Paris; Crédit Foncier Egyptien, Cairo; Crédit Foncier de l'Orient, Paris; Crédit Lyonnais, Lyons; Ioman Bank, Ltd., London; Land Bank of Egypt, Alexandria; Lloyds Bank, Ltd., London; Mortgage Company of Egypt, Ltd., Cairo; National Bank of Egypt, Cairo; Ottoman Bank, London, Paris and Constantinople; Société Cooperative Commerciale de Crédit, Cairo.

**BANCO ITALO EGIZIANO.** This is an Italian banking company of considerable importance, having at its head the President of the Banco di Roma. It operates not only in Alexandria and Cairo, but by means of agencies established throughout the provinces and especially in the cotton districts. (See also text following this article.)

**BANK OF ATHENS.**—This bank, whose headquarters are at Athens, provides exceptional facilities for the export and import trade between Great Britain and the Near East generally. The principal Egyptian branch is at Alexandria. (See also text following this article.)

**BANQUE BELGE POUR L'ETRANGER.**—This important Belgian bank, which was founded in 1902, transacts every variety of banking business from its head office in Brussels and in such diverse centres as London, Paris, Cologne, Bucharest, New York, Peking and Tientsin. The Director-General of the bank's operations in Egypt is in charge of the Egyptian main branch in Cairo, and other branches are at Alexandria, Tanta, Zagazig and Beni-Suef. (See also text following this article.)

**BARCLAYS OVERSEAS BANK.**—One of the outstanding features of Egyptian banking in 1925 was the amalgamation of the various institutions which Barclays



OTTOMAN BANK.  
Banking Premises, Alexandria.  
(See letterpress, page 27)

native opinion has always been hostile, was that foreigners in Egypt were for a long time exempt from taxation to which the inhabitants were subject. In consequence of the Capitulations (see under "Administration"), no foreign resident could be taxed by the Egyptian Government unless the Governments of all the Powers consented to the imposition of the tax. It was not until 1884 that house-tax was paid by foreign residents. Generally speaking, it may be said that foreign residents now pay all taxes

**COTTON TAX.**—By decree of April 18, 1920, a tax of P.T. 35 per kantar was established on ginned cotton. In 1922 this tax was reduced to P.T. 25 per kantar. The revenue raised in 1924-25 was estimated at £E 1,250,000.

**HOUSE TAX.**—The house-tax is levied only in those towns where it is considered that the amount collected will justify or exceed the cost of collection. The amount of the tax is 8½ per cent, or one-twelfth of

Bank has welded into a great overseas subsidiary. The Anglo-Egyptian Bank itself (now absorbed into Barclays Bank, Dominion, Colonial and Overseas) has been established in Egypt since 1864, and has always played a prominent part in the financial and commercial development of the country. From details given in the extended notice of Barclays activities which follows in this section it will be seen that the composition of the new central board of management and of the administration generally augurs well for the development of the bank's widespread business.

**CREDIT FONCIER EGYPTIEN**—This, one of the older banking institutions of Egypt, was founded in 1880, with headquarters at Cairo, and now has extensions throughout the country. It conducts a large volume of business. (See also text following in this section.)

## REPRESENTATIVE BANKING ENTERPRISES

### NATIONAL BANK OF EGYPT.

**Inception.** The history of this National Bank is intimately connected with the financial development of modern Egypt. When towards the end of the nineteenth century the State finances had been put on a sound basis, the Government expressed a desire to see established in Egypt a Bank with which it could deposit its funds and which at the same time would be the Bank of Issue of the country. The result was the foundation of the National Bank of Egypt under the authority of a Khedivial Decree dated June 25, 1898, as an Egyptian company with its head office in Cairo.

The promoters were the late Sir Ernest Cassel and the local firms of Messrs. C. M. Salvago & Co. and Messrs. Suarès Frères & Co. The first Governor was the late Sir Elwin Palmer, K.C.B., K.C.M.G., who previously held the appointment of Financial Adviser to the Egyptian Government.

**Activities.**—One of the first of the activities of the Bank was the granting of loans to the fellahs, who were up to that time in the hands of the usurers. This branch of the Bank's business soon grew to such large proportions that it had to be handed over in 1902 to a separate company specially formed for the purpose, the Agricultural Bank of Egypt, in which the National Bank retains a controlling interest.

Before the foundation of the institution under notice there were few banks established in Egypt, and the number of their branches in the Provinces was extremely small. The National Bank of Egypt immediately opened several branches, and subsequently the number was increased so as to include all Mudirah towns, in which places the Bank effects encashments and payments for the Government. The establishment of these branches conferred on the country a more widely spread banking system than it had been accustomed to.

**National Services.**—From its foundation to the present day the development of the National Bank of Egypt has been continuous. Being in touch with the Government on the one hand and the commercial community on the other, and possessing an organisation prepared for the widest activities in emergency, the Bank and its connected concerns have rendered signal services to the country.

During the various crises that have swept over the State, and in particular

**IMPERIAL OTTOMAN BANK**—Founded in 1863, this well-known bank has established highly successful branches at Alexandria, Cairo, Port Said, Ismailia, Mansurah and Minya. The widespread activities in all countries of the Near and Middle East render its position in Egypt one of increasing value. (See also text following in this section.)

**LAND BANK OF EGYPT**—This bank was established under French auspices in 1905, and operates from its head office in Alexandria. (See also text following in this section.)

**LLOYDS BANK, LTD**—This well-known institution has long since acquired an international reputation. It is now firmly established in both Alexandria and Cairo, with a dozen agencies in other important centres. (See also text following in this section.)

at the outbreak of War in 1914, no efforts were spared by the Bank to meet the situation. It is therefore no matter for surprise that the confidence which was placed in the institution at its foundation has gone on increasing, and that in times of trouble the country has always looked to it for that assistance which has been meted out readily and loyally.

The outbreak of War came at a particularly critical moment for Egypt, as the cotton crop was just due on the market and with the impossibility of importing into the country the usual quantities of gold required to finance that crop, the position was serious. Thanks to the Bank's prompt action in collaboration with the Government, that position was eased, the Government decreed the "cours forcé" for the notes of the Bank, and it was thus possible to expand the issue, providing the necessary currency for the cotton to be moved from the interior down to Alexandria for export. Moreover, the measures taken by the institution at the outbreak of War undoubtedly minimised the panic that ensued on the local market and helped to bring an early return of confidence.

**Financial.**—In the course of its existence of 27 years the National Bank of Egypt has paid an average dividend of 9.46 per cent. The dividend paid for the year 1925 was 17 per cent, whilst 15 per cent was distributed each year during the period 1920-1924.

Substantial sums have been added to the reserves, which now figure at £2,550,000 against a capital of £3,000,000. The nominal value of the share is £10. On March 1, 1926, it was quoted on the Stock Exchange at £36.

**Operations in Egypt.**—Apart from its special functions as the Issuing Bank of the country and Government bankers, the National Bank of Egypt transacts the usual banking operations. It has agencies in Egypt at Cairo, Alexandria, Assuan, Assiut, Benha, Beni-Suef, Chebin-el-Kom, Damanhour, Fayyum, Helopolis, Keneh, Luxor, Mansurah, Mchalla-Kebir, Minieh, Port Said, Sohag, Suez, Tantah (with a sub-agency at Kafr-el-Zayat) and Zagazig.

**Operations in the Sudan.**—The National Bank of Egypt also holds an important position in the economic life of the Sudan, whither it came as pioneers in 1901. It acts as bankers to the Government of that region, and has agencies at Khartoum, Port Sudan, El-Obeid, Wad Medani, and sub-agencies at Omdurman, Kassala and Tokar.

**NATIONAL BANK OF EGYPT**—The National Bank of Egypt, established under Egyptian law in 1898, is the sole bank of issue in Egypt. The course of its note issue during 1925 was unusual in that the outstanding amount on the first day of the year—£41,900,000 proved to be the maximum point of the 12 months. At the end of the year the total was £F 35,500,000, a reduction of £E 6,400,000 compared with the end of 1924, the usual expansion in the note circulation of the late autumn having been curtailed owing to the fall in the price of cotton and the slowness with which the crop was marketed. The results disclosed by the bank for 1925 were the best ever shown by this institution, a noticeable feature being the large increase in the Egyptian Government's deposits, which rose from £E 18,944,217 in 1924 to £E 25,400,562 in 1925. (See also text following this article.)

**Directorate.** The Bank is administered by a Board of Directors in Cairo, presided over by the Governor. The present Governor is Sir Bertram Hornsby, C.B.E. who was appointed to the post in 1921, in succession to Sir Frederick Rowlatt.

The Board of Directors is composed of the following gentlemen, of whom the last four form a London Committee: Sir Bertram Hornsby, C.B.E. (president); H.E. Ahmed Ziwer Pacha, Mr H.E. Barker, H.E. V. Harari Pacha, C.M.G., Mr John Home, Mr Robert Rolo, C.B.E., Sir Frederick Rowlatt, K.B.E., Mr Michel Salvago, Mr Leon Suarès, Col the Hon Sidney Peel, D.S.O., Lord Cullen of Ashbourne, K.B.E., Mr E.W.P. Foster, C.M.G., and Major General Sir John Davidson, K.C.M.G., C.B., D.S.O., M.P.

**Head Office.**—31 rue Kasr-el-Nil, Cairo. Cables: "National," Cairo.

**London Agency.**—6 and 7, King William Street, E.C. 4.

(See illustration facing page 25.)

### OTTOMAN BANK.

**Inception.**—After the termination of the Crimean War a British Bank, with a paid up capital of £500,000, was established in Constantinople as the Ottoman Bank. Such was the genesis of the present institution, which, with the participation of French capital, was established as a State Bank, under the title of the Imperial Ottoman Bank, by virtue of a firman of the Sultan of Turkey dated February 4, 1863. It received a concession from the Turkish Government for a period of thirty years, namely, up to 1893. The concession, renewed from time to time, is now current for ten years from August, 1925.

**Capital.** The capital of the Bank is £10,000,000, of which one-half is paid up, the reserve funds amounting to £1,250,000. The shares are all in the form of bonds to bearer.

**Activities.**—At the head office in Constantinople the Bank's activities are directed by a Council of Administration under the control of a Committee, half of which sits in Paris and half in London. The country in whose capital the enterprise was first started has derived immense advantages from an organization so deeply interested in the development of its natural resources and the well-being of its inhabitants.

**Operations.**--The Bank's system enables it to undertake all kinds of banking business on behalf of clients through the medium of its own branches and of correspondents in all parts of the globe. Operations cover advances on merchandise, approved bills and securities, opening of mercantile credits, and issuing of drafts, cheques, telegraphic transfers and letters of credit on the principal towns of the world. The safe custody of securities, valuables, etc., collection of coupons and bills, and purchase and sale of stocks and shares are also undertaken.

**Family Savings Banks.** Apart from the extension of banking facilities which have proved so valuable a power for national development, the institution of Family Savings Banks in 1861 deserves special notice. Under that scheme the Bank receives at all its agencies deposits on drawing account, upon which it allows 2 per cent. interest on sums up to a limit of £100 Turkish, a facility of which the small depositor has not been slow to avail himself.

**Branches.**--The intimate relations maintained between the Ottoman Bank and the Government have not prevented due regard being given to the commercial requirements of the country, which have been supplied by the creation of branches. In 1863 there were only four, in 1883 fourteen. During the ensuing ten years that number was doubled. By 1908 fifty-four were in being, and to-day the Bank possesses more than eighty branches and sub-offices in the Near East. The following are the Egyptian branches: Alexandria (5, Mohd. Aly Square), Cairo (10, Shari el Manakh Mousky), Port Said, Mansurah, Minieh, Abou-Koukas, Mellawi and Ismailia. Each of these agencies

has a Savings Bank Department. Important branches are situated also in Cyprus, Iraq, Palestine, Greece, Persia and Tunisia.

**London Agency.** 26, Throgmorton Street, F.C. 2

**Paris Agency.** 7, Rue Meyerbeer

**Manchester Agency.** 56-60, Cross Street

**Cables.** -- "Ottobank" Alexandria

(See also illustration, page 26)

#### LLOYDS BANK LIMITED.

**Inception and Development.** Facing the origin and progress of an institution playing so fundamentally important a part in British and overseas financial operations as does Lloyds Bank is tantamount to outlining a history of banking itself. The inception of the establishment in its present form was the direct outcome of the passing of the Limited Liability Act of 1862, the Bank being inaugurated as a joint stock concern three years later, with the late Rt. Hon. Joseph Chamberlain among its original directors. A nucleus had been provided in the former private banking house of Lloyds & Co. (Birmingham Old Bank), founded exactly a century earlier, and which, under the provisions of the new Act, was now amalgamated with the Birmingham firm of Mollet & Sons.

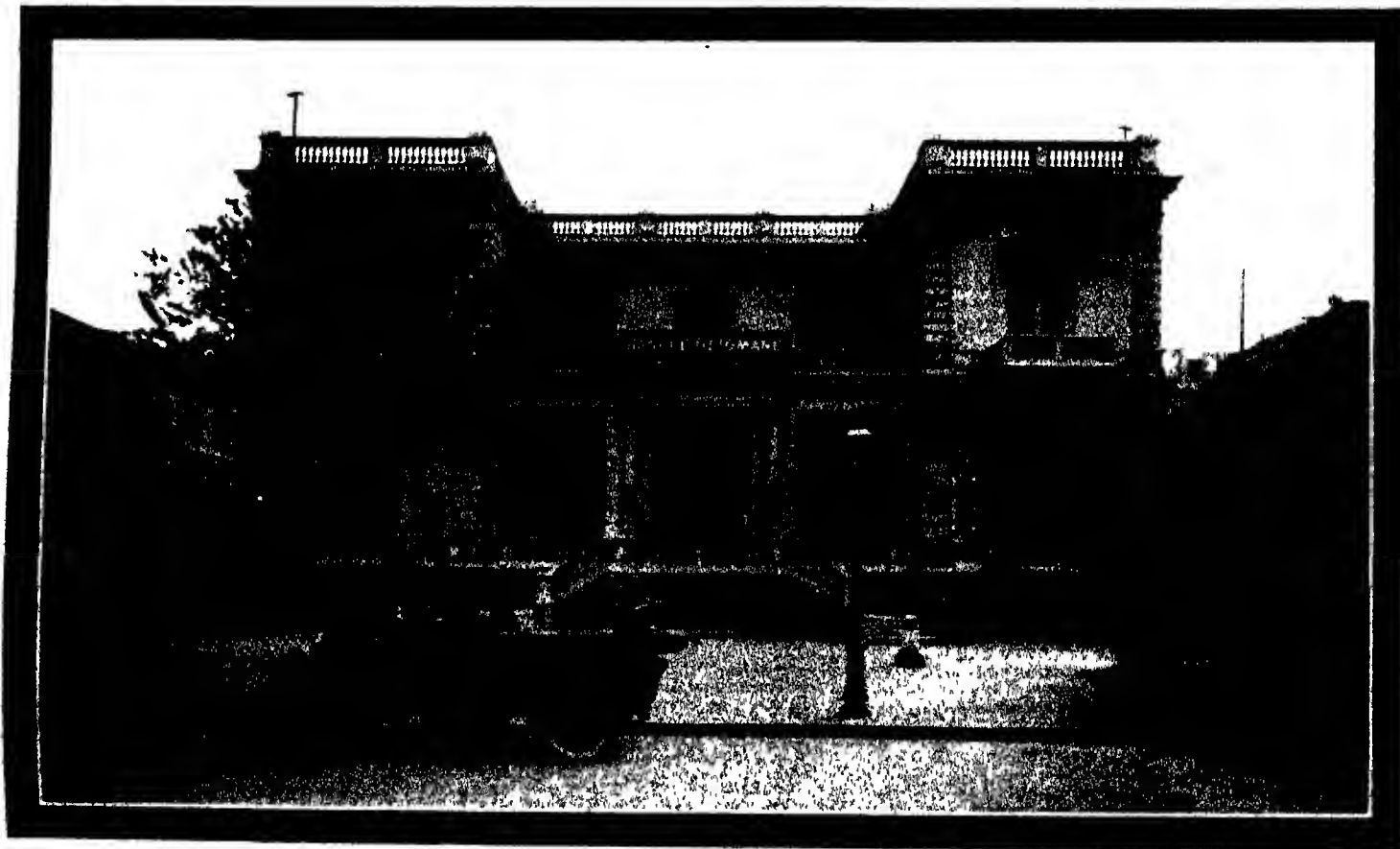
The process of absorption having commenced, eight other companies had been acquired when, in 1884, the taking in of Messrs. Barnett's Hoares & Co. and Bosanquet, Salt & Co. furnished Lloyds Bank with London offices. There now ensued an interval of four years, during which the relative control of town and country business was stabilised, then

amalgamation was recommenced, and year by year famous and long-founded private and joint stock concerns fell to the nod of this gigantic corporation. Particularly significant was the year 1918, during which the absorption of the Capital and Counties Bank gave Lloyds Bank 473 new branches, and a union of interests with the National Bank of Scotland and the London and River Plate Bank (since 1923 known as the Bank of London and South America, Ltd.) was sealed. Throughout the two generations that have elapsed since its foundation as a joint stock concern, 53 businesses have been incorporated with Lloyds the last two Messrs. Cox & Co., the Army Agents, and Henry S. King & Co., yielding up their individuality in 1923.

**Expansion Statistics.**--An index to the extraordinary development of Lloyds Bank Ltd. during the first sixty years of existence obtains in a comparison of the institution's resources at its foundation and at December 31, 1925. In 1865 the Bank's capital paid up totalled £143,415, in 1925, £14,372,956. The reserve fund in 1865 was £18,115, in 1925 £10,000,000. Deposit and current accounts, which in 1865 rested at £1,066,100, in 1925 figured at £37,178,515.

**Capital.** The authorised capital of the Bank on December 31, 1925, was £72,500,000 (consisting of 14,500,000 shares of £5 each), of which £14,372,956 was paid up. At an extraordinary general meeting held on February 24, 1926, it was decided to increase the capital to £74,000,000 by the creation of 1,500,000 new shares of £1 each, with 1,437,296 of such shares paid up in full.

**Operations.** Every branch of banking transaction is brought into operation by this



OTTOMAN BANK.  
The Office at Cairo.

world-wide organization. Current accounts are opened, deposits received at interest, and savings bank departments are available for small deposits. Securities are accepted for safe custody, coupons, dividends and pay warrants collected, foreign moneys exchanged, and periodical payments made. Purchases and sales of stocks and shares are effected, approved bills purchased, and circular notes, foreign currency drafts, telegraphic transfers and letter payments obtainable at the principal branches. The Bank has correspondents and agents throughout the world, and undertakes the agency of colonial and foreign banks, overseas business of all kinds, including the collection of foreign bills and cheques, and the issuing of world letters of credit. The institution is also prepared to act as executor and trustee of wills, trustee of settlements and of debenture stock issues, etc.

**Egyptian Activities.**—The business now conducted by Lloyds Bank in Egypt was commenced by Messrs Cox & Co., whose interests were subsequently merged into the institution now under notice, as has been indicated above. The first branch was opened at Alexandria in the autumn of 1910, to be followed a few months later by the establishment of a branch in Cairo, the rapid increase of business also making imperative the installing of several agencies in the provinces.

Branches are now in operation at Alexandria, Cairo (four offices), Ianta, Damahour, Mansurah, Mehalla Kehir, Fayyum, Wasta, Beni Suef, Lashu, Maghagha, Beni Mazat, Samahut, Minieh, Menut, Benha and Zagazig. In June 1925 business was still further extended by the fusion of the Egyptian branches of the Bank of British West Africa Ltd. with Lloyds Bank.

The Bank's chief establishment in Egypt is at Alexandria, employing a staff of 140 under the direction of Messrs T. R. Cole and F. Willing as joint managers.

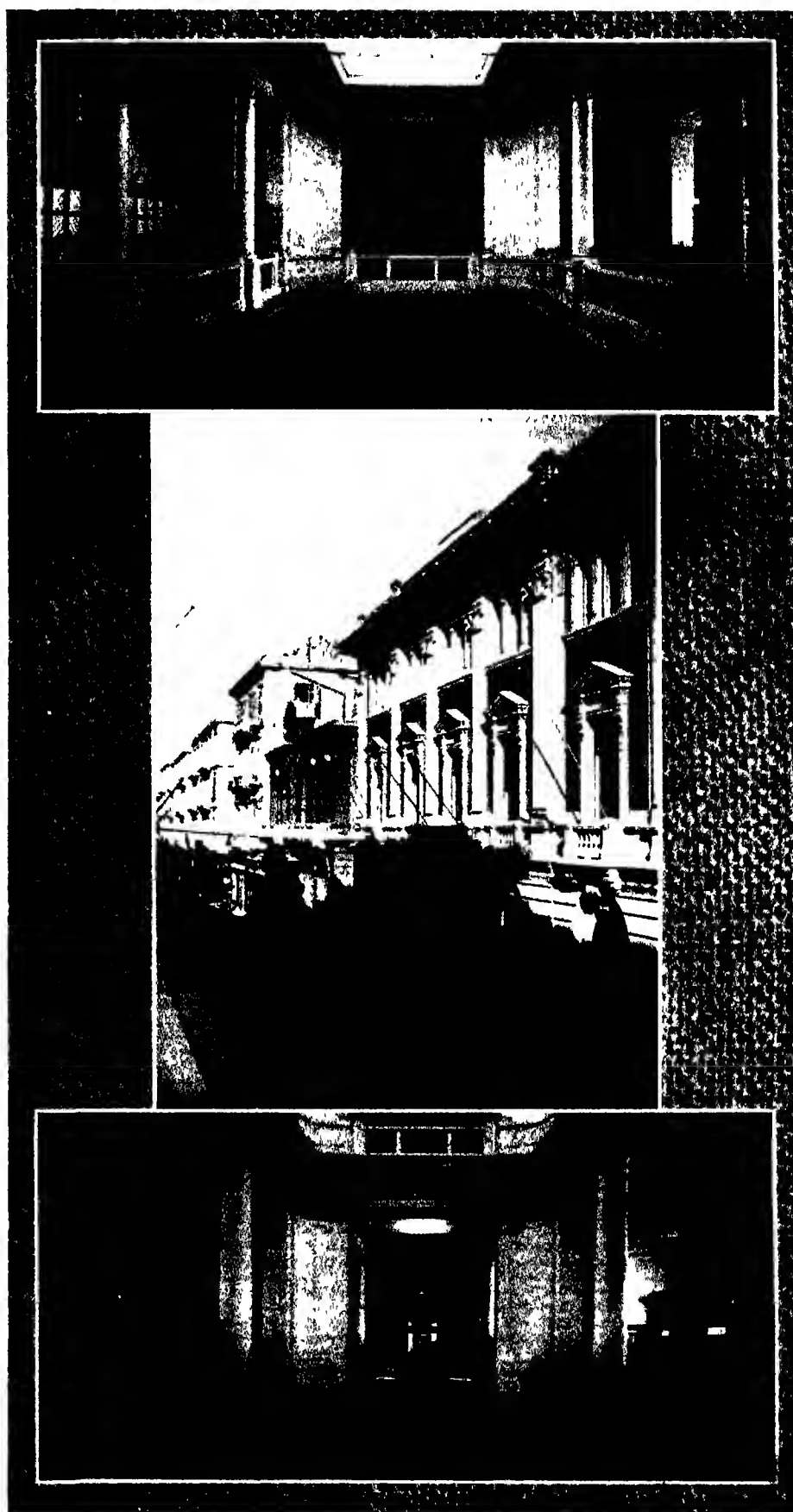
**Directorate.**—J. W. Beaumont Pease (chairman), Sir Austin E. Harris, K.B.E. (deputy chairman), J. H. L. Baldwin, C. F. Barnett, Henry Bell, the Hon. Robert H. Brand, C.M.G., F. R. Debenham, W. S. de Winton, J. H. Fox, Maj. J. W. Garton, R. C. Chapple Gull, G. V. Harvey, Sir Henry H. A. Hoare, Bt., the Rt. Hon. Sir Robert S. Horne, G.B.E., M.P., the Rt. Hon. Lord Inverforth, P.C., H. J. W. Jervis, Charles Ker, Sir H. Seymour King, K.C.I.L., C. F. Lloyd, M.P., Lt. Col. R. K. Morcom, C.B.E., P. E. Noble, W. W. Paine, Alwyn Parker, C.B., C.M.G., A. E. Pattinson, Sir Arthur F. Pease, Bt., D.L., Samuel Samuel, D.L., M.P., Oswald Sanderson, D.L., the Rt. Hon. the Earl of Selborne, K.G., P.C., G.C.M.G., H. B. Sim, Sir Edwin F. Stockton, E. D. Vaisey, Col. the Hon. F. Vernon Willey, C.M.G., C.B.E., M.V.O., Evan Williams, D.L., and the Rt. Hon. Viscount Younger.

**Head Office.**—42, Gracechurch Street, E.C. 3.

**Cables.**—"Coxia," Alexandria.

**Balance Sheet.**—The following was the balance sheet submitted on December 31, 1925:—

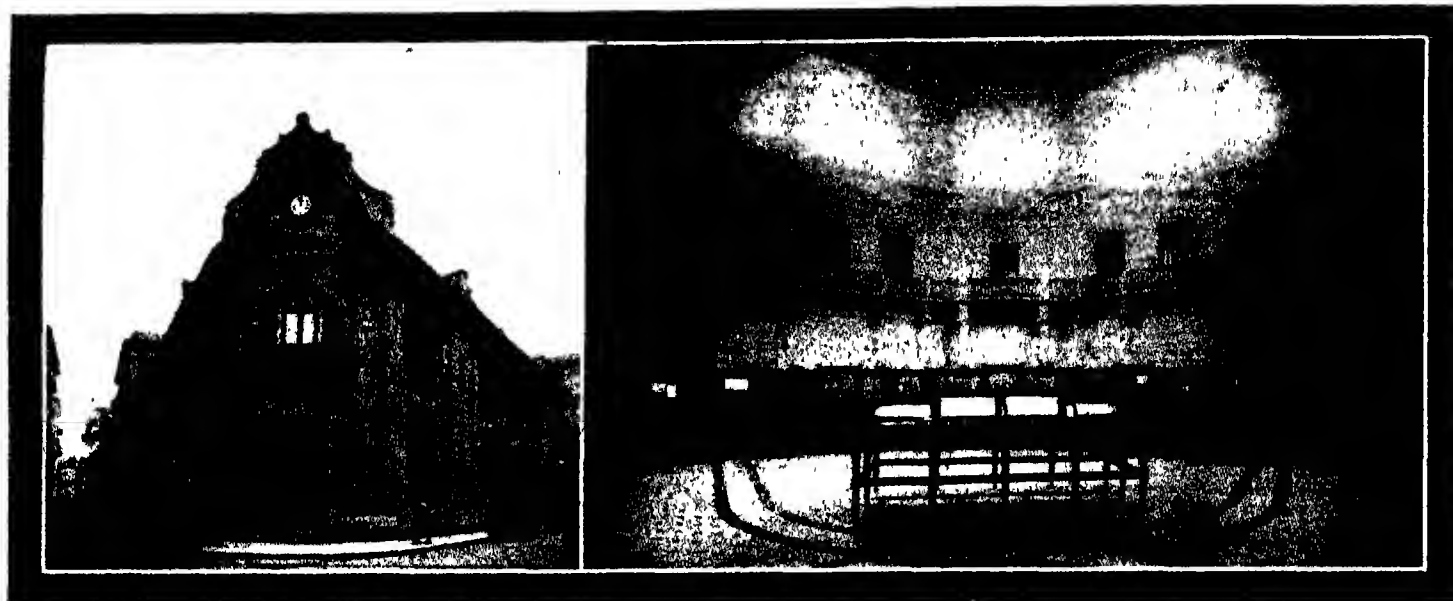
LIABILITIES			
Current, deposit and other accounts, including rebate of bills and provision for contingencies	£337,178,515	3	1
Acceptances, Endorsements, Guaranties, etc.	20,686,775	2	7
Capital paid up, viz., 14,372,956 shares of £5 each, £1 per share paid	14,372,956	0	0
Reserve Fund	20,000,000	0	0
Profit and Loss Balance	1,492,492	2	8
	£383,730,738	8	4



LLOYDS BANK LTD., Alexandria.

1. First Floor.
2. Head Office for Egypt.
3. Ground Floor.





1. The Premises at Cairo

## LLOYDS BANK LTD

(See also letterpress and illustration, pages 28-29)

2. The Banking Hall

ASSETS	
Cash in hand and with the Bank of England	£ 39,101,271 0 6
Balances with, and cheques in course of collection on, other Banks in the British Isles	12,147,323 15 10
Money at call and Short Notice	20,507,062 12 9
Bills of Exchange	41,024,120 19 0
Treasury Bonds and other Short-term British Government Securities	£ 35,775,857 18 2
Other British Government Securities of which £414,800, nominal, is lodged for public accounts	£ 14,684,011 8 4
Indian and Colonial Government securities, Corporation stocks, and other investments*	49,959,889 0 6
	3,762,763 13 5
	£ 107,102,440 17 0
The National Bank of Scotland Limited, £4,864,070 (nominal) stock (£1,070,095 8s 6d paid up) at £300 for each £110 paid up	2,918,442 0 0
Bank of London & South America Limited, 402,070 shares of £5 each (fully paid) at £8 10s 6d per Share	3,422,605 0 0
Lloyds & National Provincial Foreign Bank Limited 12,000 shares of £50 each (£20 paid up) at £20 per Share	240,000 0 0
Advances to customers and other accounts	183,330,725 14 4
Liabilities of customers for Acceptances, Endorsements, Guarantees, etc., as per contra	20,686,775 2 7
Bank Premises, at cost, less amounts provided for depreciation	5,729,659 14 5
	£ 383,730,738 8 4

\*Note.—There is a contingent liability for uncalled capital in respect of a portion of these investments

**Dividend.**—For the half year ended June 30, 1925, a dividend of 1s 8d per share, being at the rate of 10 2/3 per cent. per annum on the paid-up capital of the company, was declared. A sum of £250,000 was placed to the bank premises account, and one of £400,000 to the staff superannuation fund. Out of the balance of £1,492,492 it was decided to pay a final dividend, of the same amount as that just mentioned, for the half year ended December 31.

In terms of a resolution at the annual meeting on February 5, 1926, the issued capital was raised to £15,810,252 by the addition of £1,437,296

(See also illustration, page 29.)

**BANQUE BELGE POUR L'ETRANGER.**

**Inception.**—This Bank was registered in 1902 under Belgian Laws as the Sino-Belgian Bank, but on January 1, 1913, the name was changed to the present form. Affiliated with the Société Générale de Belgique it has its head office at 66, Rue des Colonies, Brussels.

**Capital.**—The capital of the institution is now Fr 100,000,000, and is fully subscribed. The reserve funds amount to Fr 32,000,000.

**Financial.**—The shares issued by the company stand normally at Fr 500, the shareholders' liability being limited to the amount subscribed. The Bank makes returns to the Commissioners of Inland Revenue as London bankers. The general balance sheet furnished on June 30, 1925, showing a highly satisfactory position, is given below.

Particulars of dividends disbursed over the last fourteen years are as follow: For the two years to 1912-13 a dividend of 5 per cent per annum was paid, for the five years to June 30, 1918, 14 per cent (actual), 1918-19, 7 per cent., 1919-20 and 1920-21, 9 per cent., 1921-22, 7 per cent. (less tax), 1922-23, 7 per cent. (tax free), 1923-24 and 1924-25, 8 per cent. (tax free).

**Operations.**—Every description of banking business comes under the purview of this important concern, which has correspondents in all parts of the world. In the United Kingdom it operates as agents for the Belgian Postal Cheque Service.

**Allied Banks.**—With this Bank the following institutions are allied: Wiener Bank-Verein, with branches in Austria, Hungary, Italy (Tyrol), Rumania and Yugo-Slavia; Allgemeiner Boehmscher Bank-Verein, Prague, with branches in Czecho-Slovakia; Société Générale de Banque en Pologne, Warsaw, with branches in Poland; Banco Internacional de Industria y Comercio, Madrid, with branches in Spain and Morocco; Banque Franco-Belge de Bulgarie, Soc. An., Sofia and Roustchouk, with affiliations in Plovdiv (Philippopolis) and Bourgas; Banque du Pays de Bosnie-Herzegovine, Sarajevo, with branches in Yugo-Slavia.

**Branches.**—The institution has established branches at London, Paris, New York, Braila, Bucharest, Constantinople, Hankow, Peking, Shanghai, and Tientsin, with the follow-

ing in Egypt: Cairo (45, Rue Kasr el Nil), and Alexandria (10, Rue Stamboul).

**Directorate.** Jean Jadot (chairman), Chevalier de Wouters (vice-chairman and managing director), Alexis van Damme, and Paul Ramlot (managing directors), Josse Allard, Edouard de Brabander, Hector Carlier, Baron F. Carton de Wiart, H. Dewez, A. Francois, E. Francqui, Baron Guffinet, Jules Jadot, H. le Bocuf and Paul Mayer.

**London Office.**—4, Bishopsgate, E.C.2

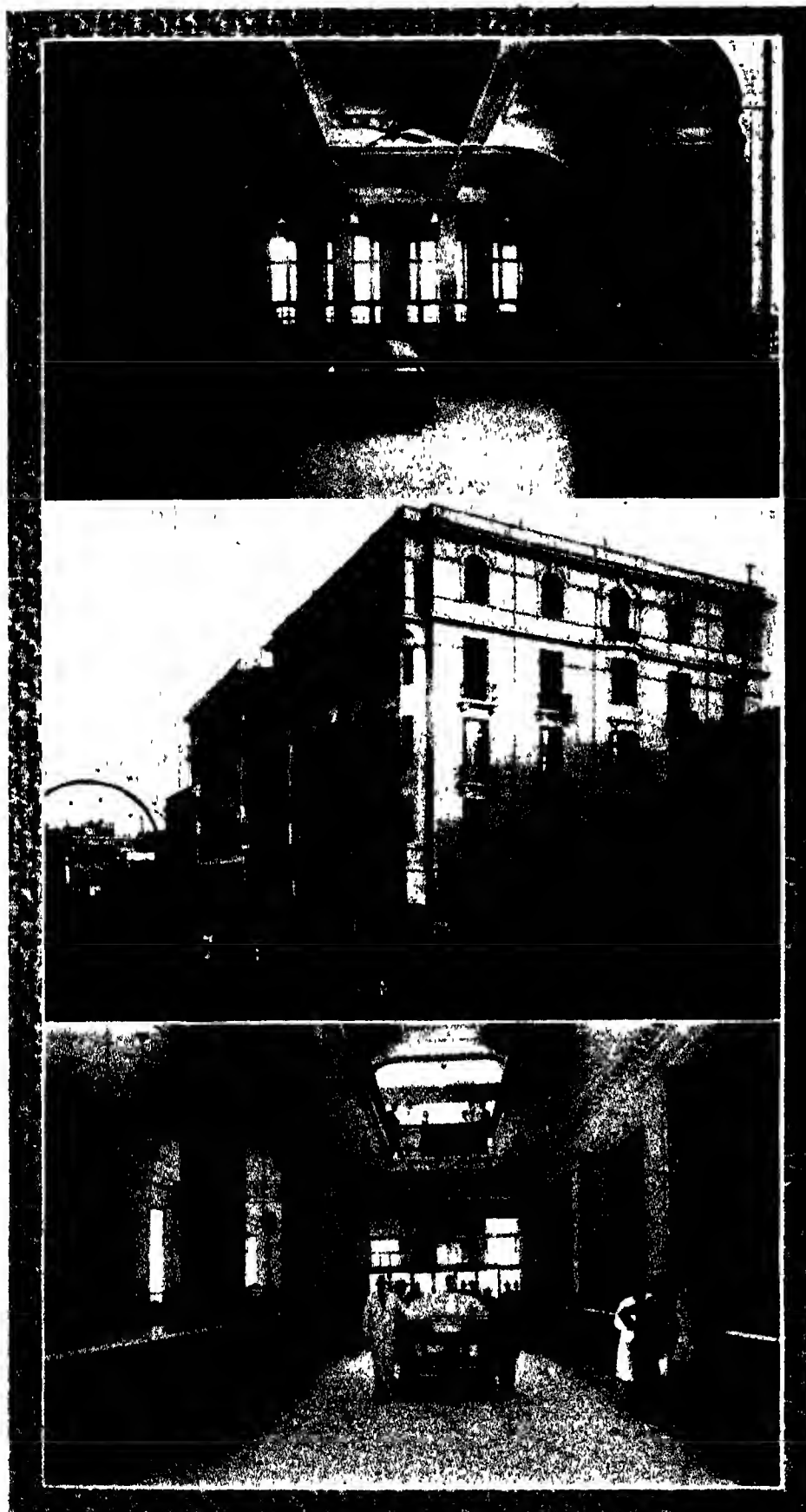
**Paris Office.**—12, Place de la Bourse

**Telegraphic Addresses.**—"Eglobe" for London, "Belgisch" for Paris, "Sino-Belge" for Brussels and for the remaining branches.

**Balance Sheet.**—The following was the balance sheet at June 30, 1925—

LIABILITIES		Fr
Capital subscribed	..	100,000,000
Capital	..	100,000,000
Reserves	..	28,000,000
Sundry creditors	..	771,901,986
Acceptances	..	
Head Office	246,800	
Branches	69,897,466	
	---	70,144,266
Obligations	..	4,500,000
Note issue in China	..	3,749,167
Profit and loss account	..	12,279,800
<b>Total</b>		<b>Fr 990,575,219</b>

ASSETS		Fr
Shareholders' liability	..	24,999,750
Cash in hand and with Bankers	..	132,165,468
Sundry debtors	..	492,468,448
Liability of customers on acceptances	..	70,144,266
Investments	..	
Government and Government guaranteed stocks	11,281,142	
Treasury bills	14,857,473	
Other securities	56,231,708	
	---	82,370,323
Financial participations	..	3,218,342
Bills receivable	..	171,965,565
Bank premises, etc.	..	13,243,037
<b>Total</b>		<b>Fr 990,575,219</b>



BANQUE BELGE POUR L'ETRANGER.  
1 and 2. Views of the Bank at Cairo.  
3. The Alexandria Office.

#### BARCLAYS BANK (DOMINION, COLONIAL AND OVERSEAS).

**History of Parent Bank.**— The inception of Barclays Bank Ltd., which constitutes the parent concern to that now under notice, may be traced back prior to 1729, in which year one Joseph Freame established a banking business at the corner of George Yard, Lombard Street, under the sign of the Spread Black Eagle. Seven years after this foundation the Barclay name became associated with the enterprise, when James, son of David Barclay, a Cheapside linen-merchant, entered into partnership with Mr Freame. The progressive qualities and acumen of the new comer were reflected in those of his kin who succeeded him, until, at the retirement of the last member of the Freame family from participation, the Barclays were in control of an organisation most soundly based and efficiently operated. In the Georgian era the attachment of Sylvanus Bevan and John Henton Tritton as partners gave the firm the style of Barclay, Bevan, Tritton & Co., subsequently to be modified to the present designation.

**Absorption.** After the Limited Liability Act of 1862, the process of absorbing other private or joint-stock banks, destined steadily to raise Barclays Bank Ltd. to its present proud eminence among the all-powerful financial strongholds of the country, soon developed. Prominent milestones on the path of amalgamation were the taking over of Spooner, Attwood & Co. in 1866, the Norwich house of Gurney & Co. about a generation later, and in 1911 the Stamford, Spalding and Boston Banking Co. The merging into Barclays Bank Ltd. of the Union Counties Bank in 1916 was followed two years later by the incorporation of the London, Provincial and South Western Bank. In November 1919 a union of interests was effected with the British Linen Bank and the Union Bank of Manchester, Ltd. Such are typical successive strokes in a boldly-conceived policy which gives this immense organisation a record of nearly two centuries of continuous development. At the present day the Bank has an authorised capital of £20,000,000, the issued and paid-up totalling £15,592,372, while the reserve fund stands at £6,250,000. Current, deposit and other accounts amounted on December 31, 1925, to £306,259,810. Among assets, cash in hand and with the Bank of England at that date reached a total of £45,672,882, bills discounted £32,028,847, investments £59,596,214, and advances to customers and other accounts, £153,028,485.

**Inception of Present Concern.**— The inception of the banking business now under consideration marks a stage in the amalgamating process just described. During 1925 the Colonial Bank, in which Barclays Bank Ltd. held a controlling interest, was re-incorporated by Act of Parliament, and thereunder changed its name to Barclays Bank (Dominion, Colonial and Overseas). The Colonial Bank originally had been incorporated by Royal Charter in 1836, and for many years confined its services to the West Indies. In 1916 and 1917 it obtained Acts of Parliament which enabled it to carry on business in any part of the world, in pursuance of which authorisation it extended its sphere of operations to British West Africa.

In November 1925 The Anglo-Egyptian Bank Ltd., which had been founded in 1864, was amalgamated with Barclays Bank (Dominion, Colonial and Overseas), and at the end of February 1926 the incorporation of The National Bank of South Africa Ltd., founded in 1891, was also completed.

**Capital.**—The authorised capital of the combined institution is £10,000,000, of which £6,975,500 is issued and subscribed, £4,975,500 being paid up, while the reserve fund now stands at £1,000,000. In addition to this reserve, there is an uncalled liability of £2,000,000 in respect of the 500,000 "B" shares of £5 each (£1 paid) held by Barclays Bank Ltd.

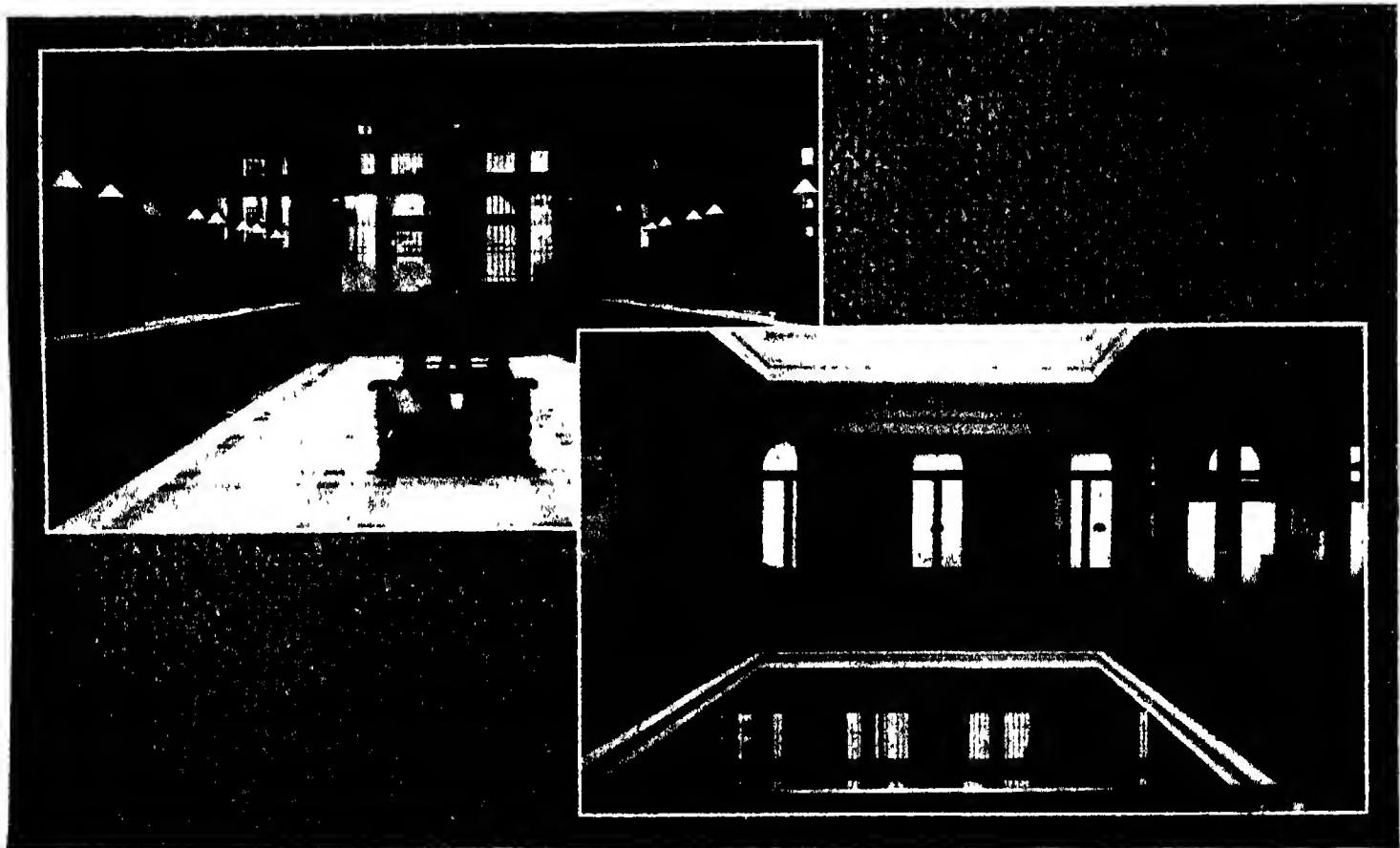
**Spheres of Operation.**—Barclays Bank (Dominion, Colonial and Overseas) operates in the West Indies and British Guiana, British West Africa, Egypt and the Sudan, the Transvaal, Rhodesia, Cape Province, Natal, Orange Free State, Swaziland Portuguese East Africa, South West Africa, Tan-

banking in Egypt and along the Mediterranean littoral. Owing to the polyglot nature of transactions in the big towns, all members of the staff speak several languages, those most in use being English, French, Greek, Italian and Arabic.

**Directorate.**—The chairman of the amalgamated bank is Mr Frederick Craufurd Goodenough, chairman of Barclays Bank Ltd, the deputy chairman being Sir Herbert Hambling, Bt, who holds a similar position in the parent institution. The following are directors of the bank: The Rt Hon. Earl Buxton, G.C.M.G., George Cyril Cassels, John Caulcutt, Raoul Hector Foà, Arthur Bevington Gillett, James Rankine Lusk,

**NATIONAL BANK OF SOUTH AFRICA LOCAL BOARD** James Rankine Lusk, C.M.G. (chairman and managing director in South Africa), John Emrys Evans, C.M.G. (vice-chairman), Alexander Arken, Sir Francis Drummond Percy Chaplin, G.B.E., K.C.M.G., M.L.A., Leonard Lme, Charles Maggs, James Benjamin Taylor, Henry O'Kelly Webber, and Walter Solomon Webber.

**ANGLO-EGYPTIAN BANK LOCAL BOARD** Raoul Hector Foà (chairman), John Edward Mounsey (deputy-chairman), William Nelson Bicket, Lt-Col G. Clifford M. Hall, C.M.G., C.B.E., D.S.O., Maj-Gen Sir A. W. Money, K.C.B., K.B.E., C.B., C.S.I., and Emil Pusch.



BARCLAYS BANK LTD. (DOMINION, COLONIAL AND OVERSEAS), Alexandria.

1. The Ground Floor of the Bank.

2. View of the First Floor

(See letterpress, page 31.)

ganyika, Nyasaland, Kenya Colony, Malta, Gibraltar, Palestine and Mauritius.

**Egyptian Activities.**—Barclays Bank (Dominion, Colonial and Overseas), as was the case with the Anglo-Egyptian Bank for years past, acts as bankers for the British Army and Navy at those branches where such services are required. The utmost facilities are provided for all commercial transactions, the financing of the cotton crop in particular having been brought to a fine art. The Bank possesses two of the best-situated warehouses in Minet-el-Bassal, the cotton centre of Alexandria, and handles about one-third of the Egyptian crop in a normal season. In a word, Barclays Bank (Dominion, Colonial and Overseas) stands for efficient dealing in all departments of

C.M.G., John Edward Mounsey, Sir William Edgar Nicholls, Edmund Henry Parker, LL.D., Emil Pusch, Sir Harold Edward Snagge, K.B.E., Herbert Leslie Melville Tritton, James Tuke, and Charles Frederick Wood.

**Local Boards.**—**COLONIAL BANK LOCAL BOARD** Charles Frederick Wood (chairman), Sir Robert Rutherford (deputy chairman), Ernest Hyslop Bell, George Cyril Cassels, Sir Edward Davson, Thomas Du Buisson, Sir Herbert Hambling, Bt, Charles Henry Hewett, Oliver Vaughan Gurney Hoare, the Rt. Hon. Sir Fredk. John Dealtry Lugard, G.C.M.G., C.B., D.S.O., Herbert Leslie Melville Tritton, the Rt. Hon. Lord Wargrave, and Col. Charles William Sofer Whitburn.

**NATIONAL BANK OF SOUTH AFRICA LONDON COMMITTEE** Charles Frederick Wood (chairman), A. C. Duff, Arthur Bevington Gillett, and James Tuke.

**Head Office.**—54, Lombard Street, London, E.C.3. Cables: "Barcladom—Stock," London.

Four additional offices have also been established in London, viz., 37-39 King William Street, E.C.4, Circus Place, London Wall, E.C.2, 29 Gracechurch Street, E.C.3, and 111 St. Martin's Lane, Trafalgar Square, W.C.2.

**Other Offices.**—Liverpool: 25 Castle Street; Manchester: 21 York Street; Hamburg: Adolphsplatz 4; New York agency: 44 Beaver Street.

**BANCO ITALO EGIZIANO.**

**Inception.**—This Bank was constituted as a "Société Anonyme Egyptienne" in June, 1922, in order to absorb the Egyptian group of the Banco di Roma. The title borne at its inception was the "Banco di Roma per l'Egitto e il Levante," but when, after two years had elapsed, important interests in the institution were acquired by the "Credito Italiano" and the "Banca Nazionale di Credito," the name was changed to its present form. The Bank now under notice is thus actually the product of three great Italian corporations, the "Credito Italiano," the "Banca Nazionale di Credito" and the "Banco di Roma" and the resources so placed at its command enable the institution, in developing the advantages offered to clients, effectively to further the consolidation of Egyptian financial and economic affairs.

**Capital.** The capital of the institution is £F 975,000, with reserves totalling £F 10,000.

**Operations.** All classes of banking business are transacted by the Banco Italo Egiziano, which is prepared to open current accounts, make advances on goods (especially cotton), approved bills and securities, and issue letters of credit. The collection of coupons and bills, purchase and sale of stocks and shares, and safe custody of valuables are among other services available to clients.

**Head Office.**—The head office, which constitutes the centre of control, is situated at Alexandria.

**Branches.**—The business handled by the Bank has necessitated the creation of agencies throughout the country. The principal branch is in Cairo, and other agencies are now in operation at Benha, Beni-Mazar, Beni Suef, Fayyumi, Mansurah, Minieh, Mit-Ghaur and Tanta.

**Directorate.**—The Board is composed of the following prominent men, most of whom occupy positions on the directorates of the three Italian corporations participating in the institution now under review. Gr. Off. Carlo Feltrinelli (administrator of the Credito Italiano), president, Hon. Francesco Boncompagni Ludovisi, Prince de Bombino (president of the Banco di Roma), vice-president, Gr. Off. Domenico Giloni (president of the Banca Nazionale di Credito), vice-president, H. E. Mohamed Pacha Chaheek, Gr. Off. Carlo Orsi (managing director of the Credito Italiano), Comm. Dr. Osvaldo Riso (director of the Banco di Roma [France]), Comm. Mario Solza (managing director of the Banca Nazionale di Credito), Comm. Arrigo Stoffel (central manager of the Credito Italiano), Gr. Off. Avv. Vittorio Carlo Vitali (managing director of the Banco di Roma), Comm. Emilio Wirz (managing director of the Banque Italo-Française de Crédit).

**General Management.**—The general manager is Comm. Grisante Vannucci, with Dr. Chev. Off. Enrico Biagi as co-general manager.

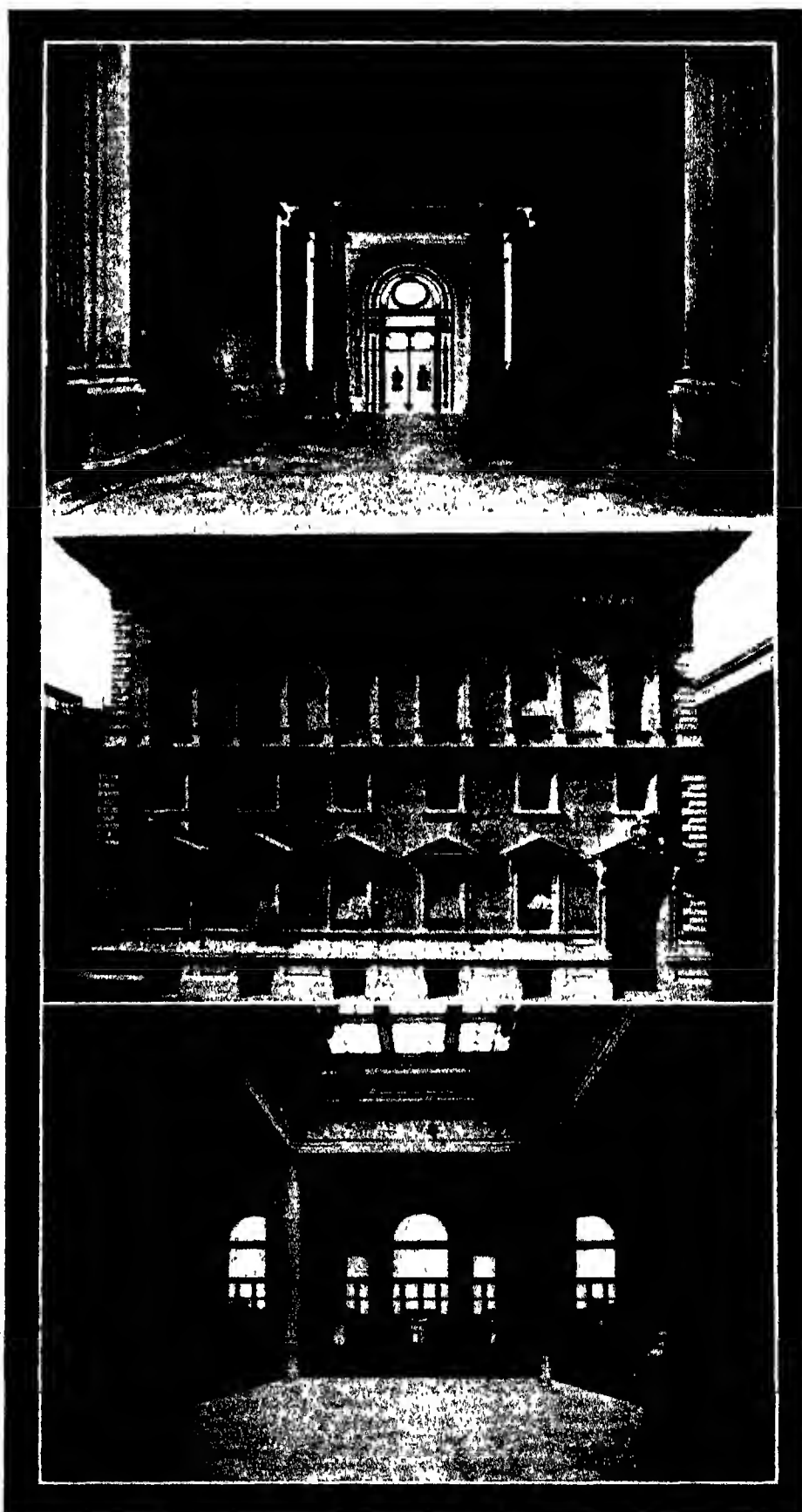
**Auditors.**—Mr. Harold Bridson, Dr. Cesare Quario and Dr. Giulio Carmignato.

**Cables.**—"Italegi," for all branches.

**Balance Sheet.**—The balance sheet, showing the position of the Bank's affairs at December 31, 1925, was as follows:

	LIABILITIES	£F.
Capital	.. .. .	975,000 000
Reserve fund	.. .. .	10,000 000
Current and deposit accounts	.. .. .	1,913,909.814
Banks and Correspondents	.. .. .	1,468,424.472
Sundry creditors	.. .. .	252,496.982
Profit and loss account 1924	.. .. .	12,702.142
Profits of the year	.. .. .	39,527.196

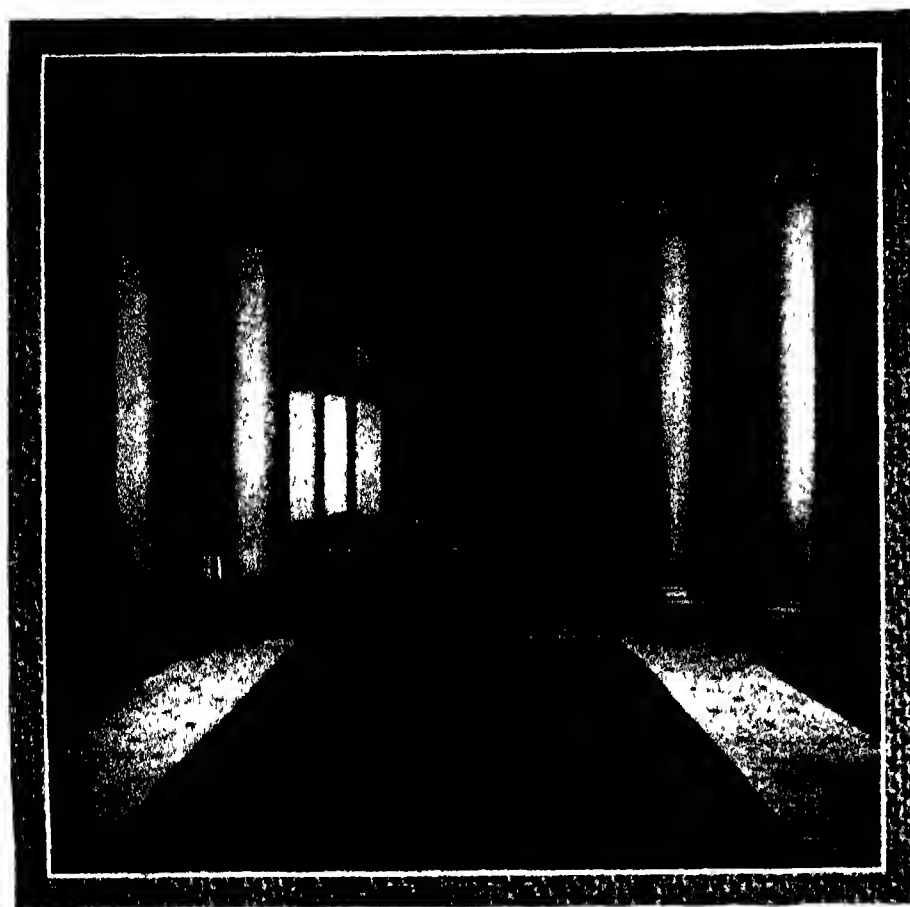
£F 4,672,060.606



**BANCO ITALO EGIZIANO.**

1. Entrance Hall.
2. The Bank at Alexandria.
3. The Banking Hall.

(See also illustration, page 34.)



BANCO ITALO EGIZIANO Manager's Office at Cairo Branch.

ASSETS	£F
Shareholders' liability	487,500 000
Cash in hand and with bankers	345,794 225
Correspondents	636,506 504
Portfolio for Egypt	516,891 944
Value of property	38,301 781
Financial participations	240,870 052
Guaranteed current accounts	1,870,826 305
Sundry current accounts	259,724 738
Real estate	141,192 112
Sundry debtors	126,946 885
Furniture, sales, etc.	7,500 000

£E 4,672,060 606

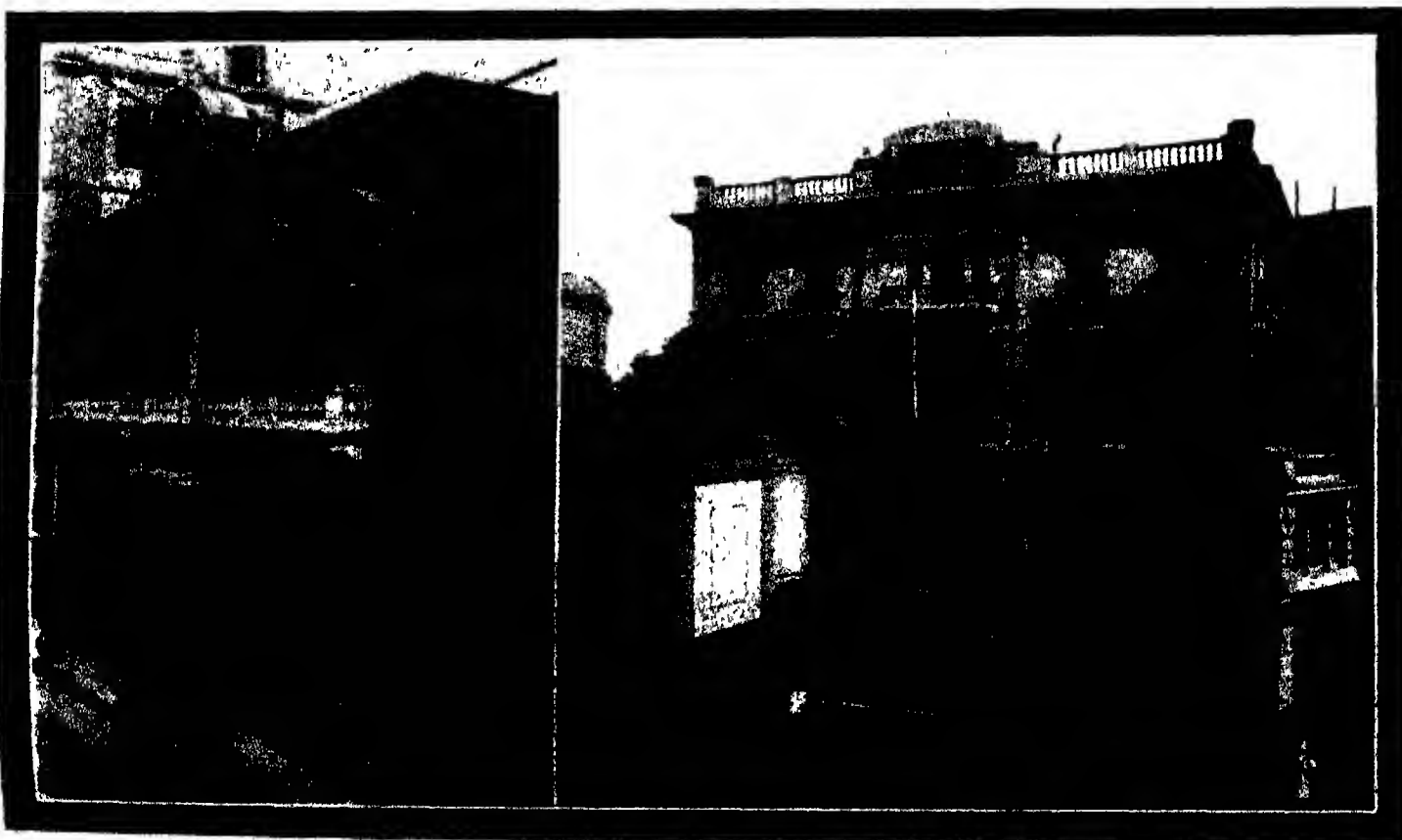
(See also illustration, page 33)

**BANQUE D'ATHÈNES.**

**Inception.**—This Bank, which was established as a limited company in 1893, speedily won an important position as a financial institution throughout the mainland and the isles of Greece. The head office is at Athens.

**Capital.**—The capital now stands at Drs 72,000,000, fully paid, with reserves totalling Drs 34,000,000.

**Operations.**—All departments of banking business are conducted by the Banque d'Athènes with efficiency and despatch. Bills are discounted and collections made in Greece and abroad, foreign currencies purchased and sold, letters of credit issued, and transfers arranged by post or cable. The Bank also opens documentary credits, accepts stock as deposit, buys or collects coupons and gathers the values matured, executes Stock Exchange commissions, receives without charge subscriptions, and effects any transaction in stock. Advances are made on goods and bills of lading, also on shares, bonds and securities, current



1. The Office at Alexandria.

BANQUE D'ATHÈNES.

2. Branch at Cairo.



accounts are opened and deposits received at sight or at term in drachmas or foreign currencies. A system of safes offering secure custody is at the disposal of clients. The Bank has correspondents throughout the world.

**Branches.** — The institution possesses branches in the country of its origin at the Piræus, Patras, Volo, Salonica, Cavalla, Janina, Calamata, Isle of Crete (Candia, Canca, Rétimo), Corfu, Chios, Lemnos, Mityleni, Syra, Samos (Vathy and Carlovassili), and at 45 other towns in Continental Greece and the Isles.

Overseas branches are established at London, New York and Boston, in Cyprus at Limassol and Nicosia, and in Egypt at Alexandria (now in existence for just thirty years, address, 25, Rue Cherif Pacha), Cairo and Port Said. For these Egyptian agencies, M. Marius Lascaris has been appointed delegate-director.

**Directorate.** J. Comidounotis (president), L. Gouffray and G. Aycroff (vice-presidents), J. Bonnier (delegate-director), M. Lascaris, I. Eugendi, I. Zarihi, P. Carapiano, G. Nicolaïdis, Baron A. De Neutze, J. Politis, E. Rodocanachi, and C. R. Wehrung General Manager, John C. Phasco.

**Cables.** "Bancathén."

**London Office.** 22, Fenchurch Street, E.C. 2.

**New York Office.** 25, Pine Street.

**Boston Office.** (Athens Bankers Corp.), 16, State Street.

#### CREDIT FONCIER EGYPTIEN.

**Inception.** — This company, founded on January 1, 1880, was authorised as a "société anonyme égyptienne" by décret issued on February 15 of the same year, with the right to operate for a period of 90 years.

**Capital.** The authorised capital of the company is Fr 200,000,000, equivalent to £7,715,000, of which one-half is paid up. This capital is divided into 400,000 shares of Fr 500, made out to bearer, in respect of each of which Fr 250 have been paid. The company's obligatory capital on October 31, 1925, reached £23,320,838 (equivalent to Fr 604,558,336 at tariff), to be divided in the following manner:

181,850 3 per cent lottery bonds (1880 issue) to bearer at Fr 250 (drawings monthly), redeemable at par until 1936, these bonds to carry interest at Fr 7 50, payable in May.

326,273 3 per cent lottery bonds (1903 issue) to bearer at Fr 250 (drawings monthly), redeemable at par until 1953, these bonds to carry interest at Fr 7 50, payable in May.

185,521 3 per cent lottery bonds (1911 issue) to bearer at Fr 250 (drawings monthly), redeemable at par until 1961, these bonds to carry interest at Fr 7 50, payable in February.

358,207 3 per cent bonds, without lottery, to bearer at Fr 500, redeemable at Fr 500 by drawings in May and November each year until 1978, these bonds to carry interest at Fr 15, payable in January and July.

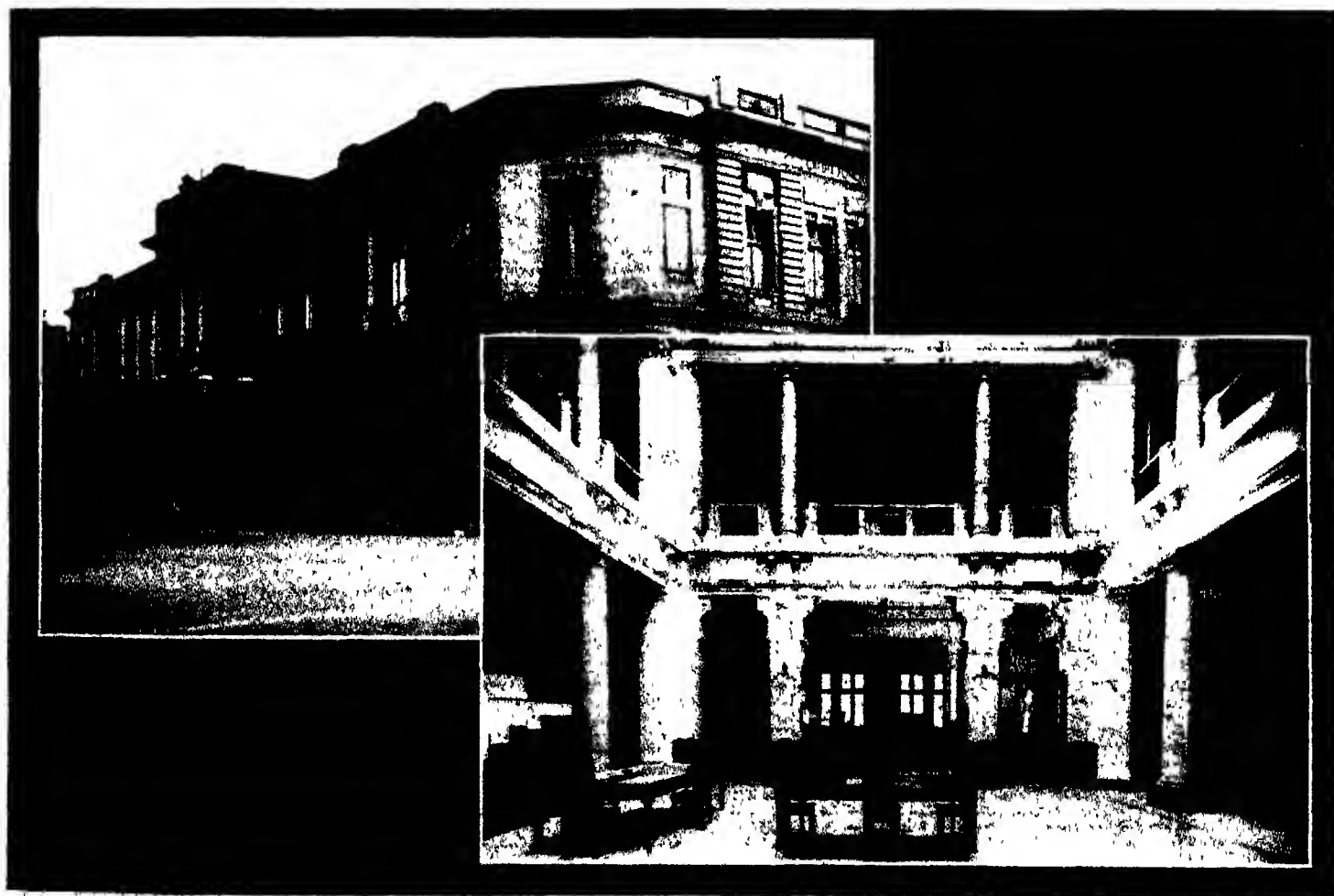
411,201 3½ per cent bonds, without lottery, to bearer at Fr 500, redeemable at Fr 515

by drawings in February and August each year until 1978, these bonds to carry interest at Fr 17 50, payable in April and October.

282,490 4 per cent bonds, without lottery, to bearer at Fr 500, redeemable at Fr 500 by drawings in April and October each year until 1978, these bonds to carry interest at Fr 20, payable in June and December.

**Operations.** The essential purpose for which the company was created was the advancing of loans on mortgage to city or country landowners in Egypt. It is also empowered to grant loans in Egypt to provinces, municipalities, syndicates depending on the Government and possessing special authorisation similarly to syndicates independent of Government control, as well as to hospitals, public establishments and companies holding concessions for public services. In all these cases the loan may be with or without mortgage. The company is authorised to acquire mortgage debts to open current accounts on mortgage or on security, and to discount values guaranteed by securities. The Board is composed of from twelve to nineteen members, each to possess 100 non transferable shares. The ordinary general meeting, held at Cairo in January, can only be attended by holders of not less than 50 shares or their representatives. The general inventory is made out on October 31 of each year.

**Financial.** — The company's reserves amounted on October 31, 1925, to Fr 4,004,620. At that date mortgage loans (capital still due) reached a total of



1. Head Office Cairo.

CREDIT FONCIER EGYPTIEN.

2. Entrance Hall.

£E.16,855,369, with the portfolio figuring at £E 14,537,201

From the net profit was deducted 6 per cent interest in respect of share capital. The balance was then disposed of as follows: 10 per cent. to constitute a reserve fund equal to half the capital of the Company, 5 per cent to the Board, 15 per cent to the 2,000 founders' shares, and the remaining 70 per cent to shareholders' dividend. The general meeting was given the power to deduct from this 70 per cent, if thought necessary, a sum to constitute an extraordinary reserve.

**Loans.**—From the date of its creation until October 31, 1925, the Crédit Foncier Egyptien negotiated 20,840 loans for a total amount of £E 82,997,456. On this capital the company recovered by way of regular redemption of loans and by anticipated repayments, since the beginning of its operations, a sum of £E 66,142,087. The balance of capital remaining due on October 31, 1925, was therefore £E 16,855,369, which it was permissible to divide into the following categories:—

Country loans	..	£E 14,064,225
City	"	1,748,162
Mixed	"	1,022,992

£E 16,855,369

These loans could be further grouped according to their duration as follows:

Under 10 years	..	£E 221,228
From 10 to 20 years	..	7,277,616
" 21 " 30 "	..	4,879,660
" 31 " 50 "	..	4,476,865

£E 16,855,369

The following were the receipts, together with the balances of profit (shown in parentheses), for the ten years from 1916 to 1925:

1916	£E 1,695,192,143	(£E 432,542,929)
1917	£E 1,810,540,399	(£E 538,626,922)
1918	£E 1,976,302,161	(£E 702,529,346)
1919	£E 2,018,763,843	(£E 723,174,885)
1920	£E 1,999,952,615	(£E 724,074,025)
1921	£E 2,049,293,696	(£E 690,095,669)
1922	£E 2,034,313,973	(£E 678,180,522)
1923	£E 2,029,203,964	(£E 699,971,404)
1924	£E 2,032,295,632	(£E 700,637,568)
1925	£E 2,022,808,018	(£E 700,690,139)

The dividends disbursed over the same period were as follow:—

1916	PT 92	1917	PT 110	1918	PT 120
1919	PT 130	1920	PT 130	1921	PT 136
1922	PT 136	1923	PT 140	1924	PT 140
1925	PT 140				

**Directorate.**—F. Miriel (president), R. Rolo, B. Boyer, Comte Ch. de Sénonne, M. Lascaris, G. Griolet, H. Naus Bey, H. E. Adly Pacha Yeghen, Baron G. Buncard, Sir Bertram Hornsby, C. H. E. Talaat Harb Bey, J. Simon, and M. Vincent (general manager). Secrétaire général, E. Mmost, sous-directeur, Y. Roche. Auditors nominated by the shareholders, F. Papasian and H. Bonnet.

(See also illustration, page 35.)

#### THE LAND BANK OF EGYPT.

**Inception.**—The foundation of this Bank as a limited liability company was authorised by Khedivial decree of January 10, 1905, with the right to operate for a period of 99 years. The head office is at Alexandria.

**Capital.**—The capital of the institution is £1,000,000 sterling, of which £975,000 is represented by 195,000 ordinary shares of £5 each, and £25,000 by deferred shares of the same value. The reserve fund totals £392,843.

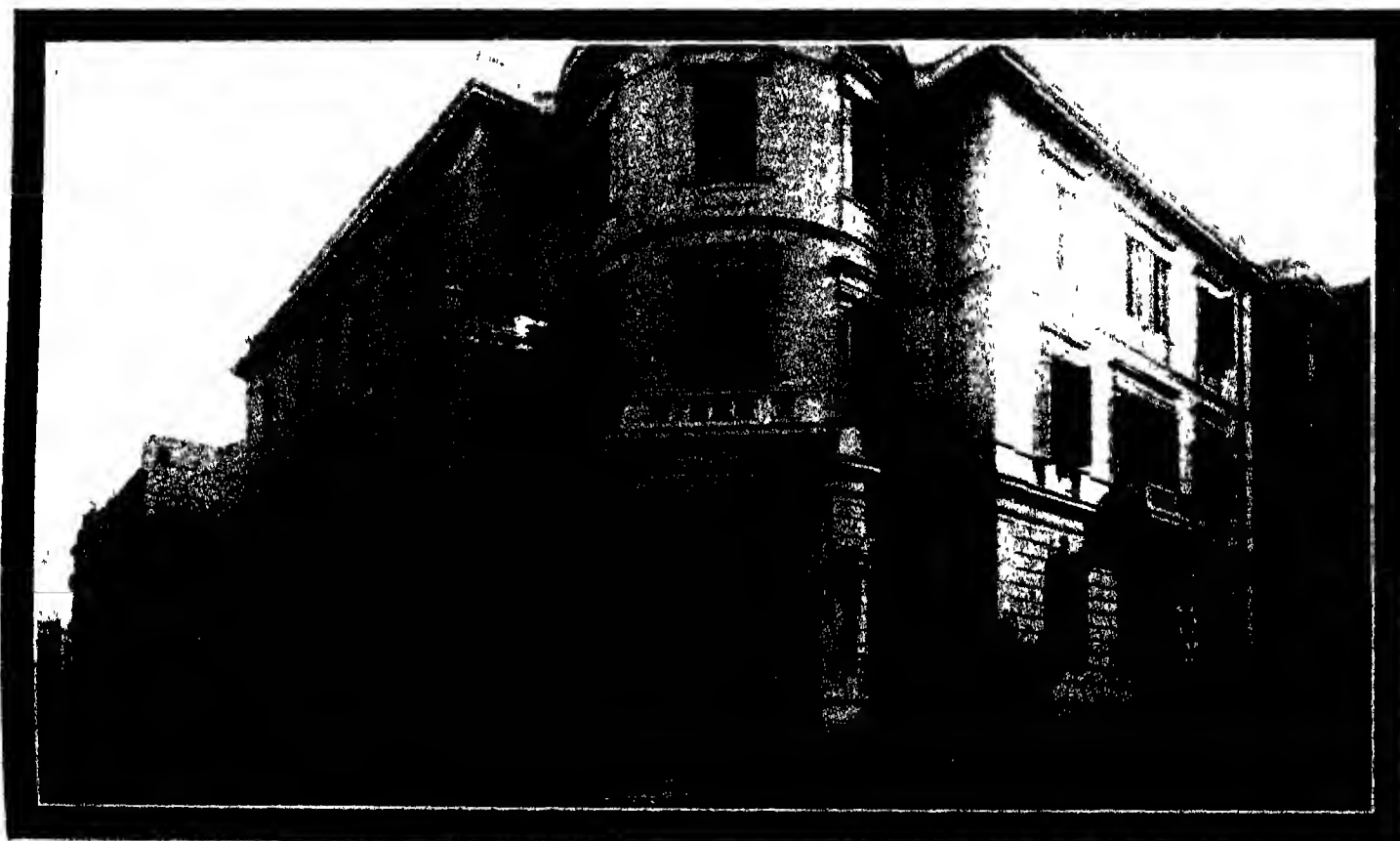
**Operations.**—The essential object for which the Bank was promoted was the granting

of loans on mortgage, repayable either at long or short terms and with optional redemption, to owners of estates in Egypt. It is authorised also to purchase mortgage debts, and to open current account credits on mortgages. To meet the annual requirements of cultivators and landowners the institution is prepared to advance cash on a non-mortgage basis, within the value of the profits yielded by the land, likewise to cash their bills to order against endorsement. It also receives deposits at or without interest.

**Loans.**—According to the annual report presented by the directors on December 1, 1925, the Bank had negotiated, since its foundation up to the end of the financial year then concluded, 3,769 redeemable loans and 561 sales of real estate, also redeemable, amounting to £E 12,275,229 with anticipated redemptions totalling £E 5,313,354. The sum of loans and redeemable sales was, on September 30, 1925, £E 3,636,501, and the total amount of mortgage loans granted up to the same date £E 3,685,416. The number of current accounts on mortgage opened by the Bank since its inception was 62, involving a capital of £E 627,422, and the entire mortgage transactions during that period reached the total of £E 3,787,514.

**Directorate.**—Richard Abdy (president), Péricles Zarif (vice-president), le Comte Charles de Lasteyrie, Edouard Cazalet, René Julien Labruyère, René Ismaïlun, Michel Salvago, S. Wellhoff, and Edouard Bouire (manager). Four of the directors, the vice-president, the Comte Charles de Lasteyrie, and MM. Cazalet and Labruyère, form a Paris committee. General secretary, A. Delprat, assistant manager, Farid Bichara, auditors, H. Pougny, J. Sôho and Ch. Mazet.

**Cables.**—"Aradi," Alexandria



THE LAND BANK OF EGYPT  
Head Office at Alexandria

**Balance Sheet.**—The balance sheet under date September 30, 1925, was as follows:—

LIABILITIES	£F
Capital .. .. .	975,000,000
Reserves and provisions ..	586,557,632
Provision for equalisation of dividend ..	29,989,199
Profit brought forward from redemption of bonds ..	899,124,558
Obligations ..	2,141,881,737
Sundry depositors ..	50,370,293
Provisional retention of loans ..	132,609,905
Dividends, coupons, and redeemable bonds not claimed ..	20,897,027
Sundry creditors ..	49,816,391
Creditors for recovery of mortgage debts ..	130,977,500
Interest due but not drawn ..	22,184,591
Interest and sundry sums for next financial year ..	63,341,429
Bonus 1923-24 carried forward to new account ..	659,375
Profit and loss balance ..	204,425,335
	£E 5,321,834,972

ASSETS	£F
Cash in hand and with bankers ..	57,918,351
Securities forming statutory reserve ..	3,782,500
Securities against four per cent bond issue ..	447,794,260
Securities against provision for equalisation of dividend ..	20,961,262
Advances at short term ..	18,130,178
Mortgage loans ..	4,322,608,155
Real estate acquired by expropriation ..	97,976,037
Company's real estate ..	22,000,000
Real estate sales in course of regularisation ..	54,601,454
Securities placed on deposit ..	50,456,551
Debts recovered on account of a third party ..	139,977,500
Sundry debtors and accounts ..	20,088,474
Interim dividend (financial year 1924-25) ..	47,531,250
	£E 5,321,834,972

**BANCA COMMERCIALE ITALIANA PER L'EGITTO.** Egyptian limited company authorised by Royal decree of May 1, 1924. Paid up capital, £E 500,000, subscribed capital, £E 1,000,000. Head office and administration at Alexandria, branches at Cairo and Mansurah, agencies at Beni-Mazar, Beni-Suef, Dammanhour, Mehalla Kebir, Mimih and Zagazig, and sub-offices at Abou-Kourkas, Bibeh, Bouch, Deirout, Dessouk, Fashn, Mellawi, Mimih El-Gamh and Wasta. Administrative Council: S.E. Gr. Uff. Dr. Silvio Crespi (president), S.E. Gran Cordone Yehia Pacha Ibrahim (vice-president), S.E. Gran Cordone Ettore Conti, Conte Enrico di San Martino, Lodovico Toepfitz and Comm. Renato Angelini. General manager, Cav. Dottor Raoul Lusena. Cables "Comitegit."

**BANK OF ABYSSINIA.**—Founded in 1905. Hon. President, H.M. The Empress of Abyssinia. Capital £500,000 in shares of £5 each, of which one-quarter is paid up. Head office at Addis Ababa, head office in Egypt at Cairo, near to the National Bank of Egypt; agencies at Dire Dawa, Gore and Dessieh. Administrative council: S.A. Kas Tafari; the Governor of the National Bank of Egypt (president), the Governor of the Bank of Abyssinia (vice-president), S.E. the Fitaurari Hapte Ghiorghis, A. Ambron, E. Miriel, H. Naus Bey, Sir F. Rowlett, K.B.E., M. C. Salvago and L. Suarès.

**BANQUE MISR.**—Egyptian limited company founded by Sultanial decree of April 3, 1920. Head office: 15 rue Cheikh Abou

El-Sebaa, Cairo. Alexandria office: rue Toussoum. At Minet El-Bassal there are a warehouse and a bureau at the Bourse. Branches are established at Mousky, Mimih (with sub-agencies at Maghaga, Beni-Mazar, Deirout and Mellawi), Tantah, Mansurah, Benha, Mehalla Kebir, Mit Ghami, Simbellawem, Zagazig and Chebin El Kom. All Egyptian and foreign banking business is transacted. Cables "Banisr."

**BANQUE D'ORIENT.**—Limited company, founded in 1905. Head office and administrative council at Athens. Capital: Frs 35,000,000, in shares of Frs 125 fully paid. Branches at Alexandria, Cairo, Salonica, Mitylene, the Piræus and Cavalla, agencies at Serres and Zagazig. Alexandria branch: 17 rue Stamboul (manager, L. Rodocanachi, assistant manager, B. E. Pavlidis). Cairo branch: 17 rue Emad el Dine (manager, C. B. Georgiades, assistant manager, N. D. Drakidis).

**COMMERCIAL BANK OF THE NEAR EAST LTD.**—Limited company, with central office in London (1, London Wall Buildings, 1st C 2) and branches at Alexandria and Constantinople. Authorised capital, £200,000, of which £184,345 is paid up. Cables "Esteneirago." This institution is associated with the Banque Commerciale de Grèce, which has its central office at Athens, 22 branches in the principal Greek towns and one at Alexandria (5 rue Stamboul).

**COMPTOIR NATIONAL D'ESCOMPTE DE PARIS.** Limited company founded in 1880. Capital: Frs 250,000,000, fully paid up. In Paris are situated the head office, a branch, 44 auxiliary and 15 suburban offices. Foreign branches established at London, Liverpool, Manchester, Brussels, Monte Carlo, St. Sebastian, Alexandria (11 rue Cherif Pacha, general manager, J. Desvermors), Cairo (rue El Maghaby, manager, H. Pougny), Port Said (manager, C. Adele), and in Tunisia, the Indies, Australia, Madagascar, etc. Administrative council: Paul Boyer (president), Jules Rostand (vice-president), E. Llewellyn, Alfred Bechman, Robert Jameson, O. Lem, Alexandre Celier, M. Lewandowski, Joseph Nand, Simon Stanislas E. Sommer, and Alex. Vacherie.

**CREDIT LYONNAIS.**—Founded in 1863. Capital: Frs 250,000,000, in 500,000 shares of Frs 500 each, fully paid. Reserves total Frs 225,000,000. Head office, Lyons, central office, Paris. Branches in all the principal towns of France. Foreign branches established at Alexandria (4 rue Cherif Pacha, manager, J. Adoue), Cairo (rue El-Bosta, manager, H. Beer), Port Said (rue du Commerce, manager, R. Pely), Jerusalem, Barcelona, Brussels, Constantinople, Geneva, London, Madrid, Seville, Smyrna, Valencia and Tunis. Administrative council: E. Bethenod (hon. president), Baron Brincard (president), E. Fabre-Luce, A. Madimer (vice-president), J. Rosselli, R. de Fregomain, P. Platet, Eug. Schneider, R. Lehnoux, A. Bronty and E. Morel.

**IONIAN BANK LTD.**—Founded in 1839. Authorised capital, £1,000,000, of which £600,000 is paid up. Reserves total £200,000 and assets £6,111,763. Head office, London, central office for Greece, Athens. Central office for Egypt is at 10 rue Adib, Alexandria, and there are branches at Tantah, Mehalla Kebir, Mansurah, Fayyum, Beni-Suef, Mimih, Kafr-el-Zayat, Benha and Zifta. Administrative council (London): Sir John J. Stavridis, Hon. Clive Bigham, C.M.G., Charles S. Guthrie and the Rt. Hon. Lord Ritchie of Dundee.

**AGRICULTURAL BANK OF EGYPT.**—Created by Khedivial decree of May 17, 1902, under concession of the same date

granted by the Egyptian Government. Head office: 5 rue Elout, Cairo. Agencies in the Mudiriehs. Authorised share capital, £3,740,000, all issued, comprising 496,000 ordinary shares of £5 each, 125,000 cumulative 4 per cent preferred shares of £10 each, and 2,000 deferred shares of £5 each, debentures £4,175,000 in 3½ per cent bonds. Reserve funds, £1,050,337. Chief object of establishment, the granting of loans to Egyptian cultivators. Dividends paid for the past ten years. On ordinary shares: 1916, 6s; 1917, 7s; 1918, 8s; 1919, 8s; 1920, 8s; 1921, 8s; 1922, 8s; 1923, 8s 6d; 1924, 9s 3d; 1925, 10s. On deferred shares: 1916, £15; 1917, £40; 1918, £40; 1919, £40; 1920, £40; 1921, £40; 1922, £40; 1923, £45; 1924, £52 10s; 1925, £55. Directorate: Sir B. Hornsby, C.B.E., H.E. V. Haniam Pasha, C.M.G., T. S. Richmond, and Capt. R. G. Westropp (managing director). London committee: Col. the Hon. S. Peel, D.S.O. (chairman), F. W. P. Foster, C.M.G., Sir J. L. P. Horner, K.C.V.O., A. G. M. Dickson. Cables "Zetel" Cairo.

**COMMERCIAL BANK OF EGYPT.** Head office: 10 rue Fouad Ier. Created by decree of the Sultan, founded in 1920. Capital £150,000 fully paid. Reserves £83,000. Directorate: Alfred J. Suarès (chairman), G. Verdy-Delisle (vice-chairman), Jacques Suarès, Vicomte G. de Breteuil, Cecil M. Higgins, Richard Thalmann, René Thery, and S.F. Joseph. Cattam Pacha. Branches: Paris, 48 rue des Petits Champs; Cairo, 33 rue Kasr-el-Nil. There is also a sub-agency at Tantah.

## INSURANCE

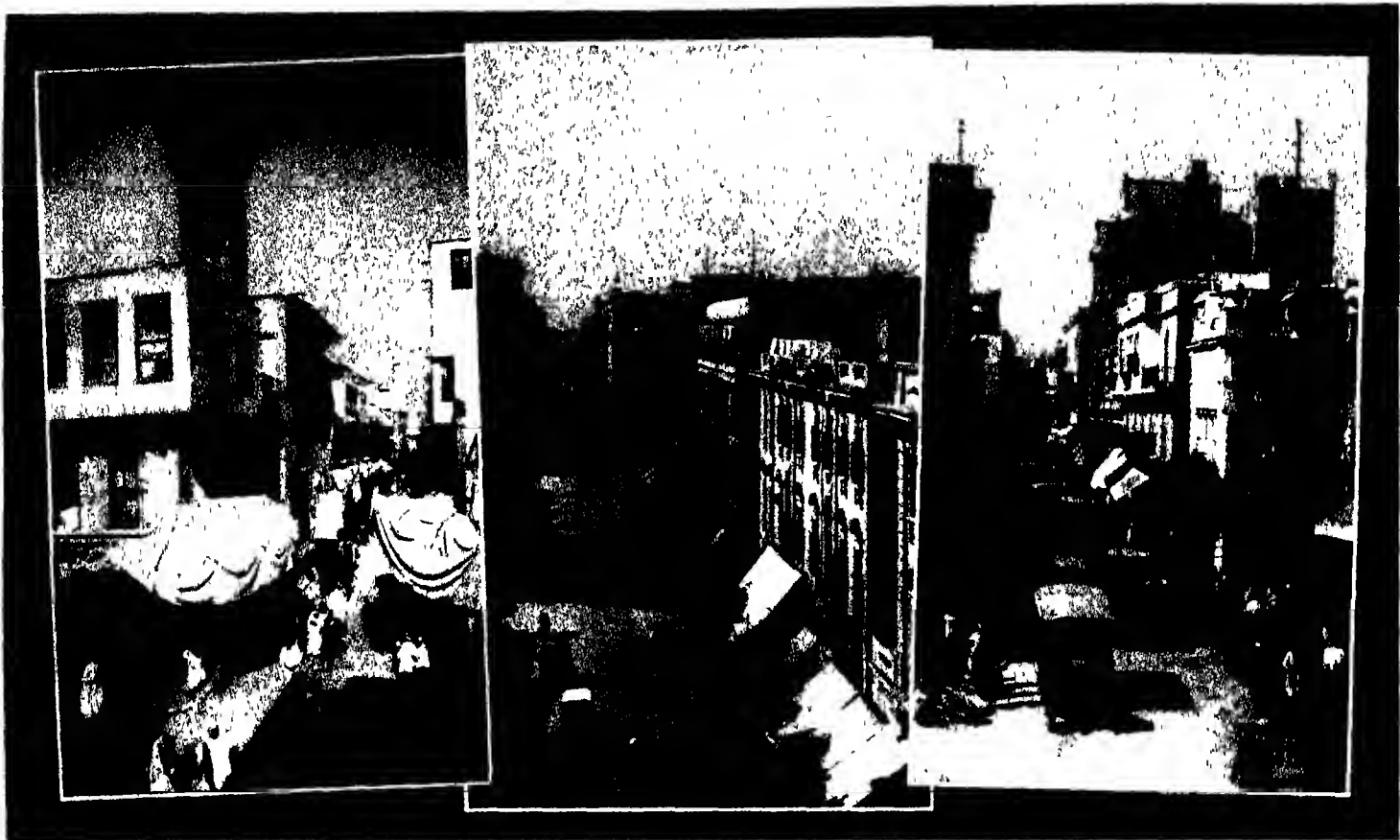
Insurance business in Egypt is very largely in the hands of British companies. Many important kindred institutions of other nationalities are, however, eager to obtain a substantial share of the lucrative transactions associated with the cotton industry, and are accordingly fittingly represented in the kingdom.

The Union de Paris, working in conjunction with its subsidiary, the Nationale d'Egypte, a local company, has obtained a solid footing in the territory, not so much directly as owing to the financial interests represented on the board of that particular company. Here, no doubt, familiarity with French methods induces a considerable volume of business among the Gallicised Levantines. Competition in insurance circles in Egypt is on the whole very acute, as shown by the presence in this field of over one hundred fire, marine and life companies from all over the world, a fact which attests in a noteworthy degree how desirable the business is considered by those engaged in it.

**MARINE AND FIRE INSURANCE.**—The principal interest involved in this respect is cotton, and Alexandria is probably alone in confining the marketing and storage of the commodity to one clearly defined area adjoining the port—Minet el Bassal—where the chounahs (cotton warehouses) and steam presses are situated.

For general merchandise there was a pronounced decline in rates during the years 1924-26. Thus those for imported cotton goods, w.p.a. theft and non-delivery, dropped from 20s in 1924 to 10s. in 1926, and f.p.a. excluding theft from 10s. to 6s. Exports to the Levant ports followed suit, the rates w.p.a. having decreased from 10s. to 8s. 6d. and f.p.a. from 6s. 6d. to 4s.

Rates for fire within the port enclosure are controlled, as elsewhere, by the Syndicat Internationale des Cies. d'Assurance operating in Egypt.



1. Sharia Khan-el-Khalil.

2. Sharia Kasr-el-Nil

3. Sharia El Mousky

CAIRO, A CITY OF INTERESTING CONTRASTS

## CITY OF CAIRO

**M**ASR EL-KÂHIRA, called by the Egyptians Masr and by the Europeans Cairo, is situated a little distance from the right or east bank of the Nile, on the sloping plain lying between that river and a projecting angle of the Mohattam hills. Old Cairo as it exists to-day dates from A.D. 969, and was called El-Kâhira, "the victorious," after the planet Mars, which was then in the ascendant. The former Mohammedan city had been successively known as El Fustat and El Askar ("the Cantonments"), which in their turn had succeeded the old Roman settlement of Babylon. Gradually El-Kâhira became joined on to such older quarters as had survived, and so the modern Cairo, much added to and improved since the British occupation, has come about. Ever since 1517, when Egypt became a province of the Turkish Empire, Cairo has been its capital and has steadily grown in importance, not only as a capital city and a great centre of commerce, but, especially during the present century, as a tourist and health resort in the winter months. Within its walls and at a short distance from its gates are gathered many of the most remarkable monuments of antiquity, the City of the Caliphs makes an insistent appeal to all who wish themselves back, if only for a few hours, in the Middle Ages; and the

kaleidoscopic social life of a pleasure loving city draws those to whom the present is more than the past, and the sunshine of modern Cairo a greater attraction than the mists of antiquity.

**ADMINISTRATION.**—Cairo, like Alexandria, forms a government distinct from the province in which it is situated. It has its own Governor, who is assisted by a Deputy. The city is divided into 13 kisms or quarters, which at one time were separated from each other by gates. These gates were closed at night and guarded by watchmen, who allowed no one to pass without examination, but few of such gates now remain. What would be called elsewhere the municipal control of the city is exercised in Cairo by the Tanzim Department of the Ministry of Public Works, which is responsible for the maintenance and construction of roads and public gardens, the maintenance and control of the Nile banks, the administration of the water and electricity supplies and of the scavenging services.

**AQUARIUM.**—The Aquarium was established at Gezira in 1902 at a cost of £E.1,150, and placed under the control of the English Director of the Zoological Gardens. It contains a number of varieties of Nile fish which have never before been kept in captivity. The gardens are beautiful, and are well worth visiting.

**BARRAGES.** The famous Barrage, designed by Mohammed Ali in 1835, which lies only about half an hour's journey by train from the capital, is in reality a series of four barrages, of which the first holds up the water in the Tewfik Canal, and is the smallest of the number. The second is built across the Damietta arm of the Nile, and is about one-third of a mile in length. The third is constructed across the Rosetta arm of the Nile, and is nearly as long as the second barrage, while the fourth is built across the Mahmudia Canal. The Barrage Gardens are beautifully laid out and contain a number of rare plants, trees, etc. In the Barrage Museum are many large scale models of dams, barrages, etc., one of them which illustrates the dredging of the Nile being workable by electricity.

**BAZARS.**—At places in Cairo where goods are sold or exchanged, and to markets in general, the name "bazar" has been commonly given by Europeans, but among Egyptians the word "suk" or "sok" is employed, thus originally indicating a portion of a street, or a whole street, appropriated to one particular trade. Thus the market of the coppersmiths and workers in brass is called "Suk An-Nahhasin," the market of the jewellers is "Suk Al-Gawharigin," etc. Wholesale dealers usually congregate in a building called a "wakkalah,"

the word signifying a place where a merchant can store his wares in safety. The wakkalah is a rectangular courtyard, on each side of which are built vaulted chambers opening on to it, above which are small living rooms. The wakkalah has only one entrance, and the door, which is always shut at night, is kept by a porter. In Lane's time there were over 200 wakkalahs in Cairo. The shops in a bazar, or suk, are usually small apartments, a few feet square, in which the shopkeeper sits, but in the modern portions of the bazars more room for customers is now provided, and dealers in Indian stuffs and wares have counters and chairs for their clients. In the old shops, however, the Muslim expects his customer to sit on the same level with himself, and to remove his shoes if he sits cross-legged. Bargaining is often a matter of an hour or more, and to good customers coffee is generally offered.

The best way to reach the bazars of Cairo is via the Muski, a street which leads directly into one of the oldest parts of the town, and whose character has greatly changed from the days when it was filled with picturesque native shops.

General, the Palace of Ibrahim Pasha, the Palace of the Queen Mother, the Medical School and the Government Hospital. Further removed from the river are the Ministries of Public Works and of War—a handsome building surrounded by gardens—and of Justice and Finance. On the east side of Abdin Square is the Abdin Palace, a comparatively unpretentious building used for official receptions, and adjoining it are barracks. North-east of Abdin Square, in the Sharia Mohammed Ali is the Museum of Arab Art and the Sultanyeh Library. Near this building are the Courts of the Native Tribunals. In the Kasr el-Dubara quarter are many imposing private residences.

**CHURCHES.** The church buildings of most interest in Cairo (apart from the mosques) are those of the Coptic Christians. The largest one, the Cathedral dedicated to St Mark, is situated in the Coptic quarter, to the north of the Esbekiya. It is a large modern basilica, consisting of a nave and two aisles, separated by lofty pillars supporting pointed arches. Internal features are the thrones of the late and present Patriarchs,

**CITADEL.**—To the south of the Muski quarter rises the Citadel, built by Saladin at the end of the 12th century and for long considered a practically impregnable fortress. It is now used as a detention prison for political offenders. The most important building is the Mohammed Ali Mosque, which is notable for its two wonderfully slim and beautiful minarets piercing the sky and visible for miles in every direction. The Sultan Hasan Mosque adjoins it, a fortress-like building, reminiscent of some of the larger cathedrals of Spain. There is an ancient well in the citadel known as Joseph's Well which Jewish opinion has always associated with the son of Jacob.

**CLIMATE.**—The climate of Cairo is dry and salubrious in winter but in summer somewhat hot and stifling. The city is now known as one of the winter health resorts of the world. By a thorough system of drainage and cleansing much has been done to improve it for residents and tourists. It is said that the winter temperature is colder than it used to be, and indeed fires are often necessary at night. At Mena House, about eight miles from Cairo, the air is generally clearer, fresher and drier than in the city,



SHARIA NUBAR PACHA, Cairo.

The "Shell" Pumps provide excellent service throughout the City

**BUILDINGS.**—The Government Offices and other modern public buildings of Cairo are nearly all in the western half of the city. On the south side of the Esbekiya are the Post Office, the Courts of the Mixed Tribunals, the offices of the Public Debt and the Opera House. On the east side are the Bourse and the Crédit Lyonnais, and on the north the headquarters of the American Mission, the institution which has done so much since 1854 to promote the physical, mental and spiritual well-being of the Egyptian people. On or near the west side of the Gardens are most of the luxurious hotels which cater for the needs of European and American visitors—Shepherd's, the Continental and the Hotel de l'Angleterre, to mention three of the largest. Facing the river, immediately north of the Great Nile Bridge, are the large barracks called Kasr el-Nil and the Museum of Egyptian Antiquities. South of the bridge are the Ismailia Palace, the British Consulate

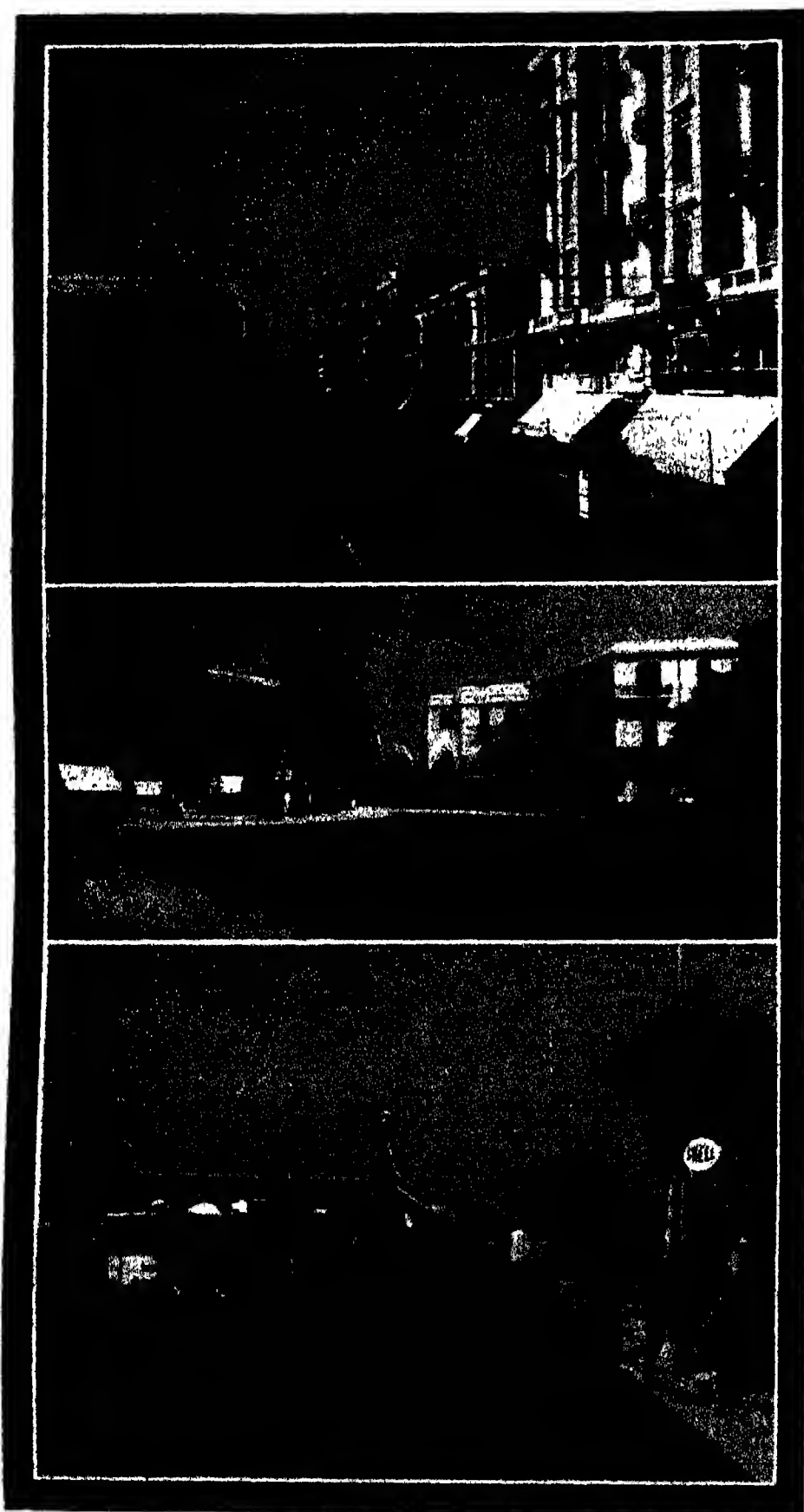
and a handsome reading desk of inlaid work. In old Cairo the finest of the Coptic churches is that of Abu Sarga, which possesses some magnificent carvings. The church of Mar Mena dates from the fourth century, that of Abu Sephin, a fine and interesting building, from the tenth century. The old church of El Adra or Sitt Miriam, commonly known as El-Moallaka, or "the suspended," is of especial interest from the fact that it is suspended between two bastions and must be entered by a staircase.

Non-Coptic churches are those of St Mary's (Kasr el-Dubara) of the Church of England, the Roman Catholic Church of the Assumption, in Sharia el-Banadkia, St. Andrew's Church (Presbyterian), on the Ab'ul Elah Bridge, and the French Protestant Church in Sharia Abbas. The old parish church of the British community, All Saints, had recently to be destroyed, and steps are in hand to erect a new Anglican Cathedral as a war memorial.

and the weather almost perfect during March and April.

**DRAINAGE.**—The sewerage system of Cairo dates from 1915, and is now working satisfactorily. The method of pumping sewage by means of compressed air has been adopted, the city being divided into sixty-three areas, in each of which there is an underground ejector station from which the sewage is forced through iron pipes to Port Ghamra, whence it flows by gravitation to Kafr el-Gamús, a distance of thirteen and a half kilometres. The suburbs are entirely drained by gravitation sewers. At Kafr el-Gamús the sewage is pumped through iron pipes a further distance of eleven and a half kilometres to Gebel el-Asfar, situated about three kilometres east of El Khanka village, where it is treated in tanks and filters and afterward discharged on to the surrounding desert. Twelve hundred acres have been laid out and established as a farm, cereals and fruits being cultivated.





## CAIRO.

1. Sharia Madabegh. Messrs. L. Rofin & Co. have many contracts in progress.
2. Midan Suarez. Messrs. Roberts, Hughes and Co.'s Store behind the Palm Trees.
3. Sharia Bouleac.

**GARDENS AND SQUARES.**—The Esbekiya is the largest and best known public garden in Cairo. Before Mohammed Ali's time it used to be one large sheet of water during the inundation. He cut a canal round the space and laid it out as a garden, with trees planted on the canal bank. Ismail Pasha began transforming it into its present state. The trees were cut down and the whole of the area filled to the level of the surrounding ground, a part was then divided into building plots, and the remainder eventually laid out as a public garden, with cafés, al fresco theatres, grottoes, ornamental water, etc. The gardens are well kept, there is plenty of shade, and the Esbekiya has become a favourite place of resort, especially when a band plays in the evening.

The Abdin Square, in front of the King's Palace, is about half a mile from the Esbekiya. Military reviews sometimes take place there. Other fine open spaces are the Rumela, at the foot of the Citadel, and the Menshiya Gedida, from which the annual pilgrimage to Mecca always starts.

**HELIOPOLIS.** In the place of the ancient city of Heliopolis which the Egyptians dedicated to the Sun has sprung up an important residential suburb, to which has been given the name of Masr el-Gedida (New Cairo), though to Europeans it is always known by its old designation. Heliopolis is only twelve minutes' distant by rail or tram from Cairo, and on this favoured plateau is one of the largest and most luxurious hotels in the world, also the most delightful villa residences, not only artistically conceived, but replete with every comfort. At Heliopolis is the fine racecourse controlled by the Heliopolis Racing Club, and under His Majesty's patronage. The town is brilliantly lit and assured of an ample supply of water and it is the boast of the Oasis Company, which has carried out all municipal works, that no city in Egypt possesses a better drainage system.

Of ancient Heliopolis nothing remains to-day save some of the city wall and a single obelisk. The latter is the most ancient in Egypt. What is known as Moses' Well, the Petrified Forest and the Tombs of the Caliphs (see later) are all in the immediate neighbourhood.

**HELWAN.**—Helwan (Helwán), though situated 14 miles distant from Cairo, may be described as a suburb, and was indeed at one time a kism or quarter of the capital. The little town, which is surrounded by desert on all sides and stands 150 feet above the Nile Valley, owes its fame and prosperity entirely to its salt and sulphur springs, it is frequented by Europeans and Egyptians who are suffering from any kind of rheumatic and gouty ailment. Helwan has also become something of a residential place, and has much pleasant social life. A good and direct road from Cairo was made under the auspices of Lord Kitchener, and is much used by motorists. In the neighbourhood are the famous quarries of Ma'sarah and Turah.

**INDUSTRIES.**—The commerce of Cairo is of considerable extent and variety, and consists mainly in the transit of goods. Gum, ivory, hides and ostrich feathers from the Sudan, cotton and sugar from Upper Egypt, indigo and shawls from India and Persia, sheep and tobacco from Asiatic Turkey, and all kinds of European manufactures pass through in a constant stream. Several important industries have been, however, developed during the last fifty years, many of these having received a decided impetus from the Great War. As far back as the reign of Mohammed Ali several factories were founded in Bulak for spinning, weaving and printing cotton, the Government Printing Press at Bulak is one of the largest in

the country, and there has been a great increase in the number of engineering and small repairs factories. Cement manufacture, cigarette making, paper milling, sugar refining, rug making, and soap making are other important industries.

**LIBRARY.**—The Sultanyeh Library, which is housed in the Museum of Arab Art, was founded by Ismail Pasha, has cost altogether upwards of £E 66,000, and contains over 100,000 volumes, including some 50,000 manuscripts and books in Arabic, Persian, Turkish and Oriental languages. The Library is open daily, Fridays and holidays excepted, and admission to the Reading Room and Exhibition Room is free.

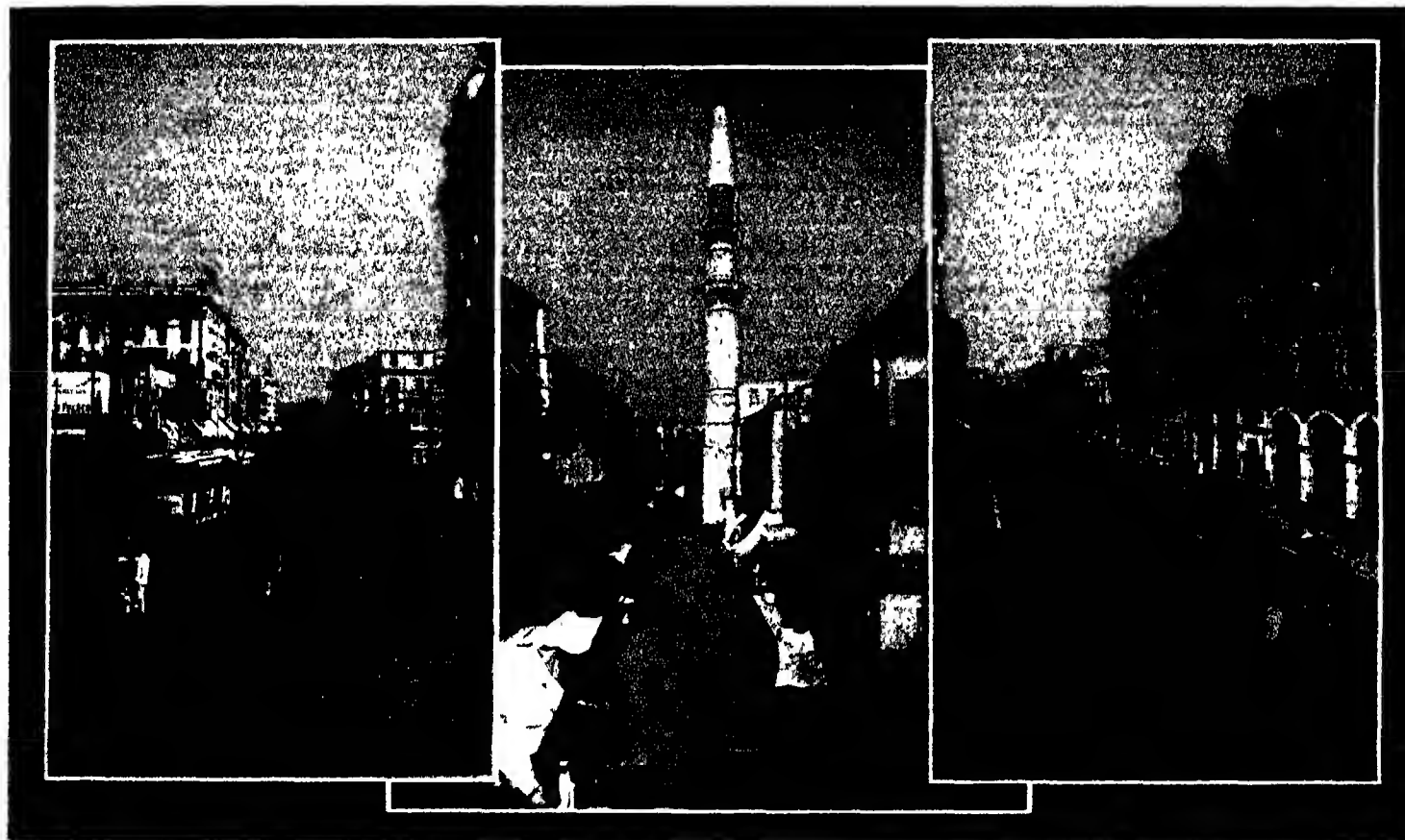
**MOSQUES.**—It is from the mosques and tombs of Cairo and other cities that our

It was formerly called the "Mosque of Conquests" or "Crown of Mosques," and is still held in the highest veneration by Mohammedans, who believe that prayers made within it are specially answered. The next great mosque of Cairo is Al-Azhar, which was begun in A.D. 969 and finished three years later, since 988 it has been the leading university of the Muslim world. This mosque has six gates, but is usually entered through the "Gate of the Barbers." The Mosque of Sultan Hasan is one of the most remarkable buildings of its kind in the world, having a simple grandeur univalled elsewhere. The Mosque of Barkuk is famous for its light and elegant pointed arches and the Mosque of Al-Mu'ayyad for its columns. On the Island of Roda the Mosque of Kart Bey, built in 1475, is considered to be one of the finest architectural works in Cairo,

tion, but produced the well-known "Guide to the Cairo Museum," which is indispensable to the interested visitor. Successive keepers have made valuable additions to the Museum, among the most recent of which are the many treasures discovered in the tomb of Tutankhamen in 1923 and 1924. Up to the latter year the total cost of the Museum was £E 251,000, while nearly £E 50,000 has been spent on the catalogue.

In the Museum of Arab Art close to the Mosque of Al-Hakim are collections which illustrate the development of Arab art and comprise many beautiful riches and treasures. The lower portion of this building houses the Sultanyeh Library.

In 1926 Mr. John D. Rockefeller, junior, of the United States, offered \$10,000,000 (£2,000,000) to King Fuad and the Egyptian people for the purpose of building and



CAIRO

1 Sharia Fouad El-Awal

2 Sharia Sidna El-Musseln, with Minaret of Mosque

3 Sharia El-Maghrabi

knowledge of Arab architecture and art is principally derived. Considerations of space forbid any lengthy description of these, but it may be stated briefly that the mosques of Egypt are largely Byzantine in origin, one most important characteristic, that of the arcade on pillars, being entirely due to Byzantine influence, and that the very beautiful designs of fruit, plants and flowers, as well as the intricate leaf compositions and geometrical patterns which are so universally admired, are due to the fact that the religion of the Arabs prevented them from employing figures of men and women in their architectural works.

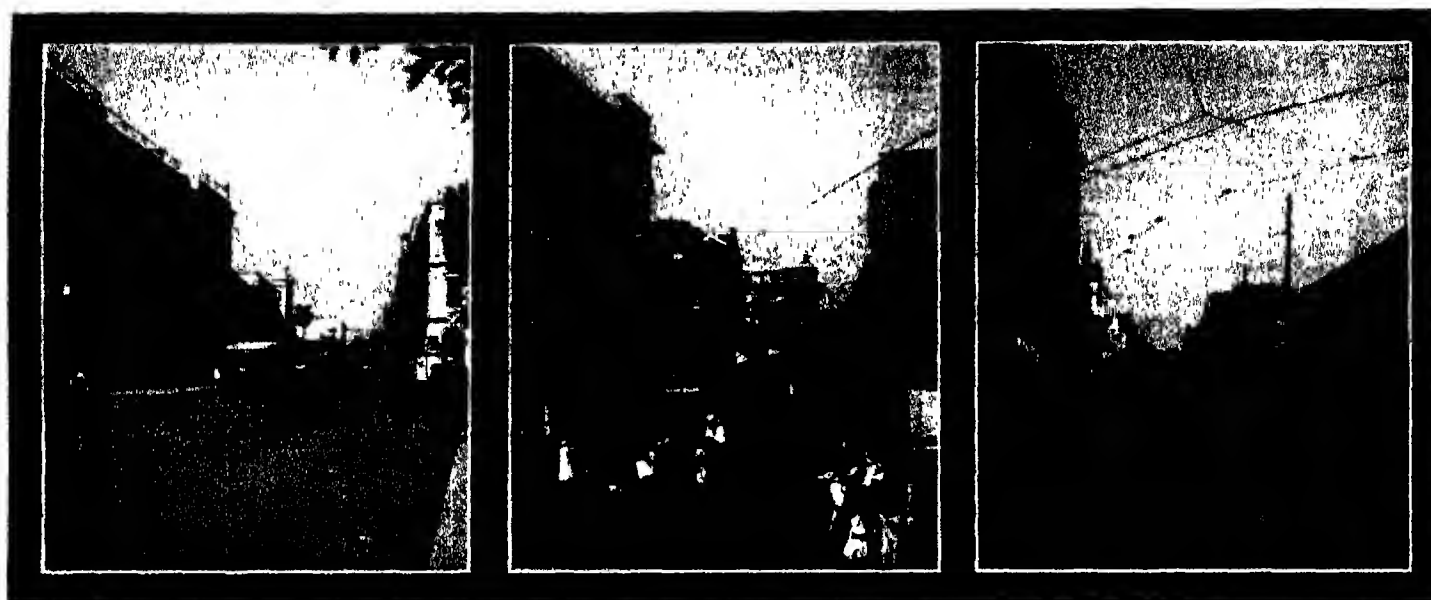
The principal mosques of Cairo are thirteen in number, the oldest being that of 'Amr, built A.D. 643, but since frequently restored.

the carving being unusually delicate and the minaret a most beautiful example of Saracenic art.

**MUSEUMS.**—Cairo possesses in the Museum of Egyptian Antiquities, which is situated at Kasr el-Nil, the most remarkable collection of Egyptian antiquities in the world, covering as it does all periods from about 4,400 B.C. to the end of Roman rule in Egypt. Originally formed about the middle of the last century by M. Mariette, a distinguished French scholar and archaeologist, the collection was first housed in the present beautiful building in 1902, Mariette having been succeeded as keeper by the famous French savant, Professor Gaston Maspero, who not only added largely to the collec-

maintaining a new museum in Cairo, and establishing in conjunction with it an archaeological institute in a separate building. This munificent offer was afterwards withdrawn, the conditions attached to the bequest not being acceptable to the Egyptian Government.

**NILOMETER.**—Opposite Old Cairo lies the Island of Roda, where, according to Arab tradition, Pharaoh's daughter found Moses in the bulrushes. Two bridges connect the old city with Roda, and a third bridge joins Roda to Giza on the west bank of the river. Roda island contains the Mosque built by Kart Bey (see "Mosques"), and at its southern extremity is the Nilometer, by which the Cairenes



1. Sharia Kamal.

CAIRO.  
2. Sharia Emad el Dine.

3. Sharia Mazloum Pacha.

have for over a thousand years measured the rise of the river. It is a square well, with an octagonal pillar marked by cubits in the centre.

**POPULATION.**--The population of the Governorate of Cairo at the last census was 790,939, making it the largest and most populous city in Africa. These figures showed a growth of 130,493 inhabitants during the previous ten years. About 63,000 are resident Europeans. The bona-fide inhabitant of Cairo is very proud of the appellation of "Masri" or Cairene, by which he is always distinguished among his fellows, and considers himself immensely superior to his brethren of the Delta and Said. There are marked mental and physical differences between them; the town-bred Cairene is much quicker and more

intelligent than his country cousin, and he may generally be distinguished by certain outward signs, such as a peculiar tint of tawny complexion, large mouth, with thick well-formed lips, broad nose, enormous legs, and a general look of sturdiness.

**PYRAMIDS.**--Formerly named one of the Seven Wonders of the World, the Pyramids of Egypt are about seventy-five in number, of different sizes, and are masses of stone (or early brick) with square bases and triangular sides. They were originally the tombs of those Pharaohs who flourished from the First to the Twelfth Dynasty, and they are best described as monuments built over the sepulchral chambers of Kings. Sir Wallis Budge is of the opinion that before the actual building of a pyramid was begun, a suitable rocky site was chosen and cleared,

a mass of rock if possible being left in the middle of the area to form the core of the building. The chambers and galleries leading to them were next planned and excavated. Around the core a truncated pyramidal building was made, the angles of which were built up with blocks of stone. Layer after layer of stone was then placed around the work, which grew larger and larger until it was finished. One conjecture is that when a king ascended the throne he built for himself a small but complete tomb-pyramid, and that a fresh coating of stone was built around it every year that he reigned; that when he died the sides of the pyramids were like long flights of steps, which his successor filled up with right-angled triangular blocks of stone. The door of the pyramid was walled up after the body of its



MEDAN SOLIMAN PACHA, CAIRO, showing the New Groppi Restaurant in the centre.

builder had been laid in it, and thus resulted a finished tomb.

The most famous of the pyramids are those situated on the rocky plateau of Giza, formerly one of the cemeteries of ancient Memphis (Giza is within easy reach of Cairo by train or motor car). These pyramids were opened by Persians during the fifth and fourth centuries before Christ, it is probable that they were also entered by the Romans. Once opened, it was soon seen what splendid quarries the pyramids formed, and for some centuries after the conquest of Egypt by the Arabs they were laid under contribution for stone to build mosques, etc., in Cairo. Mohammed Ali ordered the Barrage to be built with stones from the Great Pyramid, and was only persuaded to give up the plan because it was cheaper to get stones from the quarries.

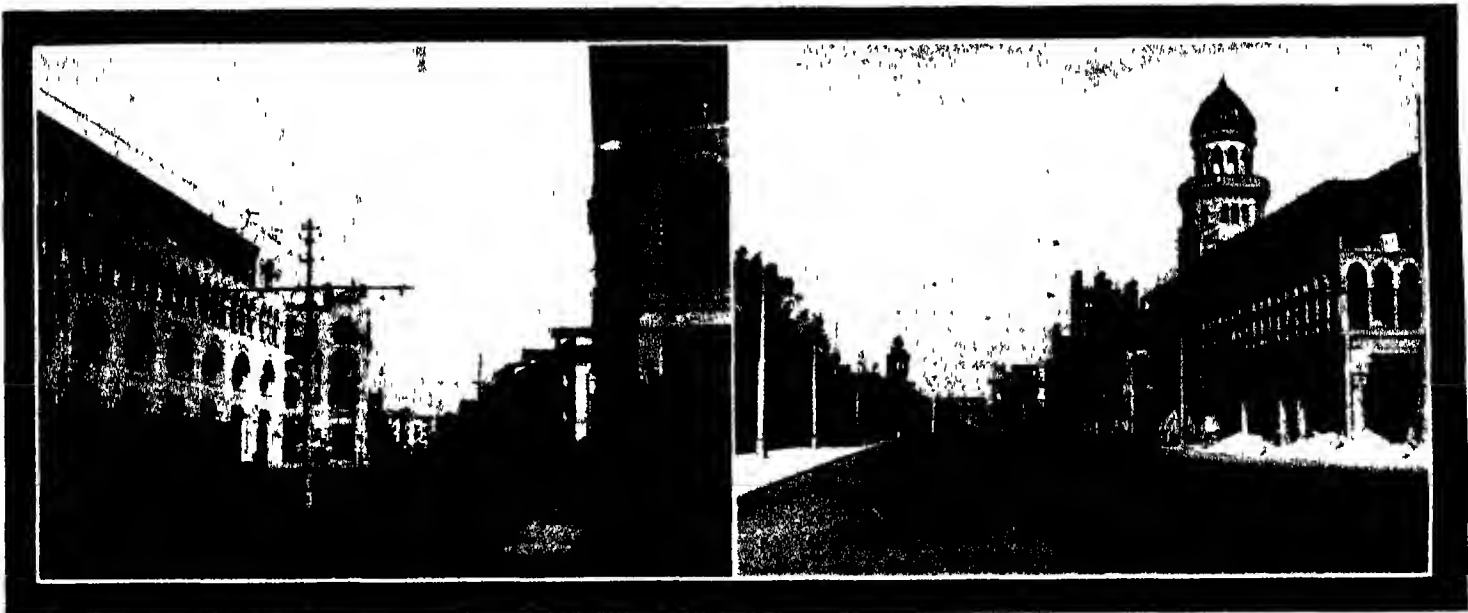
**GREAT PYRAMID**—The first or Great Pyramid, the largest of all, was built by Chufu (Cheops), the second king of the Fourth Dynasty. Its height was originally 481 feet and its base 774 feet square, it has,

**THIRD PYRAMID**—The Third Pyramid is much smaller than the other two, being only 215 ft high by 350 ft at the base. It was built by Menkaura or Mycerinus, who succeeded Chefred. It has three chambers, the lowest of which, granite cased, formerly held a stone sarcophagus and a wooden coffin. The body found within and fragments of the coffin were removed to the British Museum, but the stone sarcophagus was lost off Carthage by the sinking of the vessel in which it was being transported to England. The masonry of this pyramid (sometimes called the Red Pyramid) is very fine, and it was once cased half way up with granite, the remains of which are still visible. The Third Pyramid (according to some, the tomb of a favourite courtesan) is regarded with superstitious dread by many Egyptians on account of a ghost which is said to haunt it.

At Giza are six pyramids of inferior height and interest, others are situated at Abu Roash, six miles to the north-west, and at Saqqara and Abusu, these, however,

naturalistic colouring. Its body is 150 ft long, the head 30 ft long, and the front paws 50 ft long. Its face is 14 ft wide, and the distance from the crown of the head to the base of the figure is 70 ft. In course of time the plaster sizing, with which the original sculptor had covered it, became destroyed by wind and rain, and the sand blown from the surrounding desert began to eat into the hard strata of stone of which it was composed. Being situated in a hollow, the Sphinx gradually became covered up with sand, so that the upper part of the body and the neck and head alone were exposed. Time after time the area immediately in front of the monument was cleared of sand, but it again silted up, and in addition pieces of the head began to drop off (the beard had long ago disappeared), while there appeared to be a danger that the whole of the head might collapse.

During the year 1925-26 important excavation and repair works were carried out, and these have not only uncovered again the altar between the paws of the sun-god which



1. Boulevard Ismail  
Showing some of the many buildings constructed by Leon Rollin & Co.

HELIOPOLIS, CAIRO.

2. Avenue du Caire.

however, been much despoiled and stripped of its exterior blocks. According to Herodotus, 100,000 men were employed on its construction, which was completed in 30 years. The stone used was brought from Turah and Mokattam, and the contents amount to 85,000,000 cubic feet. The flat space at the top of the pyramid is about 30 ft square, and the view from it is very fine. Inside are the Queen's Chamber and the King's Chamber, in the latter lying the empty, coverless and broken red granite sarcophagus of Cheops.

**SECOND PYRAMID**—The Second Pyramid, built by Chafra, or Chefred, the third king of the Fourth Dynasty, is hardly inferior in size to the Great Pyramid, while, owing to the fact that it stands on higher ground, it actually appears to be larger. Its original height was 472 ft, it occupies an area of 55,419 square yards, and has two sepulchral chambers. The masonry is inferior to that of the First Pyramid, but it was formerly cased below with polished stones, some of which remain, while the top still retains its original casing.

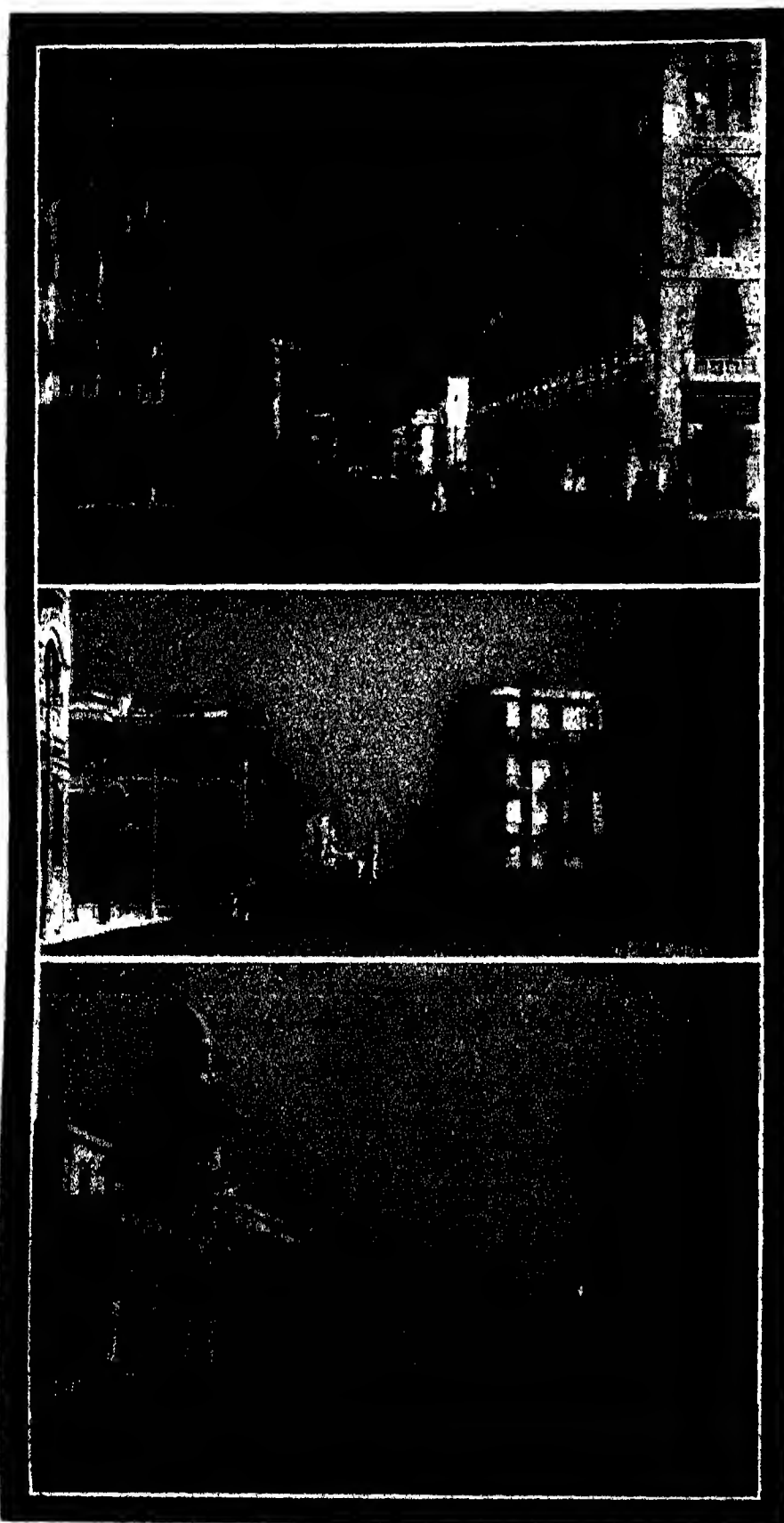
failing to compete in any respect with the three already described.

**SPHINX**.—About a quarter of a mile to the south-east of the Great Pyramid lies the Sphinx, the most remarkable object, next to the Pyramids, existing on the Giza plateau. The exact age of this wonderful monument is unknown, but it is certain that it was the work of the third or fourth century before Christ. The Sphinx, which was intended as an image of Harmachis, the sun-god, lying always "in the shadow of the sun" and facing the eastern sky, and consequently of his human representative on earth, the king of Egypt who had it made, is the figure of a lion with the divine head on the body of the animal. Many sphinxes have been found in Egypt, but the Sphinx of Giza stands out amongst them all by reason of its great bulk and surroundings. It is hewn out of the living rock, a monument to the genius of the king who conceived it and of the workmen who carried out the gigantic work.

The body of this great image was painted red, its head dress white, and its eyes had a

the Romans used in their sacrifices, and which Caveghia had discovered in 1817, but also a second stairway leading down to the Sphinx, a tablet bearing a figure of the Sphinx with a short inscription, and a couple of small bronze sphinxes. The face has been left untouched, but the head has been skilfully treated, and fallen stones have been replaced. Artistically, perhaps, the uncovering and clearance of the Sphinx have resulted in revealing a figure which is neither so picturesque nor so mystical in appearance as before. On the other hand, the results gained are of incalculable value to the student of Egyptian archaeology.

**STREETS**.—In all the quarters of the interior of Cairo the streets are very narrow. As a result of the Cairene method of building houses, each storey projecting beyond that immediately below it, two persons may almost shake hands across the thoroughfares from the upper windows. The names of most of the streets are now put up at the corners in English and Arabic, the Egyptian terms "sharia" (street), "darb" (a narrower street), "medan" (place), and "haret"



#### HELIPOLIS, CAIRO.

1. Avenue Ibrahim.
2. Avenue de Mosquée.
3. Boulevard Abbas.

The Buildings seen in these views and numerous others were constructed by Leon Rolin & Co.

(quarter) being used. Before the accession of the Khedive Ismail, the only tolerably broad street in Cairo was the Muski, running from the south-east corner of the Esbekiya to the street leading from the Ghuriyah (the cotton and silk stuffs bazar) to the Khan el-Khahli, or great market for dresses, embroidered stuffs and carpets. Many of the largest European shops are in the Muski.

Cairo now possesses several wide and well-constructed thoroughfares which would do credit to any western city. The best of these, the Sharia Mohammed Ali, contains many handsome buildings and residences. In the Ismailia Quarter are some of the best streets in Cairo—Sharia Kasr el-Nil, Sharia el-Kubri, and Sharia el-Maghrabi, this being the region of the principal hotels and clubs.

**TOMBS OF THE CALIPHS.**—Beyond the eastern wall of the city are the splendid mausolea erroneously known to Europeans as the Tombs of the Caliphs, they are in reality tombs of the Circassian or Burgi Mamelukes, a race extinguished by Mohammed Ali. Their lofty gilt domes and fanciful network of arabesque tracery are partly in ruins, and the mosques attached to them are also a good deal delapidated. The chief tomb mosques are those of Sultan Barkuk, with two domes and two minarets, completed in A.D. 1410, and Kait Bey (A.D. 1475), which has a slender minaret 135 ft high. This mosque was carefully restored in 1898. South of the Citadel is another group of tomb mosques known as the Tombs of the Mamelukes, but of less interest architecturally than those of the Caliphs. South-west of the Mameluke tombs is the much venerated tomb-mosque of the Imanesh-Shafih, founder of one of the four orthodox sects of Islam. Near it is a family burial place built by Mohammed Ali.

**TRAMWAYS.**—The traveller in Cairo will find the tramways very convenient, for by means of them many of the outlying parts of the city can be visited quickly and cheaply. The cars have been greatly improved in recent years, and on the newer lines, e.g. that to the suburb of Helipolis, a considerable speed is attained. Carefully fitting windows exclude the dust, and in the matter of blinds and seats the cars leave little to be desired. The tramway centre is 'Atabah-al-Khadrah, and trams run at frequent intervals to Shubrah, Rod-al-Farag, 'Abbasiyah, Bülak, Zabtlyah, Sayyidah Zénâb, the Citadel, Old Cairo, Roda Island, Giza and Helipolis. A tram line connects Kasr el-Nil Bridge with the Pyramids, and there is a half-hourly service. About the time of full moon for three nights each month the service to and from Giza is extended one hour.

**WATER SUPPLY.**—Cairo obtains its supply of water through the Cairo Water Company, founded in 1865, with headquarters in the City, and subject to Egyptian legislation. The present concession from the Government comes to an end in 1969. The company supplies about 30,000,000 cubic metres of water annually to the city. At Giza and Helwan are waterworks owned by the Government.

**ZOOLOGICAL GARDENS.**—These beautiful gardens, which are situated at Giza, were established in 1891, and enlarged in 1898 and 1903; they cost £E.7,400, and their upkeep totals about £E.4,000 a year. The area of the gardens, which are open daily, is about 52 acres, and they contain a remarkably good collection of the birds and animals of North-East Africa.



## VISITORS' GUIDE

**CLUBS.**—Gazirah Sporting Club—Gazirah ;  
Helopolis Sporting Club—Helopolis Oasis ;  
Mohammed Ali—Sharia Soliman Pacha ;  
Turf Club—Sharia el-Maghrabi

**CONSULATES.**—Arabia—8, Sharia Aboul  
Sebaa ; Austria—3, Sharia Manakh ; Bel-  
gium—7, Sharia el-Fadi ; Brazil—1, Sharia  
Walla ; Denmark—14, Sharia el-Maghrabi ;  
France—5, Sharia el-Fadi ; Germany—17,  
Sharia el-Maghrabi ; Great Britain—10,  
Sharia Gamel Charkass ; Greece—37, Sharia  
Kasr el-Nil ; Italy—1, Sharia Masroum ;  
Netherlands—6, Rue Champollion ; Norway  
—23, Sharia Kasr el-Nil ; Persia—5, Sharia  
Manakh ; Portugal—23, Sharia Sheikh Aboul-  
Sebaa ; Spain—10, Sharia Borsa Gedida  
and 23, Sharia Soliman Pacha ; Turkey—  
6, Sharia Deir el-Banat ; United States  
—2, Rue Soliman Pacha

**HOTELS.**—Bristol, Continental, Mena  
House, New Khedivial, Semiramis, Savoy,  
Shepherd's. At Helopolis, the Helopolis  
House and Helopolis Palace Hotels ; at  
Helwan, the Al-Hayat, Grand Hotel des  
Bains and Tewfik Palace Hotels

**POST OFFICE.**—Corner of Sharia Tahir  
and Sharia al-Baidak, open from 7.30 a.m.  
to 9.30 p.m.

The Telegraph Offices of the Eastern Tele-  
graph Company are at the corner of the  
Sharia Imad el-Din and Sharia el-Manakh

**THEATRES.**—Kursaal, Sultan's Opera  
House, and many Cinemas

REPRESENTATIVE COMMERCIAL  
ENTERPRISES

## MAURICE NAHMAN.

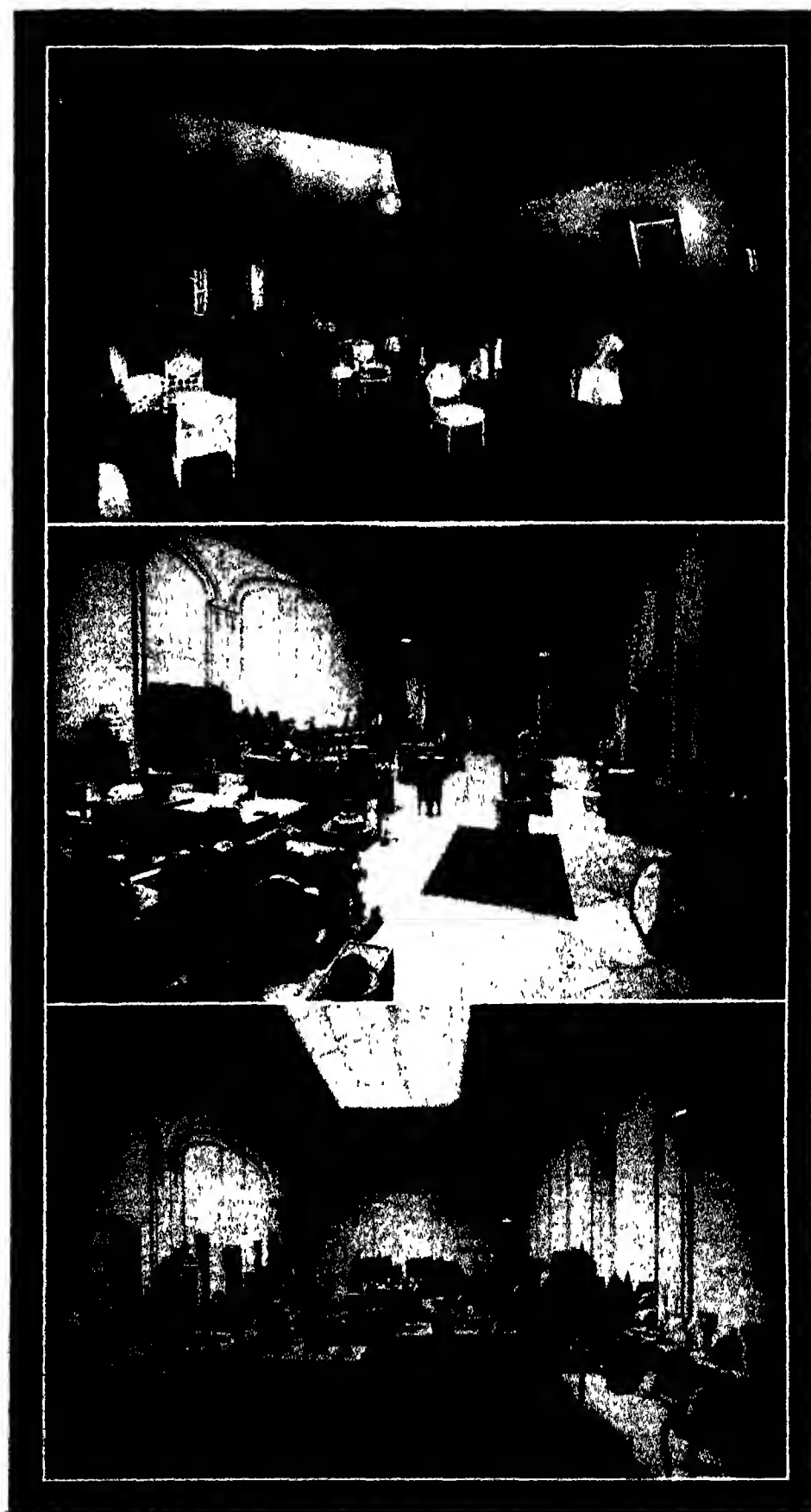
**Inception.**—Since 1890, the date of their  
opening, the Galleries of Mr. Maurice Nahman  
at Cairo have attracted not only connoisseurs  
and collectors, but, in ever-increasing numbers,  
visitors to that city who find interest and  
charm in the artistic products of antiquity.  
Mr. Nahman, who contributes elsewhere in  
these pages an article on Ancient Egyptian  
Art, holds the official licence of the Egyptian  
Government and the Egyptian Museum.

**Showrooms.**—In his finely-appointed show-  
rooms, situated opposite the French Resi-  
dency, Mr. Nahman displays antiques and  
*objets d'art* which include Egyptian, Roman,  
Greek and Byzantine sculpture and curios,  
Greek, Roman and Arabic coins, ancient  
jewels, gems, scarabs, embroideries and  
brasswork. There may also be viewed  
Coptic, Arabic and Greek papyri and manu-  
scripts of extreme interest to the student  
and the historian, while the catholic taste  
of the general collector will be satisfied by  
the fine show of alabaster vases, ushabties,  
amulets, necklaces, bronzes, iridescent glass,  
porcelain and faience. Every one of these  
numerous pieces is guaranteed absolutely  
genuine.

**Collections.**—Mr. Nahman undertakes the  
expert cataloguing of items gathered for  
public sale, and is himself prepared to buy  
collections.

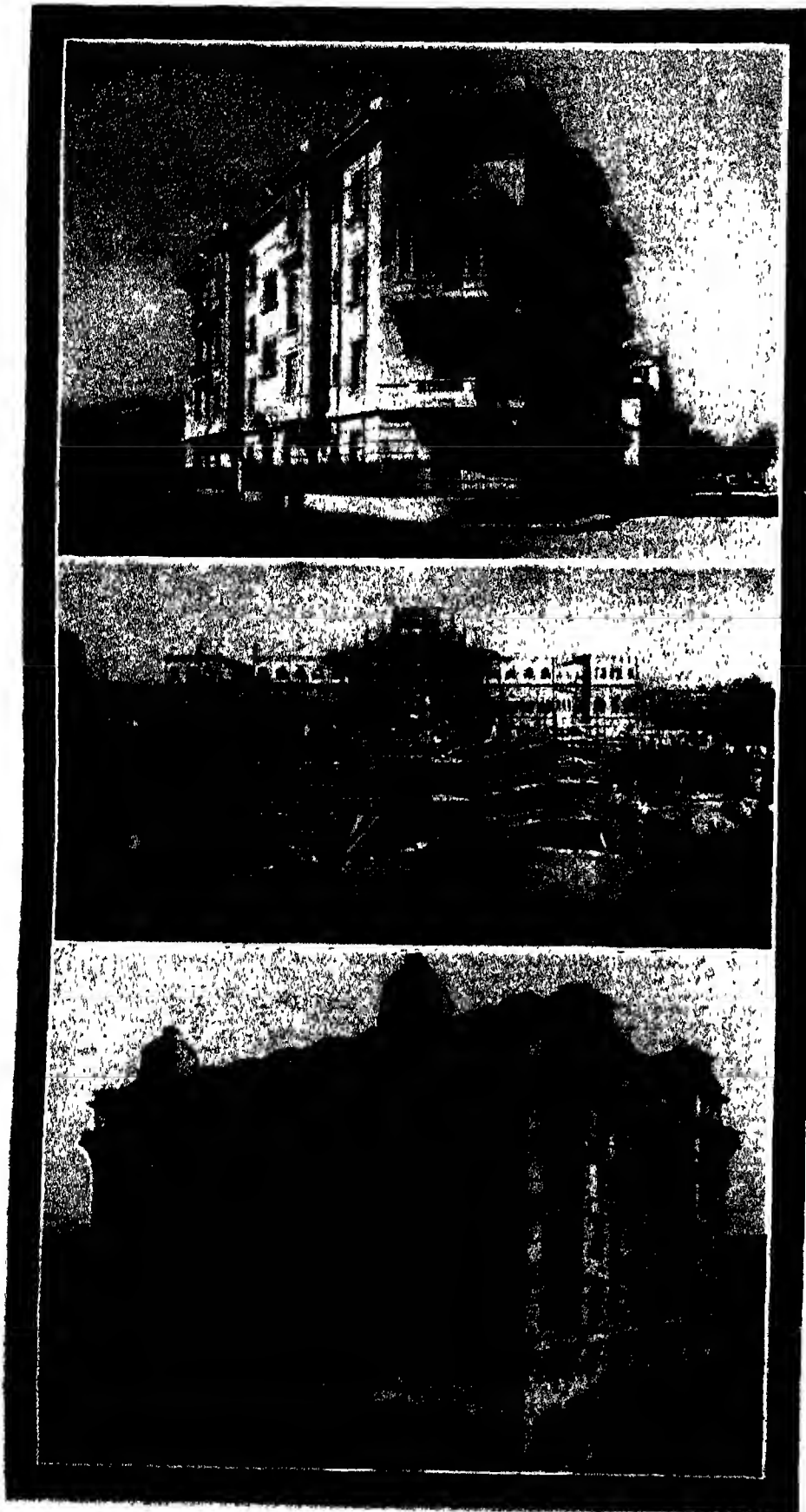
**Museums.**—Business dealings are con-  
ducted with National and University Mu-  
seums throughout Europe and the United  
States, including such institutions as the  
British Museum, the Musée du Louvre, and  
the Museums of Berlin, Munich, Hanover  
and of Denmark.

**Address.**—27 Rue el-Madabegh, Cairo  
(telephone : Ataba 4399).



MAURICE NAHMAN, Cairo.

Beautiful Showrooms in the Maurice Nahman Art Gallery



LÉON ROLIN & CO., Cairo.

Contracts undertaken by the Firm.

1. Kasr el Dubara Building at Cairo.
2. Parliament Buildings under construction.
3. D. Roff & Sons' Premises, Cairo.

#### LÉON ROLIN & CO.

**Inception.**—In 1897 M. Léon Rohn, who had formerly held the position of engineer in connection with the construction of the Salonica-Dedeagatchi Railway, founded, in association with M. M. Padova, a firm at Cairo, with a branch house at Alexandria. The company's original style was M. Padova, Léon Rohn & Co., but at the expiration of the partnership term of ten years the firm was transformed into a limited liability company under the name of Léon Rohn & Co. Subsequently, in 1922, came its final reconstitution as a joint-stock company with the denomination "Société Anonyme des Anciennes Entreprises L. Rohn & Co."

**Development.**—The original firm of M. Padova, Léon Rohn & Co. specialised at the outset in metallic construction particularly of bridges and the framework of buildings, among their notable achievements being a group of steel warehouses for the Alexandria Custom House and various railway bridges. Then they commenced operations in reinforced concrete, employing the Hennebique system, and so became the prime cause of the widespread favour which that method of construction has attained in Egypt. The firm was equally responsible for the introduction into this country of the laying of foundations by mechanical soil-compression and of the Frankignoul pile-system, which now assume vast scope and importance.

**Wartime Activities.** During the War the firm of Léon Rohn & Co. (then a limited liability company) executed for the British Army numerous outstanding works, especially in the Suez Canal region and in the desert between Kantarah and Gaza. Notable among these commissions were roads, railways, canal works, reservoirs and water filters, river and railway bridges, wharves, and works for the Nile Cold Storage, Port Said. At that port the company also carried out, using not only steel but reinforced concrete, the repairing of vessels damaged by torpedo.

**Buildings and Other Works.**—Among buildings erected and other works executed by the firm the following are important achievements:—

**PUBLIC BUILDINGS AND HOSPITALS**—Ministry of Communications, Cairo; Egyptian Parliament Building, Cairo; Egyptian Senate House, Cairo; extension of Kasr el Eini Hospital, Cairo; Benha Hospital; Mohamed Aly Theatre, Alexandria; foundations of the Mortgage Office, Cairo; foundations of the Law Courts, Assiut; foundations of the Moliarem Boy Schools, Alexandria; and foundations of the Alexandria Hospital.

**SACRED BUILDINGS**—Evangelical Church, Cairo; Armenian Catholic Church, Cairo; and Rifai Mosque, Cairo.

**CONVENTS AND CONVENT SCHOOLS**—Convent of the Sacred Heart, at Gamrah and Heliopolis; Convent School of the Sœurs de la Délivrande, Heliopolis; Convent School of the Franciscan Sisters at Saptieh, Cairo; and Convent School of the Sisters of St. Vincent de Paul at Abbassieh, Cairo.

**BANK BUILDINGS**—For the Crédit Foncier Egyptien at Cairo; for the Banco di Roma (Italo Egiziano) at Cairo; for the Anglo-Egyptian Bank (Mousky agency and foundations of the head office) at Cairo; for the National Bank of Egypt at Assuan; for the Caisse Hypothécaire d'Egypte at Cairo; for the Banque d'Orient at Cairo; for Cox's Bank at Alexandria; and for the Banque Misr at Cairo.

**OFFICES AND COMMERCIAL BUILDINGS** For the Huileries de Nouzha at Alexandria, for the Centrale Electrique de Choubrah at Cairo, for the Compagnie Frigorifique d'Egypte at Cairo, for the Société des Sucreries et Raffinerie d'Egypte at Cairo, various alterations and extensions to the Raffinerie de Hawamdieh at Hawamdieh, Nag-Hamadi, Kom-Ombo, Erment and elsewhere, pumping stations at Choubrah, Kom-Ombo and Abon-Honiar, similar works for the Water Company at Cairo, and for the Imprimerie Misr at Cairo.

**PROPERTY FOR RENTAL**—For the Société Belge Egyptienne de l'Ezbekieh at Cairo, for the Société des Biens fonds at Cairo, for the Société d'Héliopolis at Heliopolis, for the Centrale Immobilière at Cairo, for the Soliman Building Company at Cairo, for the Gresham Life Company at Cairo, for the Société des Immeubles d'Alexandrie, and for the following firms at Cairo: MM D. Rofé & Sons, Sursok, Choukiy Pacha, Muscat Bey, Tobia Pacha, Parvis, and Chelmis.

**HOTELS**—Hotel Semiramis, Cairo, extension and alterations to Continental Hotel, Cairo, Heliopolis Palace Hotel, Heliopolis, and Heliopolis House, Heliopolis.

**SHOPS AND STORES**—Orosdi-Back premises, Cairo, Cicurel premises, Tiring premises, Cairo, stores for the Bonded Warehouses Company at Cairo and Alexandria, and storehouses for the following companies: the Société de Pressages, Banco di Roma Commercial Bank, the Sucreries, and MM. Goar, Rolo and Cordahi.

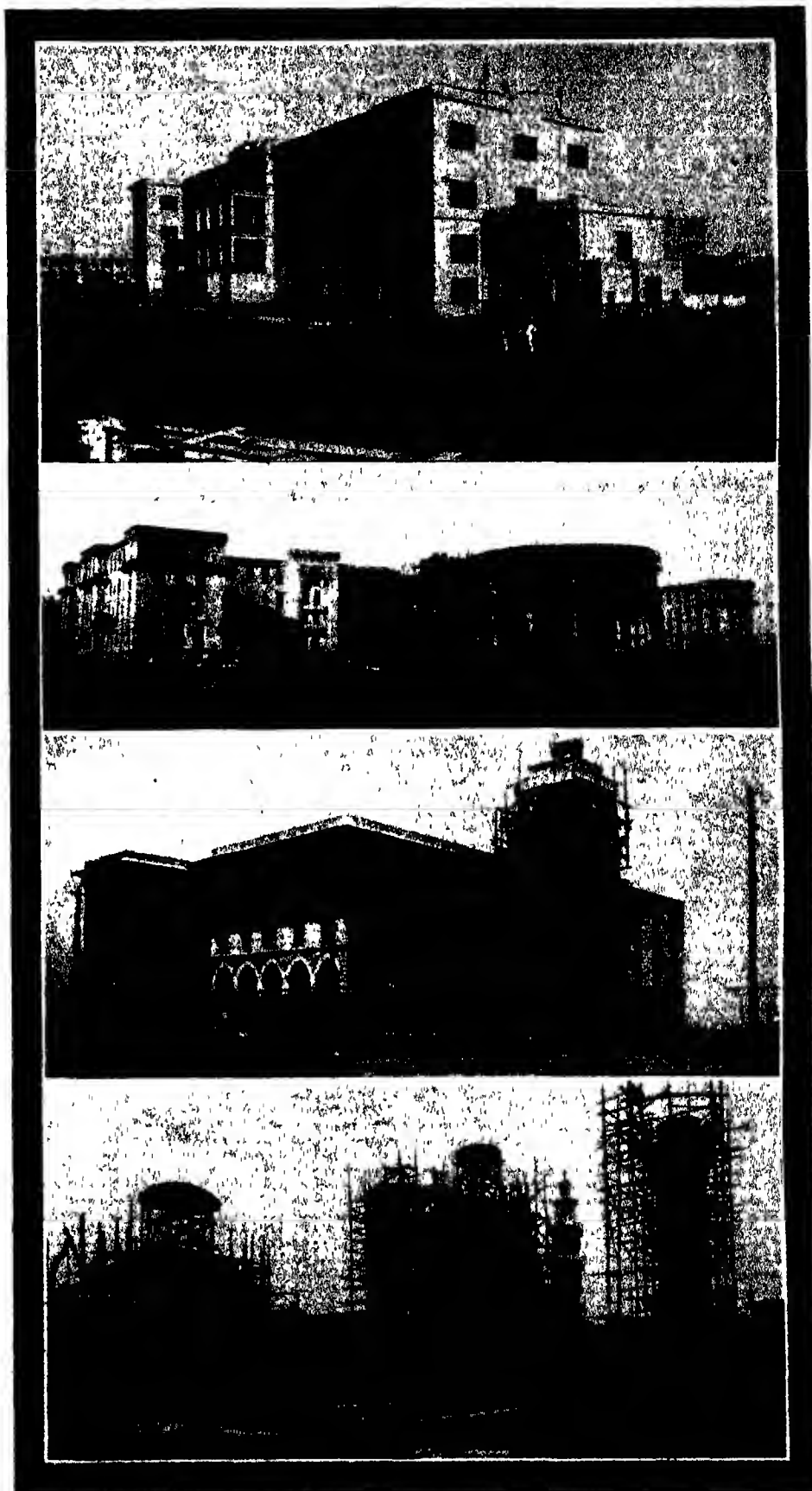
**REINFORCED CONCRETE RESERVOIRS** For the Cairo Water Company, for the Alexandria Water Company, for the sugar-factories at Hawamdieh, Nag-Hamadi, Kom-Ombo, Mataana and elsewhere, for the Suez Canal Company at Ismailia, for the Heliopolis Company at Heliopolis, at the Koubbeh and Zaafatan Palaces, Cairo, and 20 large reservoirs for the British Army in the Suez Canal zone.

**REINFORCED CONCRETE BRIDGES** For the Gaza, Abon-Eng and Abou-Choucha railways and the lower Embabeh route, for roads and tramways at Heliopolis, Tolombat, Maadieh and other towns, foundations on reinforced concrete piles for the Suez Canal bridge at Kantarah and for the Hamoul and Chouth bridges.

**CONSTRUCTIONS IN METAL**—Railway bridges for the Barranis, Guirgeh to Nag-Hamadi, Nag-Hamadi to Keneh, Rassou, Mariout and Choubra lines, bridges on the Almieh, Mehig and Zulhicar roads and at the Alexandria dam, framework for the Salt & Soda Company, Cotton Mills, Tramways at Cairo and Alexandria, and warehouses for the Custom House at Alexandria and Port Said, barrage gates at Ziftah, ropeway for the Sinai Mining Company at Abou-Zenma, and overhead tanks at Suez, Port Tewfik and Port Said.

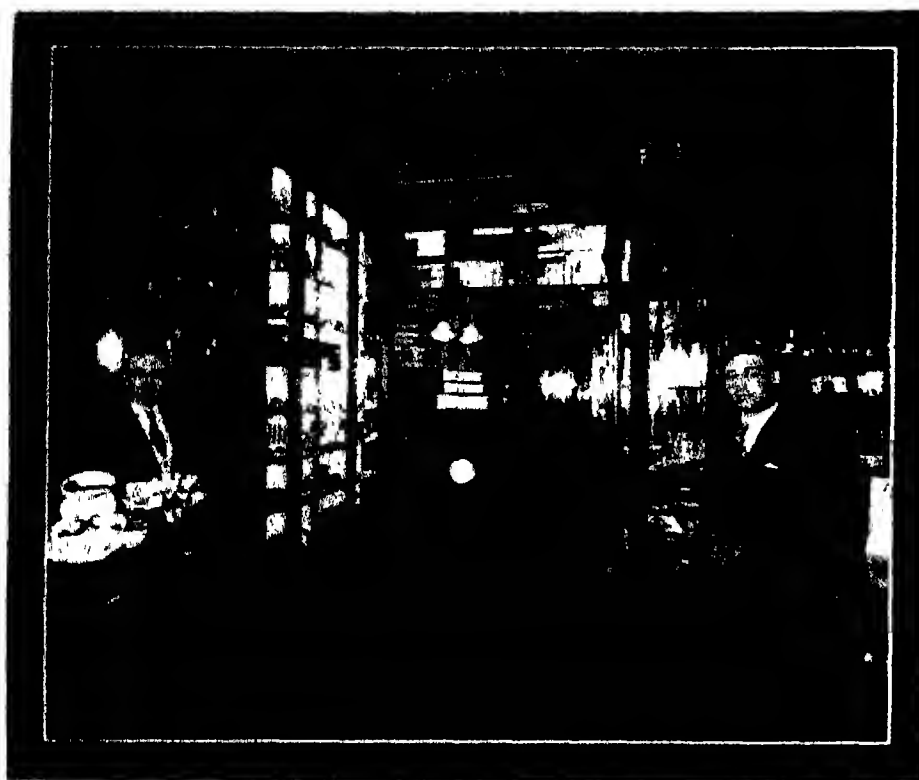
**Cables**—"Rolin," Cairo Codes. A B C 5th Edition and Lieber's.

**SOCIÉTÉ ANONYME EGYPTIENNE D'AMEUBLEMENTS "KRIEGER."**—34 rue Kasr el-Nil, Cairo. Egyptian branch of the Maison Krieger of Paris. Established in 1923. Engaged in furnishing, decorations, tapestries, etc. Head office. Cairo; branch. 35 rue Fouad 1er, Alexandria. Capital. £40,000 in shares of £10 each, fully paid. Administration: Léon Colin, Paul Colin, Albert Colin. Delegate director, Albert Colin. Manager, Léon Lucien Arnaud.



LÉON ROLIN & CO., Cairo.  
Contracts undertaken by the Firm.

1. Convent of The Sacred Heart.
2. Heliopolis Palace Hotel, under construction.
3. A modern Family Residence, Heliopolis.
4. Mosque Rifai, in course of construction.



ROBERTS, HUGHES &amp; CO.

A Section of the Cairo Store.

**ROBERTS, HUGHES & CO.**

**Activities.**—It is always a source of satisfaction to travellers abroad to find their needs supplied by a well-appointed English store specialising in the class of merchandise to be found in the modern London store. They but follow the wise example of residents of all nationalities in dealing with such a firm as Messrs Roberts, Hughes & Co., of Cairo and Alexandria, which purveys goods not only specially adaptable to local climatic conditions and usage, but, as in the case of sporting outfits, bearing the British mark of recognised superiority. At both centres just mentioned Messrs Roberts, Hughes & Co have important establishments carrying practically identical lines.

**Departments.**—The departments specialise as follow —

Sports and games requisites of all kinds, sports' clothing, featuring plus-four suits (3 or 4 piece) and riding breeches, London cut and make.

High grade boots and shoes for gentlemen and ladies, day and evening wear. Riding and mosquito boots are stocked.

The men's outfitting department provides all the newest ideas in day and evening wear.

The traveller is exceptionally well catered for, the travel goods department being well stocked with all kinds and sizes of suit cases, cabin trunks, and travelling rugs in the best English makes.

A well organized mail order department is maintained which deals promptly with every demand, large or small.

**Repair Workshops.**—There is a staff of expert workmen on the premises for repairs to travel goods, footwear and tennis rackets, in fact for repairs and renovations of every kind.

**Store.**—The firm's store at Cairo covers approximately 500 square metres, and employs only assistants specially trained in their respective departments. At the Cairo and Alexandria establishments one of the principals constantly looks after the interests of clients.

**Address.**—Sharia Kasr-el-Nil, Cairo Cables "Sport," Cairo

**ANGLO-AMERICAN NILE AND TOURIST CO.**—8 rue Manakh, Cairo. Established in 1899. Runs tourist boat services on the Nile, builds ships and small craft, undertakes various mechanical constructions and develops Nile traffic. Capital £T. 108,205 500, in 27,745 shares of £4 each, fully paid. Administration: Astley P Friend (president), Capt P W Stout, DSO, OBE, and Robert S Rolo, CBE. Delegate director, Robert O Diacono, works manager, Leo W Cole, tourist manager, Hector V Diacono.

**MORTGAGE COMPANY OF EGYPT LTD.**—15 rue Ennad El Dine, Cairo. Established under English law in 1908, with head office in London and a capital of £1,250,000 in 200,000 ordinary shares of £5 each, £250,000 having been called up and paid. In 1900 £1,000,000 5 per cent preference shares were issued. Subsequently 4½ per cent debentures were issued for a total of £1,750,000; of these £904,460 are outstanding to-day, the remainder having been purchased by the company and cancelled. The object of this enterprise was to lend money in Egypt on first mortgages secured by real property in the country, which is distributed over all the provinces of Egypt and the cities of Cairo and Alexandria. A dividend of 12 per cent was paid on ordinary shares for the years 1921-1925, with a bonus of 2 per cent. for the year last named. Cables: "Egyptcase," Cairo.

**D. LIMONGELLI.**

**Inception.**—This leading firm of engineers and public works contractors, which takes its designation from the name of its founder, has just celebrated its coming-of-age, having been established in 1905. Mr D Limongelli brought to that enterprise qualifications of the highest order as a recipient of the Diploma of Engineering and Construction from the Engineering School at Lausanne University and as the holder of the appointment of consulting structural engineer and expert before the Mixed Courts.

**Activities.** To this firm is due the notable invention of the Delta system of reinforced concrete, and it holds also sole concession for the Strauss system of differential piles for foundations. It specialises in the speedy and economical reinforcement of inadequate or defective foundations by the application of differential cement piles. In addition to these particular operations, for which it has achieved a special reputation, the concern undertakes the construction of every form of private or public building.

**Buildings and Other Works.** Among the most outstanding of the buildings erected and other structures carried out by D Limongelli are the following —

**CHURCHES**—Franciscan Church at Suez and at Ibrahimieh (Alexandria)

**SCHOOLS**—School of the Sisters of the Legion d'Honneur (Mère de Dieu), at the Garden City, Ghezireh (Cairo), Ecole des Frères des Écoles Chrétiennes, at Ichopolis, Petit Collège des Jésuites, at Cairo, and Greek Community School at Cairo and at Mansurah.

**BANKS**—Establishments for the Monts de Piété Egyptiens, and for the Anglo-Egyptian Bank at Mansurah.

**HOTELS**—Regina Palace Hotel, Alexandria, and Hotel du Nord, Cairo.

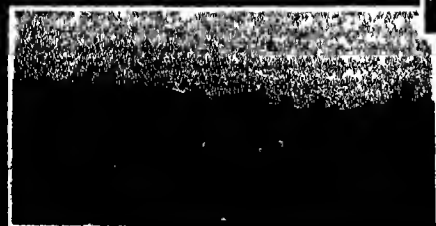
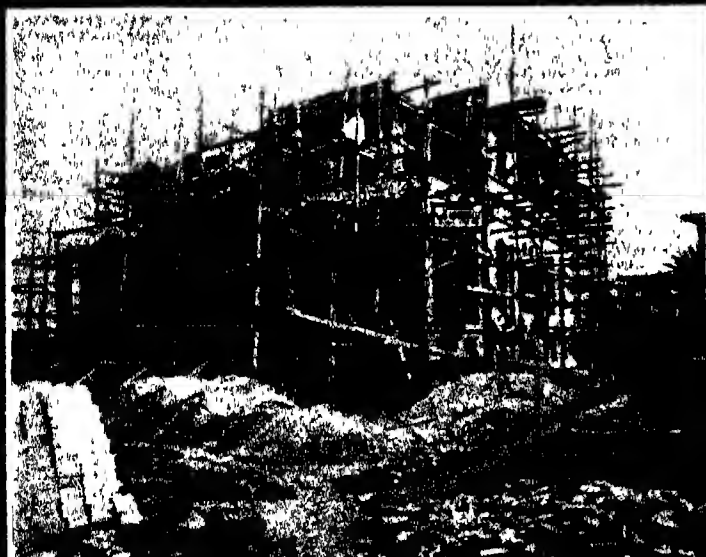
**PRIVATE DWELLINGS**—No less than 150 buildings for lease as flats or villas.

**COMMERCIAL BUILDINGS**—Pelote Basque building, at Cairo, and a special concrete structure for the gypsum factory, Plâtreries de Ballah, at Cairo.

**BRIDGES**—Fourteen bascule bridges for carrying railways and roads over irrigation canals in the province of Giza, etc.

**Address.**—13, Sharia El Nimr, Cairo Cables "Limongelli," Cairo. Code Lieber's.

**GENERAL ACCIDENT, FIRE AND LIFE ASSURANCE CORPORATION LTD.**—19 Sharia Kasr El Nil, Cairo. Head office Perth, Scotland. Established 1885. At its inception operations were confined to accident business in central and northern counties of Scotland, a staff of only ten persons being maintained, quartered in three rooms. To-day the corporation's employees number nearly three thousand, there being also over forty thousand agents working on commission terms all over the world. Policies are printed in eleven different languages. In a recent year its income was nearly £6,000,000, and assets exceed £10,000,000. Since its formation the corporation has paid out £25,000,000 in claims. General manager: F. Norie-Miller, J.P. Chief London office: General Buildings, Aldwych, W.C.2. Telegrams: "Gafiac, Estrand," London.



D. LEMONGELLI, INGENIEUR, E.I.L., Cairo.

Various Types of Buildings and other Works constructed by the Firm.

1. Rapport Building, Cairo.

2. Apostolic Delegation Building.

3. Kotiaoui Bridge.

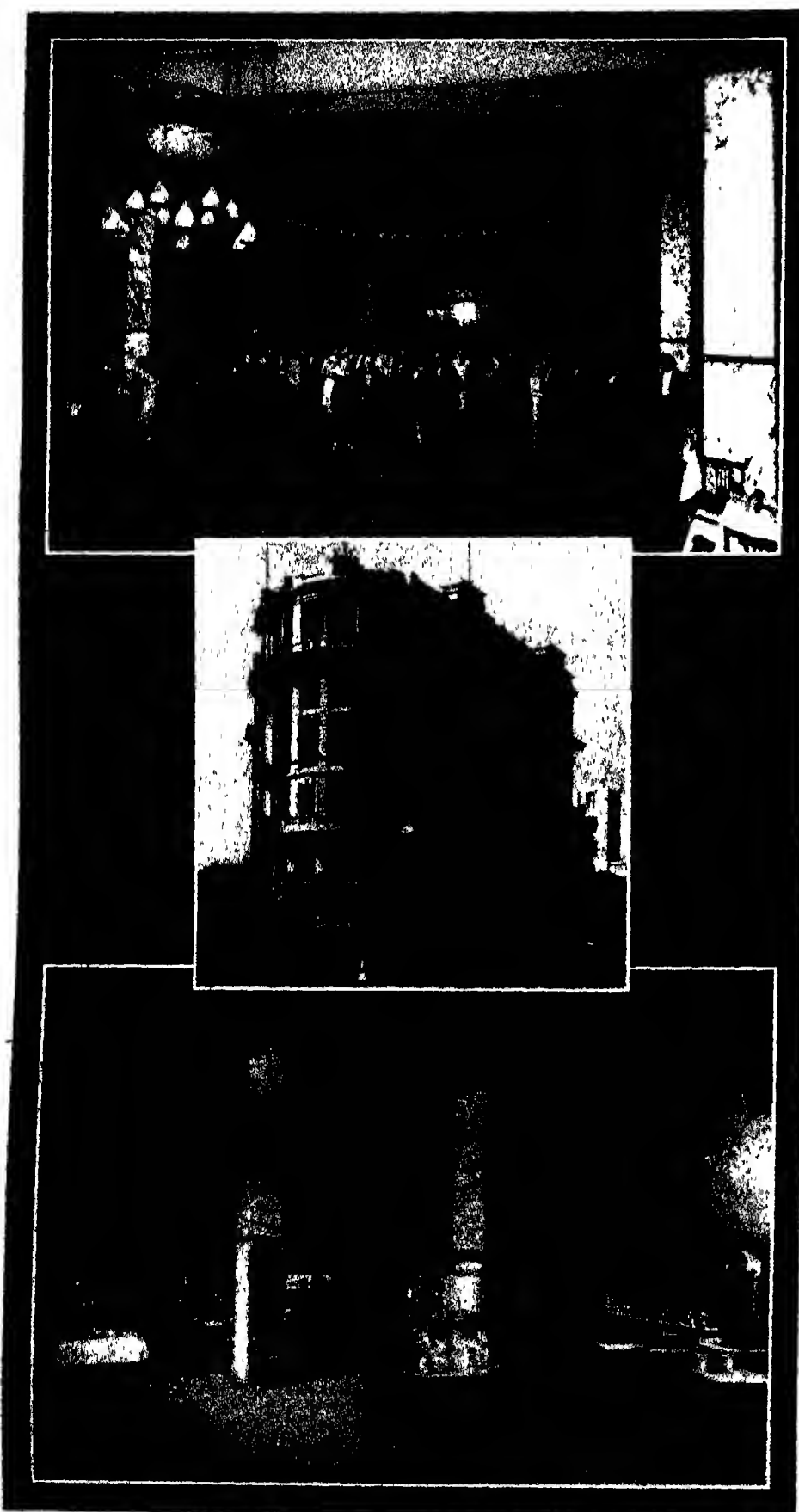
4. Group of Villas and Coptic Church at Zeitun.

5. Catholic Cemetery Chapel, Old Cairo.

6. Kotiaoui Bridge, another view.

7. Kafr Amar Bridge.





J. GROPPi, Cairo.

1. Ball Room Scene at Groppi's Dance, one of the attractions of the Season at Cairo.
2. The new "Groppi" Building, with Ball Room and Confectionery Department on Ground Floor.
3. The Confectionery Department of the new Restaurant.

#### J. GROPPi.

**Inception.**—What a famous catering establishment is to London, Groppi's, as it is familiarly known, is to Cairo, with the difference that it caters for a somewhat more exclusive clientèle. This enterprising firm, conducted in a manner worthy of the best traditions of London or Paris, was founded in 1890 by Mr J. Groppi, who still manages the business with the assistance of his son, Mr A. Groppi.

**Activities.**—One of the titles to fame of Groppi's is the excellence of its cuisine and service, which makes luncheon or dinner in the handsomely-appointed New Restaurant a pleasure often sought by the resident in Cairo and as often recommended to the traveller. Another esteemed branch of the establishment is the provision store, providing practically everything edible from fruit to daintily prepared meals, and constituting a modern delicatessen store, the last word in appointment as in the display of appetising foodstuffs. In the confectionery department a feature is made of French pastry, sold in many tempting varieties.

Nor are the activities of Groppi's confined within the limits of its own splendid premises. The advantages of its cuisine and service have been extended to undertake outside catering, and the firm is constantly favoured with contracts for private parties, balls and receptions, enjoying a well earned reputation in this connection.

**Building.** Cairo may well be proud of Groppi's café, a building executed according to the latest Western plans and most luxuriously appointed. In the general interior colour-scheme rich browns and gold predominate, relieved by blues and greens in the mosaics and painted linings. Panels of yellow marble, dark amber curtains and bronze columns complete the strikingly harmonious effect.

**Rotunda.**—The most beautiful part of the interior is the Rotunda, a hall that architect and decorator have made a masterpiece. This hall, reserved for tea and supper dances, has a specially sprung dancing floor, which covers the central area. Four days a week the Rotunda is filled with a truly cosmopolitan crowd.

**Ballroom.**—Some idea of the spacious ballroom in marble and gold may be obtained from the accompanying illustration. Thrice weekly, or more often during the season, the thing is to dine and dance at Groppi's, with full enjoyment of good food and wine, excellent music, and the general atmosphere of true gaiety.

**Café.**—Beside the New Restaurant and the ballroom there is the added attraction of the café, a popular rendezvous for morning coffee and afternoon tea. These refreshments are served in the café itself, or in a pleasant courtyard under the trees, to the strains of a good orchestra.

**COMPAGNIE FRIGORIFIQUE D'EGYPTE.**—Rue Foum el-Teraa el-Boula-kieh, Cairo. Established in 1904. Manufacturers of ice, and general refrigeration contractors. Install, acquire and operate cold storage plant, etc. Capital £E 180,000, in 45,000 shares of £E 4 each. Financial year ends December 31. Administration: J. B. Piot Bey (president), S. E. Jos A. Cattani Pacha, Arakel Nubar Bey, E. Monnérat General manager, V. J. Kerihuel; sub-manager, F. Brouard.

**E. di A. DE FARRO & COMPANY.**

**Inception.** When Mr E di A De Farro decided thirty years ago to create a firm that should play an active part in Egyptian building and contracting operations, he brought to the undertaking practical experience and expert knowledge of the highest order. In the capacity of engineer to John Aird & Co he helped to construct the Assuan Dam, and in a similar appointment to Sir William Aird & Co was prominently engaged in bridge building and steel construction.

**Development.** The firm of E di A De Farro & Co, so auspiciously founded, set itself to the assimilation of each successive improvement in building and engineering processes with particular regard to ferro-concrete work and foundations. Concession-

**SACRED BUILDINGS.**—Church of the Sœurs Franciscaines d'Afrique at Fayyum, Missions Franciscaines Church, Daher, Roman Catholic Churches at Kantarah and Port Said, Armenian Church of St Gregoire l'Illuminateur, Cairo.

**MISSION AND OTHER SCHOOLS.**—Schools of the Sœurs Franciscaines at Cairo (Sharia Kasr el Nil), Ismailia, Fayyum and Port Said, American mission schools at Assiut, Tanta and Fayyum, St Charles School, Bab el Louk, Municipal Secondary School Minieh, and School of Drainage Instruction, Zeitoun.

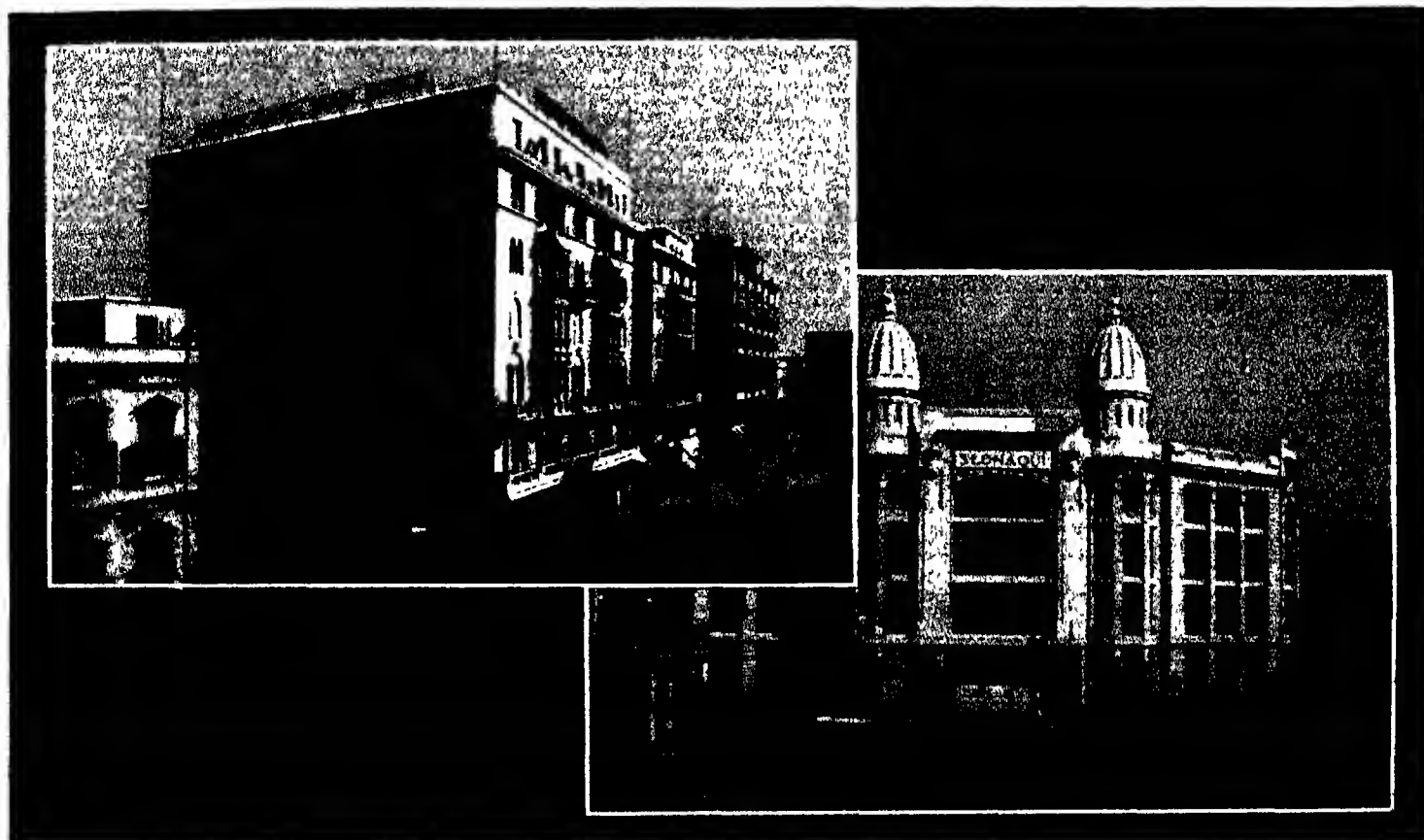
**BANK BUILDINGS.**—For the Anglo-Egyptian Bank at Port Said, National Bank of Egypt at Kenh, Port Said and Fayyum, Crédit Foncier Egyptien at Cairo.

In addition, Messrs E di A De Farro & Co have successfully fulfilled contracts for large numbers of private villas and for warehouses, drainage works, laboratories, reinforced concrete reservoirs, etc.

**WAR MEMORIALS.**—At the behest of the Imperial War Graves Commission they have carried out many noble memorials to the fallen, among the most striking being the beautiful chapel (designed by Sir John Burnet, R A, R S A) in the War Cemetery overlooking Jerusalem, and the austere obelisk memorial at Port Tewfik.

**Engineering Department.**—The firm's engineering department at Cairo specialises in reinforced concrete and in steel construction.

**Offices.**—Head office: St David's Buildings, 16 Sharia el Maghraby, Cairo. Cables



E. di A. DE FARRO & CO, Cairo

1. The "Davies Bryan" Buildings, constructed by the Company. 2. The Sednaoui, also constructed by the Firm.

aire for the "Compressol" system, it has also adopted the mechanical soil-compression method of foundation-laying.

**Operations.** Every conceivable kind of modern building and engineering construction, from Royal palaces to aeroplane hangars, comes within the province of this enterprise. Contracts executed have included those for churches, hospitals, barracks for the British and Egyptian armies, aerodromes and roads.

**Buildings.**—Among the most important building achievements of the company are the following—

**GOVERNMENT BUILDINGS.**—British Consulate, Port Said, Italian Consulate and School, Port Said, for the Egyptian Government, Judges' Rest House and local Tribunals, Assiut; and new works for the daïra of H M the King of Egypt at Cairo.

Agricultural Bank of Egypt at Maghagha, Abou-Kourkas, Bem-Mazar, Mansurah, Chebin-el-Kom, Dessouk, Choubrahit, Zifteh, Kous and Gurgeh.

**OFFICES AND COMMERCIAL BUILDINGS.**—For the Société Agricole & Industrielle d'Egypte at Cairo, Vacuum Oil Co at Cairo and Port Said, Tramways Co at Cairo, Egyptian State Railways at Cairo, British & Foreign Bible Society at Port Said, Davies, Bryan & Co. at Cairo, Telephone Company of Egypt House at Port Said, Marconi Co at Abou Zaabal and Abou Sucri; all concert halls, cinemas and cafés for the Y M C A at Polygon Camp, Moascar, Suez, Ismailia, Port Said, Kantarah and elsewhere; E Casdagli & Sons, Hotel Majestic at Alexandria; and Ismailia wireless station.

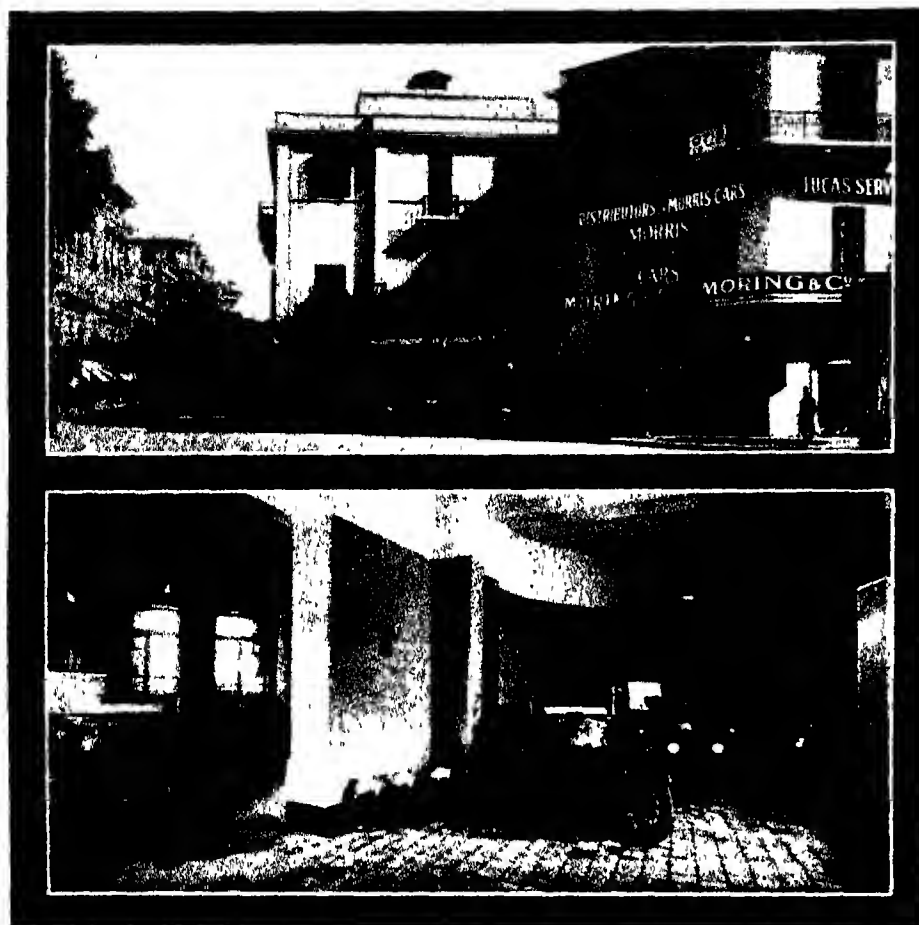
"Defarro" London office 12, Charterhouse Square, E C 1.

**Branches.**—27, Rue Attarine, Alexandria, and at Jerusalem.

**Partners.**—Engr Ernesto di A. De Farro, Mme Emma De Farro, Engr Carlo Fiori, Engr Rinaldo Mazzola, Engr Samuel Curiel, and Charles Hara.

**COMPAGNIE CENTRALE D'ÉCLAIRAGE ET DE CHAUFFAGE PAR LE GAZ, LEBON & CIE.**—Head office 26 rue de Londres, Paris. Cairo works Ave Foadier (manager, Maurice Déjardin), Alexandria works rue Sidi el-Metwalli (manager, Jean Paul de Susini, sub-manager, Charles Lams); Port Said works, rue Constantinieh (manager, F. Julien).

Copyright, see Preface.



MORING & CO., Cairo.  
1 and 2. Showrooms at Medan Suarez

#### MORING & CO.

**Inception.**—Mr. A. Moring, the sole proprietor, established the firm now known as Moring & Co. in 1894, and over thirty years of operations as the representatives of automobiles, motor cycles, bicycles and accessories of every description have gained for the company a unique position in the Egyptian mechanical transport world.

**Showrooms.**—The extensive showrooms and offices are conveniently located at Midan Suarez, the centre of the banking and commercial section at Cairo. Major Court Treatt's recent Cape to Cairo trek finished at Moring's premises, and the Crossley cars used were on display there.

**Representations.**—The company holds agencies for Morris Cowley and Morris Oxford cars, Triumph, Raleigh, Harley-Davidson and Sunbeam motor cycles, Armstrong, New Hudson, Raleigh, Sunbeam and Triumph bicycles, and the Lucas service accessory charging plant, which has an English expert in control.

**Departments.**—An important department, also in charge of an English mechanic, is that for repairs. Mention should be made of the prominent side-line of surgical instruments, in which Moring's have long done considerable business.

**Staff.**—This numbers 18.

**Addresses.**—P.O. Box 747, Medan Suarez, Cairo. Cables: "Cycles," Cairo. Code: A.B.C. 5th Edition.

#### OTHER COMMERCIAL ENTERPRISES

**BRITISH THOMSON - HOUSTON CO. LTD.**—46 rue Madabegh, imm. Rosé, Cairo. Electrical engineers and manufacturers. Egyptian branch office established in 1906. Showrooms, Cairo, Ave. Fouad Ier, Alexandria, 33 rue Fouad Ier. Head office and works, Rugby, England. Sole representatives in Egypt, Sudan, Palestine, Syria and Cyprus for the following associated companies: International General Electric Co. Inc., of New York; Compagnie Française Thomson-Houston, of Paris; Compagnia Generale di Eletticità, of Milan; Société d'Electricité et de Mécanique, of Brussels. Manager, Egyptian branch, B. W. Leak, A.M.I.E.E.

**CAIRO SAND BRICKS COMPANY (S.A.E.)**—Rue Sekket el-Baida, Abbassieh. Established in 1910. Head office, Cairo. Manufacturers of bricks of various kinds. Capital £48,764, in £4 shares. Administration: Dr. E. Hahnloser (president), E. Trembley (delegate director), J. Jacot Descombes, E. Naef and A. Reinhart. Manager, Pierre Luce. Auditors, Russell & Co.

**CALLENDER'S EGYPTIAN DAMP PROOF CO. LTD.**—89 rue Gheziret Badran, Choubrah, Cairo. Head office: 25, Victoria Street, Westminster, London, S.W.1. Managing director: A. H. Warner.

**EGYPTIAN ENTERPRISE & DEVELOPMENT CO.**—29 rue el-Maghrabi, Cairo. Established in 1904. All land, agricultural and industrial operations. Capital £E 275,000, in 27,500 shares of £E 10 and 16,000 preference shares. Financial year ends December 31. Administration: M. N. Shakour Pacha (president), G. A. Eid, J. B. Piot Bey, Léon Rohin, F. Romi Abdel Hamud Bey Suhi. General manager, M. N. Shakour Pacha. Manager, Selim Schemel Bey. Commissioners: J. C. Sidley, Guido Levi.

**FAYOUM LIGHT RAILWAYS CO.**—Central office at Fayoum. Cairo office, Savoy Chambers, rue el-Borsa el-Guedida. Administration: Francis Fitzgerald, C.B.E. (president), 8, Crosby Square, London, E.C. 3 (telegraphic address: "Fayouman Stock," London), Charles Thonet, Brussels (telegraphic address: "Engetrane," Brussels), Gaëtan Carlier, Liège. Managing director, Charles Duquenne, chief of administrative staff, Louis Naudi, Fayoum, chief of technical staff, Paul Bussy, Fayoum. Secretary (Cairo office), Jules Arnaud. Auditors: Price, Waterhouse, Peat & Co. and Geo. B. Abdalmezzih.

**MENZALEH CANAL & NAVIGATION CO.**—Gresham House, 20 rue Soliman Pacha, Cairo. General shipping, export, import, landing, clearing, and forwarding agents. Conduct towage and lighterage, Port Said, and inland water transport. Daily steam whetler services on Lake Menzaleh for passengers and goods. Bi-monthly cargo service Port Said (Cairo and vice versa). Administration: H. B. Greville (chairman), Astley P. Friend, G. Levi and F. Murrell-Wright, Port Said (director and general manager).


**PLATRIERES DE BALLAH (S.A.E.)**—7 rue Gamch Charkass, Cairo. Manufactures and sells all qualities of plaster. Head office at Cairo, works at Ballah and Cairo. Capital £E 24,000, composed of 6,000 shares of £E 4 each. Administration: A. Jarroson (president), A. Mathon (delegate director), N. Georgiades Bey, G. Guieu, H. Payen, P. Terrail, M. L. Zarmati.

**SOCIETE ANONYME DES DROGUERIES D'EGYPTE**—22 rue Imad el-Dine, Cairo. Established in 1914. Druggists, chemists, and purveyors of medical specialties, mineral waters, etc. Capital £E 100,000 fully paid, in 25,000 shares of £E 4 each. Financial year ends March 31. Administration: E. Del Mar (president), I. Benarou (delegate director), A. Del Mai, Max Fischer, B. Grunberg.

**SOCIETE ANONYME DES EAUX DU CAIRE**—Rue Foum el-Teraa el-Boulakich, Cairo. Established in 1865. Capital Frs 8,500,000 in 68,000 shares of frs 125, fully paid, of which 12,524 shares have been redeemed. Financial year ends December 31. Administration: S. E. Sir Hussein Ruchdy Pacha (president), J. B. Piot Bey (vice-president), S. E. Boghos Nubar Pacha, E. Mirel, S. E. Joseph Aslan Cattani Pacha, H. Naus Bey, Arakel Nubar Bey, E. Monnerat, S. E. Mahmoud Fakhri Pacha, and a Government delegate. General manager, V. J. Kerihuel, sub-manager, F. Brouard. Legal adviser, Me César Adda. Auditors, César Caprara and Edgar Papasian.

**SOCIETE ANONYME D'IRRIGATION DE BALIANA**—12 rue Cheikh Aboul-Sebaa, Cairo. Irrigation experts. Capital £40,000 in 10,000 shares, fully paid. Administration: N. Naus Bey (president and managing director), S. E. J. Cattani Pacha (delegate director), C. Deleuze, E. Mosses, G. Schirmann, M. Ismailun. Secretary, H. Boinet.

# INDUSTRIES

 WING to its lack of iron-ore, coal, and water-power, Egypt can never hope to be an industrial country on a very large scale. Nevertheless, there have always been a limited number of local industries, of more or less importance, and these have been encouraged by the cheapness of labour. The long duration of the World War, too, gave a decided impetus to many industries not previously identified with Egypt, and since that war the Government has taken up very seriously the question of the development of those industries already in existence, as also the encouragement of new ones. This is done through the medium of the Department of Commerce and Industry, which has established at its headquarters in Cairo a permanent exhibition of Egyptian crafts and industries. The inspectors of the Department travel throughout the country, inspecting the various industries. They encourage industrialists, guide them to the latest methods of manufacture and marketing, help them to get in direct touch with foreign manufacturers and merchants from whom they can obtain their raw materials, and, indeed, spare no pains to foster the development of every kind of industry.

## PRODUCTS

**BUILDING MATERIAL, ETC.** Building material has always been abundant throughout the country, which has in all ages been famous for the variety and beauty of its granite, basalt, limestone, sandstone, alabaster, marble, diorite, quartzite, porphyry, breccia, and veined and variegated stones of many kinds. Limestone is quarried in large quantities along the Nile Valley from Cairo to Assuan, at Mex (Dikhila), Suez, and Ismailia for building, irrigation training works, and other purposes. The stone necessary for the Port Said jetty and break-water and for the new Suez harbour works was obtained from the important Attaqua quarries near Suez. Basalt is produced at Abu Za'bal for kerbstones, paving stones, road metal, and railway ballast. Red bricks and tiles are made from the clay of El Wadi, south of Helwan, while Assuan clay, the only refractory clay found in Egypt, is utilised in the manufacture of fire bricks, glazed pipes, etc., of good quality. A special kind of clay found at Qena is employed in the production of very large quantities of porous native pottery ("goulas," "zeers," etc.) for water cooling.

**CEMENT.**—The cement industry in Egypt is a promising business, some 70,000 tons being made locally. The largest cement producing company is the Société Anonyme des Ciments d'Égypte at Ma'sara, a suburb of Cairo. At present about 80,000 tons are imported annually, but it is hoped that the local output will gradually be increased to an extent which will enable the whole of the requirements of the country to be met.

**CIGARETTES.**—The manufacture of cigarettes is Egypt's leading industry, and the product is world-famed. Tobacco is not grown in Egypt, but is imported from the Black Sea littoral and the adjacent countries, the best Macedonian tobacco coming from Cavalia. During the year 1924 there were imported 6,899,500 kilos. of tobacco to the value of £E.1,499,546, as against 6,667,698 kilos. valued at £E.1,268,119 in the previous

year. During the same two years Egypt exported 171,910 kilos of cigarettes valued at £E.332,041, as against 187,914 kilos valued at £E.366,948. The amount of tobacco consumed locally is very large, but the exports of cigarettes show a distinctly declining tendency, due to reduced buying by many of the foreign purchasing markets.

**COTTON SPINNING.**—The cotton grown in Egypt is mainly for export. Considering the wealth of raw material at its command, the country has not yet developed the manufacture of the product to the extent that might have been expected. At the present time there is only one factory for the spinning of cotton yarns, that of the Filature Nationale d'Égypte at Alexandria, which was established in 1896. This factory consumes annually some 60,000 kantars (approximately 2,500,000 kilos) of low grade cotton. In addition to the spinning of cotton yarns, brown cloth (sheet and damur) is manufactured, much of which is exported to the Sudan and Palestine. There are no factories for spinning other kinds of yarn, but all over the country the villagers occupy themselves during their leisure time in spinning quantities of woollen and linen yarns, employing hand spindles. The yarns spun in this way are generally rough and uneven, and are used in weaving coarse fabrics.

**ENGINEERING.**—Engineering works developed largely during the War, and are to be found chiefly in Cairo, Alexandria, Mansurah and Port Said. Spare parts of machinery similar to those imported from abroad can now be manufactured in the country. Motor car repair shops exist all over Egypt owing to the large number of motor cars now in use.

**FISHING.** Fish is an important article of food in Egypt, and the fish caught in the lakes of Menzala, Burullus, Idku, Maryut and Karun average 30,000,000 kilos a year. The fisheries are under the supervision of a Government Department. That Department has suggested to the Belchra Provincial Council that sardine-tinning might with profit be taught to the townsmen of Rosetta, an important fishing centre.

**LEATHER WORK.**—This industry made great strides during the War, when the importation of all varieties of leather ceased. The main centres are Cairo, Alexandria, and Damietta. It is expected that the prospects of the industry will improve owing to the abundance of its raw materials and cheap labour, especially when tanning is carried on more in accordance with modern methods and up-to-date machinery is installed. (See also under "Commerce.")

**MINING.**—The mining industry of Egypt is unimportant. Gold has been mined during recent years at various scattered localities in the Nubian desert, but operations are at present at a standstill owing to the high cost of production. Coal has been found in small seams, but until further investigations have been made it is impossible to say whether they are worth working. Copper and manganiferous iron ores are found in the Sinai Peninsula, and the output of the latter, which has steadily increased since 1918, is exported principally to Europe for use in the manufacture of basic "pig iron." Petroleum is extracted at Gemsa and Hurgada on the coast of the Gulf of

Suez, and drilling for oil is now proceeding in several other areas. There are large soda lakes at Wadi Natron, where there is a factory for the production of caustic soda.

**OIL MAKING.**—There are several oil mills for the extraction of oil in both Upper and Lower Egypt. In the Sharkieh Province about 10,000 feddans of the best land are cultivated with sesame. The area under cultivation is gradually decreasing owing to the greater demand for cotton. In Upper Egypt, lettuce and sesame oils are produced, while in Lower Egypt, linseed and cotton oils are extracted. The chief centres for sesame oil production are Bulbis and the Eastern regions of the Delta. The total production of sesame oil is approximately 1,000,000 kilos yearly. In Lower Egypt there are seven factories for the extraction of cotton seed oil, situated at Alexandria, Cairo, Kafr el Zayat and Mit-Ghamr.

**PRINTING.**—Printing in Egypt has greatly improved. There are a large number of presses owned and run by individuals. Printing can now be done in the several languages which are required in the larger cities. The Government Press at Bulaq is one of the largest in the country, is equipped with the most up-to-date machinery, and employs 500 hands. Besides Arabic type for printing books, etc., there are English, French, German, Dutch, Turkish, Greek, Russian, and Rumanian types for printing in those languages. Some of the dies are cast in Egypt, but the greater number are imported from abroad.

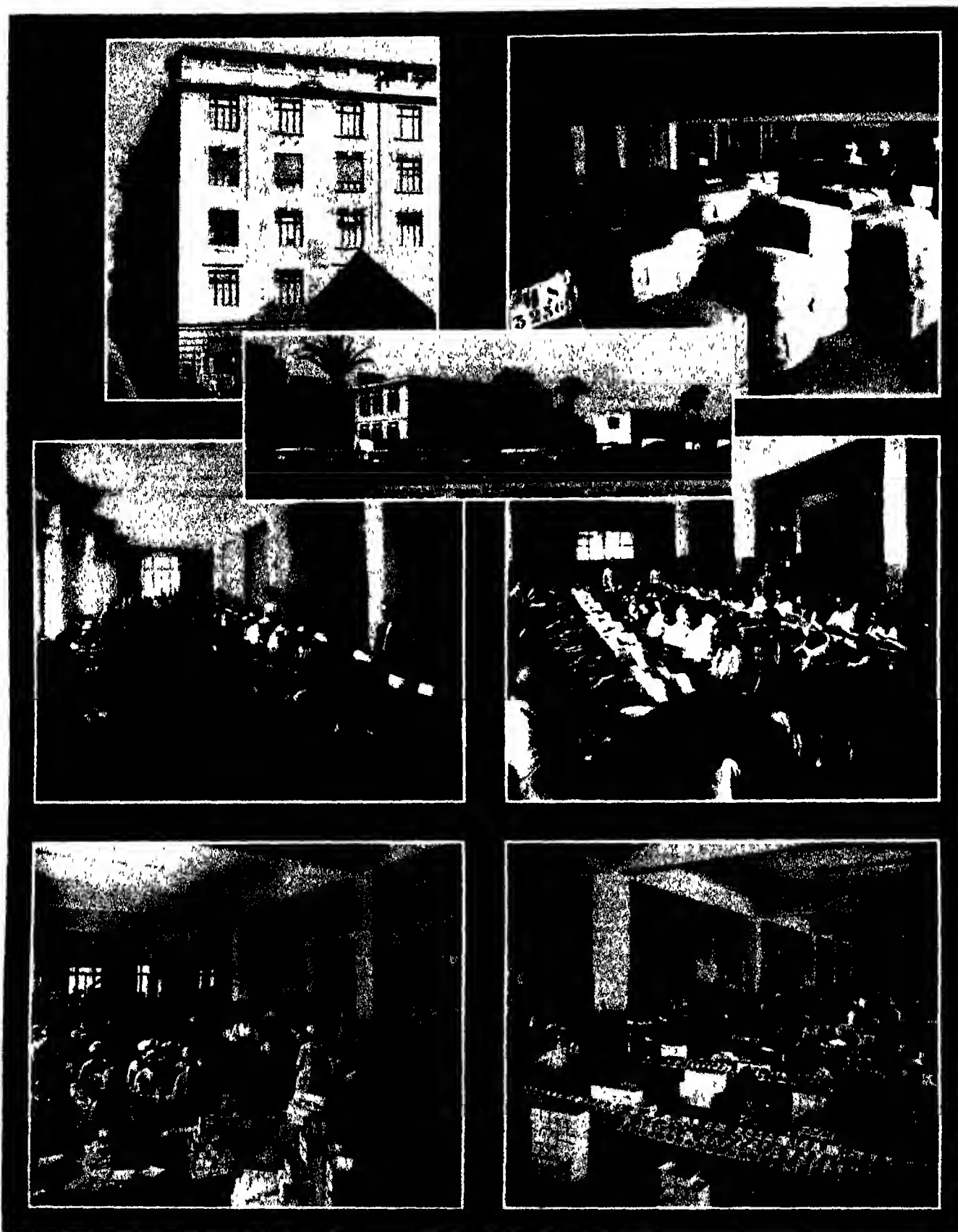
**QUARRYING.**—See "Building Material."

**RICE-HULLING.**—This industry is carried on in most of the towns of the Northern Delta, such as Rosetta, Damietta, Burullus, Iqwa, Mansurah, and Menzala. The leading hulling mill in Egypt is that of the Rosetta and Alexandria Rice Mills Company, situated on the Mahmoudieh Canal, near Alexandria. This mill hulls nearly half of the Egyptian crops, and is well equipped with the latest types of machinery.

**RUBBER MANUFACTURE.**—This is undertaken by one company in Egypt, the Société des Industries Égyptiennes, of Cairo, which has been in existence for 15 years. All kinds of rubber articles are manufactured, the production being almost entirely for local consumption, the total annual sales amounting to about £E.18,000 or £E.20,000, one quarter of which is made through adjudications for Egyptian Government enterprises.

**RUG-MAKING.**—Rugs of kleems are manufactured in a considerable number of villages. The most important industry is that of the Bedouins, whose women weave large quantities of rugs of most attractive design. The wool is bought locally and only vegetable dyes are used. Large numbers of kleems are woven at Beni Adi (Asiut Province). Other rug-weaving centres are Cairo, Beni Suef, Būsh, Minya, Asiut, Fūwa, Nag'Hamādi, and El Kharga Oasis.

**SOAP MANUFACTURE.**—Large quantities of ordinary household washing soap are manufactured, Cairo, Alexandria, Tanta, and Zagazig being the chief centres. Egyptian soap is principally made from cotton-seed oil mixed with caustic soda. In some cases olive oil and coconut oil imported from Greece, Syria and Palestine are used.



MASPERO FRÈRES LIMITED, Cairo.

1. The Company's Building.

2. Bulk Tobacco Warehouse.

3. Fleet of Delivery Trucks.

4. Picking Leaf.

5, 6 & 7. Interesting Aspects of the Packaging Department.



**SUGAR REFINING.**—Sugar refining can be considered as next in importance to cigarette manufacturing. The sugar industry is the monopoly of one large company called the "Société Générale des Sucreries et de la Raffinerie d'Égypte," founded in 1897 with a capital of 114,000,000 francs, and operating several factories. During the War this concern made very large profits owing to the scarcity of sugar from other parts of the world. The company can produce 100,000 tons of sugar annually. It employs over 20,000 Egyptian workmen, besides European experts. Egyptian sugar is famed for its whiteness and sweetness. (See text concerning this company, following "Agriculture.")

**TANNING.**—This industry is carried on extensively in Egypt, and in almost every town there are two or more tanneries. The main centres are Cairo and Alexandria where there are 40 tanneries out of 200 such enterprises in the country. With the exception of a few establishments where machinery of the latest type is used, and where tanning is conducted according to scientific and practical methods, almost all the work is done in the old way. The leather at present produced lacks finish, but the larger tanneries are gradually improving the grade of their output. Big quantities of skins and hides are imported yearly.

**WEAVING INDUSTRY.** Weaving workshops are scattered throughout the country, but the greater number of them are small, employing antiquated simple hand-loom and making only slight profits. Very few workshops employ as many as 50 hands, the majority affording employment to from five to ten weavers. The only weaving workshops in Egypt that are furnished with up-to-date machinery are the silk factory at Damietta the Filature Nationale d'Égypte at Alexandria and the Michalla Weaving School. The last named is an institution established for training students in the art of weaving. There are about 10,000 cotton looms altogether, with an annual output of 15,000,000 metres, 9,000,000 of which are woven by the Filature Nationale, and 2,000 silk looms, with an annual output of 3,000,000 metres. The industry at the last census provided employment for 72,818 hands.

## REPRESENTATIVE INDUSTRIAL ENTERPRISES

### MASPERO FRÈRES, LTD.

**Inception.**—Of the industries in Egypt, cigarette-making ranks second only to cotton, and the importance of the former can be gauged from the fact that during the year ended March 1925 the Egyptian Government receipts from import duty on tobacco amounted to £E 5,875,000 or £6,021,875 sterling. Maspero Frères Ltd., who control one of the largest cigarette and tobacco manufacturing organisations in the country, and who therefore contribute very liberally to the State revenue, commenced operations in Cairo in 1906.

**Machine-made Cigarettes.**—At the inception of the firm cigarette-making machinery was not used in Egypt, all cigarettes being rolled by hand. Consequently the ready-made cigarette, owing to its comparatively high cost of production, was denied to the poorer classes, who were accustomed to making their own cigarettes from cut tobacco in packets. Maspero Frères Ltd., by introducing into Egypt the manufacture of cigarettes by machinery, revolutionised these conditions. Where once 90 per cent. of the local consumers relied on cut tobacco and only 10 per cent. on ready made cigarettes,

the local consumption to-day comprises quite 70 per cent machine-made cigarettes and 30 per cent those rolled from cut tobacco. The innovation has greatly added to the prosperity of the country. The number of workpeople in the various factories has been steadily augmented, and box-making and printing factories have been started in large numbers to supply the elaborate cigarette packings which have supplanted the former plain tobacco wrapper.

**Organisation.**—Since the growing of tobacco in Egypt was totally prohibited by decree dated June 25, 1890, all the leaf required for this flourishing industry has to be imported. Maspero Frères Ltd retain a thoroughly trained staff of leaf tobacco buyers in the various Near East markets, ensuring perfect selection in the purchase of material. In their factories the firm has always maintained a very high standard of cleanliness and hygiene, thereby setting an example not without its effect on the general condition of the workpeople during the last twenty years.

**Export Trade.**—Egyptian cigarettes, by the superior quality of their material and manufacture, are popular among smokers throughout the world. The Egyptian Government issues to manufacturers a mauve coloured guarantee stamp, which is affixed to all packings of Egyptian cigarettes exported from Egypt, as an assurance to consumers of the origin of their purchases. Maspero Frères Ltd, in addition to their wide local business, participate extensively in the high-class export trade, and their well-known cigarettes can be obtained in most parts of the world. The exported brands are, to a very great degree, hand-made.

**Factory and Depots.**—The firm's main factory is situated in Cairo (P.O. Box No. 1064), with a sales department in Sharia-el-Maghaby. Other selling depots are established in Alexandria, Port Said, Ismailia, Suez, Tantah, Zagazig, Kafi-el-Zayat, Fayyum, Beni-Suef (Egypt), Khartoum, Atbara, Omdurman and Wad Medani (Sudan). In all the remaining towns and principal villages in Egypt and the Sudan selling agents have been appointed.

**Cables.**— "Orepsam," Cairo. Codes A B C 4th and 5th editions, Bentley's and Broomhall.

### TABACS & CIGARETTES MATOSSIAN, SOC. ANON.

**Egyptian Cigarettes.**—It is affirmed that a Havana cigar must not only be made of the famous Vuelta Abajo leaf, but, if perfection is desired, it must be manufactured and smoked on the island of Cuba. Whether such restrictions should without exception be imposed on the smoker of the Egyptian cigarette may be disputed, but there is substantial foundation for the claim that an Egyptian cigarette must be made in Egypt. The leaf should be selected by the descendants of the men who made such cigarettes renowned, and blended by others also possessed of inherited aptitude. Such qualifications of the highest order combine to produce the world-famed brands of the House of Matossian.

**Inception.**—The present business was founded by Mr Ohannes Matossian about 50 years ago, and constituted as a limited company by Khedivial decree in 1899.

**Development.**—During its existence of over a quarter of a century the firm has maintained a record of continual expansion. To-day it controls the largest cigarette factory in the world manufacturing solely Egyptian or Turkish cigarettes. The hands employed number 4,000, the weight of finest Oriental leaf consumed daily is 10,000 kilos, over 2,000,000,000 cigarettes are

manufactured every year, and no less than £2,000,000 is paid annually as duty to the Egyptian Customs.

**Factory.**—Inspection of the factory, which is under the administration of Mr J Matossian, makes clear how so enormous an output is achieved. A detailed enumeration of the plant would be tedious, as it is understood that capacity to produce six to seven million cigarettes per day implies complete installation of "up-to-the-minute" equipment for the various processes of drying and fermenting, cutting and cleaning, paper cutting, cigarette making, packet making and labelling. There are few machines more interesting to watch in operation than that which makes cigarettes. The slightest possible mechanical inexactitude would cause the breaking of the delicate slip of tissue wrapper and the stoppage of the machine, but such a mishap rarely occurs to interrupt its unending stream of about 200,000 cigarettes daily. The cigarette-making room at the Matossian factory, installed with 40 such machines, is an exceptionally interesting department. Elsewhere on the same premises is executed all printing required, from that of the ordinary wrappers for loose tobacco to the beautifully-finished packet labels and wrappers of the finest brands. The motive power for the factory is supplied by two 150 h.p. Diesel engines and a Franco-Loire of 80 h.p., operated on the individual motor system under the supervision of four electricians.

**Hand Packing.**—Some of the expert operatives who pack by hand the more expensive among the thirty brands of Matossian cigarettes display a remarkable dexterity. The present writer watched one such expert snatch handful after handful of cigarettes, place them deftly in a box with tissue and silver-paper wrappings, and with two or three light pats complete the packing process. The amazing thing was that the packer grasped exactly ten cigarettes every time, neither more nor less. The record for one man in an eight-hour day is 40,000 cigarettes, which is its own testimony to this lightning dexterity.

**Export.**—The Matossian company exports annually over 500,000,000 cigarettes, or one-quarter of its total output, a fact which supports the view that the discriminating smoker throughout the world demands a brand which he knows to have been manufactured in Egypt.

**Concessionaire.**—Messrs Spalding & Hodge Ltd, of Drury House, Russell Street, London, W.C., have been appointed sole concessionaire for the export of Matossian products to Australia, New Zealand, South Africa, Canada, India, China, British East Africa, Ceylon, Straits Settlements, Malay States and Java. They have a head office in Egypt at 19-21, Kasr-el-Nil, Cairo (cables "Old-vury," Cairo), and a branch at Alexandria.

**Cables.**—For Tabacs & Cigarettes Matossian, "Matossian," Cairo and Alexandria.

(See also illustration page 56)

### SOCIÉTÉ EGYPTIENNE D'IRRIGATION.

—12 rue Cheikh Aboul-Sebaa, Cairo. Established in 1896. Administration: H. Naus Bey (president and delegate director), S. E. Joseph Aslan Cattani Pacha (vice-president), E. Ternynck, C. Deleuze, E. Mosseri, G. Schirmann. General secretary, H. Boinet.

**SULZER FRÈRES.**—Head office Winterthur, Switzerland. Head offices for Egypt and the Sudan: 5 rue Emad el-Dine, Cairo. General manager, E. Naef, engineer. Attorneys: J. Koller, B. de Raemy, H. Rapp. Branches: 4 rue de la Gare du Caire, Alexandria; rue El Mahatta, Assiut.



MATOSSIAN, Cairo.

1. Preparing Tobacco for Blending.
2. Cigarette Making Machines.
3. Packet Making Department.

4. Cutting and Packing Loose Tobacco.
5. Cigarette Packing Department.
6. View of the Power Plant.

(See *Editorial*, page 55.)

**W. ABLITT.**

**Inception.**—The story, constantly recurring in the varied annals of commerce, of the progress of some captain of industry from an apprentice to be proprietor of the firm finds again its application in the case of Mr. Walter Ablitt, who joined the old Cairo firm of R. Kuster & Co., specialists in hardware and builders' supplies, as articulated

a local tile industry soon became apparent to Mr. Ablitt, and in 1918 he established the present factory under the business style of W. Ablitt.

**Development.**—At the commencement the undertaking employed 20 hands, and produced daily some 120 square metres of tiles. To-day both staff and output have been more than trebled, and after supplying

system. The power is supplied by a gas-motor and hydraulic pressure.

**Demand.**—The firm has contracts with practically all modern Egyptian Government buildings, schools, American missions, Suez Canal buildings, and hotels.

**Future Expansion.**—Having seen his tile-manufacturing project established with conspicuous success, Mr. Walter Ablitt, sole



W. ABLITT, Cairo

1. One of the ten Tile Pressing Machines.  
3. Tile Soaking Tanks.

2. Polishing Machine.  
4. The finished Product ready for Despatch.

employee in 1882. He took over the management some years prior to becoming senior partner in 1914, when the title of the business was changed to W. & H. Ablitt.

**Activities.**—One of the chief interests embraced by the firm was the representation of many well-known British manufacturers of cement tiles, structure steel and other builders' requisites. The potentialities of

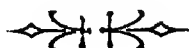
the ever-increasing demand there is seldom in stock less than 10,000 square metres of the highly-finished product. Tiles are manufactured in more than 200 designs, all of which are cast in Italy and imported therefrom.

**Plant.**—The plant includes ten modern tile presses, polishing machines, extensive soaking tanks, and a light rail transport

proprietor of the firm, intends to develop in conjunction therewith departments handling those builders' supplies in which he traded prior to 1918.

**Branch.**—A branch is established at Alexandria.

**Address.**—64, Avenue Fouad Ier, Cairo. Cables: "Waltabli."



## THE PETROLEUM INDUSTRY OF EGYPT

**W**HAT is now known as "petroleum" was without doubt found and employed in Egypt many thousands of years ago. Numbers of the oldest buildings in the country were built with the aid of a matter which was composed wholly or partly of some bituminous substances, in those ancient times, boats on the Nile were coated with the same material.

The only region in this vast country where oil is found is on the coast of the Red Sea, 200 miles south of Suez, and the deposits now being exploited were undoubtedly also known in ancient times. One land mark in

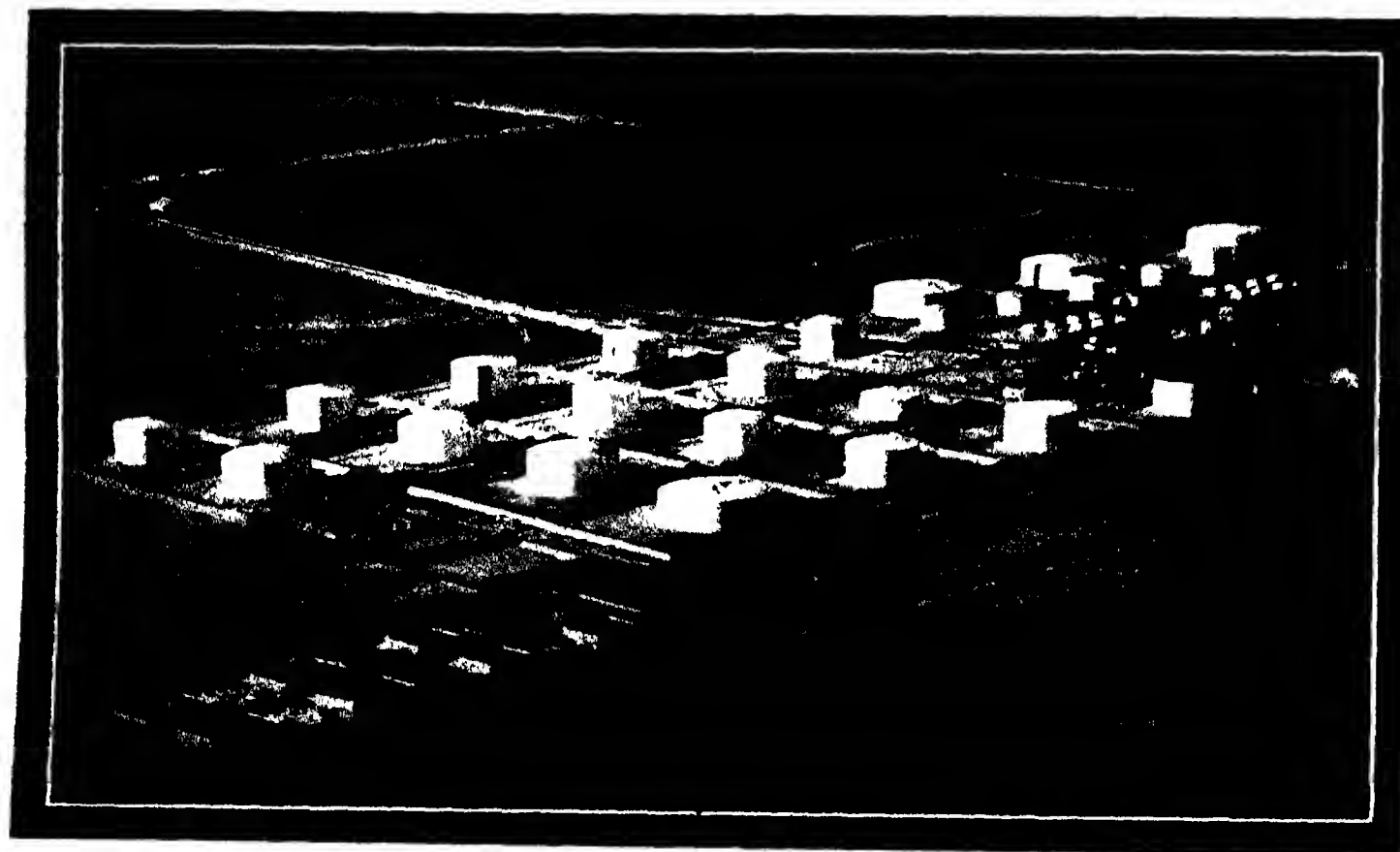
Of these, several have exhausted their capital in unproductive work, though others, such as the Anglo-Egyptian Oilfields, Ltd., the Vacuum Oil Company, the Egyptian Central Oilfields and the Egyptian Oil Syndicate, have met with a considerable measure of success and still continue drilling, the first-named of these companies being the one to whose enterprise the commercial development of Egypt's petroleum resources has been largely due.

The Anglo-Egyptian Oilfields Ltd. is an English concern partly financed by the "Shell" group, but in which also the

When the supplies at Gensah were beginning to fail, oil was, in 1914, fortunately discovered at Hurghada, and this has been Egypt's main source of petroleum ever since. The oil at Hurghada is a mixture of paraffin base and asphaltic base petroleum rich in sulphur, and therefore very difficult to refine fully.

Following is the production in English tons—

	GEMSAH	HURGHADA	TOTAL
1911	1,200		1,200
1912	27,450		27,450
1913	12,000		12,000



ASIATIC PETROLEUM CO. (EGYPT) LTD., Cairo.  
The Anglo-Egyptian Oilfield Refinery at Suez

this territory is known as Gebel el Zeit, Zeit being an old Arabic word for oil, and the ancient Roman name for the same place was Mons Petroleus.

**DEVELOPMENT.**—Although oil was first discovered in Egypt in the year 1865 by a company searching at Gensah for sulphur, it was not until 1885 that any expenditure on exploration was made. Oil was also found at that time, but not in commercial quantities. Since that date the history of the product in Egypt has been one of difficult finance in the face of enormous odds. Before the War half a dozen companies surveyed large tracts of land, and some of them spent considerable sums of money on drilling. After the War the number of companies operating, which, without exception, were financed by British capital, was about 20.

Egyptian Government participates as a large shareholder. The company commenced operations in 1911 with a capital of £676,000, to which in 1912 £549,000 was added, further increases of £350,000 in 1913 and £233,000 in 1920 brought the total capital to its present figure of £1,808,000.

### DISTRIBUTION AND PRODUCTION.

The only areas which have shown promise of oil have been those of Hurghada and Gensah, explored by the Egyptian Oilfields Ltd., and those of Abu Shaar and Abu Durba, explored by the Egyptian Government.

In 1911 the Anglo-Egyptian Oilfields Ltd. commenced exploring and building at Gensah, on the Red Sea. Work here has continued to the present day, about two dozen wells having been drilled. The production of oil has, however, been intermittent, it has, in fact, practically ceased.

	GEMSAH	HURGHADA	TOTAL
1914	90,200	11,500	101,700
1915	13,700	10,200	32,900
1916	12,600	36,700	49,300
1917	6,500	125,200	131,700
1918	5,500	268,000	273,500
1919	4,100	234,000	238,100
1920	2,800	145,600	148,400
1921	4,300	176,900	181,200
1922	3,000	166,000	169,000
1923	700	150,000	150,700

The Vacuum Oil Company, which is purely an importing company operating from New York and with ramifications that circle the globe, has established an up-to-date installation at Gabbary (Alexandria), whence many millions of gallons of petroleum and benzine are despatched yearly throughout Egypt, Palestine and Syria. The Egyptian Oil Syndicate works the Abu Durba area, where some 520 metric tons were produced in

1924 In that year also a new British company was licensed to commence drilling operations on Towila Island, in the Red Sea

**OILFIELDS AND REFINERY.**—On the producing field of the Anglo-Egyptian Oilfields are employed about 700 men, of whom 90 per cent are Egyptians. The field is up-to-date, it has a hospital, a cinema, a club, and many comforts which are not usually associated with desert life. Houses are provided for all employees and meals served from central kitchens.

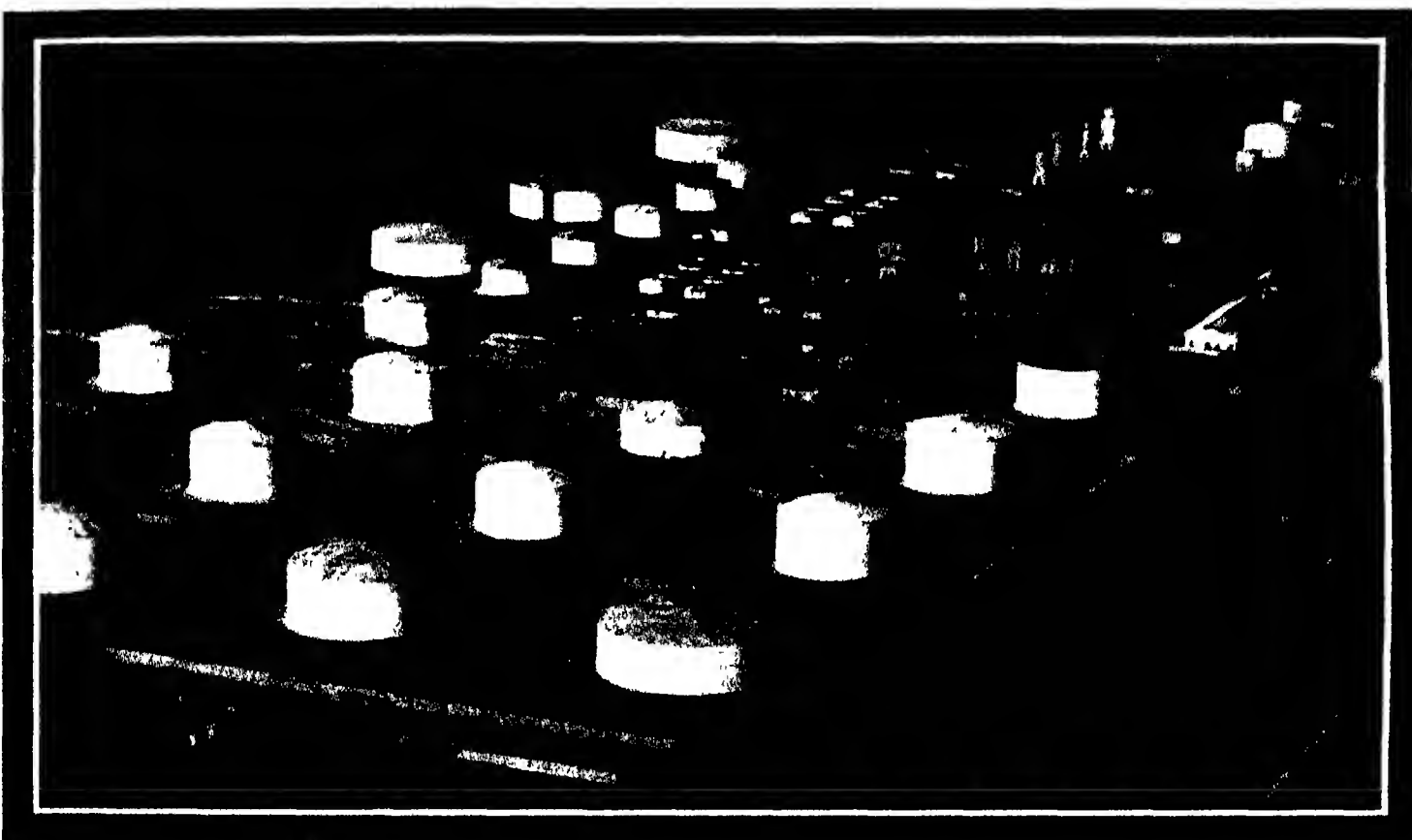
Storage tanks with a capacity of about 100,000 tons have been erected by the company at Gensah, Huihuda and Suez. The crude oil produced by the Anglo-Egyptian Oilfields Ltd is transported in oil tankers to Suez. In the company's refinery there, which is capable of dealing with about 1,500

**RESERVES (GOVERNMENT).**—These are situated at Abu Shaar and Abu Durba.

**ABU SHILAR.**—Under license to a Cairo syndicate in 1907 this area was declared a Government reserve in 1920. Three years later, after an outlay of about £200,000 by the Government, all work ceased, the plant being dismantled. This resulted in the Government Refinery at Suez having to close down for several months, and the only oil dealt with there now is the royalty oil received by the Government from the Anglo-Egyptian Oilfields Ltd.

**ABU DURBA.** This was declared a Government Reserve in 1918, and shallow boring was commenced by the Department of Mines. The quantities of oil produced, however, have been very small, and this field has now been sold to an Egyptian Syndicate.

placing the long-existent sakich, and economising substantially in time and labour, these appliances at the same time introduce the most modern ways and means of cultivation. The tallow candle, the vegetable-oil hand lamp and the torch have disappeared from even the poorest houses, to be supplanted by the cheaper, brighter and safer kerosene lamp. Even the long familiar donkey-cart is fast vanishing from the country roads, being gradually superseded by motor cars and omnibuses as a means of transport and locomotion. Egypt, deprived by nature of wood and coal, has for the development of her agriculture had to rely to a considerable extent on oil, and one of the main factors in the country's prosperity and development has been the wonderfully efficient distribution system organised by the great oil companies.



ASIATIC PETROLEUM CO (EGYPT) LTD, Cairo.  
Another View of the Anglo-Egyptian Oilfield Refinery at

### THE ASIATIC PETROLEUM CO. (EGYPT) LTD.

tons a day, the Egyptian crude oil is treated, and the resultant products include benzene, kerosene, gas oil, fuel oil, and asphalt. In addition to the indigenous production, large quantities of crude oils are imported from other countries and treated for consumption in Egypt and for export.

**TRANSPORT.**—The whole of the products manufactured at the Suez refinery are handled by its associated company, the Asiatic Petroleum Company (Egypt) Ltd, which has a filling station adjoining the refinery. (See letterpress following.) There are no big pipelines in the country, and all railway transport is a Government monopoly in the hands of the Egyptian State Railways, which own oil tank-wagons up to about 30,000 kgs. capacity. There is a certain amount of river and canal transport in barges of 150 to 180 tons capacity.

**Oil Distribution in Egypt.** The part played by great oil-distributing organisations such as The Asiatic Petroleum Co (Egypt) Ltd in the commercial and economic development of Egypt during the past forty years is one of extreme importance. It is nothing short of remarkable how the Oriental, despite his traditional conservatism, has adapted oil in all its multiplicity of varieties to the performance of his daily labour. Only a few decades ago hand-labour and the corvée were mainly responsible for a great deal of the work now being performed by oil. Today the position is entirely changed, oil and Diesel engines, together with pumping and other mechanism, all driven by petroleum or its derivatives, having been and still are being installed all over the country. Re-

**Wartime Services.**—The War period found The Asiatic Petroleum Co (Egypt) Ltd singularly fortunate in being the only firm able to meet Egyptian needs in benzene, kerosene and fuel oil, and it deserves great credit for the efficient manner in which the requirements of the Allied Forces and of the civilian population were supplied.

**Activities.**—The products dealt in by the company are benzene, kerosene, fuel oil, Diesel fuel, asphalt, candles, wax, lubricating oils and greases, supplied throughout Egypt and to the adjacent countries of Palestine, Syria, Cyprus, the Sudan and Cilicia.

**Distributing Centres.**—CAIRO—The main distributing installation is at Ghamrah, with a subsidiary depot at Madabegh on the other side of the city. From these depôts an excellent motor transport service



delivers benzine, kerosene and liquid fuel direct to the numerous consumers in various parts of Cairo. The company was the pioneer of the supply to motorists of benzine from the now familiar kerbside pumps, which, numbering nearly 50, have been erected at all important points in the City and on the Cairo-Heliopolis, Cairo-Heliopolis and Cairo-Pyramids roads.

**ALEXANDRIA**—An ocean depot for the storage of fuel oil and kerosene imported from the West is established at Alexandria, whence distribution is made to the smaller depôts up-country. This port is the source of supply for Palestine, Syria and Cyprus, besides a bunkering station for tourist and other steamers. At the company's oil jetty situated in the outer harbour about two miles south of the commercial harbour vessels of any dimensions with a maximum draught of 30 feet may be bunkered. Lighters and tugs are always available.

**PORT SAID**—Here are situated an ocean depot for storing fuel oil from the West, and a bunkering station for steamers traversing the Suez Canal, providing eight berths (four on the African, four on the Asiatic side), at which vessels up to 755 feet in length can be bunkered. Lighters and tugs are ever ready for service. The company's agents at Port Said are Messrs. Worms & Co.

**SUEZ**—The company maintains at Suez a large refinery for dealing with crude oil imported from the East, as well as that produced at Hurgada on the Red Sea. The port supplies the Sudan and the countries

round the Red Sea, besides distributing to up-country depôts. Bunkering of steamers passing through the Canal is also undertaken.

At Suez it is the general practice for bunkers to be delivered to ships in the roads by means of lighters, thereby avoiding dues payable on ships mooring alongside the depôt.

**Up-Country Agencies.**—**EGYPT**—In every village of importance in the country agencies have been established, the number now reaching about 100, including some 35 bulk installations.

**PALESTINE**—To meet the increasing demands for oil of all varieties due to the various post-war projects for the development of Palestine, the company has established agencies at Jaffa, Jerusalem, Haifa, Gaza, Nazareth, Amman, Nablus, and some 25 other towns and villages.

**SYRIA**—Recent troubles have hindered Syrian trade, but the country is now settling down to more normal conditions. Work done on the roads, encouraging the development of motor traffic, is responsible for an increased consumption of benzine. The company's head office in Syria is at Beirut, and its agencies are at Damascus, Deraa, Alexandretta, Aleppo, Homs, Hama, Zahleh, Baalbek, Lattakieh, Tripoli, Saida and Sour.

**CYPRUS**—Trade in Cyprus does not flourish greatly, but owing to the increased number of motor cars running since the War, consumption of benzine has slightly improved. Agents, the Eastern & Colonial Association Ltd., head office, Nicosia,

agencies, Larnaca, Famagusta, Kyrenia and Paphos.

**THE SUDAN**—Due to the great development in irrigation and road-construction, trade in benzine and kerosene in the Sudan constantly increases. At Port Sudan the company has a bunkering station for steamers, allowing vessels up to 28 feet in draught to be supplied alongside the ordinary steamer berths. Messrs. Gellatly, Hankey & Co. (Sudan) Ltd. act as its agents, with head offices at Khartoum and agencies at Port Sudan, Wadi Halfa, Atbara, Shendi, Wad Medani, El Obaid, Sennar, Suakin, Kassala, Kerenia and Omdurman.

**ADEN**—At Aden, the supply centre for the whole of the Red Sea, A. Besser acts as the company's agent. Sub-agencies controlled therethrough are at Mogadiscio (Italian Somaliland), Berbera (British Somaliland), Djibouti (French Somaliland), Massowah (Eritrea), Hodeidah (The Yemen), Adis Ababa (Abyssinia), Makallah (The Hadramout).

**ARABIA**—Agents, Messrs. Gellatly, Hankey & Co. (Sudan) Ltd., head office, Jeddah, sub-agencies, Yembo and Medina.

**LIBYIA**—Resulting from extensions in the cotton industry of Libya, there is a progressive trade in oil. Agents, Messrs. Joseph Catoni & Co., head office, Misrata, sub-agencies, Tarsus and Adana.

**Head Office.**—30 Rue Madabagh, Cairo, Cables "Apogyp," Cairo.

**Bankers** Barclays Bank (Dominion, Colonial and Overseas).



ANGLO EGYPTIAN OILFIELDS PLANT.

1. Pumping Oil Well by Motor, Hurgada, Red Sea,
2. Automatic Gravity Conveyor for filled Tins.

3. General View of four Agitators.
4. Tins passing through Automatic Solderer.

# COMMERCE

## EXPORTS AND IMPORTS

### GENERAL DATA

**E**GYPT being primarily an agricultural country and, with the exception of the cigarette industry, having few manufactures for export purposes, provides an especially good market for foreign manufactured goods. The various statistics of the export and import trade of the country which follow show how important are the commercial relations between Egypt and Great Britain, which country in 1925 purchased more than three times as much as its nearest competitor of Egypt's cotton and other exports, and supplied over 25 per cent of all the goods imported. There are, however, certain disquieting features in the present position of Great Britain's trade with Egypt, competition in several lines, notably textiles and machinery with Italy, France, the United States and Germany being acute.

**BALANCE OF TRADE.**—The following table shows the favourable trade balances for the years named:—

	1921 £L	1925 £L
Exports	65,733,935	59,198,662
Re-exports	1,470,143	1,270,174
Total	67,204,078	60,468,836
Imports	50,736,918	58,224,895
Trade Balance	16,467,160	2,243,941

Total for foreign trade 117,940,006 118,793,731  
Note:—The above figures exclude spirits.

In 1923 the total foreign trade was valued at £E 105,130,136, exports and re-exports being £E 59,853,173 and imports £E 45,276,963, the trade balance thus being £E 14,576,210.

### EXPORTS AND IMPORTS

**EXPORT TRADE.**—Exports from Egypt, which increased by £E 7,346,608 in 1924 over the figure for 1923 (the gain being almost entirely due to a rise in the price of cotton), fell again by £E 6,535,273 in 1925. The principal decreases in the last named years were in cotton (£E 4,894,693), cotton seed (£E 1,079,338) and cotton seed oil (£E 154,933). There was also a further decline in exports of cigarettes, sugar and hides. Substantial increases in value and quantity occurred in onions, wool, cheese and some classes of cotton piece goods which go to Greece, Syria and Turkey. The following table summarises the export trade of Egypt by categories for the years named:—

	1924 £E	1925 £E
Animals and animal food products	618,847	526,926
Hides, skins and leather goods	307,982	247,768
Other animal products	85,791	68,116
Cereals, flour, and agricultural produce	5,760,758	4,795,344
Colonial produce and general grocery	543,205	204,129

	1924 £L	1925 £L
Spirits, beverages and oils	479,116	394,175
Paper and printed matter	70,951	74,054
Wood and coal	25,188	21,054
Stone earthenware and glassware	5,144	5,945
Dyestuffs, tanstuffs and colours	26,483	18,274
Chemical and medicinal products and perfumery	216,862	154,093
Yarns and textiles*	56,864,736	52,024,761
Metals and metalware	333,934	221,785
Miscellaneous	62,862	51,505

Total of merchandise exported	65,401,894	58,815,429
Cigarettes	332,041	383,233

Total of exports 65,733,935 59,198,662

\*Mostly raw cotton

**IMPORT TRADE.**—The import trade of Egypt, which in 1923 was valued at £E 45,276,963, rose in 1924 to £E 50,736,918, and in 1925 to £E 58,224,895, an increase in the last named year of £E 7,487,977. There was a general rise in 1925 in the value of commodities imported, but noticeably so in the cases of cereals, flour and agricultural products, which showed a gain of £E 2,564,553, and of metals and metalware, which rose from £E 6,741,411 to £E 8,472,477. Only in dyestuffs, tanstuffs, etc., and in tobacco were decreases recorded. The following table shows the values of imports into Egypt in 1924 and 1925, classified by categories:

	1924 £L	1925 £L
Animals and animal food products	1,822,800	1,867,752
Hides, skins and leather goods	565,010	662,895
Other animal products	65,777	66,102
Cereals, flour and agricultural produce	4,536,725	7,101,278
Colonial produce and general grocery	2,040,820	3,108,274
Spirits, beverages and oils	3,271,309	3,558,357
Paper and printed matter	910,846	1,031,621
Wood and coal	4,174,094	4,840,035
Stone, earthenware and glassware	1,454,093	1,037,928
Dyestuffs, tanstuffs and colours	466,926	397,536
Chemical and medicinal products and perfumery	3,411,701	4,204,739
Yarns and textiles	17,118,397	17,965,629
Metals and metalware	6,741,411	8,472,477
Miscellaneous	1,474,974	1,777,266

Total of merchandise imported	48,954,799	59,751,880
Tobacco	1,782,119	1,473,000
Total of imports	50,736,918	58,224,895

### COMMODITIES

**RE-EXPORTS.** The re-export trade of Egypt amounted in 1925 to £E 1,270,174, compared with £E 1,470,143 in 1924, a decrease of £E 199,969.

**TRADE BY COUNTRIES.**—The following tables show the positions occupied by the twelve leading countries in the import and export trade of Egypt in the years named:

	1924 £L	1925 £L
<b>Imports</b>		
Great Britain	13,993,584	14,660,664
Italy	5,240,772	6,120,939
France	4,688,718	5,399,682
Germany	2,946,759	3,348,143
British India	1,781,785	2,979,730
Australasia	1,642,156	2,440,328
Belgium	1,898,354	2,124,403
United States	1,798,542	2,116,238
Chile	1,389,609	1,850,889
Czecho-Slovakia	900,678	1,224,117
Japan	973,325	1,105,168
Switzerland	638,299	630,363

	1924 £L	1925 £L
<b>Exports</b>		
Great Britain	31,955,625	29,167,972
United States	7,085,911	8,411,246
France	8,614,073	7,461,040
Italy	1,000,082	1,613,795
Germany	3,907,296	3,540,073
Switzerland	2,299,474	2,263,956
Japan	1,509,486	2,166,288
Spain	1,481,312	1,177,821
Czecho-Slovakia	1,119,604	1,057,207
Palestine	376,491	375,180
Holland	333,204	341,163
Syria	332,702	285,796

**FRANCE.** In 1925, as in 1924, this country came third in the list of principal supplying countries, but lost second place as a buying country to the United States. Her exports to Egypt rose by no less than £E 1,152,133 in 1925 compared with the 1924 increase of some £E 865,000 over 1923. The most important items in the list of imports from France are silk cloths and mixed silk textiles, woollen textiles, hosiery, iron and steel goods, medicinal specialties, motor vehicles and ready-made cotton and silk clothing.

**GERMANY.** Imports from Germany rose from £E 2,652,720 in 1923 to £E 2,946,739 in 1924 and £E 3,348,143 in 1925, iron and steel goods, hosiery, machinery, locks and door and window fittings, dyes, woollen textiles, and wrapping paper and cardboard being the principal commodities.

**GR. BRITAIN.** Imports from Great Britain declined from £E 14,771,677 in 1923 to £E 13,993,584 in 1924, but rose again to £E 14,660,664 in 1925. Exports from Egypt to the United Kingdom rose from £E 28,354,293 in 1923 to £E 31,955,625 in 1924, but declined to £E 29,167,972 in 1925.

At the annual meeting of the British Chamber of Commerce in Egypt in 1926 the President drew the attention of exporters to the present condition of British trade with Egypt. Pointing to its general decline, he said that "at no time in the last forty

years has the United Kingdom's share in the trade been so small as during the period under review. There is no reluctance here to buy British goods, which everyone admits are as good as they ever were, but unfortunately they are dearer than they should be." "At the same time," he went on, "the manufacturer cannot be entirely exonerated from sharing in the causes which have produced this diminution in his business. He takes too little interest in this market, ignores its possibilities, and is not sufficiently enterprising to ascertain how he might adapt himself to its requirements."

In comparison with past years the percentage of Egyptian trade with the United Kingdom works out as follows —

	IMPORTS PER CENT	EXPORTS PER CENT
1922	34	47.3
1923	32.6	48.6
1924	27.6	48.6
1925	25.3	44 (11 months)

**Decreases.**—The following figures refer to some of the markets in which imports from Great Britain show a definite decline. The figures are for 1925, as compared with 1924.

Metals and metal-ware imported show an increase of £E 985,060, yet purchases in the United Kingdom decreased by £E 253,758.

Cement was imported to the extent of £E 373,509, against £E 221,179. The United Kingdom supplied £E 27,852 as against £E 33,313.

Motor tyres imported amounted to £E 140,692, against £E 86,036. Of this, £E 16,340 came into Great Britain, as against £E 22,627. France took the largest share at £E 67,184, as against £E 39,406.

The importation of fertilisers shows a big increase at £E 2,261,454 against £E 475,730. The greater portion on this trade is with Chile for nitrate of soda.

Out of a total of 2,120 typewriters, valued at £E 26,403, England supplied only 92, at a cost of £E 1,200, and America 1,557 for £E 20,403.

**Increase in Machinery Exports.**—In the machinery market England continues to maintain a satisfactory position. Her proportion of machinery supplied was 41.45 per cent in 1923, 43.37 per cent in 1924, and 42.28 per cent in 1925. The increases are mostly in those kinds of machinery used for irrigation and agricultural purposes. In the agricultural tractor market, however, Great Britain has steadily lost ground to the United States.

**ITALY.** Italy's exports to Egypt, which consist principally of cotton piece goods, silk and woollen textiles, yarns, silk shawls, hosiery, motor vehicles and rail locomotives, increased by £E 963,000 in 1924 and by £E 899,000 in 1925. Exports to Italy, which are mainly cotton, cotton seed and cotton seed oil, and onions, declined from £E 4,069,082 in 1924 to £E 3,613,795 in 1925.

**UNITED STATES.**—The United States increased her exports to Egypt by only 5.6 per cent in 1924, but by 12.1 per cent in 1925, the total for the latter year being £E 2,116,238, compared with £E 1,798,542 in 1924 and £E 1,702,765 in 1923. Exports to the United States declined from £E 7,246,787 in 1923 to £E 7,085,911 in 1924 and rose to £E 8,411,246 in 1925, cotton and cotton seed being the main items of trade. Wheat flour, kerosene, agricultural machinery, and mineral lubricating oils are the principal commodities imported from the United States.

**TRADING ASSOCIATIONS.**—The Department of Agriculture has for some years carried on an extensive propaganda with a view to impressing merchants and industrialists with the benefits of co-operation and instructing them how to form trade societies. These are novel ideas in Egypt, and it cannot be said that as yet the country has realised the needs of co-operation. There are, however, several flourishing Chambers of Commerce, the oldest-established being those of Cairo, Alexandria and Zifta. Chambers have recently been created at Mt Ghamr, El Mansorah, Port Said, Benha, Dammanhur, El Ghiza, Assuan and Fayyum, bringing the total up to eleven. The British Chamber of Commerce in Egypt with headquarters at Alexandria, continues to do much useful work.

**TRADING METHODS.** The bulk of the import trade of Egypt is done through local agents working in conjunction with representatives or travellers from the home firms, and only in this way can a satisfactory business be built up. The need of having a local agent is due, not to the backward state of commerce in Egypt but to (a) the number of different nationalities with which one has to deal, and the need of an extensive knowledge of languages, (b) the necessity of having somebody on the spot to deal with and settle the endless disputes which arise to curtail delays in taking up shipping documents, and to press for payment of bills which only too often are not met on due dates, (c) the distrust existing on both sides, that is between the local buyer and foreign suppliers, and (d) most important of all, the local knowledge of the agent, this being the first essential to satisfactory business.

**APPOINTMENT OF AGENTS.** The greatest care is necessary in the appointment of an agent, many of the so-called commission agents in Egypt being individuals of very slight if any financial standing. References should be carefully scrutinised and in this connection membership of the British Chamber of Commerce is helpful.

Makers should assure themselves that the prospective agent has some address besides a post office box number, and that business can be run on straight commercial lines, backed by a proper staff. Not only is it necessary to assure oneself of the qualifications of an agent, but once he is appointed it is most important (a) To keep him "au courant" of any fluctuations in prices and even to repeat prices periodically, though they may not have been altered, and to supply him liberally with samples and catalogues, etc. (b) To back him up by regular visits of a traveller or other representative of the firm. This is most essential, as it not only keeps the agent keen and interested, but also inspires confidence in the buyers and establishes the personal relationship so valuable between buyer and seller.

**TENDERS FOR CONTRACTS.**—It is becoming increasingly difficult to find suitable agents for British manufacturers of machinery, heavy electrical and engineering goods and constructional work who are not prepared to go to the expense of establishing a branch in Egypt. All but one or two of the reliable firms in Egypt which can handle heavy and technical goods of this nature, and who are properly qualified either to tender on behalf of or to explain technical details arising out of tenders submitted by their United Kingdom principals, are already so fully engaged with these lines that they cannot consider fresh connections.

In view of the increasing tendency on the part of the Egyptian Government to

widen the range of open tenders at the expense of "limited" tenders, the need to appoint a resident agent in Egypt in order to conform to the conditions governing Egyptian Government contracts for which open tenders are invited is becoming more and more general. Consequently, British manufacturers, desirous of tendering for such contracts, but who are not already represented in Egypt, will find it difficult to arrange for suitable representation in the lines referred to in the preceding paragraph unless they adopt one of the four following methods, viz: (a) Set up a branch in Egypt, (b) Form an Egyptian company with offices in the United Kingdom, (c) Amalgamate with other non-competitive United Kingdom firms for the appointment of a joint representative firm or individual, the latter to be paid on the basis of a fixed salary and a commission, (d) Consider the appointment on say six months' or a year's probation in the interests of both parties, of retired Anglo-Egyptian officials who were appointed on the ground of technical qualifications to Egyptian Government Departments such as the Ministry of Public Works, which includes Irrigation, the Ministry of Communications, which includes the Railways, Telegraphs and Telephones, as well as Ports and Lights, and the Roads and Bridges Department, the section of the Ministry of the Interior which controls power, light and water installations in the provincial towns, the technical Industrial School section of the Ministry of Education, the Survey Department, and others.

Anglo-Egyptian officials, who have several years' experience of the provinces in Egypt, not only speak Arabic fluently, but also know how to handle the native, and in many cases have won the respect and confidence of the fellahs and landowners who are the largest buyers of machinery for agricultural purposes, particularly pumps of various kinds.

**WEIGHTS AND MEASURES.**—The most important weights and measures used in Egypt are —

1 Ardeb	198 litres	43.58 gall.	1
		(5.45 bushels)	
27 kantars	(of cotton seed)		
1 Feddan	4,200.8 sq. metres	1.038 acres	
		= .42 hectares	
1 Kasabah	3.55 metres	3.88 yds.	
1 Oke	25 kilos	2.75 lbs. (English)	
1 Kantar	{ 100 rotls }	44.93 kilos.	
	{ 36 okes }	99.05 lbs. (English)	
1 Acre	for all practical purposes	= 1 feddan	
	the exact equivalents are	963 feddan or	
		40467 hectares	

## COMMODITIES

Following are the principal of the leading articles of Egypt's export and import trade:—

**BICYCLES.**—Egypt imported 2,061 bicycles (£E 9,294) in 1925, against 3,697 (£E 17,761) in 1924, the United Kingdom's share of this trade falling from £E 6,340 to £E 2,927.

**BOOTS AND SHOES.**—In 1925 Egypt imported 158,263 pairs of boots and shoes, valued at £E 36,491, against 128,680 pairs, valued at £E 33,593, in 1924. Of this trade the United Kingdom's share was 26,200 pairs (£E 5,742) in 1925, compared with 18,837 pairs (£E 4,713) in 1924. Germany increased her trade from 56,356 pairs (£E 14,308) in 1924 to 80,901 pairs (£E 18,016) in 1925.

**CAMELS.**—In 1925 the number of camels exported was 2,177, valued at £E 15,844, compared with 1,612 valued at £E 13,118 in 1924.

**CHEESE.**—Exports of cheese increased substantially from 27,461 kg (£E 2,088) in 1924 to 46,227 kg (£E 3,402) in 1925.

**CIGARETTE PAPER.** Cigarette manufacturing is one of Egypt's very important and most highly developed industries. There is no manufacture of cigarette paper, the local industry being entirely dependent upon foreign sources of supply. Imports of this commodity amounted to 560,887 kg, valued at £E 65,724, in 1924, and to 504,202 kg, valued at £E 51,933, in 1925. Italy supplies the preponderance of cigarette paper used by the Egyptian manufacturers, its share amounting to 83 per cent in 1925. France is the only other important source of supply, its share, however, having fallen to 14 per cent. A high-class paper is required, the prime requisites of which are that it must be strong, uniform in quality, and very white and flammable. Local cigarette manufacturers are said to pay more attention to quality than to price in making their commitments.

**CIGARETTES.**—There was a noticeable decline in the export of Egyptian cigarettes from 1923 to 1924, in which latter year exports amounted to 179,473 kg, valued at £E 329,708. The figures for 1925 show a small recovery, having risen to 197,251 kg and £E 382,570. The values taken by the principal purchasing countries in 1925 were as follow: Netherlands Indies, £E 104,823; Palestine, £E 70,301; Holland, £E 32,024; United Kingdom, £E 28,311; Straits Settlements, £E 27,586; Italy, £E 15,080; and British India, £E 8,593.

Imports of cigarettes (almost exclusively from the United Kingdom) were valued at £E 90,175, against £E 129,370 in 1924.

**COAL.**—Coal imported into Egypt rose from 962,797 tons (£E 1,627,028) in 1924 to 1,234,882 tons (£E 1,840,108) in 1925, Great Britain was practically the only source of supply, her exports being 952,832 tons (£E 1,600,005) in 1924 and 1,175,640 tons (£E 1,747,428) in 1925.

**COFFEE.** Imports of coffee declined from 11,050,204 kg (£E 913,941) in 1924 to 7,804,919 kg (£E 782,961) in 1925, Brazil and Abyssinia being the leading countries of origin.

**COTTON (RAW).**—Raw cotton is, needless to say, the mainstay of Egypt's export trade, and the total exports of this commodity in the calendar year 1925 were returned at 6,423,939 kantars, valued at £E 51,659,806, compared with 7,253,008 kantars, valued at £E 56,554,499, in 1924, or a drop of nearly £E 5,000,000 in value. The following table gives the principal recipient countries in the years named—

	1924 £E.	1925 £E.
United Kingdom	27,043,072	22,191,594
Czechoslovakia	1,116,999	1,056,064
France	8,249,256	7,122,643
Germany	3,041,718	3,119,769
Italy	3,737,618	3,272,651
Japan	1,477,941	2,143,967
Spain	1,410,810	1,113,937
Switzerland	2,278,767	2,243,488
United States of America	6,950,018	8,122,918

Total (including other countries) 56,554,499 51,659,806  
(See also article on "Cotton.")

**COTTON PIECE GOODS.**—See "Textiles."

**COTTON SEED.**—Exports of cotton seed, which in 1924 totalled 2,700,073 ardebs, of a value of £E 3,598,407, declined in 1925 to 2,079,252 ardebs, valued at £E 2,510,069. The United Kingdom took cotton seed to the value of £E 2,261,687 in 1925, compared with £E 2,949,602 in 1924.

**COTTON SEED OIL.**—Exports of this commodity declined heavily from 7,226,948 kg (£E 297,050) in 1924 to 3,604,842 kg (£E 142,717) in 1925, Palestine and the United Kingdom being the largest purchasers.

**CUTLERY.** Imports of cutlery and tableware increased from £E 60,486 in 1924 to £E 105,255 in 1925, Germany and France being the leading countries of origin, with £E 45,060 and £E 23,062 respectively in the last named year. Great Britain's share of the trade in that period was £E 13,914, compared with £E 13,158 in 1924.

**EGGS.**—Exports of eggs from Egypt were valued at £E 491,658 in 1925, against £E 566,613 in 1924, almost all going to the United Kingdom.

**HATS.** Egyptian imports of felt and straw hats amount to about 60,000 dozen (valued at almost £100,000) per annum. Some two-thirds of the total are felt either trimmed or untrimmed. France furnishes women's hats almost entirely and accounts for 50 per cent of the total felt imports, Italy sending 25 per cent. Approximately three-fifths of the straw hats imported come from Italy, which meets the greater part of the demand for men's wear. France supplies almost all of the straw hats imported for women.

**HIDES.**—Exports of untanned bullock hides in 1925 amounted to £E 27,534, of buffalo hides to £E 80,200, and of camel hides to £E 219. Corresponding figures for 1924 were £E 49,935, £E 75,215 and £E 1,173 respectively.

**HOSIERY.** Imports of cotton, silk and artificial silk hosiery in 1925 were valued at £E 725,772, compared with £E 764,214 in 1924. Imports from Germany totalled £E 187,100, from Japan, £E 167,087, and from France, £E 84,035.

**MACHINERY (AGRICULTURAL).** Although for several years to 1924 the value of Egypt's imports of agricultural machinery, implements and parts, excluding threshing machines, tractors, engines and pumps, ranged only between £E 400,000 and £E 500,000 it is significant that in 1925 the value of these items exceeded £E 900,000. The most consistent growth was in the importation of agricultural implements from the United States. Though the United Kingdom leads in Egypt's imports of agricultural machinery, implements and parts, purchases from the United States more than doubled in value in 1925 as compared with 1924, and now approximate to 60 per cent of the value of trade credited to the United Kingdom.

The following table shows the values of the principal imports of agricultural machinery and implements coming into Egypt in 1924 and 1925:—

	1924 £E.	1925 £E.
Tractors	37,272	80,913
Hand pumps	12,107	19,101
Power pumps	59,495	111,136
Stationary internal combustion engines	399,718	649,675
Portable steam engines	9,334	19,177
Threshing machines	2,653	5,772
Agricultural machinery, implements and parts, unenumerated	20,029	44,413

During the first nine months of 1925 the United Kingdom's share of this import trade was over £E 300,000, as against £E 286,000 in 1924, while the United States increased its trade from £E 90,000 to £E 180,000. There is a growing market in Egypt for all agricultural machinery, the field for which warrants the specialised attention of British manufacturers.

**COTTON GINS.**—Egypt, naturally, is a good market for seed separators of various types and especially for cotton gins. A certain kind of inexpensive British cotton gin has been thoroughly entrenched in the market for years, and now completely monopolises the field. There is also a limited importation of corn-shellers and other seed-operating machines of small inexpensive types, most of which come from the United Kingdom.

**MOTOR PLOUGHS.**—The United Kingdom's biggest trade in strictly agricultural implements is in large motor ploughs or ploughing windlasses, operated according to a patent (Fowler) system, which has been in use in Egypt for some 50 years. Imports of steel ploughs from the United Kingdom in 1925 were valued at about £E 80,000, as against £E 77,000 in 1924.

**THRASHING MACHINES.** Egypt imported in 1923 14 threshing machines valued at £E 4,099, in 1924 the total had shrunk to 8, valued at but £E 2,053, but in 1925 15 threshing machines were brought in valued at £E 5,772. The United Kingdom and Germany share the Egyptian threshing machine market, the British machines being larger and much more expensive than those offered by Germany. There is a very small business in ensilage and field cutters.

**TRACTORS.** Perhaps one of the most outstanding features of the machinery trade during 1924 and 1925 was the extraordinary increase in the imports of tractors from the United States, more than 1,000 small machines having entered the country. It is reliably estimated that in 1925 at least £E 13,000 worth of American tractor attachments, ploughs, and cultivators were imported by Egypt, approximately 80 per cent being plough attachments, and the remaining 20 per cent mostly cultivators.

**MACHINE TOOLS.**—The United Kingdom still holds a predominant position in the Egyptian market for machine tools and only the American share, which is small, shows any particular increase. The total trade in 1925 was valued at £E 35,761 (the United Kingdom's share being over £E 12,000), as compared with £E 32,010 in 1924.

**MOTOR CARS, ETC.**—Imports of motor vehicles and chassis show the United States to be by far the leading country of origin, its share of the total value of £E 481,404 recorded in 1924 being £E 191,412. Great Britain's portion of the trade in that year was £E 31,217. Imports during 1925 totalled £E 764,423 in value, both the United States and the United Kingdom increasing their trade to £E 209,744 for 3,464 vehicles and chassis and £E 73,618 for 302 respectively. France raised her exports to 648 items, value £E 154,171. The inauguration of motor-buses on new and important routes in the Delta affords an encouraging outlook for manufacturers. Freight haulage at Alexandria also offers an interesting and immediate field for specially adapted vehicles.

**MOTOR CYCLES.**—In 1925 imports of motor cycles from the United Kingdom aggregated 159, of a total value of £E 8,042,

compared with 179 at £E 11,263 in 1924, the trade for those two years being £E 12,814, compared with £E 15,483

**NITRATE.**—The importation of nitrate into Egypt for fertilising purposes is on a large scale. Practically all comes from Chile, which country supplied 167,196 tons in 1925, valued at £E 1,850,880, out of a total of 173,764 tons imported

**OILS (MINERAL AND LUBRICATING).**—The total of all imports of mineral and lubricating oils and greases in 1925 was 16,035,835 kg., valued at £E 288,431, compared with 11,805,598 kg., valued at £E 232,542, in 1924. Imports from the United States increased from £E 173,174 to £E 176,824, and from the United Kingdom from £E 20,539 to £E 25,141

**ONIONS.**—The export trade in onions, which are extensively grown in Egypt, has steadily risen since the War, and reached the value of £E 913,333 in 1925, compared with £E 651,911 in 1924 and £E 358,040 in 1923. The values taken by the leading countries of destination in 1925 were: Great Britain, £E 336,010; Italy, £E 206,151; United States, £E 125,322; and Germany £E 118,994.

**PETROLEUM, ETC.** The rapid advance in Egyptian motor vehicle imports and registrations has been accompanied by a large increase in the country's mineral lubricating oil imports, approximately 40 per cent, from 11,806 metric tons valued at £E 232,542 in 1924 to £E 16,036 tons valued at £E 288,431 in 1925. Gasoline delivered from the Suez refinery, the principal source of motor-fuel supply, and imported from abroad increased nearly 50 per cent, or from 20,789 tons valued at £E 253,175 in 1924 to 30,208 tons valued at £E 370,997 in 1925. Kerosene importation in 1925, 228,563 tons and 9,061 cases, valued at £E 1,050,320, exceeded that of 1924 of 191,280 tons and 38,850 cases, valued at £E 1,035,269, by about 15 per cent.

In lubricating oils and greases the United States continues to have the greater part of the business, although unusually large gains are recorded in imports of these items from the Straits Settlements, British Borneo and Germany. Russia accounts for at least 60 per cent of Egypt's kerosene imports, while Rumania furnishes nearly one-half the benzine. American interests, however, supply a large share of the refined petroleum receipts from these countries. Egypt's imports of fuel oil (mazout) actually declined about 8 per cent in 1925: from the 1924 total of 107,856 tons valued at £E 374,613 to 99,223 tons valued at £E 345,055

**QUAILS.**—The number of quails exported to European countries fell from 772,473 in 1924 to 450,445 in 1925, and the value from £E 12,111 to £E 6,633

**RICE.**—Exports of rice declined from 32,265,687 kg. (£E 528,010) in 1924 to 27,716,623 kg. (£E 479,190) in 1925. Most of the product exported goes to Syria

In the same two years imports of rice (almost entirely from British India and Siam) rose from 18,136,758 kg. valued at £E 278,780 to 44,413,587 kg. valued at £E 653,147

**SUGAR.**—All the raw sugar imported into Egypt comes from the Netherlands Indies, and amounted in 1925 to 21,259,512 kg. (£E 270,333), against 28,860,638 kg. (£E 354,161) in 1924. There were increased imports of beet-root sugar in 1925, mainly from Czecho-Slovakia. Exports of sugar fell from £E 461,482 in 1924 to £E 143,038 in 1925, the bulk going to Mesopotamia and Palestine.

**TEA.**—Imports of tea, mainly from Ceylon and British India, rose from 3,740,581 kg., valued at £E 413,250, in 1924, to 4,415,570 kg., valued at £E 488,826, in 1925

**TEXTILES.**—The aggregate value of Egypt's imports of yarns and textiles reached £E 17,965,629 in 1925, compared with £E 17,118,307 in 1924, and comprised 31 per cent of the country's total imports of all classes of merchandise in 1925 as against 34 per cent in 1924. Cotton piece goods constituted slightly over 50 per cent of the total value of the group "yarns and textiles" in both years. The balance in 1925 included other cotton manufactures, £E 2,072,861; wool manufactures, £E 2,388,969; silk and artificial silk manufactures, £E 1,870,068; linen products, £E 230,930. With the exception of silk and artificial silk manufactures, which declined by 5 per cent, the total of each of these sub-groups represents a slight improvement over the 1924 figures.

Egypt's imports of the five principal classes of cotton piece goods increased from a total of 107,971,809 square metres (a square metre = 1.196 square yds.) valued at £E 7,790,732, in 1924, to 233,293,530 square metres, valued at £E 8,204,200, in 1925, a gain of almost 18 per cent in quantity. The imports by value of the principal classes of cotton manufactures into Egypt in the years named are shown in the following table:—

	1924 £	1925 £
Cotton yarn	499,119	497,427
Cotton piece goods		
Grey		
Light	127,951	517,888
Heavy	496,873	590,205
Bleached		
Light	553,366	547,606
Heavy	1,261,150	1,132,111
Printed		
Light	540,210	448,518
Heavy	1,399,097	1,449,083
Piece-dyed		
Light	528,541	416,120
Heavy	1,209,906	1,395,919
Yarn-dyed		
Light	47,614	60,878
Heavy	1,244,211	1,486,674
Other	1,004,933	963,000
Cotton hosiery	711,067	674,720
Mixed textiles, mainly of cotton	308,471	510,716
Other cotton manufactures	1,228,471	1,289,980
Total	£ 11,547,793	£ 12,230,070

**COUNTRIES OF ORIGIN.** Of the total quantity of cotton-piece goods imported into Egypt, the United Kingdom supplied approximately 72 per cent in 1925, and Italy ranked second with 18 per cent. Comparative figures for 1924 were: United Kingdom, 77½ per cent.; Italy, 15 per cent. Italy's special strength is in heavy fancy yarn-dyed goods, in which it increased its shipments to Egypt from 14,351,000 square metres in 1924 to 19,246,000 in 1925. It also made substantial gains in its export of heavy piece-dyed goods in 1925 as compared with 1924. Imports of Japanese heavy grey goods into Egypt rose from 7,867,000 square metres in 1924 to 13,282,000 in 1925. The trade in light grey goods continues to be almost a British monopoly, Egyptian purchases of such British cloth mounting from 25,960,000 square metres in 1924 to 35,280,000 in 1925. Imports of cotton cloth from the United States declined from 361,000 square metres in 1924 to 121,000 in 1925. The trade in American voiles suffered a

serious setback as a result of the prevailing market slackness, decreasing popularity, and the carry over of unsold goods from the previous season. The value of the imports of fents and remnants from the United States, however, increased from £E 4,015 in 1924 to £E 13,903 in 1925.

The following table shows the value of the imports of cotton piece goods from the principal sources of supply:—

	1924 £	1925 £
Belgium	123,433	212,250
Czecho-Slovakia	3,916	20,034
France	103,039	81,594
Germany	7,797	20,778
Italy	1,612,218	1,961,630
Netherlands	14,551	50,312
United Kingdom	5,570,395	5,103,301
United States	18,019	4,952
Japan	264,822	418,567
Other countries	78,542	120,782
Total	7,790,732	8,204,200

**TRADE IN 1925.** The Egyptian cotton piece-goods market was very quiet at the opening of 1925 and business throughout the year was rather unsatisfactory. Trade was unusually slack during the summer months, with buying from hand to mouth and payments poor. Despite reduced quotations by manufacturers in the early autumn and later, local importers endeavoured to maintain price levels on account of the heavy stocks of goods on hand. With favourable reports of the 1925-26 Egyptian cotton crop, importers booked large forward orders in the late fall in anticipation of a revival in business, which, however, failed to materialise. Failures among wholesalers and retail merchants were unusually numerous in the early summer and again in the last quarter of 1925.

**TIMBER.** The total value of all imports of timber in 1925 was £E 1,933,305 compared with £E 1,762,469 in 1924. Rumania and Poland are the largest supplying countries.

**TOBACCO.**—For the manufacture of the famous Egyptian cigarettes, Egypt imports all the tobacco needed, but with the decline in the cigarette trade imports of leaf tobacco likewise fell, and totalled 7,058,047 kg. in 1925 of the value of £E 1,271,325. The leading countries of origin in that year were: Turkey, £E 473,473; China, £E 339,340; Greece, £E 285,657; Japan, £E 154,515; and Russia, £E 135,286. (See also "Cigarettes.")

**WATCHES.**—Imports of watches, principally from Switzerland, declined from £E 17,287 in 1924 to £E 43,955 in 1925.

**WHEAT.**—Though a wheat-producing country, Egypt does not yet grow enough for its requirements, and in 1925 imported no less than 53,814,861 kg. (£E 734,274), compared with 4,799,804 kg. (£E 47,463) in 1924.

**WHEAT FLOUR.**—Imports of wheat flour, valued at £E 2,395,654 in 1924, rose to £E 3,435,346 in 1925, Australia being the leading source of supply, with the United States second.

**WINE.**—Wine in casks was imported to the value of £E 198,206 in 1924, rising to £E 220,549 in 1925, Greece, Cyprus and Italy being the main sources of supply. Wine in bottles, mainly from France, remained practically stationary at £E 27,707 in 1925.

**WOOL.**—Raw wool exported from Egypt in 1925 totalled 1,898,572 kg. valued at £E 136,483, compared with 2,003,117 kg. at £E 114,661 in the preceding year, the United States being the largest recipient.



## CUSTOMS TARIFF

The headquarters of the Customs Administration of Egypt are at Alexandria, there being Customs Houses at that city, Cairo, Port Said, Suez, Damietta, and Koseir. Customs posts are established at Kantara, Ismailia, Rosetta, Wadi Halfa, Gemisa, Safaga, El 'Arish, and Sollûm.

**EXCISE DUTIES.**—Excise duties on goods produced in Egypt are as follow: (1) 15 per cent ad valorem on benzine and lubricating oils, (2) 4 per cent ad valorem on mazout and other products of petroleum, except kerosene, which is not subject to excise duty, (3) 195 millimes per litre of pure alcohol in liquors and liquids distilled in the country (the collection of this is entrusted to the Direct Taxes Department), (4) A "Droit de consommation" of 2 per cent ad valorem is collected on certain liquids, provisions, and building materials when imported, and an equivalent excise duty is imposed on the same articles if produced or manufactured in Egypt.

**EXPORT DUTIES.**—The duty is one per cent ad valorem on all products of Egypt and the Sudan. At Alexandria, Port Said and Suez a charge of 12 per mille on export is levied on all goods for quay dues. In addition, paving dues of a half per mille are payable at Alexandria, 2 per mille at Damietta, and one per mille (optionally) at Port Said. No export duty is levied on foreign goods re-exported, and a refund of the difference between the import duty and the export duty is made in the case of certain goods re-exported within six months, provided that they can be identified. The exportation of antiquities, fossil remains, animals, and gold and silver coins and articles is only allowed under special conditions.

**IMPORT DUTIES.** A duty of 8 per cent ad valorem is charged on all general merchandise the importation of which is not prohibited, with the following exceptions: Firewood and kerosene, on which 1 per cent is charged; refined sugar and wood other than firewood, on which 10 per cent is charged; benzine and lubricating mineral oils, on which 15 per cent is charged; alcoholic liquors and liquids (see later), and tobacco (see later).

Ad valorem for imports means the value of the article in the country where it was purchased at the date of its clearance for consumption in Egypt, plus all freights, insurance, packing, etc., to the Egyptian port of landing. The values of certain articles are by agreement between the Customs Administration and importers, fixed for a period not exceeding one year, and the ad valorem duties are collected on these values, which are regularly published in the "Journal Officiel."

**ALCOHOLIC LIQUORS.**—The import duties on alcoholic liquors and liquids are as follow: 200 millimes per litre of pure alcohol, in addition to an 8½ per cent. ad valorem duty on the value of the alcoholic liquors after deducting the cost of alcohol, 2 millimes per kilo on denatured alcohol, beer and wines containing not more than 23 per cent. of pure alcohol pay 8 per cent ad valorem only.

No refund is granted on alcohol and alcoholic liquors when re-exported.

**CONSUMPTION DUTY.**—A consumption duty of 2 per cent. ad valorem is imposed on the following articles in addition to the import duty:—

(a) Building Materials.—Sheet-zinc, sheet-lead, lead piping, bituminised or tarred felt or paper, marble, window and plate glass, pitch, asphalt, steel and iron angles and bars, iron and steel girders, iron and steel plates and sheets, steel and iron tubes, iron and steel galvanised sheets and cast-iron pipes.

(b) Foodstuffs.—Coconut oil, preserved meat and fish (tinned and potted), condensed milk, gelatine, dried figs, dried plums, dried apricots and apricot paste (Qamar el din), walnuts, hazelnuts, almonds, coconuts, chestnuts, locust beans, pistachio nuts, tea, coffee, cocoa, pepper, cinnamon and cloves.

(c) Liquids.—Beer, cider, castor oil, turpentine, mineral lubricating oils, colza oil, hydrochloric acid, nitric acid, sulphuric acid and ammonia.

**EXEMPTIONS.**—Personal effects of visitors to Egypt are not dutiable unless new, except guns, bicycles, motor cars, saddles, etc. Persons settling in Egypt for the first time are entitled to import their personal effects and furniture free of duty, provided that such articles have been previously in the use of the person importing them. A certificate stating that the person has arrived in Egypt for the first time must be obtained from his or her Consul. Other goods not subject to import duty are samples of wine, books and printed matter of all kinds, gold ingots, bars, sheets and wire, silver bars, sheets and wire, and gold coins of legal tender in their respective countries.

**PROHIBITED IMPORTS.** The importation of the following articles is strictly prohibited: Military arms and ammunition, explosives, hashish, adulterated tobacco, Sudanese tobacco, tobacco seed, seed of *cannabis indica* (hashish), foreign coins of silver, nickel, bronze or brass of legal tender in their respective countries, obscene pictures, printed matter, etc., cotton and cotton seed, irue leaves, live insects, bacteria and fungi injurious to plants, lime and other glutinous substances employed for catching birds, shaving brushes of Japanese origin.

The importation of the undermentioned articles is subject to special conditions: Arms and ammunition other than military, fireworks, poisons, stupefying drugs, shaving brushes, gold and silver objects, live plants, silk worms and bees, fresh fruits, chemical manures, cotton piece goods.

**QUAY DUES.**—Quay dues on all goods imported at Alexandria and Suez are 4½ per mille and at Port Said 7 per mille. A further half per mille is charged for municipal duties at Alexandria and 2 per mille at Damietta. At Port Said the payment of municipal dues is optional, and is reckoned at the rate of one per mille.

**TOBACCO (DUTIES ON).**—On March 7, 1920, the Egyptian Government promulgated a decree raising the duties on tobacco imported from countries with which Egypt has no commercial agreement. These now stand at P.T.100 per kg on leaf tobacco, P.T.110 per kg on stripped tobacco, P.T.120 per kg on cut tobacco and cigarettes, as compared with P.T.82, P.T.92 and P.T.102 per kg formerly. The duty on cigars remains at P.T.100 per kg. The Egyptian conventional rates remain at P.T.80, P.T.90 and P.T.100 per kg respectively. (P.T.97½=£1)

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### ASSOCIATED BRITISH MANUFACTURERS (EGYPT), LTD.

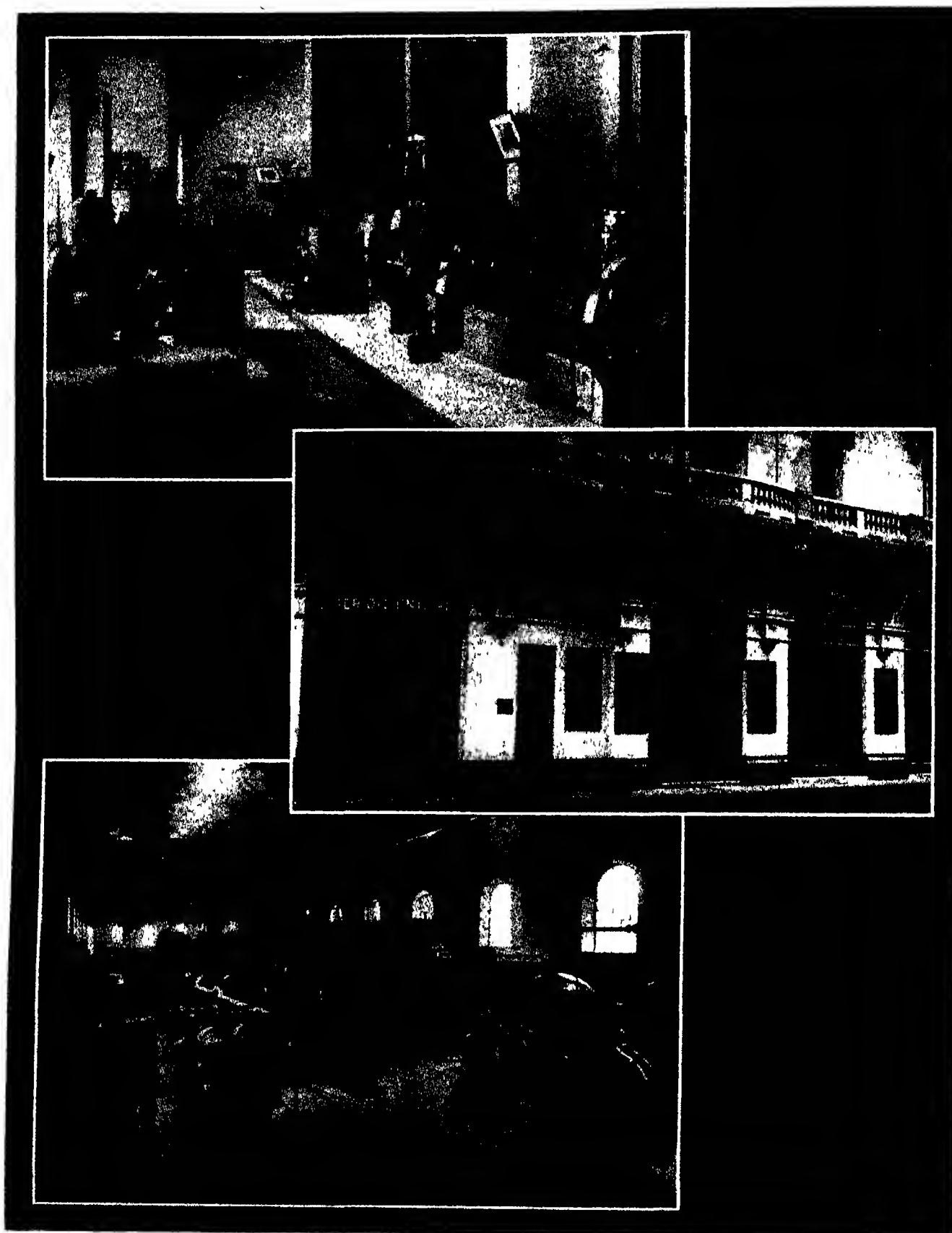
**Inception.**—The present Association was formed as a result of the not altogether satisfactory practice of carrying on manufacturers' business abroad by the employment of agents. Combining the foreign sales organisations of the British manufacturers who form the Association, it constitutes a branch office in the territory covered, and not an agency, of those manufacturers. The concern under notice is the Egypt company, covering Egypt, the Sudan, Palestine, Syria and Cyprus, and similar companies of the Association represent the same manufacturers' operations in other parts of the world.

**Associated Shareholders.**—The following are firms holding shares and associated in the enterprise:—The Birmingham Small Arms Co. Ltd., manufacturing service and sporting rifles, motor cars, motor cycles, bicycles, John Brown & Co. Ltd., manufacturing carbon and alloy steel bars, castings, railway tyres and axles, Callender's Cable & Construction Co. Ltd., producing insulated wires, cables and accessories in connection with the distribution of electricity, The English Electric Co. Ltd., comprising Dick, Kerr & Co. Ltd., Siemens Bros. Dynamo Works, Ltd., Willans & Robinson, Ltd., Coventry Ordnance Works, Ltd., Phoenix Dynamo Mfrg. Co. Ltd., and the United Electric Car Co. Ltd., supplying electric machinery and apparatus, land steam turbines and Diesel engines, Dorman, Long & Co. Ltd., makers of structural steel work, bridge spans, steel rails, etc., Thomas Firth & Sons, Ltd., manufacturing high speed, carbon and running steel, files, drills and saws, Glenfield & Kennedy, Ltd., makers of sluice valves for water, steam, oil or gas, hydraulic and pumping machinery, sluice gates for dams, Gwynnes, Ltd., manufacturers of centrifugal pumping machinery and fire engines, J. & E. Hall, Ltd., supplying refrigerating machinery, "Hallford" motor vehicles, R. & W. Hawthorn Leslie & Co., Ltd., specialising in railway locomotives, marine engines, ships' boilers and floating docks, Hughes & Lancaster, Ltd., drainage systems and air compressors, Petters, Ltd., and Vickers-Petters, Ltd., manufacturing semi-Diesel crude oil engines for industrial, agricultural and marine purposes, and aeroplanes.

**Other Associated Firms.**—With the shareholding firms listed above are associated:—Bon Accord Engineering Co., Ltd., making thrashers, gram winnowers and broadcast sowing machines; Davey, Paxman & Co., Ltd., Expanded Metal Co., supplying all types of expanded metal for reinforced concrete and plaster work, The Patent Lighting Co., Ltd., specialising in the lighting of railway vehicles, lighthouses, etc., The Paterson Engineering Co., Ltd., manufacturing water purification plant, Siemens Bros. & Co., Ltd., telephones, etc., Small & Parkes, Ltd., patentees of the "Roko" hair belt and belt paste, C. C. Wakefield & Co., Ltd., producing machine lubricating oils and the patent "Castrol" motor oil.

**Capital.**—The capital of the company stands at £100,000.

**Operations.**—The various associates of the group are capable of supplying a complete range of finished work and material suited to the requirements of the country. Efficiently controlled, and holding a qualified, expert staff at the service of customers throughout the territory, the Associated



THE ASSOCIATED BRITISH MANUFACTURERS (EGYPT) LTD., Cairo.

1. Section of Showrooms.
2. Offices and Showrooms.
3. Pumping Station from Nile into Mahmoudieh Canal ; four Willans Diesel Engines, each 335 B.H.P., coupled to Gwynnes Centrifugal Pumps, each capable of discharging 6.4 cubic metres of water per second.

(See letterpress, page 65.)

British Manufacturers (Egypt), Ltd, maintains a sound reputation for high-class machinery and apparatus.

**Recent Contracts.**—Among recent contracts secured by that reputation are four for the Egyptian Government for the Public Works Ministry, the Aif pumping station, involving a sum of £E 82,000, for the Coastguard Service, an armoured sea-going vessel (£E 64,000), for the State Railways, the Dessouk railway bridge (£E 140,000), and for the Government Municipalities, the Mehalla el Kebir Waterworks (£E 8,000). The company was recently entrusted by the Sudan Government Public Utility Services with contracts for a lighting and power stations' electric tramway service, waterworks and the Khartoum to Omdurman bridge across the Nile, at a total cost of £E 800,000.

**Offices.**—Head office Block "B," Khedivial Buildings, Sharia Emad-el-Din, Cairo, Sudan office Khartoum, London office 8, The Sanctuary, Westminster, S.W. 1 (secretary, Mr W. Ender) Cables "Rebirtman," at each address.

**Directorate.**—Sir T. O. Callender, Col. Byrne, C.M.G., Mr H. T. Rice, Mr F. C. Fairholme and Mr F. G. Moore. General manager, Lt.-Col. V. B. Gray.

#### THE EGYPTIAN ENGINEERING STORES.

**Policy.**—The development of countries such as Egypt, practically without any natural resources apart from agriculture, is attributable in a considerable degree to the enterprise of reputable machinery agents, constantly seeking opportunities to introduce improved methods of agricultural procedure. To overcome the inherent conservatism of

the farmer has been difficult, but to-day irrigation by means of centrifugal pumps driven by steam or oil engines is almost universal. On most of the large cultivated properties may also be found steam-power thrashing machines and cultivators, their employment being due largely to the example of the State Domains Administration and the late Prince Hussein Kamel Pacha, who became Sultan of Egypt, and their availability to such progressive businesses as The Egyptian Engineering Stores.

**Inception.**—The firm under notice was founded in 1887 by the late Henri Steinemann, a Swiss citizen, and the late Aziz Mabardi, of Syrian origin. After the death of Mr. Mabardi in 1905 the business was carried on by Mr. Steinemann until 1910, when it was constituted as a limited liability company, with a paid-up capital (subscribed principally in London) of £F 30,000. In 1914 the stock and premises of The Egyptian Engineering Co., Ltd., in Cairo were purchased.

**Development.**—The company's policy in acting only for manufacturers of world-wide repute finds convincing justification in the continual development of the firm, whose accumulated reserves now total £E 60,000.

**Representations.**—Clayton & Shuttleworth, Ltd., of Lincoln (oil engines and thrashing machines), Aveling & Porter, Ltd., of Rochester (road rollers and steam ploughing tackle), Barford & Perkins, Ltd., of Peterborough (motor road rollers), Galloways, Ltd., of Manchester (hoilers), Dennis Bros., Ltd., of Guildford (motor fire engines), The Foamite Fuel-oil Co., Ltd., of London

(fire-extinguishing plant), the Swiss Locomotive & Engine Works, of Winterthur (Diesel and crude oil engines), and L. Duimont, of Paris (centrifugal pumps).

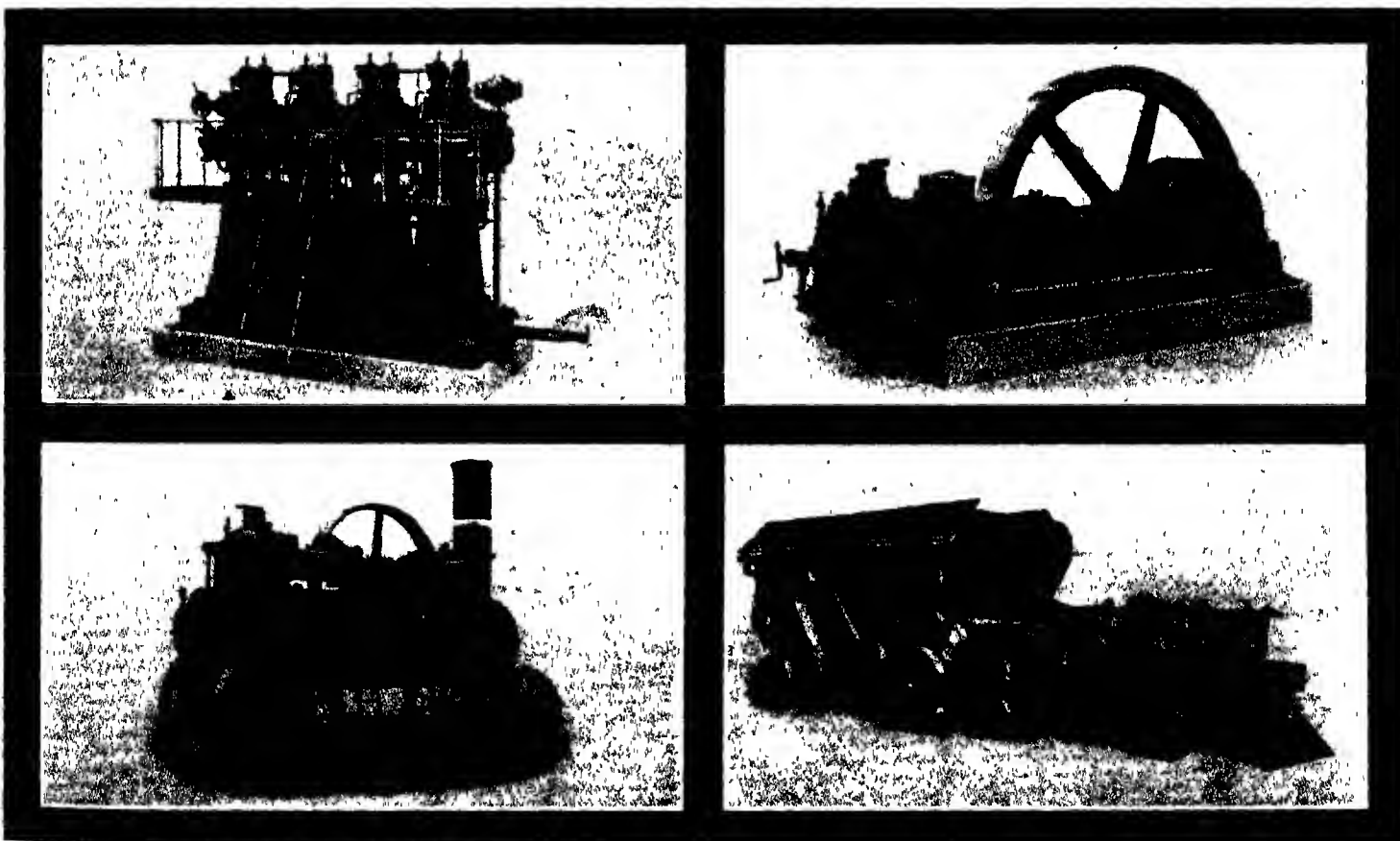
**Head Office.**—42-44, Rue Sidi-el-Metwalli, Alexandria Cables "Aziz," Alexandria Codes A B C 5th Edition and Bentley's.

**Branches.**—Sharia Emad-el-Din, Cairo, and at Assiut and Jaffa. London agents M. Samuel & Co., Ltd.

#### SENDER & CO.

**Inception.**—Prosperity attending the establishment overseas of a British firm, with an organisation on British principles and adapted to meet local conditions, finds another exemplification in the fortunes of this company. It was founded in 1908 by Mr. Clarence Sender under the title of Sender & Co., with offices in Sharia Emad-el-Din, Cairo.

**Development.**—Operating originally as insurance agents and manufacturers' representatives, from 1910 onwards the firm devoted its principal activities to the wine, spirit and cigar trade, in which its senior had been engaged in Egypt since 1897 as a manager of the formerly pre-eminent concern, Walker, Meimarachi & Co. Always in the forefront of progressive firms, Messrs. Sender & Co., requiring larger offices, in 1911 removed to 18, Sharia Madabegh, Cairo. Eight years later a commercial side to the business was developed, and following continued prosperity the company ranks to-day as one of the largest wine, spirit and general merchants in Egypt, the Sudan and Palestine. The firm's unvarying policy is to accept no



THE EGYPTIAN ENGINEERING STORES, Alexandria.

1. Slow-speed 4-cylinder Diesel Engine.
2. Non-compressor 60 horse power Diesel Motor.
3. Compound Portable Engine, Condensing Type.
4. Thrashing Machine, with movable Winnowers.

agencies other than those capable of being worked side by side with existing representations, a list of which appears below

**Organisation.**—All the company's branch managers are also travellers, trained in its selling methods, and while good personal representation is regarded as constituting the first line of attack in such a business, the firm does not consider that its functions as agent begin and end with the introduction and sale of represented lines, but that they should embrace the role of propagandist for forming public opinion, and thereby the creation of demand, or where demand already exists, its development. In addition to the traveller-managers, further representatives are engaged in canvassing towns in the interior. The whole of Egypt, the Sudan, Palestine and Syria is so covered.

**Representations.**—John Dewar & Sons, Perth, St Marceaux, Rennes, Apollinaris Co, London, Ardath Tobacco Co, London, J C Eno, Ltd, London, Glaxo, London, Castle Brewery, Amersfoort, Holland, Gordon's Dry Gin Co, London, Thos Hine & Co, Jarnac, Cognac, International Chemical Co, London, W E Johnson & Co, Liverpool, Justerini & Brooks, London, Schroder & Schyler & Cie, Bordeaux, W A Ross & Sons, Belfast, Warre & Co, Oporto, Williams, Humbert & Co, Jerez, Justus Van Maurik, Amsterdam and London, Jules Regnier & Co, Dijon, Lever Bros, Ltd, Port Sunlight, Benjamin Brooke & Co, Ltd, Liverpool, Blondeau & Cie, Liverpool, Hodgson & Simpson, Liverpool, R S Hudson, Ltd, Liverpool, Sautas Co, London, Vinolia Co, Liverpool, Woodward, Ltd, London.

**Offices.**—Head offices and warehouses, 154, Sharia Madabegh, Cairo. Branch offices and warehouses, 10, Rue General Earle, Alexandria, Rue Tantai, Port Said, Rue Colmar, Suez, Sirdar Avenue, Khartoum, King George Avenue, Jaffa.

**Bankers.** Egypt Barclays Bank (Dominion, Colonial & Overseas), Kasr-el-Nil, Cairo, and branches, London. Barclays Bank (Dominion, Colonial & Overseas), 37-9, King William Street, E.C. 4, Paris. Comptoir National d'Escompte de Paris, Rue Bergère.

#### HICKSON & THOMAS, LTD.

**Inception.**—About 20 years have elapsed since the establishment of the firm of Hickson & Thomas, Ltd, which claims a recognised place among the leading commission agents, general importers and exporters of Egypt and the Near East.

**Activities.**—The enterprise under notice represents the eminent European firms mentioned below. Its head office in Egypt is situated at Cairo with an important branch at Alexandria, while there are agencies at Port Said, Khartoum and in Palestine. The whole of the territory so served is covered by an efficient staff of travellers under the direction of Mr L H Mills Thomas. The managing director, Mr D Mills Thomas, supervises the similar covering of Gibraltar, Malta and the Canary Islands.

**Representations.** T H Downing & Co, Ltd, Leicester (Alpha and Sensola underwear, knitted goods, hosiery). Lloyd, Attree & Smith, London and Belfast (shirts, ties, etc.). Innes, Henderson & Co, Ltd, Hawick (Henda underwear). Gaunt & Hudson, Ltd, London (hats, waterproofs, etc.). Sambrook,

Witting & Co, Ltd, London (ties). W. Wood & Son, Ltd, London (trunks and leather goods). Church & Co, Northampton (boots and shoes). Phipps & Son, Ltd, Northampton (shoe manufacturers' supplies). J B Thomas (tanners), Ltd, Lanthgow (tanners). Charles F Stead & Co, Ltd, Leeds (tanners). Alex Huygen & Co, Ltd, Saint-Ouen-sur-Seine (wood and celluloid-covered heels). Nugget Polish Co, Ltd, London (boot and floor polish). Fitter Brothers, Ltd, Birmingham (bedsteads). Charles Farly & Co, Ltd, Oxfordshire (blankets). Erasmie Co, Ltd, Warrington (perfumery and fine soap). Fassett & Johnson, Ltd, London (wholesale druggists). Stafford Allen & Sons, Ltd, London (manufacturing chemists). Dymuth, Ltd, Matlock (moth killer). Joseph Crosfield & Son, Ltd, Warrington (glycerines). Coleman & Co, Ltd, Norwich ("Wincarnis").

**Offices.**—Cairo, 11, Sharia El Maghrabi, Alexandria, 2, Rue de l'Eglise Maronite, London (registered offices). Albion House, 61, New Oxford Street, W.C.1, Cables "Hanthum," for all three addresses.

#### THE MINERAL WATERS AND WINES AND SPIRITS CO. (N. SPATHIS).

**Inception.**—In the Near East climatic conditions create a natural demand for good mineral waters, and for over forty years the company now under notice has been supplying this desideratum. Originally established in 1884 as N Spathis & Co, the whole business was taken over three years later by its founder, Mr N Spathis, who in 1920 transformed it into the present concern.

**Capital.**—The capital of the firm is £E 60,000, in £E 4 shares.



1 & 4. Views of Showrooms. 2 & 3. Corners of Warehouse, with well-known brands in evidence.  
(See letterpress, page 67.)

SENDER & CO., Cairo.



HICKSON AND THOMAS, LTD., Cairo  
A view in the Showrooms.

**Development.** Steadily progressing from the outset, the business has been for many years the leading mineral waters and syrup manufactory in the Near East, with a large branch in Alexandria and agencies in the principal towns of Egypt. Over 150 persons are employed in the manufacture and distribution of its products throughout Egypt and the Sudan.

**Products.** The company produces 20 kinds of syrup and 16 brands of aerated waters, such as lemonade, orangeade, ginger beer, ginger ale and soda water. Only purest ingredients are used, and the greatest care is exercised in the cleansing of bottles, etc., the water first passing through Chamberlain filters (Pasteur system). The best brands of wines, spirits, bottled beers and teas are always stocked in the company's stores.

**Patronage.**—In Cairo and Alexandria the firm is patronised by H.M. the King of Egypt, the Residency, and practically every mess of the British Army, together with leading clubs, hotels, hospitals, etc.

**Offices.**—Head office: 15, Nubar Pasha, Cairo. Alexandria office: Averoff Street. Cables: "Spathis" Code: A B C, 5th Edition.

**UNITED DRUG STORES OF EGYPT.**—26 rue Manakh, Cairo. Established in 1926. Druggists and dealers in chemical and pharmaceutical supplies. Capital £100,000. Financial year ends March 31. Managers: Elias Gannagé and Jack Goldstein. Administration: N. Gannagé (president), W. Perkins, F. J. Denham, Ch. Goding, Choulal.

**UNITED EGYPTIAN SALT, LTD.**—5 rue Adib, Alexandria. Established in 1907. Engaged in the sale of salt in Egypt. Capital, £300,000 in £1 shares, fully paid. Administration: E. Vermond, S. Wellhoff, A. J. Lowe, P. Fabri, A. Baerlocher, A. Hasda. Alexandria management: A. J. Lowe (delegate director) and P. H. du Boulay (sub-manager).



THE MINERAL WATERS & WINES & SPIRITS CO. (N. Spathis), Cairo.  
1. Part of the Fleet of Delivery Vans.  
2. The Company's Stand at the great Agricultural and Engineering Exhibition.





NAG-HAMADI SUGAR ESTATE. NEWLY PLANTED FIELD.

## AGRICULTURE

### GENERAL DATA

**E**GYPT holds a unique position in the agricultural world by reason of the great fertility of its soil and the fact that its agricultural prosperity is wholly dependent upon artificial irrigation, which is only made practicable by means of barrages on the River Nile itself, supplying in some parts a system of canals and in others flood basins. These different methods are described later. It is due to them that Egypt has not only been able to cultivate cotton, but also to evolve special kinds which have the advantage of giving a large yield combined with a fibre of exceptional quality.

Cotton in normal years occupies about 32 per cent of the cultivated area of Egypt, producing an annual crop of some six million kantars. In addition, nearly enough cereals are grown to meet local requirements, as well as fodder crops for the upkeep of a large number of cattle.

**ADMINISTRATION.**—The Ministry of Agriculture, whose headquarters are in the Sharia el-Falaki, Cairo, is one of the most important and busiest of Egyptian Government Departments. Its work is carried out by means of an Administrative Service, Statistical Office, Entomological, Agronomic, Horticultural and Seed and Manure Sections, a Co-operative Section, a Veterinary Service,

a Chemical Laboratory, at present situated in the Higher School of Agriculture, and a Botanical and Plant-breeding Section.

The provincial staff of the Ministry consists of an Inspector of Agriculture and one or more veterinary inspectors in each province. The former is assisted by one or more sub-inspectors. In the majority of markazes an agricultural engineer or a moawen of agriculture is permanently attached to the markaz. Members of the provincial staff follow up and present monthly reports on the progress of the various crops and on the condition of live-stock; they administer the laws and regulations dealing with the control of agricultural pests, particularly the cotton worm and boll worm, and assist in carrying out the Ministry's experimental programme in the provinces, as also in the supervision of cotton seed farms.

**AGRICULTURAL SCHOOLS.**—Though all agricultural and veterinary schools in Egypt have been since 1923 under the control of the Ministry of Education, mention may be made here more fittingly of a few of the most important. The Agricultural College at Giza is a Higher School, to which students are admitted who hold the Secondary Education Certificate Part II. The course of study extends over four years,

the school diploma being awarded after one year's satisfactory work subsequent to graduation. The School of Veterinary Medicine, also at Giza, was opened in 1916, and offers a course of study extending over four years, at the end of which period successful candidates are granted a diploma authorising them to practise as veterinary surgeons in Egypt. The Mushtuhur School of Agriculture is an intermediate one, at which all the pupils are sons of landowners. There is another intermediate School of Agriculture at Shibin, working under the same conditions as that at Mushtubur. Under the Provincial Councils are many admirably conducted intermediate and farm schools.

**BOTANICAL LABORATORY AND EXPERIMENTAL FARM.**—The Botanical Laboratory and Experimental Farm are situated at Giza, having for their main object the improvement of cotton, wheat and other crops grown in the country, by breeding better and purer types on the basis of field selection, combined with self-fertilisation and hybridisation. Arrangements are made with the State Domain Administration and with certain selected private cultivators for the propagation in bulk of the improved strains which result. In addition, a considerable

amount of purely experimental work is carried out, largely with the object of throwing light on the various environmental factors which affect, either favourably or adversely, the growth of the individual plant and the ultimate character of the crop as a whole. In particular, the relation between the development of the plant in its early stages and the final yield is closely studied.

The fungus and bacterial diseases of Egyptian crops in general, and of cotton in particular, are investigated and means for controlling them are devised and tested. Specimens of diseased plants are analysed and preventive action suggested where this is considered necessary. Reports are made on any samples of cotton, wheat, etc., that may be sent in for examination, and information is supplied as to the quality, purity and germination capacity of agricultural seeds.

**COTTON RESEARCH BOARD.** See article on "Cotton" following.

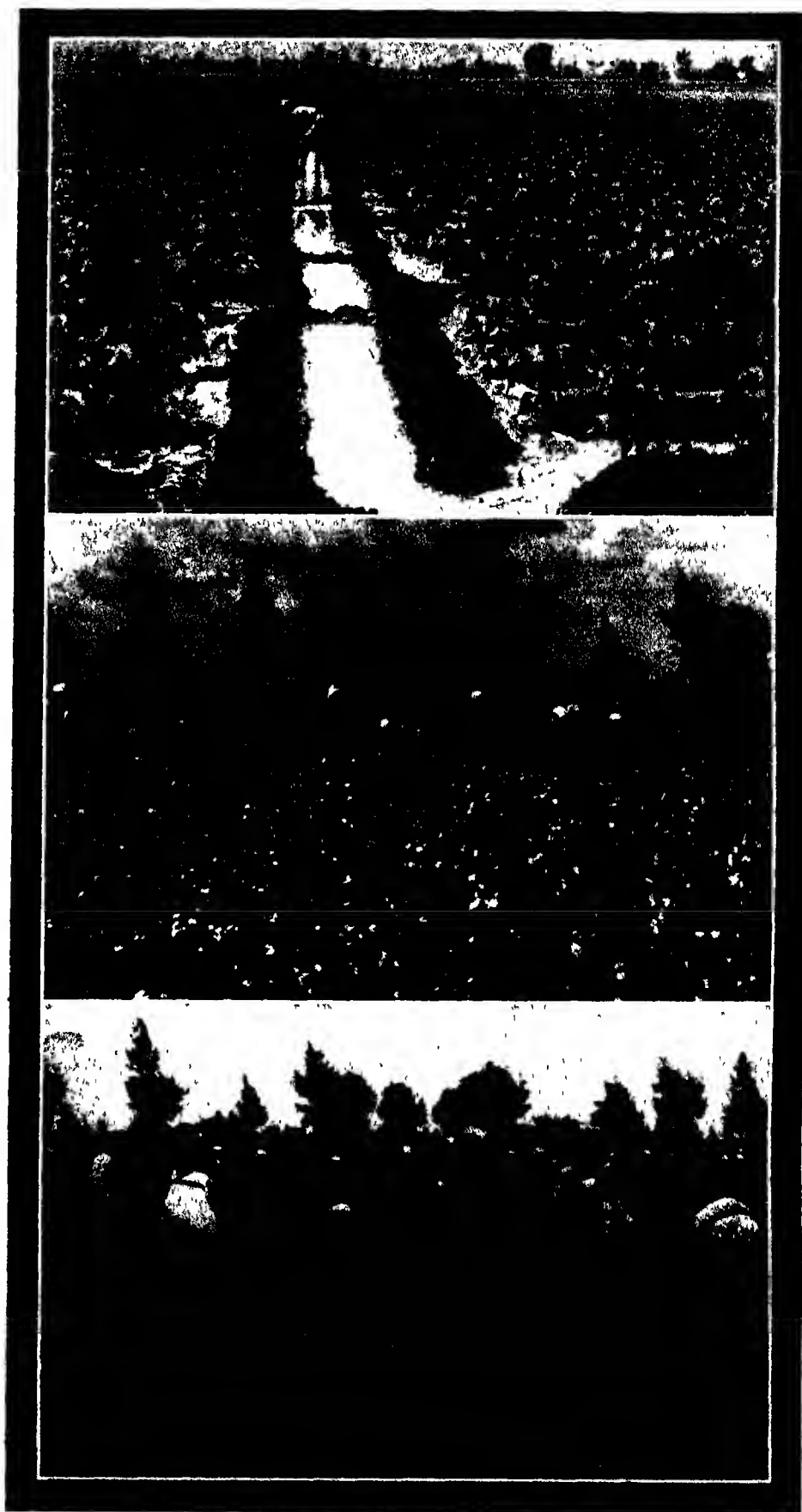
**ENTOMOLOGICAL SECTION.**—The Entomological Section gives advice and information to correspondents about insect pests and methods for their control. For this purpose the pests of economic plants are being bred and studied. Experiments are made with a view to obtaining non dangerous and at the same time efficient remedies for the principal crop pests.

In order to prevent the introduction of plant diseases into Egypt from abroad the Ministry of Agriculture prohibits the landing of cotton plants, seeds of cotton, cotton ginned or unginned, vine leaves, living insects, their eggs, larvæ and pupæ, bacteria and fungi harmful to plants. The importation of date palm trees, bananas (*Musaceæ*), sugar canes, green olives and olive trees, silkworm eggs, and honey bees is permitted only by authorisation of the Ministry of Agriculture.

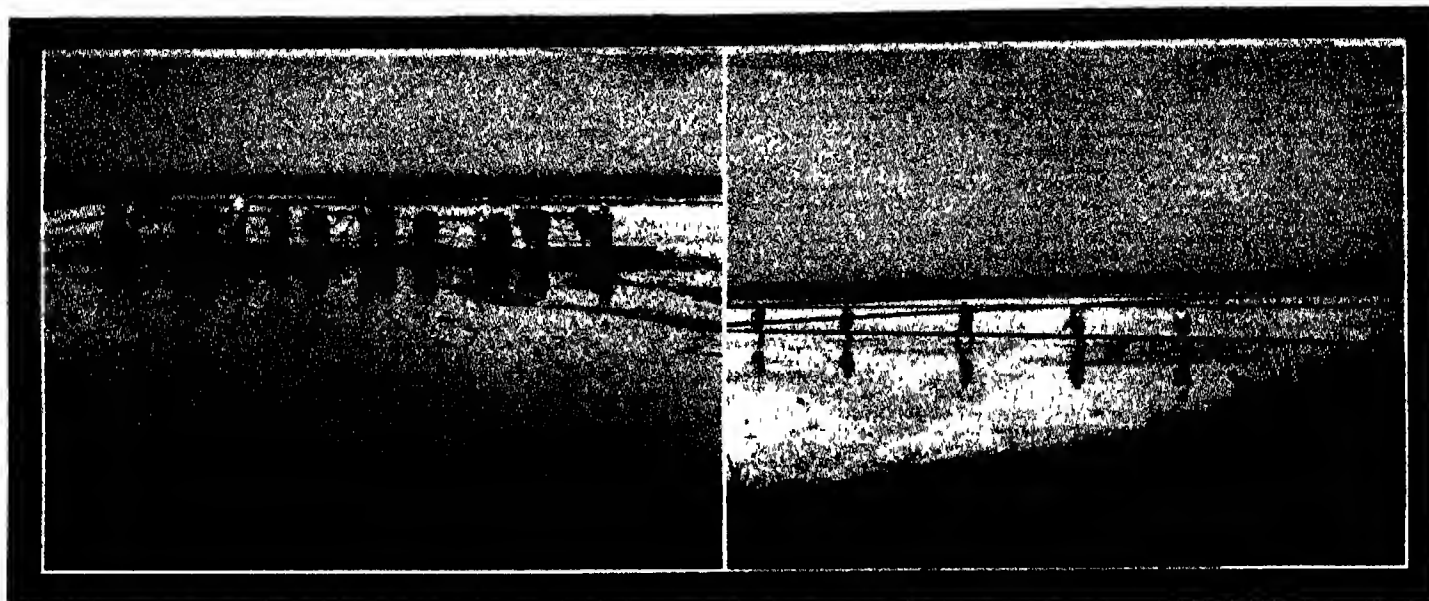
**STATE DOMAINS.**—During the period of Egypt's financial stress in the 'seventies the Egyptian Government raised a loan of £1,850,000 on the security of a part of its more valuable domains. In 1878 an international Board of three Commissioners, one Egyptian, one French and one English, was instituted for the management of these domains. During the process of the liquidation of the debt these properties were reduced by successive sales from 425,720 feddans to 151,475 feddans, which was the area handed over by the Commissioners to the Government in April 1913, after the extinction of the debt.

Under the existing Administration the estates comprising the Private Domains are managed by local agents appointed for the purpose and acting directly under the orders of the Administration, or through the intermediary of Mudiryas and Governorates.

The area of the estates within the surveyed zones under the management of the State Domains Administration on March 31, 1924, was 1,488,800 feddans. This area does not include (1) the unsurveyed desert land lying within the limits of the Egyptian territory, (2) island lands, i.e. lands situated between the banks of the Nile or on islands in the river, which are the property of the Egyptian Government and are subject to erosion and displacement forming the object of special legislation, the administration of which is entrusted to the Direct Taxes Department, Ministry of Finance; (3) quarries, mines and underground rights, the administration of which is entrusted to the Mines and Quarries Department; and (4) lakes used as fishing ponds, as well as lands allotted to public utility.



1. IRRIGATING COTTON.
2. PICKING.
3. BRINGING IN THE NEWLY-PICKED COTTON.



1. LEVELLING THE SOIL.

2. SOWING RICE

The Administration, in addition, manages 40,308,000 square metres of urban property, of which 10,883,500 square metres are situated in Cairo, 7,913,000 in Alexandria, and the remaining 15,510,900 in other towns.

The before-mentioned 1,488,800 feddans of rural property is composed of the following categories:—

	FEDDANS
Land cultivated direct by the Administration or occupied in small holdings by farm labourers or by farm buildings	30,100
Estates leased	307,776
Waste land, including small areas cultivated from time to time on annual lease	1,141,834
	<hr/>
	1,488,800

In maintaining these farms the Administration aims specially at producing and distributing a high-grade cotton seed from carefully selected plants grown under the best possible field conditions. The cotton

grown on the estates is ginned at the Administration's own factory at Sakha. The cotton is sent to Alexandria and sold by public auction. The subsidiary crops from the Administration's estates are either sold or supplied to other Departments of State.

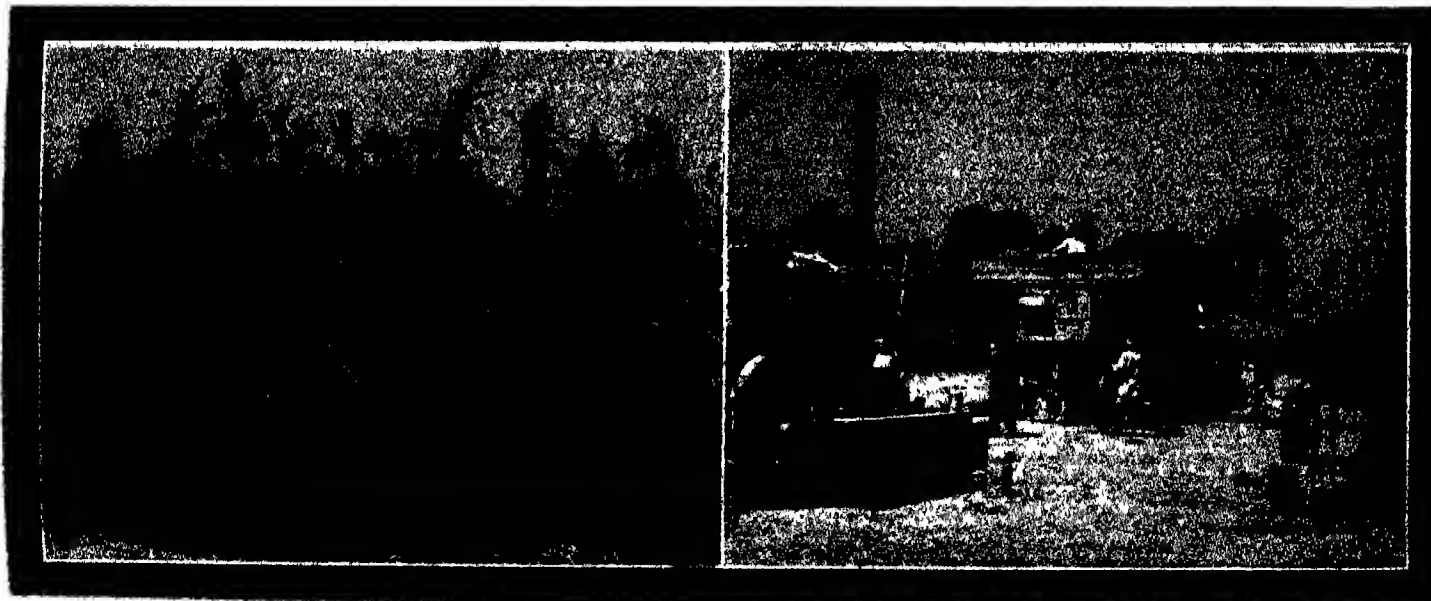
### PRODUCTS

The total area under the various crops cultivated in Egypt, according to the latest statistics available, was 6,152,739 feddans, the extent of the principal crops being approximately as follows: Cotton, 1,788,000 feddans; maize, 1,707,000 feddans; wheat, 1,304,000 feddans; rice, 222,000 feddans; sorghum (millet), 140,000 feddans; barley, 358,000 feddans; sugar-cane 51,000 feddans; onions, 40,000 feddans.

**BEANS.**—These are grown in the basin and canal lands, being harvested in March and April. In 1923-24 some 435,000 feddans were under cultivation, yielding a crop of 2,085,762 ardebs.

**BERSEEM.**—The name "Berseem" covers the various kinds of clover grown in Egypt under the general name of Egyptian clover (*Trifolium alexandrinum*). This is the principal fodder crop of the country, and, directly and indirectly it is second in importance only to the cotton crop itself. It is grown among the crops in the Nile Valley, and during six months of the year the dairy stock and working animals take it fresh from the fields, where the practice is to tether the beasts in the growing crop. When half-dry it is baled and known as "dries," serving in that form to carry the stock through the warmer months. Berseem is also of great value to the cotton crop, for it enriches the soil with its manurial properties, having also the power of extracting the nitrogen from the air and converting it into plant food.

There are four principal varieties of berseem grown in the Nile Valley, that known as "Miskawi" being by far the most important. It is raised largely under perennial



1. MAIZE.

2. THRESHING GRAIN WITH MODERN EQUIPMENT

irrigation, is tall and luxuriant in growth, and yields an extraordinary amount of green food. The "Fahl," "Saidi" and "Khadrawi" varieties are grown mostly in basin lands and need little water. Berseem is sown in October-November by broadcasting it on the water; it sinks into the soil and very quickly takes root. Three waterings are needed before the first cutting is taken towards the end of December. The crop is watered after each cutting, the yields recurring at intervals of five or six weeks. The seed is harvested in June and July.

**COTTON.** See article following.

**FLAX.**—In dynastic times flax was cultivated with great diligence in Egypt, and the weavers of linen must have formed a considerable and wealthy section of the community. The importance of the flax crop was great, and in the Bible it is coupled with barley. In modern times the cultivation of flax has decreased as that of cotton has increased, but it is still grown in Lower Egypt and the north basins, the seed being sown in November and the crop gathered in May and June.

**FRUIT AND VEGETABLES.** There would appear to be a prospect in the future for a trade in fruit and vegetables, which are capable of being grown in Egypt under the most favourable conditions for marketing. Among the most important fruits and vegetables at present cultivated are dates, oranges, bananas, limes, grapes, mangoes, guavas, apricots, figs, melons, tomatoes, aubergines, cabbages, cauliflowers, lettuces, eschalots and artichokes. (See also "Onions.")

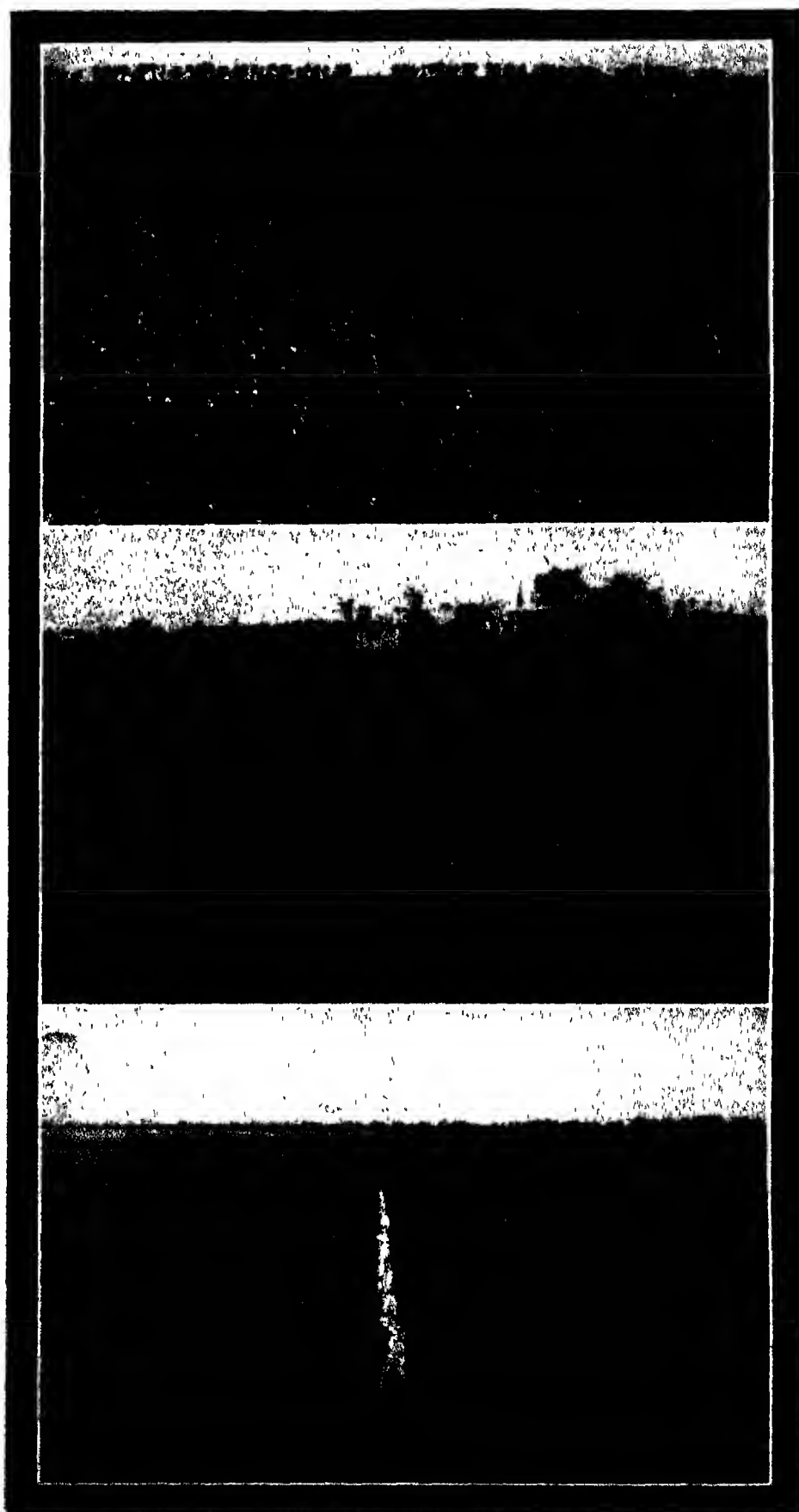
**LIVE STOCK.**—Though not essentially a stock-raising country, Egypt possesses many flocks of sheep and herds of cattle. Oxen, buffaloes and camels are utilised extensively for ploughing and draught purposes, and the ass is in many parts more generally used as a beast of burden than the horse. The last agricultural census showed the numbers of live stock in Egypt to be as under: Horses, 37,421; mules, 22,410; asses, 715,255; sheep, 1,084,703; goats, 451,640; camels, 151,197; cattle, 689,237; buffaloes, 727,027; pigs, 13,053.

**MAIZE.**—Latest statistics show that the area under maize in Egypt—which includes the canal lands generally—is about 1,797,000 feddans. Production amounts to roughly 12,000,000 ardebs, which is rather more than is required for local consumption, between 4,000 and 5,000 tons being exported annually.

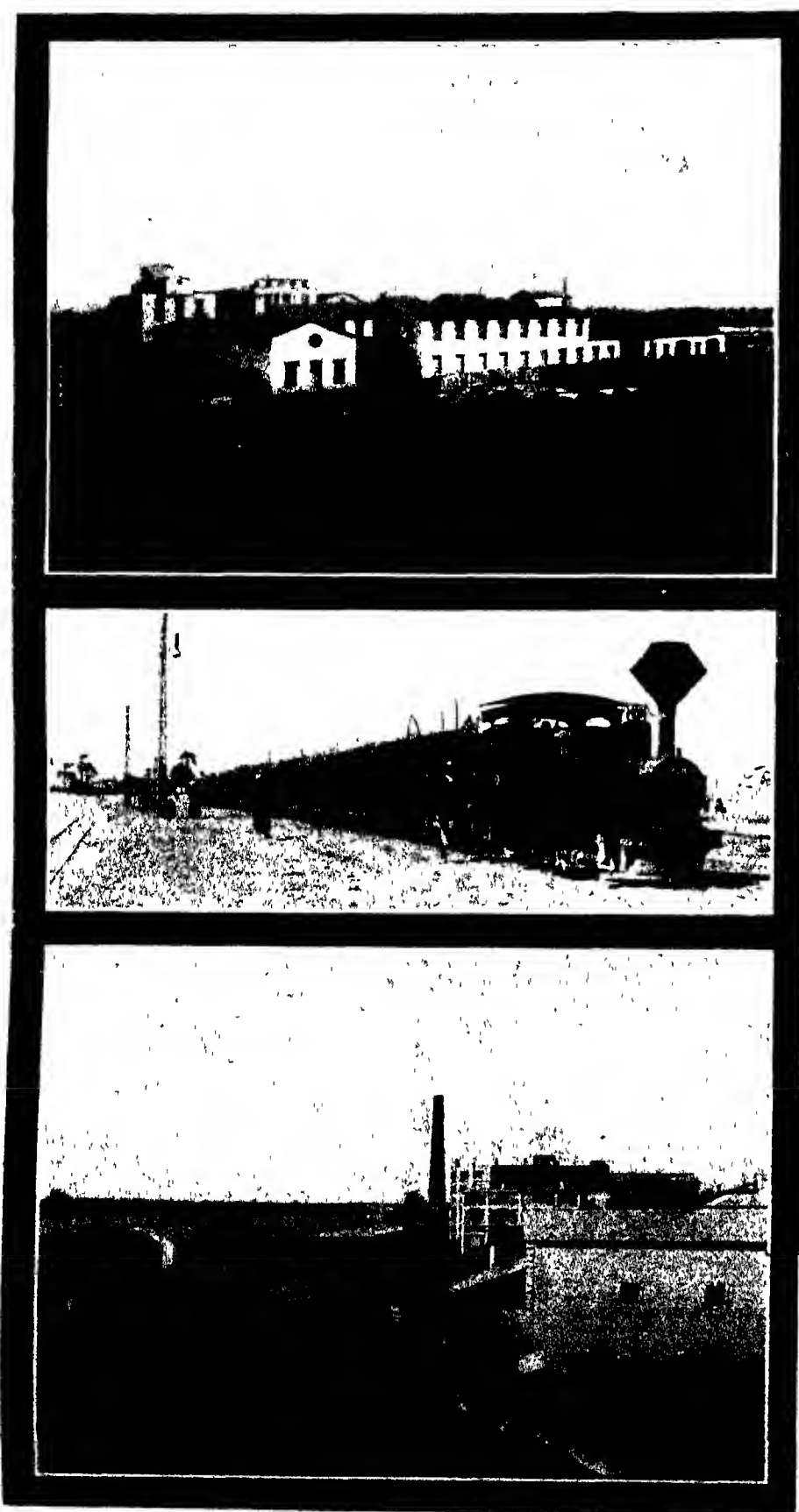
**MINOR CROPS.**—These are many and varied. Lentils are grown in the basin lands, earth nuts in the sandy soil of Lower Egypt, sorghum on all basin lands and in limited areas in Lower Egypt, barley on the perennially irrigated lands, salt lands and poor basin lands, and henna in Lower Egypt, especially Shargiya.

**ONIONS.**—Onions have of recent years become one of Egypt's most profitable agricultural crops; they are grown extensively in Upper Egypt and to a less extent in Lower Egypt, the total area under cultivation exceeding 40,000 feddans, from which nearly 6,000,000 kantars of onions are obtained. (See also under "Commerce.")

**RICE.**—Rice is a most important Egyptian crop, being a staple food of the fellahen, but not sufficient is grown for the requirements of the country, imports being considerable. The area of cultivation is confined to the North Delta and the Fayyum, August being the month of harvest in Lower and August to September in Upper Egypt. In 1923-24 some 222,000 feddans were under



1. COTTON READY FOR PICKING.  
2. SEA ISLAND VARIETY.  
3. RICE FIELD.



SOCIÉTÉ GÉNÉRALE DES SUCRERIES ET DE LA RAFFINERIE D'ÉGYPTE, Cairo.

1. The Factory at Nag-Hamadi.
2. Transporting Cane from the Estate.
3. The Factory at Hawamdiéh

cultivation, the production of non-decorticated rice being about 770 000 ardebs. (See also under "Commerce.")

**SUGAR.**—Sugar, like cotton, is now a staple product of Egypt. The cane is largely cultivated in the northern part of the country for the purpose of making sugar. An inferior variety, which is eaten raw and was introduced from India in the time of the Khalfis, is grown by the fellahs in every part of Egypt. At one time sugar factories were a monopoly of the Khedive, and mills were erected in rapid succession principally in the district of Minya. The lofty chimneys and corrugated iron roofs of these factories impart a very modern industrial appearance to the country, while at night their flaming furnaces light up the Nile and its surroundings with a weird effect.

Though the area under sugar cane (51,501 faddans in 1923-24) is somewhat less than formerly the quality of the sugar produced is much superior. Production in that year totalled 90,007 tons of sugar and 54,373 tons of molasses. (See also under "Commerce.")

**WHEAT.**—Wheat ranks third amongst Egypt's crops, the total area cultivated in the last year for which statistics are available being 1,364,949 faddans which produced 7,376,133 ardebs of grain. Wheat is grown as a winter crop in Egypt in all canal and basin lands, the harvest taking place between April and June. (See also under "Commerce.")

#### REPRESENTATIVE AGRICULTURAL ENTERPRISES

##### SOCIÉTÉ GÉNÉRALE DES SUCRERIES ET DE LA RAFFINERIE D'ÉGYPTE.

**Capital.**—This prominent Egyptian limited company which is actively engaged in that important constituent of the country's commerce, sugar refining, possesses a capital of Fr 34,777,300, and has its head office at Cairo.

**Factories and Refinery.**—Five factories established by the company in Upper Egypt deal yearly with about 900,000 tons of sugar cane, while the refinery at Hawamdiéh refines a million sacks of raw sugar each year. A view of the refinery at Hawamdiéh, another of the factory situated at Nag Hamadi, and a third showing the transportation of sugar cane from the Nag Hamadi estate are reproduced herewith.

**Supply of Cane.**—The supply of cane is maintained from the company's own plantations, which yield very fine crops, and by purchases from private planters, the further requirements of the refinery being completed by the acquisition of raw sugar from Java or elsewhere.

**Output.**—The company produces annually to the extent of 90,000 tons of the purest sugar, the refinery absorbing yearly about 100,000 tons converted into several forms of the pure article, such as loaves, lumps, granulated and powdered sugar. These products supply the consumption of Egypt and the Sudan, and in addition are exported to many other countries.

**Personnel.**—The company employs a permanent staff of some 700 on a monthly basis and more than 20,000 workmen.

**Transport.**—Over 400 kilometres of narrow-gauge railway are operated by this important corporation, which possesses also an imposing fleet on the Nile.

**Directorate.**—The board of directors is constituted as follows: S.E. V. Harari Pacha, C.M.G. (president); H. Naus Bey (general managing director), S.E. J. Cattani Pacha, and MM. G. Lemarquis, L. Lhomme, E. Miriel, A. Pezas and S. Weillhoff.



**SOCIÉTÉ ANONYME DE WADI KOM-OMBO.**

**Inception.**—Projected for the purpose of wresting from the desert the agricultural results characteristic of more kindly soil, this enterprising company was authorised by Khedivial decree of April 14, 1904.

**Capital.**—The authorised capital of the concern is £1,200,000, comprising 300,000 shares, all fully paid, of £4 each. There are also issued 15,000 founders' shares without nominal value. The company possesses no debentures or mortgage debts.

**Activities.** In accordance with the object of its inception, the Society devotes itself to the development, cultivation and subsequent sale of some 70,000 acres of desert land which it owns at Wadi Kom-Ombo, Mudriya (province) of Assuan, roughly 500 miles south of Cairo. The main settlement established by the enterprise has now become the headquarters of a provincial district.

**Communications.**—The State Railway line from Cairo to Shellal runs through the estate, on which are situated two stations, Kom-Ombo and Gabal Silsila, while the Nile adjoins the western boundary of the territory, affording river communication. A comprehensive network of light railway track, 70 miles in length, ensures easy and swift access to all parts of the estate, and to facilitate verbal communication, all villages are connected by telephone with the main settlement, which in turn is provided with a telegraphic office and a trunk call telephone exchange.

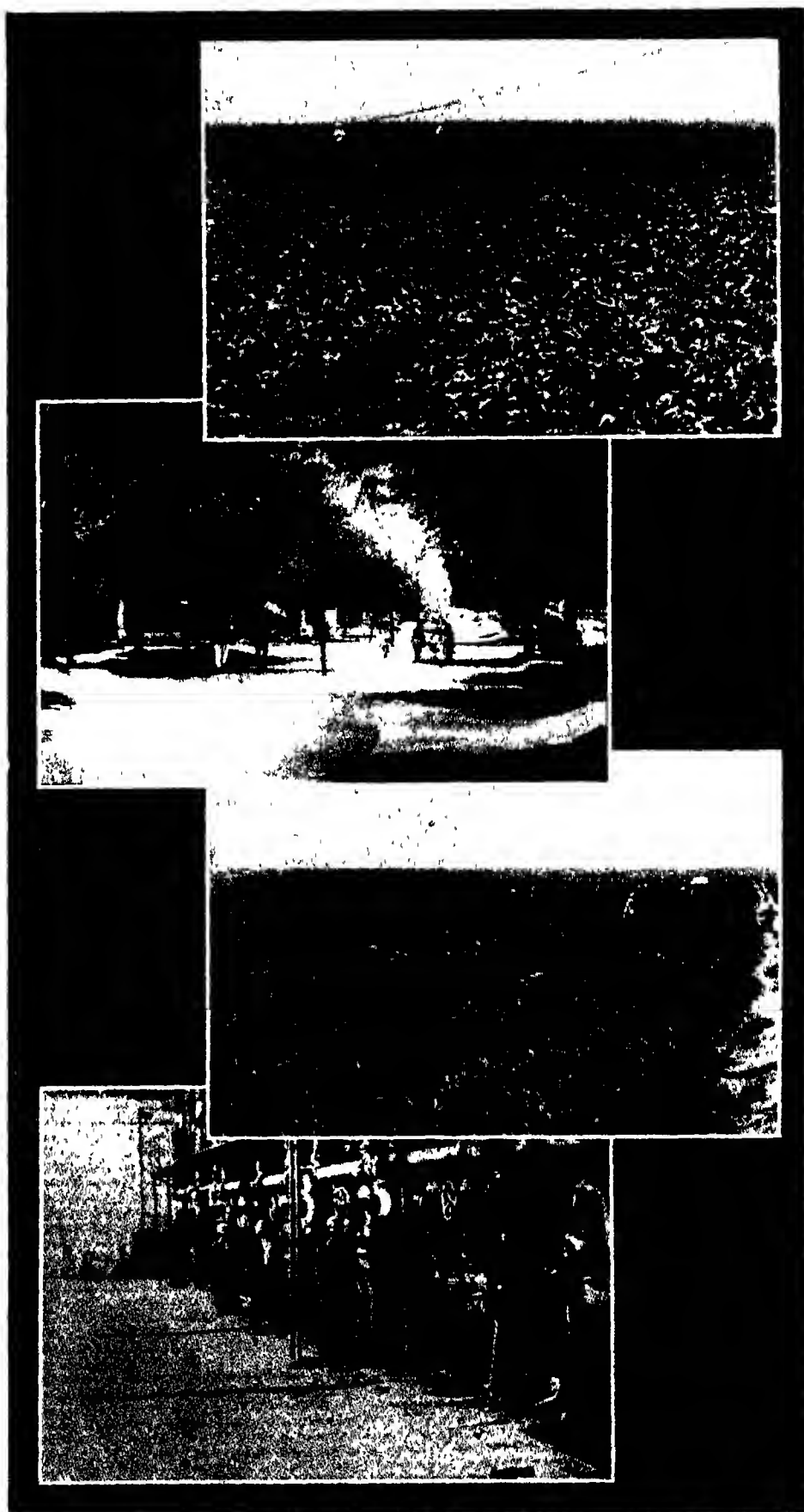
**Irrigation.** The irrigation of the estate is entrusted to four pumps having a total horsepower of 6,500. All the year round water is pumped from the Nile into the main irrigation canal, itself the source of supply of feeder canals. The pumping lift is 16 metres at high Nile, and 23 metres at low Nile.

**Crops.**—The area of the property now under cultivation is 24,000 feddans (1 feddan equalling 1.038 acres), and fresh land is in process of reclamation. The main crops raised are sugar cane, cotton, wheat, maize, barley and beans.

**Sale of Produce.**—Arrangements for the disposal of the crops so raised on the Wadi Kom-Ombo estate are complete and efficient. The sugar cane yield is sold to the Société Générale des Sucreries et de la Raffinerie d'Egypte (whose activities are described on the opposite page), and is crushed by that company in its factory specially erected in the Kom-Ombo district to absorb the output of local plantations. About 210,000 tons of cane are thus dealt with annually. The cotton crop, averaging some 10,000 kantars (1 kantar equalling 99.0492 lbs), is sold in Alexandria through the offices of one of the leading firms of cotton brokers. The remaining staple crops, wheat, maize, barley and beans, usually reaching a total weight of 4,000 to 5,000 tons, are disposed of locally or on the Cairo market. An additional commodity annually sold is tannin, or wheat straw, of which about 10,000 tons are gathered for pressing into bales.

**Plant and Fuel.**—Ploughing and threshing operations on the estate are carried out by steam. The light railway engines used for transport over the company's tract burn coal, while the pumps employed in irrigation consume fuel oil and vegetable waste matter. All mechanical repairs are executed locally in the company's own workshop.

**Population.**—The present population of Wadi Kom-Ombo tract is estimated at some 30,000. Every attention is given to the welfare of this community, education and medical attendance being provided by the company for the children of its staff and tenants.



**SOCIÉTÉ ANONYME DE WADI KOM-OMBO, Cairo.**

1. Cotton Field on Company's Estates.
2. Principal Street at Kom-Ombo.
3. Sugar Cane Field on the Estates.
4. Power Pumps.

**Visitors.**—For the convenience of visitors to the estate the company runs a small hotel, offering accommodation throughout the year. In addition to the varied interest of the agricultural processes employed in the immediate neighbourhood, there are the attractions for tourists of an adjacent Ptolemaic temple on the Nile and traces of prehistoric civilisation in the adjoining hills.

**Directorate.** The board of directors is composed of the following, all most actively

**Bankers.**—The National Bank of Egypt

**Cables.** "Komombo," Cairo

(See also illustration page 75)

#### THE BRITISH SULPHATE OF AMMONIA FEDERATION, LTD.

**Activities.** The extent and importance of the sulphate of ammonia industry need no further emphasis when it is recalled that during 1925 the world's consumption of this chemical for agricultural purposes amounted

a large proportion of the Canadian, Indian and South African output

The activities of the Federation extend practically to every country in the world, covering in particular Spain, Italy, Egypt, the Sudan, Palestine, China, Japan, India, Java, Sumatra, Malay Peninsula, Kenya Colony, Uganda, Sierra Leone, Trinidad and Canada.

**Egyptian Office.**—The Federation's office was established in Alexandria in



THE BRITISH SULPHATE OF AMMONIA FEDERATION LTD., Alexandria

(1) & (3) Unloading (2) the Product ready for transportation by (4) Rail and (5) Canal to (6) the Company's Customers through (7) Sales Depôts located throughout Egypt.

concerned with the development of Egyptian resources. H. E. V. Harari Pacha, C.M.G. (chairman), H. E. J. Cattani Pacha Aslan (vice-chairman), Mr. R. A. Harari (managing director), Mr. Elie N. Mosséri, Mr. Victor Mosséri, Mr. Robert S. Rolo, C.B.E., Mr. Alfred Suarès, Mr. Leon Suarès, and S.E. Mohammed Bey Talaat Harb.

**Auditors.**—Messrs. Russell & Co.

**Solicitors.**—Messrs. Cesar Adda.

to 2,725,471 tons, of an approximate value of £40,000,000. Nor is it necessary to stress the vital part played by The British Sulphate of Ammonia Federation Ltd. in that distribution, other than to state that it represents 90 per cent. of the total annual output in Great Britain and Ireland of this nitrogenous fertiliser (21 per cent. nitrogen), having on June 1, 1925, 428 members in the United Kingdom, and that it also handles

1915, with Mr. M. C. Georgiou, C.D.A. (Edin.), as manager. The activities of this office have made sulphate of ammonia widely known and greatly appreciated by cultivators in Egypt, from the powerful Dairas who possess thousands of acres to the small fellah who farms but a few foddans.

**Benefit to Crops.**—The fact that the Ministry of Agriculture, recognizing the special merits of sulphate of ammonia, supplies farmers

with this fertiliser by a most beneficial credit system is sufficient proof of its effectiveness for Egyptian crops. One of its oldest users in Egypt is the Société Générale des Sucreries, and the general managing director, H. Naus Bey, referred to by Sir W. Wilcocks in his standard work "Egyptian Irrigation," as the real sugar-cane expert of Upper Egypt, writes as follows: "Sulphate of ammonia forms an excellent manure for sugar-cane. We have been using it for the last twenty years, and do not hesitate to recommend it strongly to planters." Apart from that crop, sulphate of ammonia is specially suitable for the manuring of wheat, barley, cotton, maize and rice.

**Increase in Yield.**—The present cost of manuring one acre with this fertiliser varies, according to the crop, from £E 1 to £E 3. The resulting increase in yield is valued at from £E 5 to £E 25, whence it is evident that the wealth of Egypt, which depends entirely on the produce of the soil, will be considerably augmented when the use of sulphate of ammonia becomes even more popular. It is of interest to note that recent extensive fertilising experiments of

#### THE EGYPTIAN MARKETS LTD.

**Old and New-Style Markets.** To the student of humanity, with particular application to the present-day descendants of the most ancient civilisation of the known world, the operations of The Egyptian Markets, Ltd., have a distinct interest. In the old days the town and village traders used to congregate in markets even as they do to-day, but with the prime difference that to the village headman (Omdah) the market was a very lucrative source of revenue, and one which he seldom failed to abuse. Whatever was received was clear profit, for little if anything was ever spent to provide facilities of any description.

To-day the whole conduct of the market is revolutionised. Gone are the extortion and general lack of organisation, the filth and disease-breeding stagnant pools. Well-kept enclosures are now the rule, with substantially constructed sheds, tanks of fresh water, and guards to maintain order. With regard to the actual buying and selling, forms of contract are supplied which when signed by contracting parties are filed with the company, providing a permanent record

free admission. If his reasoning is sound he will prevail, otherwise he must pay the entrance fee levied on animals and vehicles. The fee itself, one piastre (about 2½d), does not matter much to anyone, but to outwit the guardian of the gate is a point worthy the contesting.

**Live Stock.**—Inside the market the traders gather in decorous groups, peacefully discussing and bargaining, or sitting in stolid patience beside their animals, awaiting a purchaser. The camels stand feeding in long lines, the pack animals outnumbering the finer racing or trotting beasts and the young camels destined for the butcher. Practically every kind of domestic animal is on sale, cattle, sheep, goats, horses, donkeys, mules being each a detail in a scene crammed with extraordinary interest.

**Merchandise.**—Yet another enclosure serves for the sale of merchandise, cheap Manchester goods, crockery, tools, boots and shoes, and foodstuffs of every description. Here is a liberal education in values for there would appear to be nothing so dilapidated in the way of old pots, pans, sacks, rope-ends, broken tools, etc., that has not a possible buyer.



THE EGYPTIAN MARKETS LTD., Cairo.  
Directors and General Manager inspecting one of the Company's 120 markets.

two varieties of cotton, Sakellandes and Ashmouni, carried out in different parts of Egypt by the well-known agricultural expert, Dr. Elhe Agluon, manager of the estates of Baron Menasse and Messrs. Sursock and Agluon, have demonstrated clearly that sulphate of ammonia, supplemented by superphosphate, forms by far the best manure for cotton. This mixture produced an average increase in yield of no less than 32½ per cent.

**Distribution.** Sulphate of ammonia is now stocked in over 300 stores situated in all parts of Egypt from Alexandria to Assuan by the Ministry of Agriculture, the Royal Agricultural Society, the Egyptian Markets, Ltd., and other distributors. Supplies of sulphate of ammonia of uniform quality are obtainable in bags of 70 kilos each and at fixed prices. The product of The British Sulphate of Ammonia Federation, Ltd., is of guaranteed purity, strength and efficacy.

**Offices.**—London (head office), 28 Grosvenor Gardens, SW 1, Alexandria: St. David's Buildings, 9 Rue Cherif Pacha. Cables: "Ammonia," Alexandria.

**Bankers.**—Bank of Scotland.

of any transaction for reference in the event of dispute.

**Types of Trader.** Though conditions have undergone so radical a change, the traders remain ever the same. To the market they throng in their thousands, people of every type and every shade from coal-black to light olive and almost pure white. The Mongolian strain is discernible here and there, moving among the pure-bred Arabs, Numidians, and descendants of a thousand races. Make room, there! for a huge water-buffalo driven by a bright-eyed mite who has not yet seen four summers, intent upon his task and capable. Here a string of camels and their driver, a copper-skinned youth in dirty, ragged shorts, followed by the owner, a patriarch, beturbaned and dignified, there mules laden with newly-cut grass, from each of which a widow filches, or takes toll of, a few wisps to provide in the aggregate food for the goat that is one of her chief possessions. At the gate a loud clamour proclaims the arrival of a wily native with a cart, who with fierce gesticulation and specious arguments demands

**Company's Inception.**—In November 1898 the Egyptian Government granted a concession for 30 years (a period subsequently extended to 40 years) to certain parties, who later transferred their rights to The Egyptian Markets, Ltd., to create cattle markets at 120 centres throughout Upper and Lower Egypt, and to build in connection with them general markets for public use.

**Sites and Construction.** In every case the locality, site, construction and general arrangement of these markets were approved and sanctioned by the Government before being opened. They were fixed at a convenient distance outside the towns and villages, with the object of avoiding the streets and consequent crowding, dirt and insanitary conditions. The land required was purchased by the company, except at places under Government tenure, where plots of land were leased at a nominal annual rental from the Government. The fees authorised to be charged at both cattle and general markets were fixed by the Government at a reasonable figure. Where possible,



water is provided free of charge for the use of the large public frequenting these commodious and well-kept markets

**Vendors.**—On a general average, about 5,000 vendors daily display their wares in the company's markets

**Commercial Department.**—The company has no less than 200 distributing centres throughout Egypt. These depots are in



Egyptian Salt & Soda Co and the United Egyptian Salt Co., besides acting as sales' agents for oil, soap, soda, Cerebos salt, etc.. Owing to the ready acceptance by the cultivators of modern Western agricultural aids, the company stocks water pumps, windmills and other similar products in popular demand, and which can be handled advantageously by its organisation

**Services.**—The company's sales organisation is therefore of extreme interest to all manufacturers who are catering for such an essentially agricultural Oriental population. The object of the institution is to serve the people and cater for their needs in every way, as is shown by the fact that it

sells even pilgrims' tickets to the Moslem Holy Places. It has certainly gained the respect and goodwill of cultivators throughout the country of its operations

**Head Office.**—210-216, Gresham House, Old Broad Street, London, E.C. 2. Cables "Ocellated," London

**Egyptian Head Office.**—Rue Emad el Dine, Cairo

charge of trusty salesmen, many of whom have been in the firm's service for years. As far as possible the sales organisation is based on cash sales. Fertilisers of every kind suitable for the country's crops, such as nitrate of soda, super-phosphate, sulphate of ammonia and cyanamide, along with sacking of all kinds, cotton bags, wheat, rice, flour, sugar and veterinary medicines, are on sale in the company's stores at the cheapest possible prices. The trade-mark of The Egyptian Markets Ltd is accepted by cultivators as a warranty of quality. The company also distributes all the salt requirements of the country, amounting annually to over 160,000 tons, as agents for the



THE EGYPTIAN MARKETS LTD., Cairo.

Views illustrating the Type of Market provided by the Company which is most popular with the traders.



1. NEWLY PICKED COTTON

2. READY FOR GINNING

## COTTON

**T**HE history of cotton growing in Egypt reads like a romance, and testifies to the fact that the planting of new agricultural industries in countries may be productive of truly marvellous consequences. From time immemorial cotton has existed in Egypt, but the Egyptian cotton known to commerce was introduced sometime prior to 1820 by Maho Bey from the Isle de Bourbon, where also it was not indigenous, but an immigrant from the Barbados. Its cultivation in Egypt was fostered by Mohammed Ali Jemel, an enterprising Frenchman, who had noticed the cotton growing in Maho Bey's garden and had created a plantation of his own, was placed in control of the great Viceroy's cotton fields. Foreign seed was imported, chiefly of the Sea Island and

Brazilian varieties, and the new husbandry quickly prospered beyond the dreams of its originators. In 1864 the Civil War in America first established the importance of Egyptian cotton as part of the world's supply, and prices rose to an unprecedented height, just as they did fifty years later during the Great European War. But, apart from this latter event, the improvement in the production of cotton fabrics and the increased demand throughout the world for the finer cotton goods have long since given a particular value to Egyptian cotton, a special impetus to the demand having been lent by the introduction of the process of mercerising, to which the Egyptian type of cotton specially lends itself. To-day the Egyptian crop is enormous and is highly prized, its value as the chief product of the

country can only be estimated by a consideration of the huge sums which successive Governments have spent in increasing the irrigation facilities so necessary to its development.

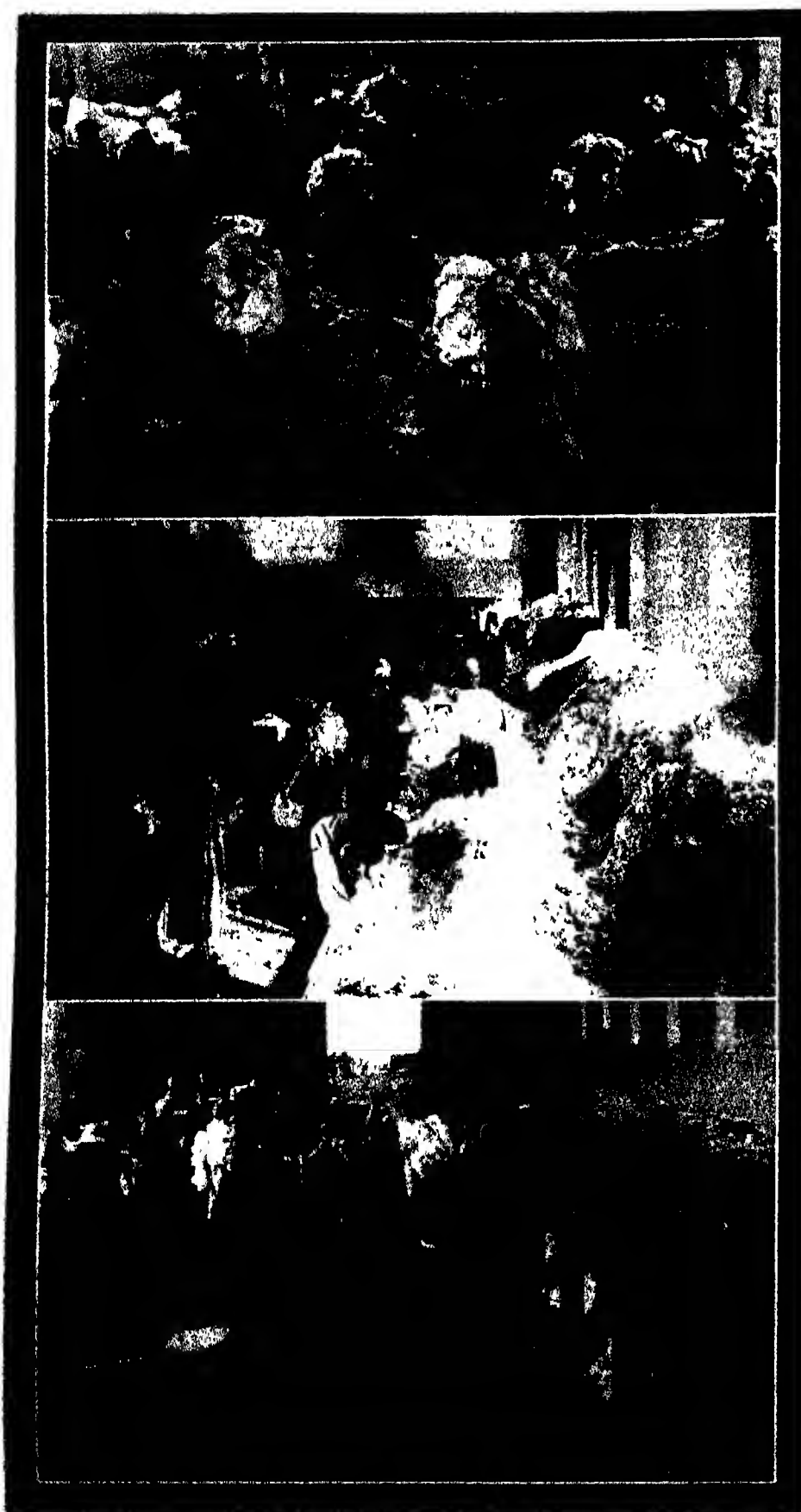
**AREA.**—The area under cotton throughout Egypt has not varied greatly in extent during the present century. In 1904-05 it stood at 1,566,602 feddans, and in 1913-14 at 1,755,270 feddans. There was a drop to 1,386,004 feddans in the following year, but in 1920-21 an increased total (1,283,805 feddans) was reached. In 1924-25 the area cultivated amounted to 1,924,382 feddans, as against 1,787,843 feddans in 1923-24. (A feddan about 1.038 of an acre.)

**COTTON EXPORTS.**—See under "Commerce."



BRINGING COTTON TO THE GINS.





PREPARATION OF COTTON.

1. "Farfara."  
2 & 3. Ginning.

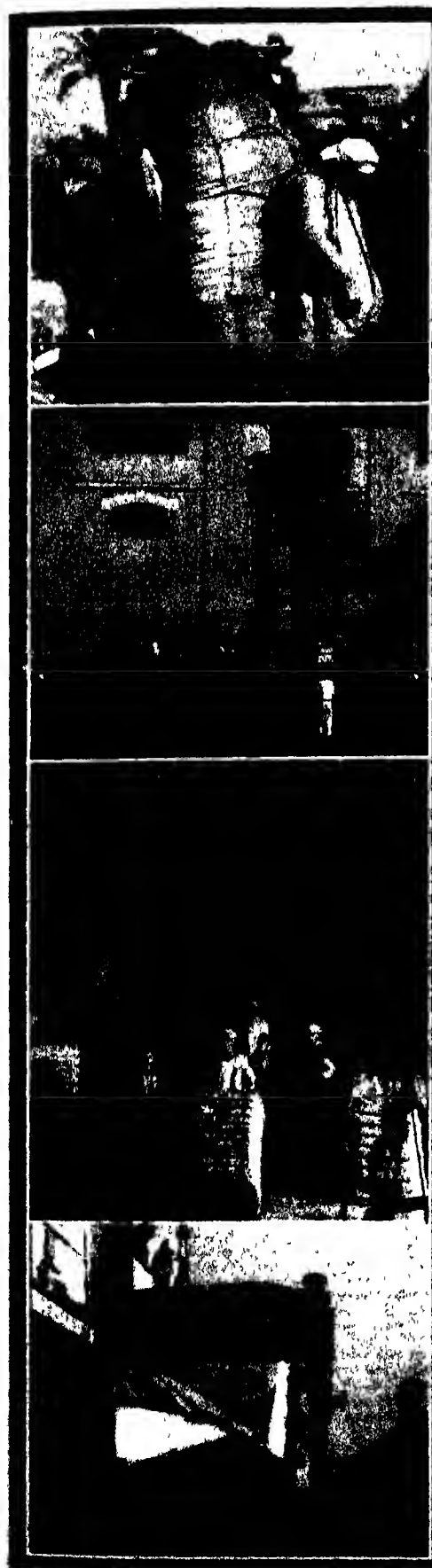
**COTTON RESEARCH BOARD.**—The Cotton Research Board was created in May 1919. Its function may be briefly dealt with under two heads. In the first place, it brings together the chiefs of all technical departments interested in cotton, and ensures that all cotton problems are dealt with as adequately as circumstances permit. In the second place, it provides the scientists engaged in research on cotton with a properly equipped laboratory and library, and with a secretarial staff which acts as a liaison agent internally between the various parts of the Board and externally between the Board and the outside world. The scientists actually carrying out research on cotton are attached to the various technical sections of the Ministry of Agriculture. The laboratories are situated at Giza, and the library, which contains a comprehensive collection of publications relating to cotton research, is open to the public.

**CULTIVATION (METHODS OF).** The cultivation of cotton in Egypt is practically in the hands of the fellahen, who comprise the small peasant-proprietors and those peasant agriculturists who work for the pasha-proprietors of large estates. Work begins in January and February, when the fellah is busily employed in ploughing, cross ploughing, ridging, and generally getting his plot of land, or that of his master, ready for the seed. March is occupied in sowing, May, June and July in weeding and irrigating, also in seeking and destroying myriads of little white eggs which are found beneath the leaves of the plants, and, if left to mature, will produce the worms which damage those plants. From September to November, as the bolls burst and the cotton comes forth, the fellah and his family are busily engaged in picking, sacking and loading it for transport to the ginning factory. It will be seen then that practically the whole year is taken up by the cultivation and production of Egypt's staple commodity.

**EGYPTIAN METHOD OF PLOUGHING.**—On all large estates steam ploughs are used, but the small cultivator prepares the ground during the winter by means of the primitive Egyptian plough drawn by a pair of oxen. This plough is made almost entirely of wood, only the front part of the beam which enters the soil is shod with iron. The plough does not cut deep into the soil, but simply scratches it, and the fellah generally ploughs his field four times, sometimes oftener, each ploughing being done at right angles to the previous one. When making ridges for cotton, the beam edge of the plough which goes into the ground has to be covered with sacking, etc., as the ordinary plough does not throw up the soil.

After the ridges have been made in this primitive manner, a number of men shape them properly by means of a "fass," an instrument of the shape of a Dutch hoe; these men also attend to the breaking up of the clods. The native plough does not enter the soil deeper than 5 to 6 inches, and cotton which has a deep tap-root, two yards or even more in length, requires the soil to be well loosened. It is generally considered advisable to let the land lie fallow for about one month after ploughing, and the soil before planting cotton should be quite dry, although a watering is given directly afterwards.

**PLANTING.**—Close sowing is generally the rule in Upper Egypt, from 10 to 15 inches being the usual distance between the plants and 25 to 30 between ridges. The number of cotton-seed holes per feddan is estimated at about 13,000. In each hole



1. WEIGHING NEWLY PICKED COTTON.  
2. LIFTING TO THE GINS.  
3 & 4. BALING GINNED COTTON.

from 10 to 20 seeds are put, and as the soil is often not fine, but in clods, the fellahs sometimes put a bean along with the cotton seed. The bean, being of stronger growth, removes any clod which may be resting over the cotton-seed. These seed-holes are made, not on the top of the ridge, but about three inches from the top on the sunny side of that ridge. Two plants are always grown in each hole in Egypt, therefore the number of plants is about 20,000 per feddan; in India and America only one plant is left.

The time of planting is generally March, in the north even April. Egypt has no killing frosts, but there is frequently cold, windy weather in early spring. The Department of Agriculture and all agricultural organisations make strong propaganda for early planting, as then the cotton does not suffer so much from the ravages of insects, which come in large numbers, generally in August, when early planted cotton is almost ripe.

**PLUCKING** --During the latter part of August the plucking or picking of the cotton commences so far as Upper Egypt is concerned, where the variety grown is chiefly Ashmouni. In September the first picking begins in the Delta, that is, in Lower Egypt.

The picking is carried out by children, boys and girls, and also old people, who put the cotton gathered into the folds of their loose smock. These children carefully separate fibres from leaves, etc., where the latter will not readily become detached and fall off, they frequently put the cotton into their mouth and blow the leaf or part of stalk away, a process which they perform very quickly. To every lot of 10 or 12 children there is an overseer. The average quantity picked per day by one child is about 30 lbs., picking cannot be carried on in the morning owing to heavy dews, and work lasts only till 5 p.m.

The cotton from each picking is kept carefully apart. There are generally two pickings, but in some places in Upper Egypt three and even four. After each picking, the field is watered. The first picking is of the best quality, and generally begins in September. The second takes place in October, and the last may be as late as December. The seed for sowing purposes is taken from the first picking only.

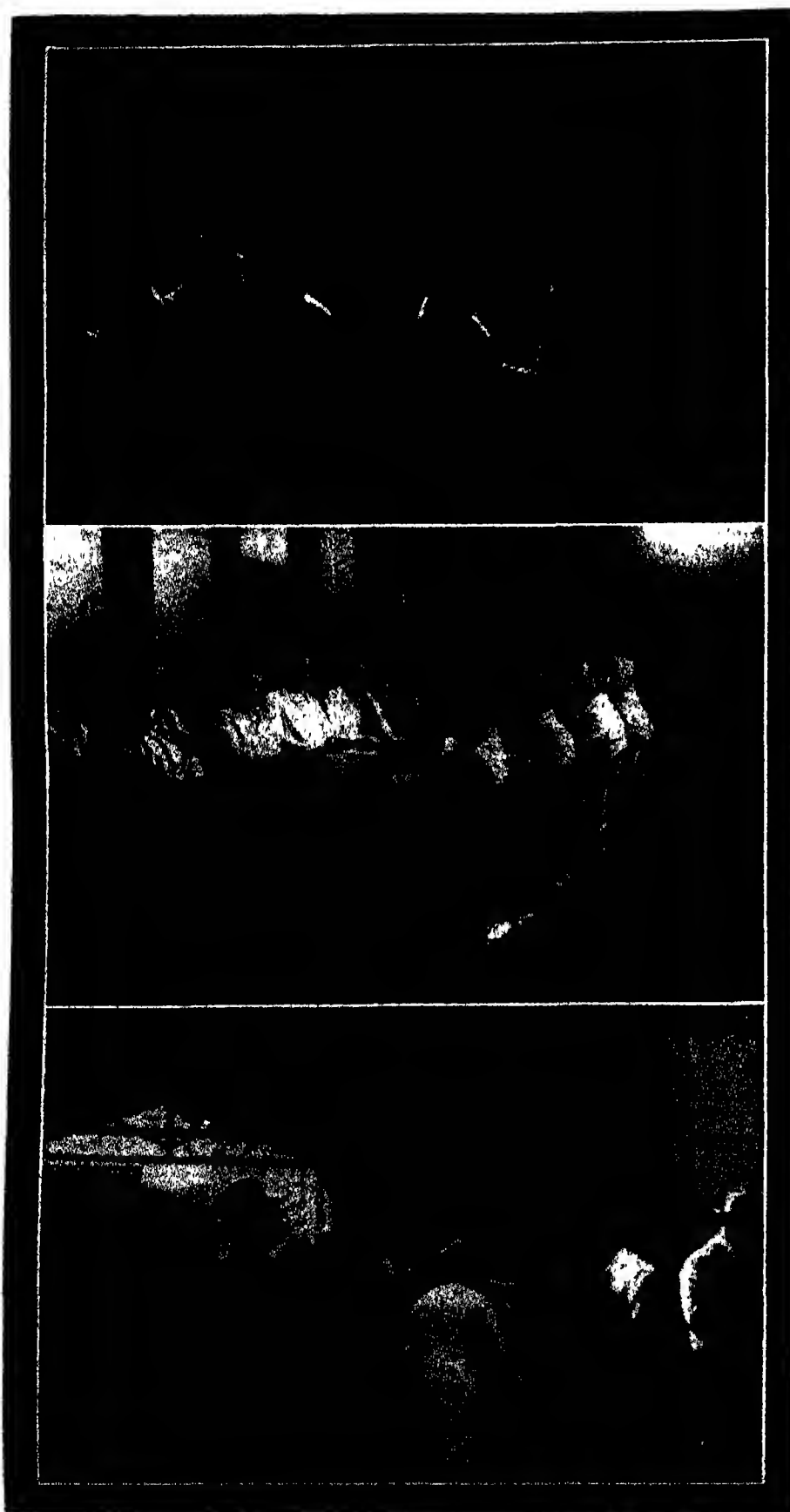
**DIFFERENT VARIETIES OF COTTON.**—Egyptian cotton (*gizun*) is usually regarded as being derived from the Sea Island variety known as *Gossypium barbadense*. This variety has always been cultivated successfully in the Sea Islands and the coastal districts of South Carolina, Georgia and Florida. It yields the most valuable of all cottons, the hairs being long, fine and silky, and ranging in length up to 2½ inches. Modern Egyptian cotton in length of staple is intermediate between average Sea Island and average Upland. It has, however, certain characteristics which cause it to be in demand even in the United States, where Egyptian cotton has for many years comprised about 80 per cent of all the foreign cottons imported. These special qualities are its fineness, strength, elasticity and great natural twist, which combined enable it to make very fine, strong yarns suited to the manufacture of the better qualities of hosiery, for mixing with silk and wool, and for making lace, etc. It also mercerises very well. The principal varieties of Egyptian cotton are —

**ASHMOUNI**—This has been for very many years the principal cotton of Upper Egypt. The staple is short and the lint light brown.



ALEXANDRIA GENERAL PRODUCE EXCHANGE ASSOCIATION.  
Cotton Exchange at Minet-El-Bassal.  
1, 2 & 3. Keen interest in the Movement of Cotton Prices.

Copyright, see Preface.



ALEXANDRIA GENERAL PRODUCE EXCHANGE ASSOCIATION: At Minet-El-Bassal Cotton Exchange.

1 & 2. During the busy hours.  
Centre. The Committee in Session.

**ASSILI** --A brown cotton selected from Ahf, which it replaced

**MAARAD** --A variety bred by the Royal Agricultural Society from Pima cotton introduced from America. It is still in the trial stages, but is longer than Sakel and appears likely to be an important variety in the future

**NAHDA** --A much improved cotton of Assili type selected by the Ministry of Agriculture, and so superior to the old Assili as to constitute a new variety

**PILION** --The most important of a number of white varieties grown in the Delta. These are all of poorer quality than Sakel, but higher yielding. Casuli is one of the best of the number

**SAKELI ARIDIS** --The main long staple cotton of Lower Egypt. It grows best in the North of the Delta, where the soils contain a small proportion of salt

**ZAGORA** --Now tending to replace the Ashmoun in Upper Egypt. It was selected from Ashmoun about 1917, and is very similar to it in general characteristics and yield, but is of slightly better quality. It is also grown on poor soils in Lower Egypt

**ZIO** --A long staple cotton bred by Dr. Laurence Balls about 1910. It is now very similar to Sakel, but stronger

**GINNING.** --From the fields the cotton is carried in sacks either on the light railways or on the backs of camels to the ginneries, of which there are about 120 working in Egypt, 90 in Lower and 30 in Upper Egypt. About one-third of these are owned by the Associated Cotton Ginneries of Egypt. The shareholders of the ginneries are in most cases the large exporting firms in Alexandria

The ginning factory stands in a large yard, often from six to ten acres in size, during the months of November and December these yards are filled with cotton bales, which lie unprotected and exposed to the weather, but, as rain seldom falls, this is not a great disadvantage, although there is frequently a heavy dew, the sun soon dries it up. The *shoumah*, or store proper, is in many cases some thirty yards away from the ginnery. There the long bales as they come from the cultivator are opened and roughly examined, only one class of cotton is kept in the store room at a time. After examination, the cotton is put on a long canvas sheet, and a man, taking the four corners in his hands, carries it across on his back. In some cases the cotton bales are brought direct into the ginnery, these weigh up to 400 lbs, but the weight-carrying ability of the Egyptian porter is phenomenal. The gin mostly in use is the MacCarthy roller gin, of British manufacture, and behind each gin there is a box for the seed cotton from which the gin is supplied by hand, or by automatic feeders. From the gin the ginned cotton is taken in box carts running on wheels to the press, where it is well shaken and watered. It is then baled and subsequently hydraulically or steam pressed into bales varying in weight from 700 to 800 lbs. The system of piston pressing is now largely in use, though in the smaller ginneries the cotton is still pressed down by the feet of the men

The fellah rarely gets his cotton ginned on his own account. It is customary for the ginner, who is nearly always synonymous with the Alexandria shipper, to buy the cotton. He has agents in all the districts, and at the beginning of the season small lots of cotton are bought from each district to ascertain the quality and the ginning output. Classifications are made, and the agents are instructed to buy accordingly.

These agents are responsible as to damage or loss resulting from damp, false packing, or difference in quality.

**GINNING OUT-TURN.**—A kantar of seed cotton is equal to 315 lbs., this weight was taken as a basis because 315 rolls, used to give 100 lbs. of ginned cotton. All ginning out-turns of Egyptian cotton are, therefore, on the basis of 315 lbs. seed cotton. If one speaks of a certain quality giving 96 as the ginning out-turn, it means 96 lbs. of lint for every 315 lbs. of seed cotton. The ginning out-turn is, it need hardly be said, of the greatest importance to the farmer, as it largely influences the price at which he can sell his cotton.

**INSECT PESTS.**—The three principal insects which do damage to the cotton crop of Egypt are the Cotton Worm, the Pink Boll Worm and the Common Boll Worm. All leaves on which eggs of the Cotton Worm

**BOLL WORM (PINK)**—By far the worst enemy of the cotton crop is the Pink Boll Worm (often confused with the Boll Weevil, which insect does not exist in Egypt). The Pink Boll Worm (*Gelechia gossypiella*) was introduced into Egypt from India about 1906, and now infests the whole country. The damage it does is not less than £1,500,000 per annum, and may be much more. The moths hatch out in early spring and throughout the summer, laying eggs on the young bolls. At the end of July about 10 per cent of the green bolls of the crop is attacked by worms (caterpillars of the moth). By the end of August over 50 per cent is attacked, and in October it is difficult to find a boll uninfested.

There are several overlapping generations during the summer, and the full grown larvæ pass through the winter in a resting stage, usually spun between two cotton

bolls attacked by either of the boll worms are liable to be shed at an early stage, to fail to open, or to open only to produce low grade, dirty and irregular lint.

**LAND VALUES.**—In the early part of the present century there was an enormous wave of speculation in land, which came to a head in the financial crisis of 1907. In 1898 certain estates were valued officially at £402,000, one year later at £625,000, and in 1905 at £1,300,000. Good cotton land in Lower Egypt, which 25 years ago might have been valued at £80, costs to-day over £240. The price of land in Upper Egypt has risen from £1.50 to more than £2.20. The causes for these stupendous increases are mainly to be found in the improvement actually caused or anticipated through irrigation and drainage works, and the high price of cotton and other products of the soil.



PEEL & CO., LTD., Alexandria.

1. Receiving Unginned and loading Ginned Cotton at Minieh Factory.
2. Bringing in Cotton to Company's Factory at Mewall.
3. Cotton at the other Factory at Minieh.
4. Type of installation at Factories.

(See Letterpress, page 85)

(*Prodenia litura*) are found must, by law, be at once picked and burnt, and children and men from 9 to 25 years of age may be requisitioned for this purpose. The Cotton Worm does the largest amount of damage during June, July and August, when at least three generations are hatched. One moth will lay about 200 eggs on the back of the leaf, and in from two to five days the worm is hatched; it feeds on the bottom segment of the leaf, and as the upper tissue soon dries up and turns brown, the infested leaf can easily be discovered. As the hatching of the eggs is quick, it is very necessary that immediate and energetic steps be taken for their destruction. It has been estimated that in some years the damage done by the Cotton Worm has amounted to a million pounds sterling.

seeds. On account of this habit all the cotton seed in Egypt must be heated in special machines as soon as ginned to kill the worms.

**COMMON BOLL WORM.**—This (*Earias insulana*) is of much less importance than the Pink Boll Worm, but still an important pest, the annual damage perhaps reaching £1,000,000. Unlike the Pink Boll Worm, this insect is active throughout the winter, and also damages the growing parts and shoots as well as the bolls. Bolls infested with this pest can be distinguished from those attacked by the Pink Boll Worm by the presence of holes on the surface of the boll, through which dark excretory matter is extruded.

**MARKETS.**—The cotton-market proper of Alexandria is situated in the Minet-el-Bassal quarter of Alexandria. Each exporter has a small office there, and from 10 a.m. to 1.30 p.m. the courtyard of the market is filled with men in a wonderful variety of dresses and colours. Very little English is spoken; French and Italian are the predominant languages, and German is also heard. People of widely different races throng this courtyard, and strange Oriental tongues are heard. Odd lots of cotton are offered for sale on samples in the small offices of the export houses. The expert valuer is separated by a rail from the farmers or brokers who bring the samples. The banks also sell to the shippers the cotton

on which they have made advances. The State Domains sell their cotton in Alexandria by auction sales. In the cotton market of Alexandria other kinds of produce are also sold, especially cotton seed, in which a large business is done.

**HALAQAS**—Cotton *halagas*, or markets, have been instituted in various parts of Egypt in order to protect the small landholder from fraud when selling his cotton, the commonest form of such fraud occurring when the cotton is being weighed in the village just before its sale. The *halagas* are enclosed places situated in the most suitable positions for access to the big agricultural roads and means of transport, they are under the direct control of the Maghs Mudiriya, Maghs Baladi, or Maghs Malhalli. The tariff on cotton brought into a *halaga* is generally 5 millimes for a small sack and 15 millimes for a large sack.

There is a reis in charge of each *halaga*, who acts also as official weigher in the smaller *halagas*. In the larger ones there is an official weigher appointed, also door-keeper, ghafis, etc. Every morning a telegram is received from Alexandria by the reis, which gives the opening price of cotton on the Bourse, a notice of this price is at once posted up in a conspicuous position. Should there be a rise or fall in price of more than five piastres (1s) at any time during the day (10 a.m. to 1-30 p.m.) another telegram is sent and the difference posted up. A daily circular is also received from the National Bank in Alexandria giving the prices of all grades of cotton, cotton seed, and contracts at Minet-el-Bassal. This is also posted in the *halaga*. Inside is an official weighing machine, on which cotton may be weighed without any further charge, each sack being numbered and a written slip given to the owner with the official weight marked on it. *Halagas* are also used as the means of distributing cotton seed to the small farmers on behalf of the Ministry of Agriculture. They likewise act as agents for the Agricultural Society for the sale of chemical manure of guaranteed quality and weight.

**PRODUCTION**.—The total commercial crop of Egyptian cotton amounted in 1923-24 to 6,531,457 kantars, but (with that held

over from the previous year) 7,021,543 kantars were exported. In 1924-25 the commercial crop totalled 7,273,974 kantars, of which 7,086,874 kantars were exported. The estimated stock in Alexandria for carry-over purposes on August 31, 1925, was 393,000 kantars. The 1925-26 crop was estimated to aggregate (in ginned cotton) roughly 7,900,000 kantars, of which 3,500,000 kantars were sakellaridis and 4,400,000 kantars other varieties. In regard to both quality and ginning the output of the 1925 crops was superior to that for 1924.

**STATISTICS**.—Following were the principal exporters of cotton from Alexandria for the seasons 1923-24 and 1924-25 —

	BALES	
	1923-24	1924-25
Aghion Freres	7,852	4,518
Ahmed Bey Fargally	5,109	3,807
Alby Albert & Co	15,806	20,603
*Alexandria Commercial Co	60,758	65,000
Alexandria Cotton Export	4,057	4,302
Andres & Co	9,103	17,629
Andriatsakis, A M & Co	10,244	23,868
Anglo-Egyptian Cotton Trading Co	5,557	5,432
Banki Behor Co	1,830	5,941
Bower & Son (Alexandria)	7,227	4,572
British Egyptian Cotton Co, Ltd	7,560	6,980
*Carver Bros & Co., Ltd	74,124	79,511
Casulli, Mason N G	8,106	11,581
Casulli, M S & Co	7,180	3,612
Choremi Benachi & Co	54,029	50,356
Cicmel & Barda	29,045	24,176
Cotton Export Co (ex Mallison & Co)	26,096	26,719
Courty & Co	13,218	13,131
Daniel Pecquignelli & Co	8,745	9,791
*Eastern Export Co S A	20,261	22,920
Egyptian Produce Trading Co	21,414	36,006
Egyptian and Sudan Cotton Trading Co	15,559	16,456
Escher, W	12,136	16,803
Fenderl & Co	22,179	24,823
Getty, W & Co	22,503	20,744
Gregusci, G & Co	15,092	26,473

	BALES	
	1923-24	1924-25
Huzel & Co	9,809	18,234
Hurv, N & Co	4,432	6,066
Japan Cotton Trading Co	6,921	6,470
Joannides, J G & Co	9,092	10,649
Kupper, H	15,773	17,250
Mallison & Co	7,877	9,848
Nile Cotton Co	5,547	3,639
*Peel & Co, Ltd	88,210	81,461
*Pinto & Co	22,972	24,726
Planta, J & Co	40,732	42,320
*Reinhart & Co	38,748	39,785
Riches & Eha	1,743	3,118
Rolo, J & Co	18,590	15,369
Sarris, G D	14,272	14,283
Sasson, Israel & Co	17,022	10,374
Sidi, D & Co	4,036	4,517
Straftis Bros & Co	26,773	12,139
Tamvaco Choremi & Co	22,884	22,426
Toriel, J & A	6,031	4,125
Union Cotton Co of Alexandria	15,885	18,731
Upper & Lower Egypt Cotton Trading Co	827	3,461
Various	41,181	22,818

Totals Bales 927,328 934,563  
Kantars 7,021,543 7,086,874  
(See special articles following dealing with the operations of those enterprises marked with an asterisk.)

Following was the cotton shipped from Alexandria to the countries named for the years given —

	BALES	
	1923-24	1924-25
United Kingdom	450,136	424,953
Italy	137,776	160,710
United States	109,261	135,200
France	137,707	126,464
Japan	26,356	33,080
Spain	27,508	10,668
Germany	17,106	14,377
Holland	7,290	9,799
Belgium	7,639	3,209
Greece and Syria	2,188	3,286
Estonia	350	1,870
Other Countries	3,351	1,917

B/S 927,328 B/S 934,563  
-- Kantars 7,021,543 = 7,086,874



1. Yard full of Cotton in Seed, Bent Suof.

CARVER BROS., LTD., Alexandria.  
2. Manager's House, Abu Kerkas.

3. Grading Cotton in seed before Ginning.



## REPRESENTATIVE COTTON ENTERPRISES

### PEEL & CO. LTD.

**Inception.**—It is claimed that this Alexandria firm of world-wide reputation is the oldest British enterprise established in Egypt its inception being ascribed to the year 1825. Owing, however, to the destruction by fire during the bombardment of Alexandria (1882) of many records, books and documents relating to the company's early days the exact date is obscure. In 1908 the institution was formed into a limited liability company, with offices in Manchester and Alexandria, the chairman being Mr. John Peel, a well-known business figure in Manchester and vice chairman of the Fine Cotton Spinners.

**Development.**—Though now one of the leading firms of cotton exporters the concern under notice was founded many years before cotton was first planted in Egypt, its earliest activities being in the direction of general trade in that country and the Sudan, especially in connection with the collection and export of ivory, gum and cereals, later of cottonseed, and the import of Manchester goods. Subsequently it achieved the distinction of having exported some of the very first cotton grown in Egypt, and, as the cultivation of that product moved forward to its ultimate supreme importance, concentrated more and more on the export of this article. From 1900 Messrs Peel & Co., Ltd. have dealt exclusively in cotton. The development of the firm on its present lines may be ascribed mainly to the work of the late Mr. William Felton Peel in Alexandria and the late Mr. Gerald Peel in Manchester during the years prior to its formation as a limited liability company. Touching the eminence so attained, it is interesting to note that during the last thirty years the firm has exported approximately 4,500,000 bales of cotton, of which nearly 2,000,000 represent exports to England, and that for the past four years it has headed the list of cotton exporters from Egypt.

**Activities.**—Cotton for export is bought principally in Alexandria on the spot market, where Messrs Peel & Co., Ltd., are among the largest "spot" buyers. Incidentally, they also buy and import from the interior a larger quantity annually than any other export firm, their organisation covering practically all districts producing the best cotton. Among their several agencies and branches is an office at Mehalla Kebir, now perhaps the most important cotton centre in the country. They maintain an extensive buying organisation, established more than 45 years, in Upper Egypt, with three ginning factories, where the cotton is expertly classified "in the seed" and ginned under European supervision. Direct personal contact is also established with all cultivators.

**General Selling Agents.**—In England the cotton is sold by the firm's representatives in conjunction with Messrs C. Tattersall & Co., the well-known cotton brokers. Outside Great Britain the company's general agents for the sale of cotton are: For all European countries, Messrs Benedetto Pototschik & Figlio, Trieste; for the United States, Messrs. Cooper & Brush, Boston; for Japan, Messrs. Nichizui Trading Company, Ltd., Osaka. Sub-agents are established in all cotton centres, and work in conjunction with the general agents.

**Insurance Agencies.**—The firm also acts as insurance agents, representing for marine insurance business The British & Foreign Marine Insurance Co., Ltd., of Liverpool; The Alliance Assurance Co., Ltd., of London; and the Ocean Marine Insurance Co., Ltd.,

of London. For fire insurance, it has represented since 1861 The Liverpool & London & Globe Insurance Co. Ltd., of Liverpool.

**Directorate.**—Messrs. John Peel (chairman), W. E. Peel, E. I. Peel, H. G. Peel, and K. P. Buley. All these directors have been associated with the management of the business for more than twenty years.

**Address.**—P.O. Box 331, Alexandria (See also illustration, page 84.)

### CARVER BROTHERS & CO. LTD.

**Inception.**—The original enterprise, to whose activities was due the basis of the present flourishing business, operated in Manchester goods between Manchester, Gibraltar and Morocco. In 1860, however, following the arrival of one of the partners in Egypt, the exportation of cotton was undertaken. In 1900 the concern became a limited liability company, with head office in Manchester.

**Development.**—The high prices for cotton resulting from the American Civil War gave a great impetus to cotton-growing in Egypt. The firm accordingly extended its activities by building ginning factories in villages in order to co-operate with cultivators and

ensure the proper grading of cotton before ginning. In 1906 its two factories in the Delta were taken over by a combine of leading ginning factory owners, but it still possesses three big structures in Upper Egypt, south of Cairo. The extension of cotton-growing in the Sudan induced the company recently to develop its operations there, becoming last year one of the principal exporters from that country.

The firm has paid, since becoming a limited liability institution, full English taxes on all profits.

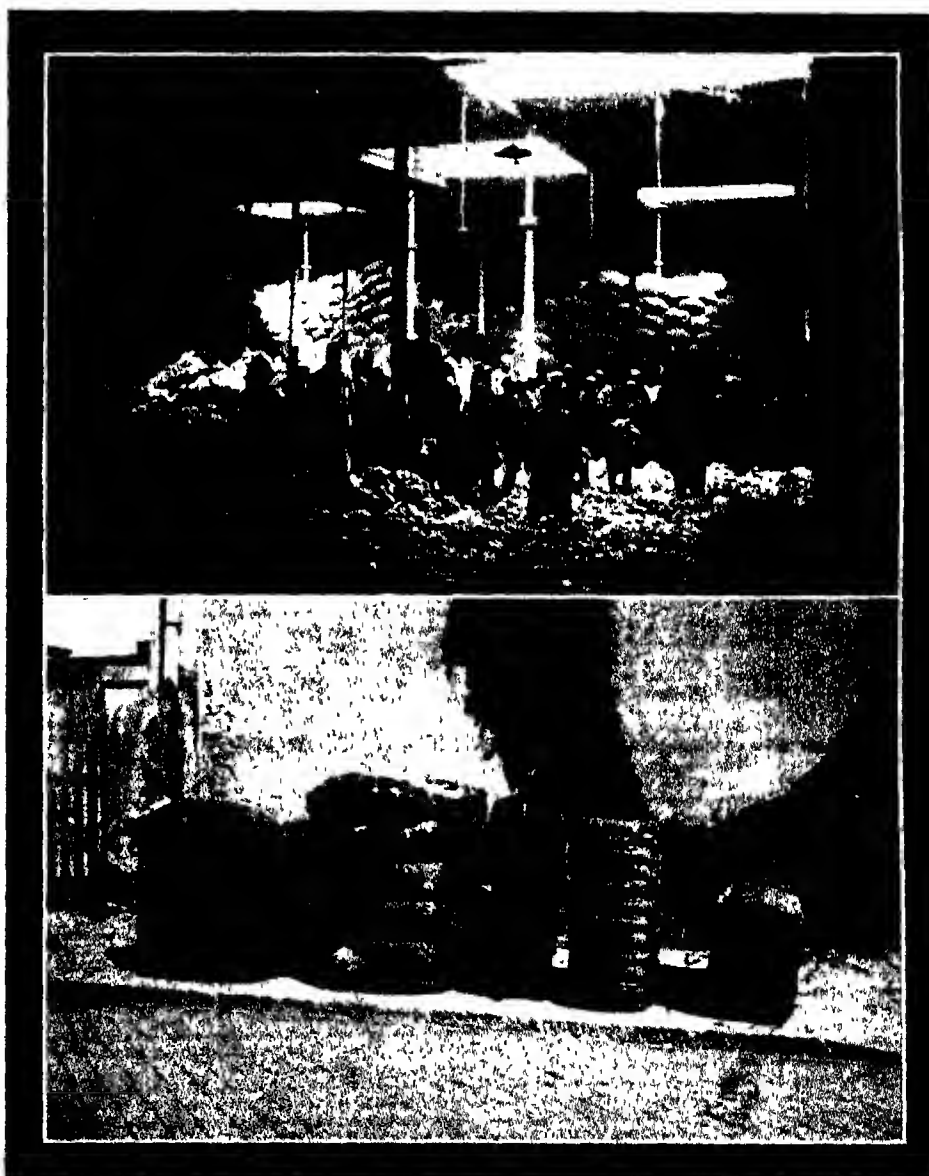
**Steampresses.**—Messrs. Carver Brothers & Co. Ltd. were among the first to erect steampresses in Alexandria for pressing cotton into hard bales before shipment.

**Alexandria Office.**—17, Rue Stamboul Cables "Carver," Alexandria.

**Bankers.**—National Bank of Egypt, Lloyds Bank Ltd., Barclays Bank (D.C. & O.), etc.

### ALEXANDRIA COMMERCIAL CO.

**Activities.**—Amongst the foremost of the many companies and firms handling and marketing the fine, long staple cotton of



ALEXANDRIA COMMERCIAL CO., Alexandria.  
1. Cleaning Cotton prior to steam pressing for Export.  
2. Hydraulic and Steam pressed Bales.

which Egypt practically monopolises the production is the private concern known as the Alexandria Commercial Company.

**Capital.**—The nominal paid-up capital of the company totals £E 672,000. This figure does not, however, represent the sum of its resources, reserve funds and the deposits of the partners bringing them to a very much larger figure.

**Operations.**—Some idea of the magnitude of the company's operations may be obtained from the fact that, out of a total crop of kantars 7,000,000, it ships over kantars 500,000, though but one of about 60 enterprises engaged in shipping cotton. The firm exports to all parts of the world where raw cotton is required, and large as is its share of the total export, the bulk handled shows every year an increase. Through subsidiary organisations it owns and culti-

whole life in the cotton trade and is an acknowledged authority on the article. The other members of the board, all actively engaged in the business, are Messrs B G Dellaporta, Henry Clark, H E Finney, S Lagonico, R Stapleton-Cotton and R E Williams.

**Address.**—9, Rue Stamboul, Alexandria, and P O Box No 623, Alexandria.

**Telegraphic Address.**—“Commodate,” Alexandria.

**Export Mark.**—“Alexcom” in green (See also illustration, page 85).

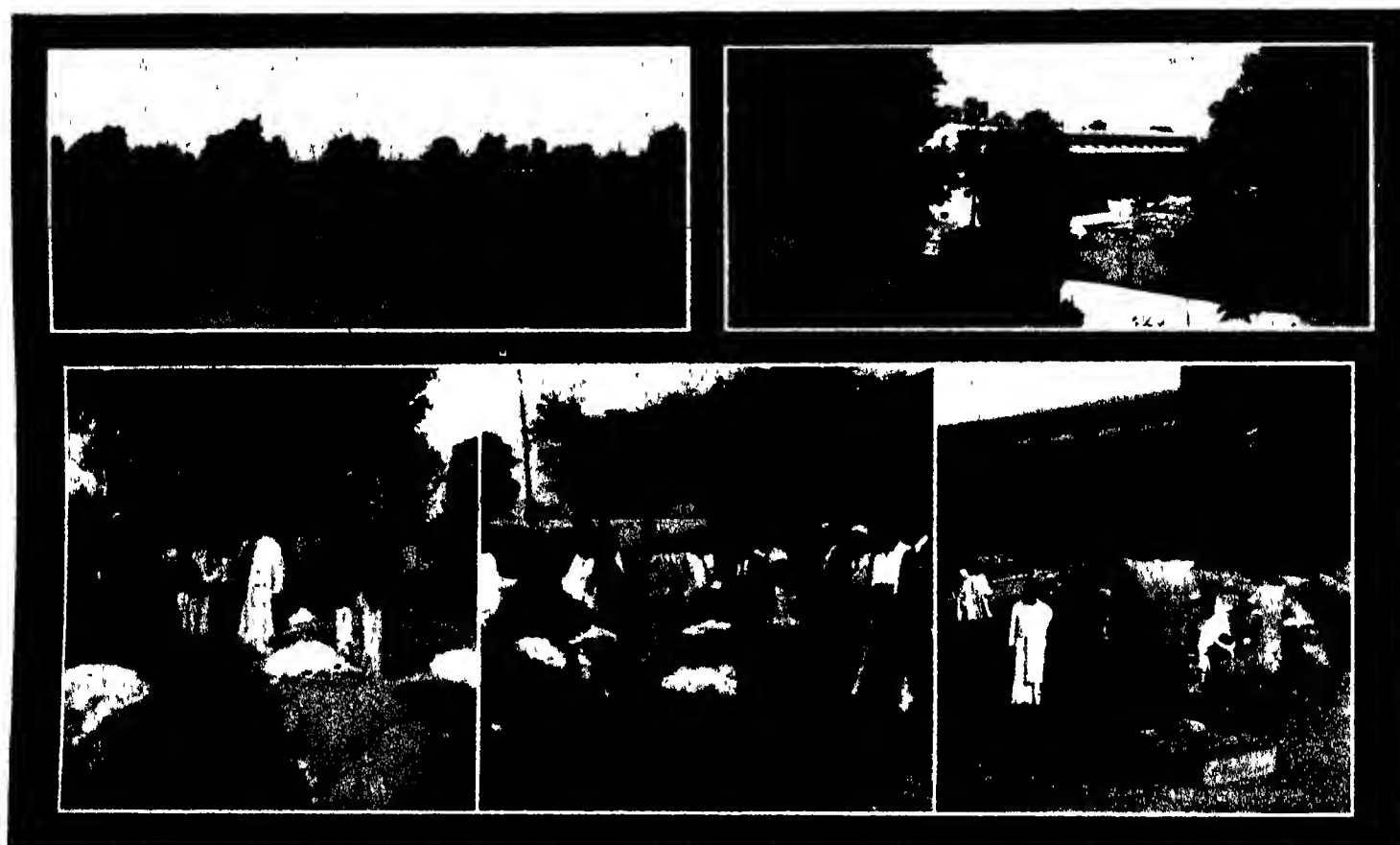
#### REINHART & CO.

**Inception.**—This progressive firm, whose operations extend to all the principal spinning centres of the world where Egyptian cotton is used, was established in 1907 by its present sole proprietor, Mr Alfred Reinhart.

Brothers, whose East Indian business in all branches, including cotton, is widely renowned, spring from another line of the Reinhart family, and through their Bombay office and an affiliated company in China represent the firm under notice in the sale of Egyptian cotton to Indian and Chinese mills.

Mr Alfred Reinhart, formerly a partner in the now extinct firm of F C Baines & Co., has been elected chairman of the National Ginning Company of Egypt, president of the Société de la Bourse de Minet-el-Bassal (spot exchange), member of the committee of the Alexandria General Produce Association and of the Bourse des Marchandises d'Alexandrie (futures exchange), and a director of the Société Générale de Pressage et de Dépôts.

**Development.**—The development of the company is best indicated by the following



REINHART & CO., Alexandria.

1. General View of the “Vitodura” Factory.

2. Another View.

3, 4 & 5. Handling, Sampling and Weighing Seed Cotton arriving at Factory.

vates cotton lands in the Delta, and has recently taken considerable interest in the propagation of new varieties. Being also, through its members, largely interested in cotton pressing concerns operating in Alexandria, the company is in effect actively in touch with Egyptian cotton from the time of sowing until the fibre enters the spinning mill.

**Branches.**—The Alexandria Commercial Co. has established branches at many interior points of Egypt, and owns and works ginning factories at Mehalla Kebir and Zifta, both important cotton centres.

**Directorate.**—The managing director is Mr. Oswald J. Finney, who has spent his

**Personal.**—The founder, who first arrived in Egypt in 1896, descends from a family long connected with that country's cotton trade. His grandfather during the 'forties, and his father in 1857, both came to Egypt to establish connections for their firm in Winterthur (Switzerland), Paul Reinhart & Cie, which, with Mr Alfred Reinhart's brother as senior partner, acts as general agents for Reinhart & Co. in Switzerland and Germany. Similar representation over areas of France and Belgium is effected by another branch of the family, established in Havre under the style of Société d'Importation et de Commission ancienne maison Louis Reinhart. The present partners in Volkart

figures showing the export of bales per season: 1907-8, 300 bales; 1908-9, 8,955; 1909-10, 13,704; 1910-11, 22,605; 1911-12, 30,661; 1912-13, 36,485; 1913-14, 46,896; 1914-15, 62,823; 1915-16, 33,217; 1916-17, 27,926; 1917-18, 26,210; 1918-19, 33,297; 1919-20; 28,458; 1920-21, 31,127; 1921-22, 35,288; 1922-23, 39,651; 1923-24, 38,748; 1924-25, 39,785.

**Activities.**—Messrs. Reinhart & Co. buy cotton partly on the Alexandria spot market and partly from up-country farmers. Their interior buying organisation is concentrated at Zifta (Gharbiéh) on the Damietta Nile, whence are controlled some 15 sub-agencies distributed through the best cotton-pro-

ducing territories. All the cotton bought by the firm up country is ginned at the "Vito-dura" ginning factory at Zifta, which is operated by Sulzer-Diesel engines and fitted with 64 Platt gins and all recent appliances. One of the first ginning factories in the country installing modern self-feeders for the gins, it maintains an annual output of 90,000 to 100,000 kantars. The factory is owned by the National Ginning Company of Egypt, all shares in which concern are held by Mr. Alfred Reinhart or members of his staff.

**Insurance.**—In 1911 the company was accredited with a general agency for the London Assurance Corporation. Since that year its insurance department has greatly developed, involving the representation also of several American and Swiss insurance companies. It acts as surveyors and claim-adjusters for a large number of marine insurance corporations.

**Employees.** The permanent staff of Reinhart & Co., with branches and affiliated concerns numbers 108, while the total of hands employed at the ginning factory and presses in the interior and at Alexandria is about 200.

**Branches.** In 1908 Mr. Reinhart opened an office in Manchester (Reinhart & Co., Ltd.), and one in Boston (Reinhart & Co., Ltd.) in 1921.

**Head Office.** 7, Rue Adib, Alexandria Cables "Reinhart," Alexandria.

**Bankers.** Alexandria: National Bank of Egypt, and Credit Lyonnais; Winterthur Union Bank of Switzerland; London: Swiss Bank Corporation; Manchester: Westminster Bank; Boston, Mass., U.S.A.: Lee, Higginson & Co.; Paris: Crédit Commercial de France.

#### **EASTERN EXPORT COMPANY (SOC. ANON.)**

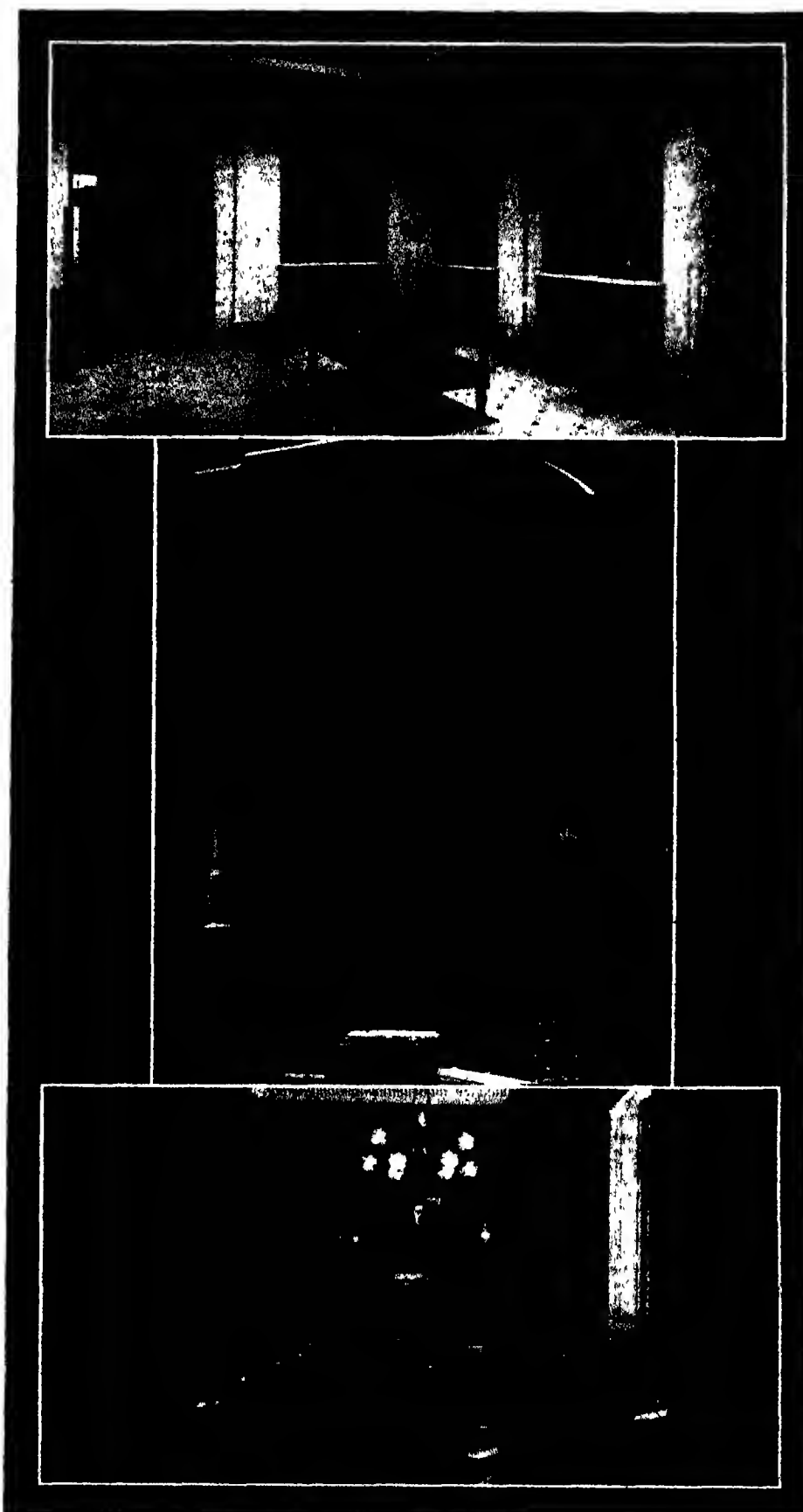
**Inception.**—Among enterprises representative of the cotton export trade of Egypt is that of the very progressive *société anonyme* known as the Eastern Export Company. The business was established in 1860 by Vittorio Adda, whose son and grandson are the present partners, under the title of the founder. In 1871 the name was changed to Vittorio Adda & Figli, a style retained until 1892, when the partnership was severed. Mr. Abram Adda then acquired the interests, to control which he formed in 1920 a limited liability company.

**Capital.**—The original capital of the concern was £150,000. The shares are held principally by Mr. Adda, his three sons, Victor, Joseph and Fernand, and a few associates of the House.

**Activities.**—The firm's interests are centred in cotton, in the export of which it figures among the big shippers. Its agencies entrusted with the purchase of the crop are maintained in the interior at Mehalla-Kebir and Zifta. The partners enjoy the ownership of extensive cotton lands, as of city properties covering not less than 15,000 square metres and including eight large buildings.

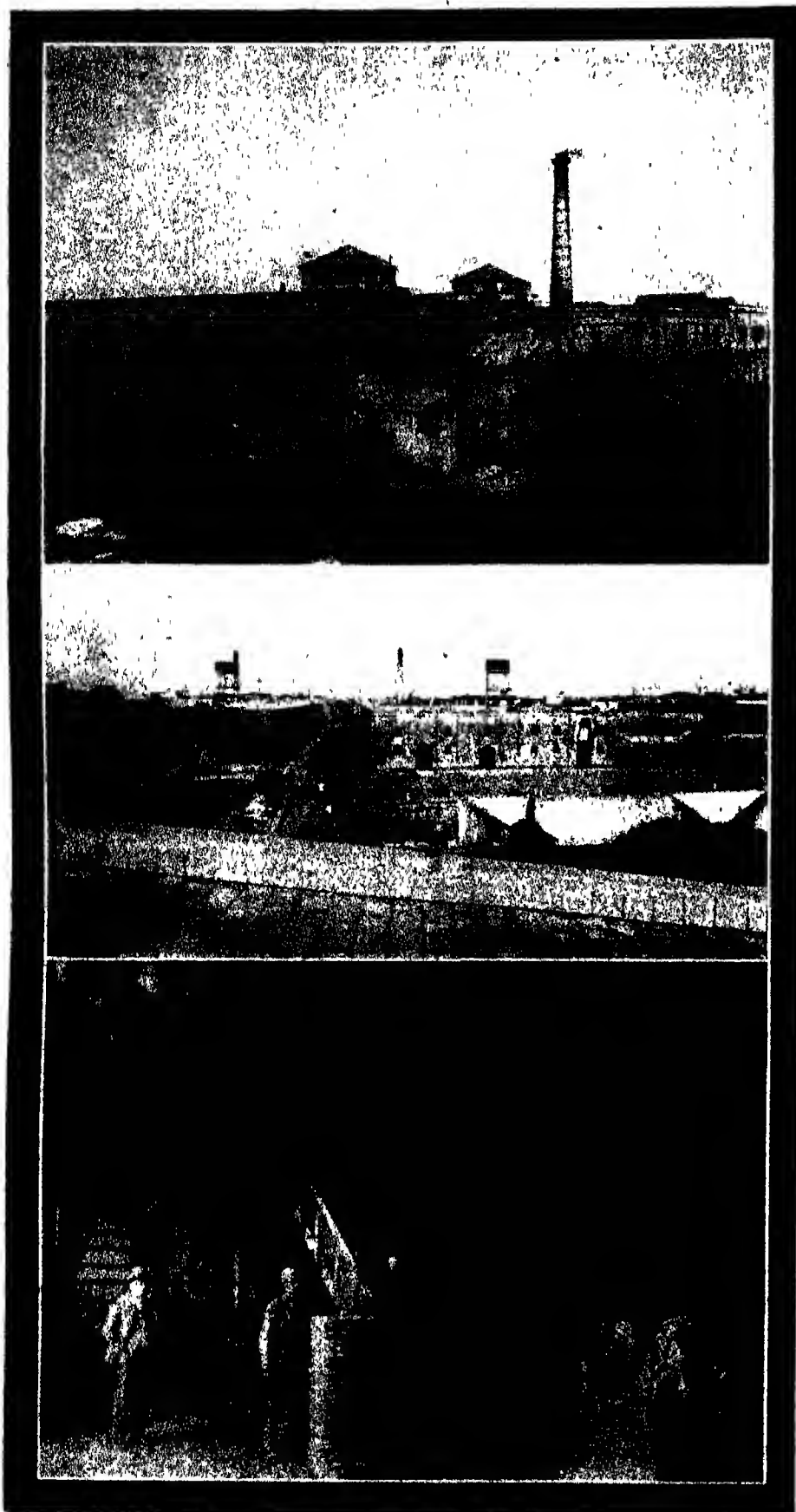
**Staff.**—The Alexandria staff numbers 25 clerks employed at the office and 35 at the Cotton Exchange.

**Premises.**—The new office premises of the company, recently completed, cover an area of 1,300 square metres. The six-storeyed, reinforced-concrete structure is on the most up-to-date plan, and is one of the finest business buildings in the city. Interior appointments are of fitting luxuriance, the partners' offices being panelled in oak.



**EASTERN EXPORT COMPANY (Soc. Anon.), Alexandria.**

1. Hall of the Firm's Offices.
2. Main Entrance to Building.
3. Board Room.



SOCIETE GENERALE DE PRESSAGE ET DE DEPOTS, Alexandria.

1. The Gabbary Press.
2. General View of the Company's Warehouses.
3. Bale Skid connecting floors at the Press.

**Directorate.**—Mr. Abiam Adda (as chairman) and his three sons form the board of directors. Mr. Adda is also chairman of the Soc Anon des Immeubles de l'Est, member of the Alexandria General Produce Association and director of the Société Générale de Pressage et de Dépôts, also the Soc Anon des Tramways d'Alexandrie. Messrs Victor, Joseph and Fernand Adda are on the board of the last-mentioned company, while Mr. Victor Adda is also a director of the Société Immobilière d'Alexandrie, and M. Joseph A. Adda a director of the Garbich Lands Cy, the Egyptian Enterprise & Development Cy, and the Koubbah Gardens.

**Offices.**—Cité Adda—Rue Fouad rrr Cables, "Matba," Alexandria.

**Bankers.** National Bank of Egypt (See also illustration, page 87.)

#### SOCIETE GENERALE DE PRESSAGE ET DE DEPOTS.

**Inception.**—Prior to 1889 the pressing or baling of cotton was a business competed for by a number of important companies which were interested, together with the banks, in the general business of cotton export. Amongst these were the following pioneer enterprises: Alexandria Pressing Co. Ltd., Anglo-Egyptian Bank Ltd., Egyptian Pressing Co. Ltd., English Pressing Co. Ltd., Imperial Ottoman Bank, Rodocanachi's Press, and T. Muller & Co.'s Press. The pressing and warehousing interests of these concerns were combined to form the Société Générale de Pressage et de Dépôts.

**Development.**—The Pressage, as it is familiarly known, has from its inception handled the greater part of the Egyptian cotton crop, and recently purchased the entire properties, including warehouses and plant, of the Egyptian Pressing Co. for the sum of £240,000, probably the biggest transaction of the kind witnessed in Egypt to date. About seven-eighths of the shares of the Egyptian Pressing Co. were held by the Pressage prior to the purchase of the property.

**Operations.**—The operations of the Pressage include storage, provision of space for sorting, cleaning and ginning of cotton, pressing, despatching, and insurance against fire. In the latter connection they are the sole agents for various important companies, including the Manchester Assurance Co. (incorporated in the Atlas Assurance Co. Ltd.), the Royal Exchange Assurance, the Norwich Union Fire Insurance Soc. Ltd. and the State Assurance Co. Ltd.

**Plant and Baling Statistics.**—It is unnecessary to dwell upon the importance of a company the name of which is familiar in every household throughout Egypt, but its statistics are at least illuminating. The five pressing factories and various warehouses have a total floor space of about 213,000 square metres, or 2,300,000 square feet. Fourteen 200 h.p. presses are in operation, most of which are capable of pressing a bale one-third of a ton in weight per minute. The cotton baled by the Pressage in the season 1922-3 was 788,000 bales, while the operations of the company for the seasons named were as follow:—

SEASON	BALES PRESSED
1923-24	728,000
1924-25	721,000

Calculating three bales to the ton, these figures show an average movement of roughly 250,000 tons of cotton handled per annum, or, in other words, between 75 and 80 per cent. of the entire Egyptian crop.

**Employees.**—About 75 Europeans are employed in clerical and supervising capacities, in addition to some thousands of natives, the number of the latter varying according to the season.

**Steel Consumption.**—That the fluctuations of the steel market can be of great importance to a cotton pressing company is evident when it is known that the quantity of steel bands actually consumed by the concern under notice is between 5,000 and 6,000 tons annually.

**Directorate.**—The board of directors is made up of the following, all well known figures in the Egyptian banking and cotton trades. Messrs K P Birley (president), I. A. F. Critchley (vice president), A. Adon, J. Adone, F. Allemann, H. B. Carver, A. C. Hann, H. Lindemann, S. Pinto, A. Reinhardt, R. Rubmeyer, C. Y. Watson. Mr A. F. Mills has been the General Manager for the last fifteen years.

**Address.**—6, Rue de l'Ancienne Bourse, Alexandria Cables "Pressage," Alexandria Code ABC 5th Edition.

#### THE ASSOCIATED COTTON GINNERS OF EGYPT LTD.

**Inception.**—This powerful organisation, playing so important a part in operations connected with the ginning and pressing of cotton in Egypt, and thereby directly influencing the industrial and economic welfare of the country, recently attained its majority, having been registered as a limited company on May 17, 1905. The objects of its establishment were to amalgamate, continue and develop the cotton ginning factories, presses, accessories and businesses connected therewith owned in Lower Egypt by Messrs Chertou Benachin & Co., Messrs C. M. Salvago & Co., Messrs C. G. Zevindachi & Sons, Messrs J. Planta & Co., Messrs Carver Bros & Co., Ltd., Messrs V & C Bacos, and La Société d'Egrenage de Zagazig, with a view to entering into an agreement with the Egyptian Investment and Agency Ltd., as promoters.

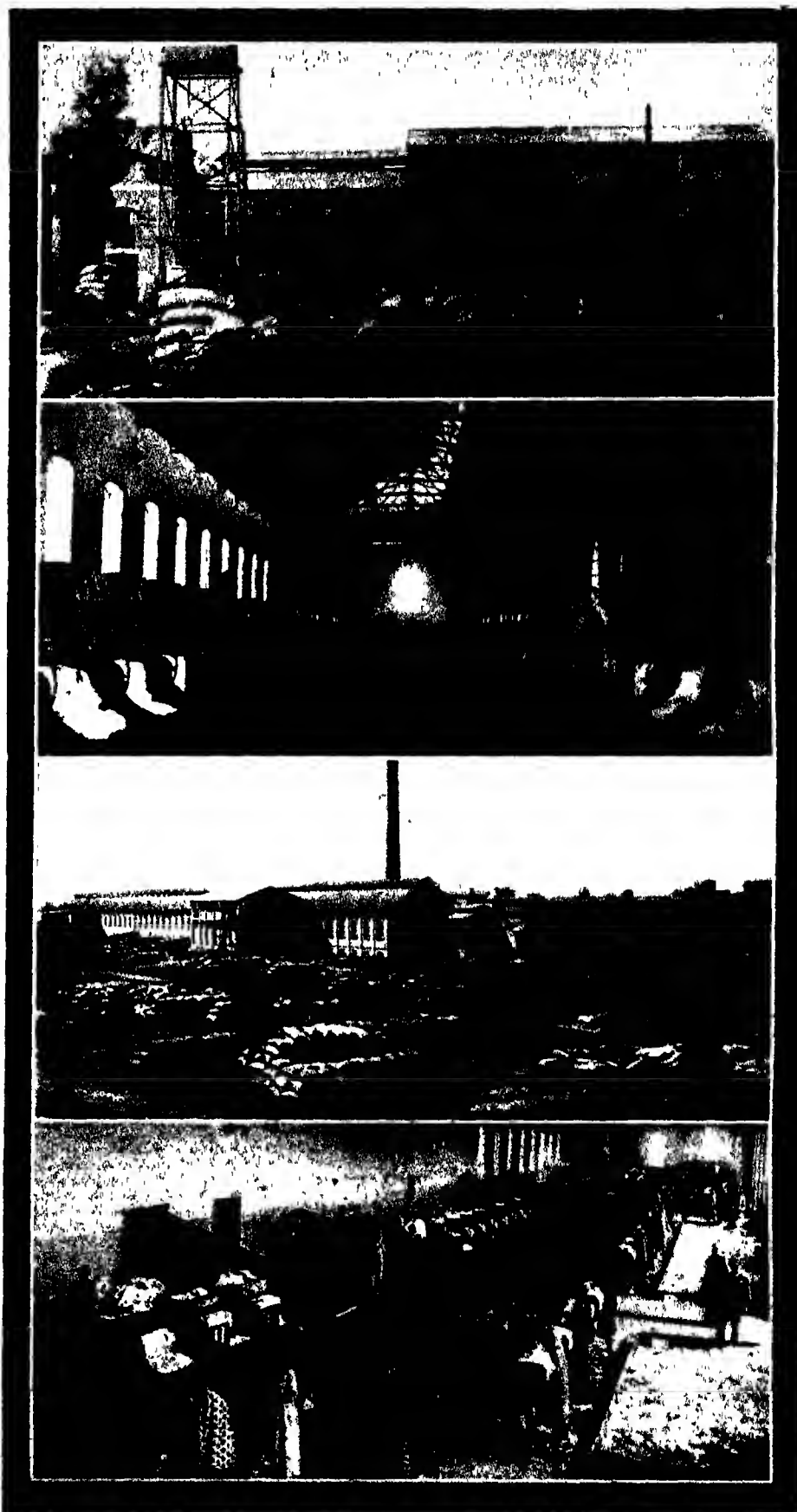
**Founders.** Associated in the original foundation of the company were the following: Messrs F. D. Carver, R. C. Abdy, W. C. Mackenzie, W. Leigh Hunt, B. F. Trone, John M. Farrington, W. G. Hatchett, and H. O. King, who under the Articles of Association was appointed first secretary of the institution.

**Capital.**—The original capital of the company was £300,000, divided into 300,000 ordinary shares of £1 each. In 1920, however, the capital was reduced to £270,000 by returning 5% per share to holders, and comprised thenceforth 360,000 shares of 15s each, fully paid up.

**Constitution.**—The corporations fused and developed by The Associated Cotton Ginnery of Egypt Ltd. are to day the same as at the company's formation, with the exception of Messrs V & C Bacos and La Société d'Egrenage de Zagazig, and the addition of Messrs G. N. Demetriadis and Messrs A. & J. Sakelariadis & Co.

**Activities.**—The firm concerns itself with the business of ginning and pressing cotton and all operations accessory thereto, the general purchase or sale of cotton or cottonseed being expressly dissociated from the objects of its inception.

**Statistics.**—The table on the succeeding page shows the quantities of cotton ginned and steam pressed at the company's factories, also the annual dividend paid since the firm's inception.



THE ASSOCIATED COTTON GINNERS OF EGYPT LTD., Alexandria.  
 1. The ex-Carver Factory at Mehalia-Kebir.  
 2. Interior View.  
 3. General Aspect of the ex-Planta Factory at Mansourah.  
 4. The Ginning Room.



WORKING SEASON	COTTON GINNED Kantars	COTTON STEAM PRESSED Kantars	DIVIDENDS	
			s	d
1905-6	1 773 247.43	738 109.21	1	9
1906-7	2 195 181.14	937 111.23	2	0
1907-8	2 154 923.92	752 416.45	1	8
1908-9	2 042 400.49	706 871.64	—	—
1909-10	1 341 985.81	346 757.82	—	7
1910-11	2 048 576.13	702 461.81	1	5
1911-12	1 996 140.80	767 418.70	1	0
1912-13	2 007 374.18	705 060.60	1	5
1913-14	1 646 532.16	343 660.61	—	—
1914-15	1 350 504.71	71 011.00	—	—
1915-16	768 776.74	36 923.48	1	0
1916-17	787 981.11	19 608.89	1	0
1917-18	910 994.52	53 027.45	1	3
1918-19	700 821.47	4 781.94	1	3
1919-20	780 254.12	97 454.14	2	0
1920-21	645 260.75	—	1	3
1921-22	605 442.80	—	1	9
1922-23	675 642.00	28 822.72	1	9
1923-24	650 664.47	—	1	0
1924-25	711 475.89	—	1	0

**Directorate.**—The board of directors is composed as follows: C. J. Chorem (chairman), F. Allemann (vice-chairman), H. B. Carver, T. A. E. Ritchley, Alex. Th. Kitroeff, T. S. Richmond, and A. H. Hornbostel (general manager).

**Address.**—1, Rue Centrale, Alexandria Cables "Ginners," Alexandria.

**Bankers.**—Lloyds Bank Ltd and Barclays Bank.

#### PINTO & CO.

**Inception.**—With the object of participating actively in the Egyptian cotton export trade, this firm was established at Alexandria in 1911.

**Personal.**—The company is composed of the four brothers, Messrs Silvio Pinto, Attilio Pinto, Fazio Pinto and Edgardo Pinto, with as a "sleeping partner" their father, Mr. I. O. Pinto, who, the oldest cotton dealer in Egypt, arrived in this country 62 years ago. The senior partner, Mr. Silvio Pinto, is a member of the committee of the Alexandria General Produce Association, a councillor of the Alexandria Cotton Futures Exchange Commission, and a director of the Société Egyptienne de la Bourse Commerciale de Minet-El-Bassal, which owns and administers the sole exchange where spot business is conducted.

**Capital.**—The capital of the company is £E.200,000.

**Activities.**—In the exporting of cotton to almost every consuming country Messrs



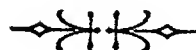
PINTO & CO., Alexandria  
1. Cotton Sorting Department.  
2. Pressed Bales.

Pinto & Co. have won high esteem and importance, particularly with Italy and also with Great Britain and the United States. The firm has established agencies up-country in Egypt. Among other activities, it represents for fire and marine business The North

British & Mercantile Insurance Company Ltd.

**Offices.**—1 Rue Adib Alexandria Cables "Pintado," Alexandria.

**Bankers.** National Bank of Egypt, Alexandria.



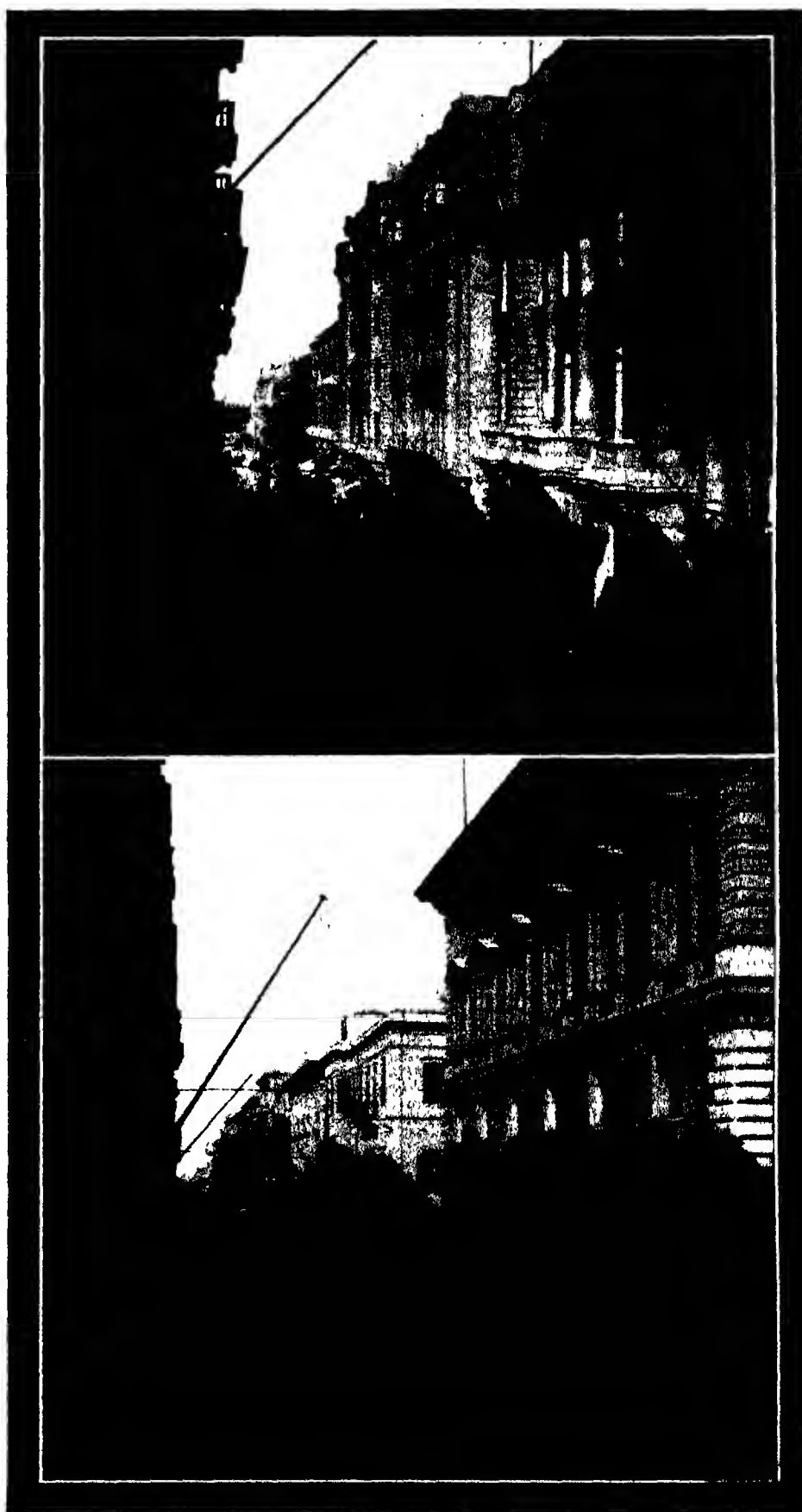
# CITY OF ALEXANDRIA

**A**LEXANDRIA, the city and port founded by Alexander the Great, the celebrated Prince of Macedon, stands as an enduring monument to the brilliant genius of that youth, who, when twenty two years of age, entered and overran Egypt without opposition. His name, indeed, became one to conjure with, the conquered Egyptians claimed him as a true descendant of one of their own dynasties, and the city that took his name grew gradually into the intellectual and commercial centre of the Eastern world. After his death, the ultimate grandeur and importance attained by Alexandria were largely due to the first two Ptolemies, one of whom founded the famous Alexandrian Library, while the other carried out the wise policy of his father. For centuries Alexandria was known all over the world as the greatest of all centres of learning, such famed teachers as Hipparchus, Archimedes, Euclid and Strabo all having sent the fruits of their learning abroad from there.

Little if anything, of the Alexandria of those days remains, though the present Rue de Rosette is said to follow closely the line of one of the main arteries of the period of the Ptolemies. After the Roman occupation both city and port rapidly declined, the former became the battle ground of various contending Christian sects, while its importance as a commercial centre practically vanished when the sea route to India, as also to the Cape, and the discovery of America came about. Mohammed (Mehemet) Ali, who was elected Pasha of Egypt in 1805, did something towards restoring the port and constructing great inland canals, and to-day the city is the centre of the great cotton trade of Egypt, from which it has derived much pecuniary advantage. Modern Alexandria is distinctively Continental in appearance, many of the streets bearing French names. It is the gateway by which thousands of tourists enter Egypt every year, and to those who do not leave it at once for Cairo and Upper Egypt presents many features of interest in connection with its past history.

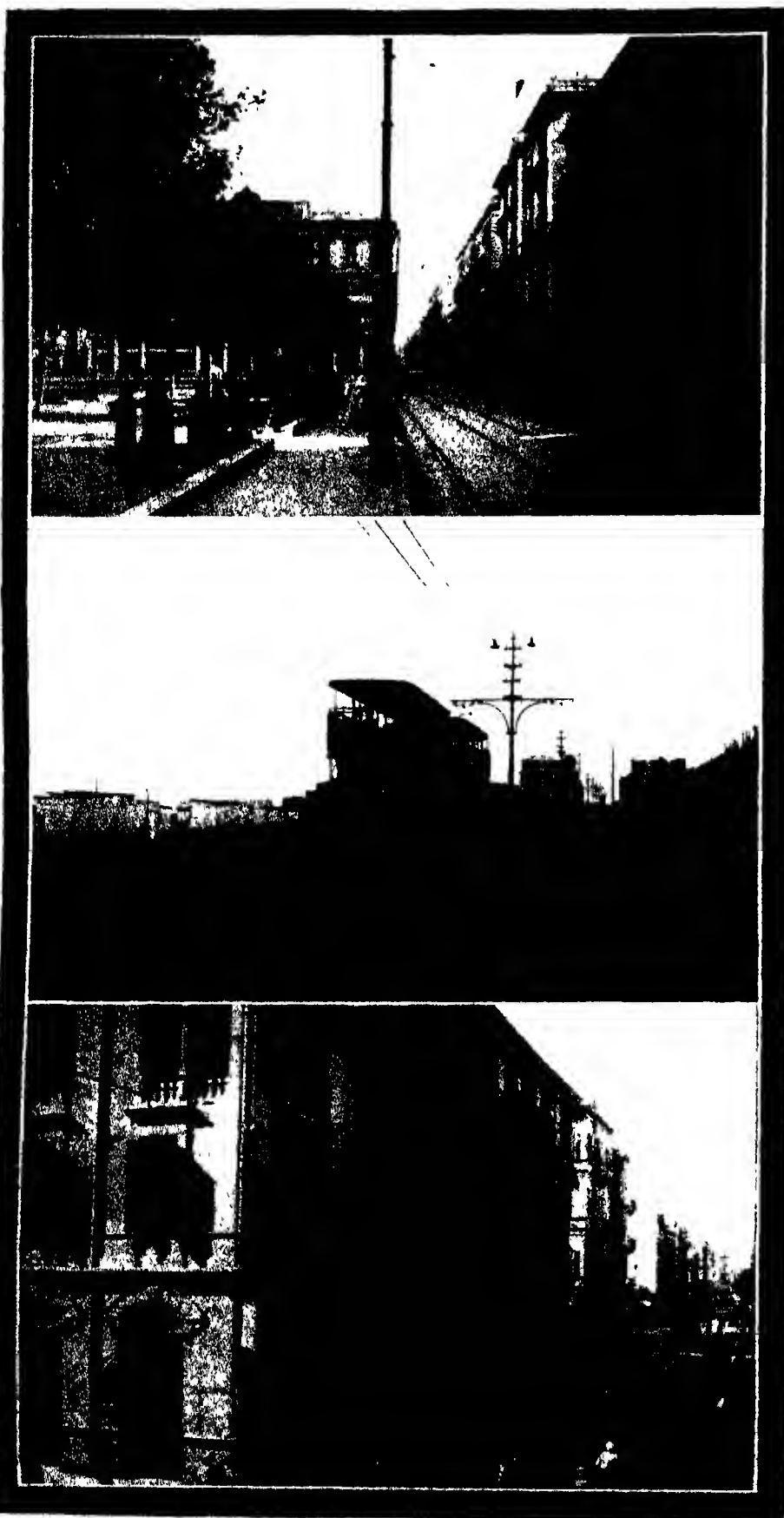
**BUILDINGS.**—Ancient Alexandria contained many famous buildings, the most celebrated of which were the white marble Pharos, or lighthouse, one of the Seven Wonders of the World, the Library and the Serapeum, or Museum. The Caesarian Library probably perished in 366 A.D., and the Serapeum was, with many other buildings and temples, destroyed by fanatical Christians during the fourth and fifth centuries. Other ancient buildings were the Theatre, the Sôma, or Mausoleum, which contained the bodies of Alexander the Great and the Ptolemies, the Gymnasium; and the Caesarian, or Palace of Cæsar.

Of modern buildings, Alexandria possesses several of architectural merit and imposing proportions. Apart from the various mosques and churches, Government House, which faces the East Harbour, the Courts of Justice, the Post Office, the Alhambra Theatre, and the leading hotels are the most prominent.



ALEXANDRIA.

1. Cherif Pacha, showing Barclays Bank in right foreground.
2. Same thoroughfare, with Banco Italo Egiziano in right foreground.



ALEXANDRIA.

1. Place Mehmet Ali. Royal Exchange in left background, Ottoman Bank in immediate right foreground.
2. Rue Gare de Ramlah.
3. Rue Sidi-El-Metwalli, Egyptian Engineering Co.'s Premises in left foreground.

**CATACOMBS.**—The catacombs of Alexandria lie to the west of the city, and contain many interesting tombs of the Ptolemaic period. The most interesting is the rock-cut Egyptian tomb which belonged to an Egyptian nobleman and his wife, and which was conceived and executed on a most elaborate plan, with corridors and galleries still showing fragments of Egyptian and Greek decoration. It is lighted throughout by electricity.

**CHURCHES.**—The principal foreign churches in Alexandria are those of St Mark's (Anglican), in Place Mehmet Ali, All Saints' (Anglican), at Bulkeley, St Catherine's (Roman Catholic), in Rue Ste Catherine, and St Andrew's (Presbyterian), close to the Post Office. The American Mission's Church is in Rue Sidi el Metwalli, and the Wesleyan Church close to the Egyptian Post Office. The principal mosques are those of Abd el-Latif, el-Wassiti, Sidi Amr, and el-Fasham. There are a large Jewish Synagogue, an Armenian Church, and several Coptic churches.

**CLIMATE.** Alexandria possesses a healthy sea-shore climate, which is on the whole drier and less enervating than that of Cairo. The mean rainfall is about 8.57 inches, and the mean temperature 69° Fahr, equal to 20.5° Cent; the mean winter temperature is 60° Fahr. Generally speaking, Alexandria is warmer by night than Cairo. The prevailing wind blows from the north in summer, and from the north-west in winter. Close to Alexandria is Ramlah, which is much frequented by tourists and residents who wish to live close to the sea.

**LIGHTING.**—In 1865 the Egyptian Government granted to Messrs Charles Lebon and Company the concession for the lighting by gas of the city of Alexandria and its surroundings. By subsequent contracts, in 1893 and 1909, the area of the concession was determined, and a further concession given to the company for electric lighting. There are nearly 7,000 gas-lamps, mostly of the single-burner type, in the city and suburbs. Electric lighting is very little used for public purposes, but is extensively employed for private use.

**MUNICIPALITY.**—Alexandria has been a municipality since 1890. The Council consists of twenty-eight members, six are ex-officio members, eight are nominated by the Egyptian Government, and fourteen are elected by different electoral bodies in the city. Not more than three members of any one nationality can be elected. The Council exercises, subject to the supervision of the central authority, all the rights of an ordinary municipal body.

**MUSEUM.**—The Museum of Græco-Roman Antiquities was founded by the Egyptian Government at a cost of £E 10,000, and is maintained by the Municipality at an annual expenditure of £E 1,200. Here are exhibited in more than twenty rooms a large and most interesting collection of the antiquities that have been discovered in Alexandria and the neighbourhood, as well as a vast number of smaller objects which illustrate the art, architecture, sculpture and burial customs of the Egyptians during the Ptolemaic period and the early centuries of the Christian era. All these objects, of great importance to a proper understanding of the religion of the period, are admirably arranged and catalogued. An archaeological library has also been formed, and now contains several thousand volumes.

**POMPEY'S PILLAR.**—This is the sole surviving monument of ancient Alexandria, having been erected in 302 by a Prefect of Egypt named Pompey. The old assumption that it was set up in honour of Pompey the Great no longer obtains, the general view being that the pillar (nearly 90 ft high and built of fluted granite) was the outcome of the gratitude of the Alexandrians to the Emperor Diocletian, who decreed that a portion of the tribute of corn which was sent from Egypt to Rome should be devoted to their needs.

**POPULATION.**—The present population of the Governorate of Alexandria is estimated at about 480,000, having increased by some 30,000 since the last census of 1917.

**ROSETTA STONE.**—This famous stone, which is now in the British Museum and from which was obtained the correct clue to the proper deciphering of the Egyptian hieroglyphics, was found at Rosetta, some 30 miles from Alexandria, by M. Boussard, a French Engineer officer, in 1799. Rosetta (now Rashid) was a very ancient city near the mouth of the main western branch of the Nile, and here the Turks signally repulsed the British forces on April 22, 1807.

**TRAMWAYS.**—There is an efficient system of electric trams, which, starting from the Place Mehmet Ali, run to different parts of the city and environs. The service commences at 5.15 a.m. and finishes at 10 p.m., except on special occasions, when it continues until midnight. (See article "Tramways d'Alexandrie" following.)

**WATER SUPPLY.**—The water supply of Alexandria is controlled by the Alexandria Water Company Limited, which purchased the waterworks of the city from the Egyptian Government in 1870. In the following year the company secured the waterworks of the suburb of Ramleh and made an additional contract with the Government. The water is obtained from the Mahmudieh Canal. (See article "Alexandria Water Co. Ltd." following.)

## VISITOR'S GUIDE

**CLUBS.**—Alexandria Sporting Club—Ibrahimiya; Ramleh; British—15, Rue de la Gare de Ramleh; Khedivial—Rue Cherif Pacha; Mohammed Ali—2, Rue Porte Rosette; Union—Rue de l'Ancienne Bourse.

**CONSULATES.**—Austria—Rue Sman Pasha; Brazil—9, Rue Mahmoud Pasha el-Falaki; Denmark—14, Rue Adib; France—Nouveau Quai; Germany—16, Rue Fuad 1; Great Britain—Rue de l'Hopital Egyptien; Greece—23, Rue Fuad 1; Italy—Boulevard Said 1; Japan—5, Rue Adib; Netherlands—1, Rue Colucci Pasha; Norway—7, Rue Toussoum; Portugal—1, Rue Fuad 1; Sweden—Quai Port-Est; Turkey—67, Rue Fuad 1; United States—29, Rue Fuad 1.

**HOTELS.**—Claridge's, Majestic, Majestic Palace; Regina Palace, Savoy, Windsor.

**POST OFFICE.**—The General Post Office is in the Rue de la Poste, and is open from 7 a.m. till 12 noon and from 2 to 9.30 p.m.

**THEATRES.**—Jardin Rosette—Rue Porte Rosette; Nuovo Teatro Alhambra—corner of Rue de l'Hopital Egyptien and Rue Misra.

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### ALEXANDRIA WATER CO. LTD.

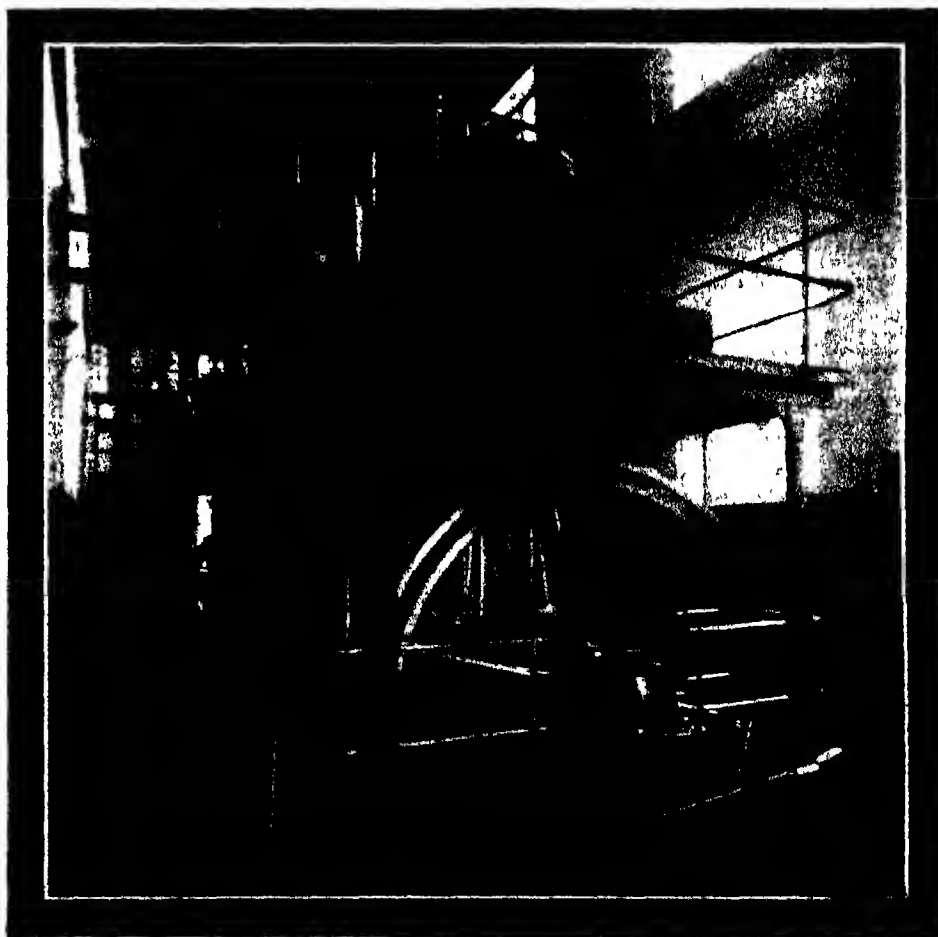
**Inception.**—In 1860 water was supplied to the city of Alexandria by a French company under concession from the Egyptian Government. In 1867 the Government itself took over the concern, but sold it after twelve years to the Alexandria Water Co. Ltd., an English limited liability company formed for the purpose of acquiring the concession, the purchase being negotiated by Mr. Edward Easton. By deed of sale dated March 29, 1879, for the sum of £300,000 the waterworks, dependencies and the monopoly of supplying the city with water by means of pipes were made over to the newly-constituted company, whose capital was £350,000, the Government reserving the right of repurchase after 20 years. In the following year the company, releasing the Egyptian Government from part of its obligations under the deed of sale and on payment of a further sum of £17,000, acquired this concession in perpetuity.

**Ramleh Water Supply.**—At the same time as this acquisition the Government also ratified the deed of sale of the water supply system in the village of Ramleh, which the company had bought for £37,000 the previous year from Mr. C. Zervudachi, and extended the concession in perpetuity to this service. Mr. Zervudachi had acquired the concern in 1876 through the failure of the Societe Hydronomique de Ramle four years after it had started the system.

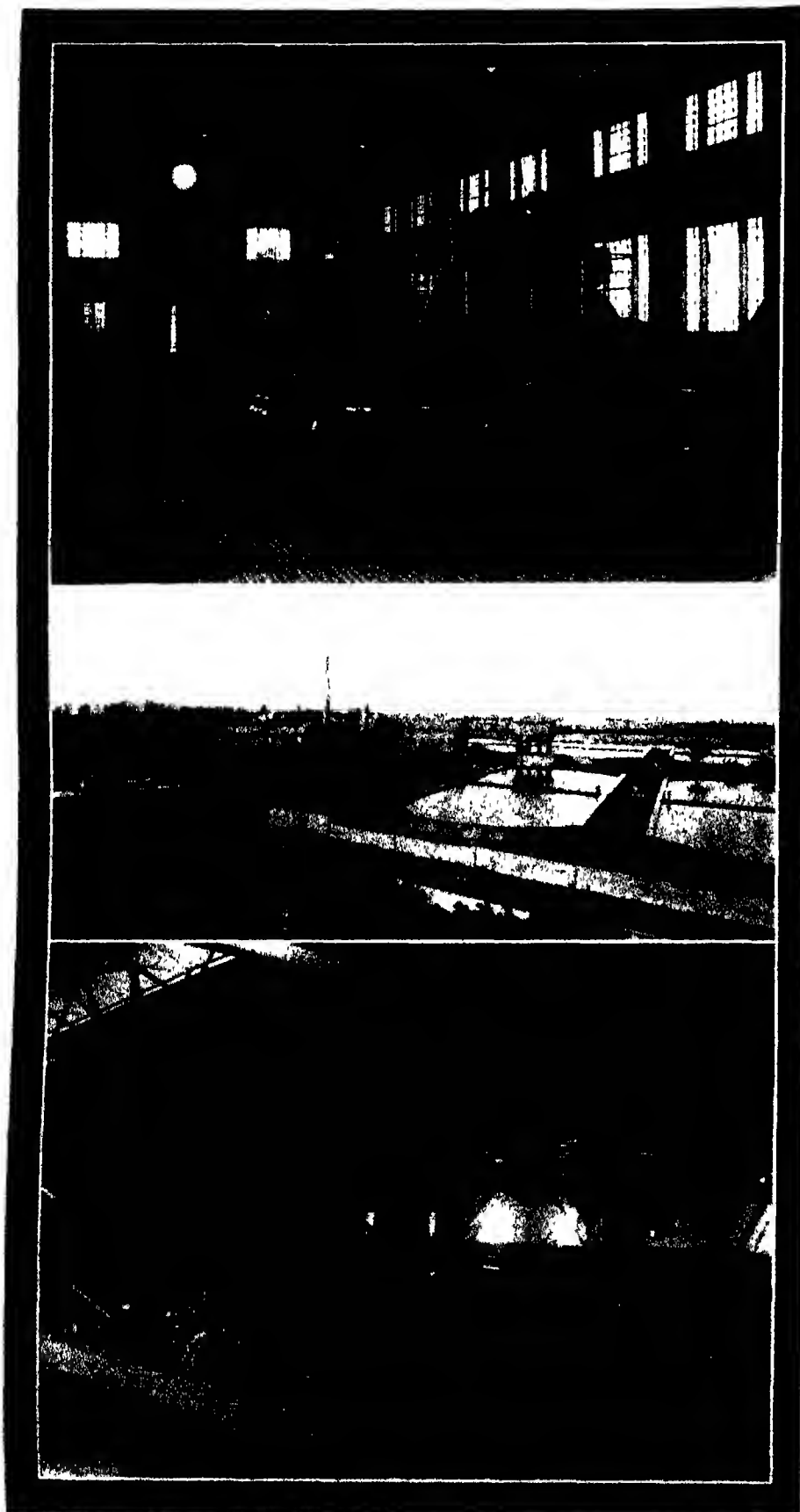
**Supply.**—The source of supply is the Mahmudieh Canal, which, constructed in about 1810, takes off from the Nile at Atf, near Rosetta, and is used not only for irrigation, but also for navigation between Alexandria and the interior of Egypt. The water is unfit for human consumption without purification.

**Purification.**—At the intake from the Mahmudieh Canal, about  $\frac{3}{4}$  mile from the main pumping station, the water is raised by a small pumping station into the company's private channel, the Farkha Canal, which flows into collecting wells. Low service pumps again raise the water to six settling basins, designed to hold about a million gallons each, where it remains for at least eight hours under the influence of a coagulant, sulphate of alumina. By force of gravitation the water flows to an American Jewell system of filters after this preliminary sedimentation. These Jewell rapid gravity filters are 38 in number, 24 being of 17 feet diameter and 14 of 21 feet diameter, and have a total daily capacity of over 20,000,000 gallons. Five covered fresh water reservoirs, nearly 5,000,000 gallons in capacity, next receive the supply, which is finally pumped by high service pumps partly into the Kom El-Dik service reservoir (accommodating 3,300,000 gallons), and partly direct into the city mains.

**Services.**—In addition to the supply to Alexandria, filtered water is also delivered to shipping by hydrant and hose to ships alongside the quay and by the company's barges to vessels anchored in the harbour.



ALEXANDRIA WATER CO. LTD.  
One of the Steam Pumping Engines.



ALEXANDRIA WATER CO. LTD.

1. View of Diesel Engine House.
2. General View of Works, showing Settling Basins.
3. No. 1 Filter House.

The water supply to the suburbs of Ramleh was originally ensured by the Ramleh pumping station, which the company acquired in 1880, but the water was not purified in any way. In 1907 mains were laid from the chief pumping station to Ramleh in order to provide filtered water to that district, the growth of which has since been extremely rapid. The Ramleh pumping station is still maintained for the purpose of supplying unfiltered water to gardens.

**Fire Service.**—In 1912 the Alexandria Water Co. Ltd. opened at Minet-El-Bassal a new pumping station to afford a special high pressure fire service in that industrial district. The mains, entirely separate from those of the potable supply, serve the automatic sprinklers and fire hydrants with which the majority of the cotton presses and stores are fitted. The fire insurance companies, which prior to the provision of these facilities had had a most unhappy experience in the Minet-El-Bassal district, have since reduced their premiums by over 50 per cent on risks in which the above appliances are installed.

**Mains.**—The total length of filtered water mains in service at the end of 1925 was approximately 230 miles, of high pressure service mains 14 miles, and of unfiltered water mains in Ramleh 20 miles. The mains vary in size from 30 inches downwards.

**Consumption.**—The consumption of filtered water in the city of Alexandria varies at present from about 11,000,000 gallons per day in winter to 17,000,000 gallons in summer. The quantity of such water pumped during 1925 was 4 778,000,000 gallons, and of unfiltered water 1,151,000,000 gallons.

**Development.**—The development of the concern since its acquisition in 1880 may be gauged from the following statistics. In 1880 the number of services stood at 2,565, at the end of 1925 at 57,629, the revenue of the company, £40,721 in 1880, reached £272,683 in 1925, and its capital, £350,000 in 1880, is now double that figure.

**Division of Profits.**—Under its contracts with the Egyptian Government and the Alexandria Municipality, the company pays to the latter one-half of the surplus net profits available after payment of a dividend of 10 per cent to the shareholders. The last dividend in respect of the year 1925 was at the rate of 14½ per cent per annum, while £33,250 was disbursed to the Municipality.

**Directorate.**—The control of the organisation from its inception until 1890 was vested in a Board of Directors, sitting in London under the chairmanship of His Grace the Duke of Sutherland, K.G., from that year the administration has devolved upon a Board in Alexandria. That Board now consists of MM. Michel C. Salvago (chairman), H. E. Barker, R. C. Abdy, J. G. Jacot Descombes, M. Lascaris, and H. E. the Governor of Alexandria, Hussein Sabry Pacha, President of the Municipality, as official director.

**Management.**—The first manager of the company, Mr. J. E. Cornish, occupied that position from 1879 to 1906, when he became managing director and was elected chairman in 1907, a post which he held until his death in 1912. For valuable services during the bombardment of the city in 1882 he was awarded the C.M.G. His successor, Mr. H. R. C. Blagden, M.Inst.C.E., M.I.Mech.E., retired in 1920, to be followed by the present manager, Mr. K. B. Woodd Smith.



**Offices.**—London (registered office) 7, Bloomsbury Square, W.C., Alexandria 7, Rue Stamboul

**Bankers.**—The National Bank of Egypt.

**Cables.** "Waterworks," Alexandria Code A B C 6th Edition  
(See also illustrations, pages 93, 94)

### THE ALEXANDRIA & RAMLEH RAILWAY CO. LTD.

**Inception.**—Under contract dated August 6, 1890, Mr Edward St John Larman, British merchant, obtained authorisation from the Egyptian Government to build a railway between Alexandria and the suburb of Ramleh. The authorisation in question was subsequently transferred to an English company which on June 27, 1883, was constituted under the present title as a limited capital corporation.

**Capital.** The capital of the company was originally fixed at £12,000, in shares of £10 each. On July 2, 1863, the sum was increased to £20,000, and on January 25, 1864, to £34,000. Subsequent augmentations brought the capital successively to £75,000 on November 26, 1887, £78,500 on November 30, 1889, and £83,500 on December 13, 1890. On April 23, 1902, the company's shares of £10 each were subdivided into 11 shares, and the capital raised to £110,000. Finally, in 1912, the capital was increased to £187,500 by 77,500 new £1 shares, created to enable the company to acquire the personnel and landed property of the Alexandria Tramways

**System.** Construction of the railway was commenced immediately after the securing of the original authorisation, the system on completion totalling 12,839 metres in length. The track throughout is a double one, built of Vignole 35-kilograms rails on wooden sleepers. Steam locomotion was employed until January 1904, when electric power was adopted.

The main line runs from Alexandria to Bulkley, thence by two diverging routes (one running by the sea) to San Stefano, beyond this junction trains run to Victoria College, adjacent to this station on the Rosetta Aboukir line of the Egyptian State Railway. In 1891, following the acquisition of running rights over the State Railway line Sidh Gaber-Ramleh-Aboukir, the direct route connecting Alexandria with Moustafa Pacha was altered, proceeding via Sporting Club-Cleopatra-Sidh-Gaber to Moustafa Pacha, where it rejoined the main track. The running rights mentioned were relinquished in 1912, but the deviation has remained.

**Power Stations.**—Two power stations are installed, one at Chatby-les Bains and one at Karmous. The former produces power in the form of continuous current of 500-550 v. from 5 Diesel-Sulzer motor groups coupled direct with generators, the Karmous station furnishes a three-phase current of 6,000 v., converted by 3 Brown-Boveri condensers at the Bulkley sub-station into a continuous current of 500-550 v. The current is transmitted to the system by means of feeders, and in some districts overhead trolley wires.

**Depôt.**—The depôt is established at Moustafa Pacha, having an adjoining workshop where running repairs are effected.

**Rolling Stock.**—The company's rolling stock comprises 44 large-type bogie carriages, of which 8 are covered, and 48 small-type parallel-axle carriages, 22 being covered. Most of the carriages are coupled in reversible trains of 2 units, each carriage being equipped with a motor.

**Development Statistics.**—The construction of this railway has been the prime factor in a suburban development unprecedented in Egypt. The number of passengers carried in 1878 was 457,000, increased by 1890 to 1,200,548, by 1900 to 2,705,000, and by 1910 to 10,394,000. The table furnished below shows corresponding totals for the decade 1915-1925, together with train kilometres run, receipts, expenses, and dividends disbursed on the £1 share.

YEARS	PASSENGERS CARRIED	TRAIN KM RUN
1915-1916	17,567,719	2,494,248
1916-1917	16,576,598	2,311,679
1917-1918	19,120,862	3,081,488
1918-1919	17,405,716	2,880,827
1919-1920	17,120,815	3,062,565
1920-1921	20,555,228	3,493,557
1921-1922	22,631,549	3,751,401
1922-1923	24,504,299	3,821,597
1923-1924	26,605,798	3,847,281
1924-1925	28,049,471	4,000,053

YEARS	RECEIPTS £	EXPENDITURE £	DIVIDENDS PAID s d
1915-1916	114,026	49,441	0 0
1916-1917	111,313	48,249	5 6
1917-1918	130,264	53,179	0 6
1918-1919	119,366	71,214	3 0
1919-1920	148,183	111,617	
1920-1921	189,405	125,164	2 0
1921-1922	190,222	125,119	4 0
1922-1923	196,087	121,595	4 0
1923-1924	196,616	118,785	4 6
1924-1925	201,017	117,589	4 6

**Directorate.** M C Salvago (president), R Abdy (vice-president), G Pavie (president of Paris committee), S L M Ayoub Pacha, I Bouille, S E N F Borton Pacha, R Julien Labruyère, M Despret, R Hecker, D Klat Bey, I Lumbroso, M Lascaris, Z Nubar Bey.

**Offices.** The company's offices are installed in its own building at 3, Place Ismailier Alexandria.

**Cables.** "Ramlerail," Alexandria Code A B C 5th Edition

**Bankers.** National Bank of Egypt

(See illustration page 96)

### TRAMWAYS D'ALEXANDRIE.

**Inception.** On January 15, 1890, M E Canderay, public works contractor, obtained from the Alexandria Municipal Commission a concession, operative for 50 years, to provide tramways serving certain districts of the city. By contract signed in Paris, May 15, 1890, and taking effect from January 1 of that year, M Canderay appointed M S Tivoli, resident in Alexandria, general works manager of the project. M Canderay contracted with the Compagnie Générale de TrACTION for the construction of the system, a power station and a depot, and on December 4, 1897, MM Canderay and Tivoli, in conjunction with the firm just mentioned, formed a registered company known as the Tramways d'Alexandrie. The chief object of this company, the head office of which was situated in Brussels, was the carrying on of the contract granted to M. Canderay by the Alexandria Municipality.

**Transference of Control.**—In February, 1899, it was decided to participate in the working of the Alexandria & Ramleh Railway Co Ltd, and to aid financially the electrification of that system. In 1902, however, circumstances caused the transference of the working of the Tramways d'Alexandrie to the Alexandria & Ramleh Railway Co. Ltd. Ten years later the entire rights of the

company under notice were acquired by the Alexandria & Ramleh Railway Co. Ltd, in consideration of which transfer the Tramways received 77,500 shares of £1 each from the controlling institution.

**Capital.**—The company's original capital was 3,000,000 Belgian francs in preference shares of 100 frs each. The sum was raised on May 17, 1898, to 6,000,000 frs, on February 25, 1899, to 8,000,000 frs, and on April 7, 1908, to 10,266,000 frs, comprising 102,660 preference shares of 100 frs each. Of the 1898 and 1899 issues 40,000 preference shares were offered at 135 frs each for public subscription in Egypt. In May, 1922, ten years after the transference of control, it was proposed to redeem part of the preference shares, and in June of the following year to redeem by ballot 8,000 such shares payable at 100 frs. These shares were transformed into dividend shares. The share capital was now reduced to 9,255,700 frs in preference shares of 100 frs each, with 33,300 dividend shares in addition. On September 15, 1925, the obligatory capital was raised to 4,367,500 frs in 8,735 4 per cent debentures of 500 frs each.

**Development.**—The first sections of the line to be completed (Ste Catherine-Abattoirs and Ste Catherine-Karmous) were opened to traffic on September 19, 1897. By the middle of 1901 it may be said that the main system was completed, particulars of working during the first five years being as follow:—

YEARS	RECEIPTS (Belgian francs)	EXPENDITURE (Belgian francs)	PASSENGERS CARRIED
1898	295,728	190,846	1,941,900
1899	511,136	165,179	4,080,112
1900	937,569	830,395	6,771,128
1901	1,067,219	808,251	7,863,852
1902	1,174,673	731,679	8,879,387

New lines were inaugurated in 1909, 1910 and 1917. The system to-day comprises 20.413 km of double track and 7.110 km of single track, divided into 8 routes. The following table provides financial and other statistics of the working of the Tramways d'Alexandrie during the years 1920-1925:—

YEARS	PASSENGERS CARRIED	TRAIN KM RUN	RECEIPTS £	EXPENDI- TURE £
1920-21	24,994,371	4,077,047	232,971	190,381
1921-22	32,826,220	5,553,499	247,934	197,763
1922-23	35,533,820	5,661,547	230,324	194,228
1923-24	42,894,397	6,141,317	239,424	203,019
1924-25	47,107,396	6,698,294	252,788	207,055

**Power Stations and Depôts.**—The two adjacent power stations of Karmous and Baldauff supply motive force in the form of a continuous current of 500-550 v conveyed direct to the system. Two depôts are installed, one at Karmous, the other at Moharem Bey.

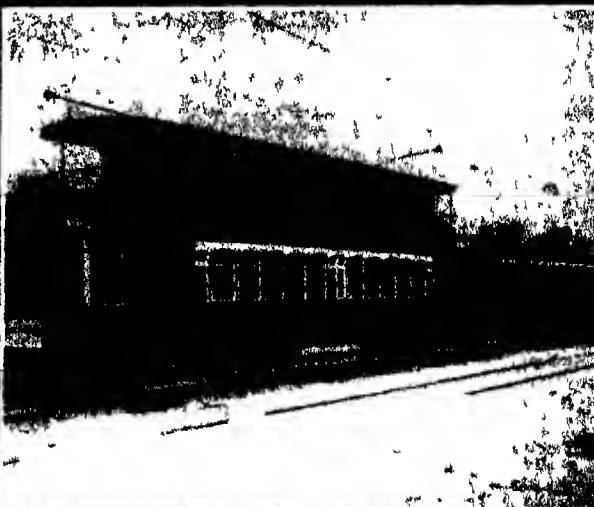
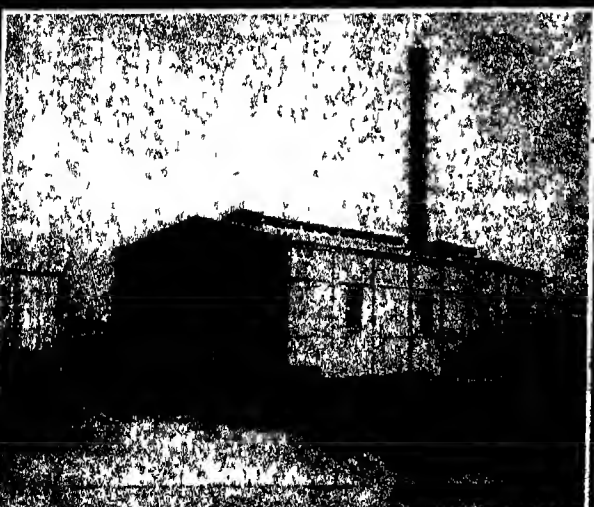
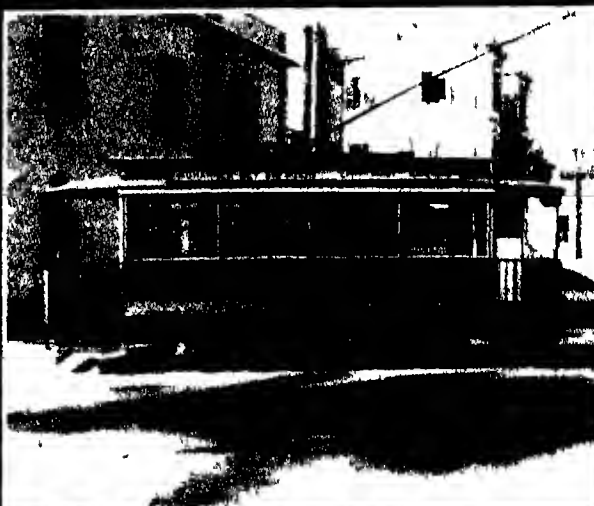
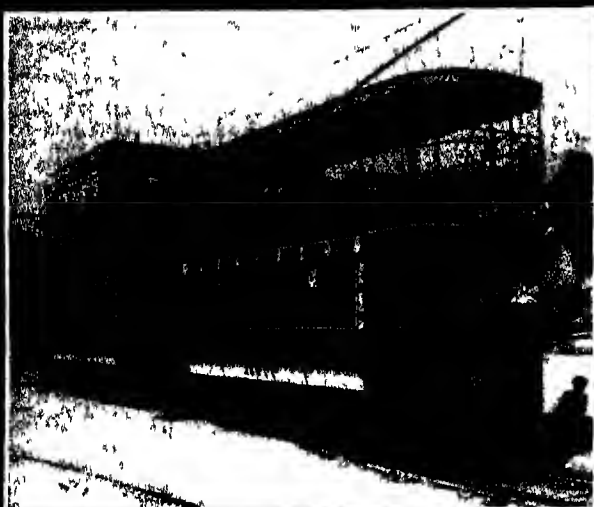
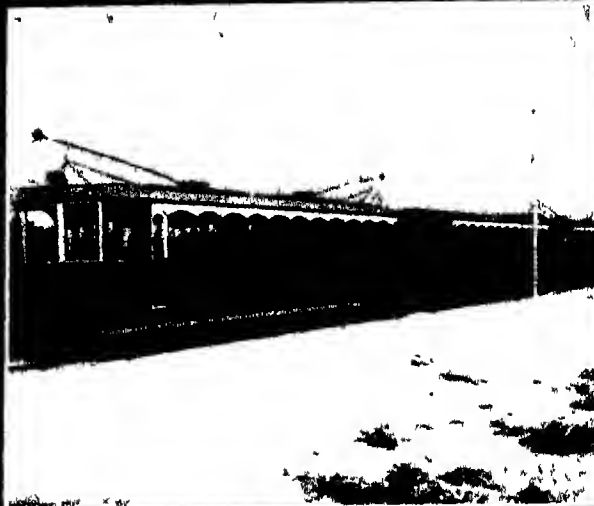
**Rolling Stock.**—Forming the rolling stock are 103 self-driving cars, 98 motorless cars, and 7 cars employed in various auxiliary services. The hauling cars are each fitted with 2 motors of 35 c.v., manufactured by Dick, Kerr and the General Electric Co.

**Directorate.**—Ed Hanman (president), M. Aghion, C Aghion, I Bouille, M Despret, D Garofalo, E Karam, M Lascaris, Z Nubar Bey, and G Pavie.

**Head Office.**—99, Rue Royale, Brussels  
Cables "Tramalex," Brussels

**Alexandria Office.**—The Alexandria & Ramleh Railway Co Ltd building, 3, Place Ismailier. Cables "Tramways," Alexandria.

**Bankers.**—Banque de Bruxelles (Brussels), Banque Ottomane (Alexandria)  
(See also illustration, page 96)



THE ALEXANDRIA & RAMLEH RAILWAY CO. LTD., Alexandria.

- |   |  |
|---|--|
| 1. Ramleh Railway Terminus and Administrative Offices of the Company. | 2. Reversible Train of three Bogey Units. Convertible into closed carriages in Winter. |
| 3. Reversible Type of Train: British Electric Car (1904).             | 4. Dick, Kerr Type (1904).   |
| 5. Works at Cheshy.   | 6. Reversible Bogey Train, convertible into open carriages in Summer.                  |

(See letterpress, page 95.)

**ROBERTS, HUGHES & CO.**

**Inception.** As at Cairo, and established in the same year, 1903, Messrs Roberts, Hughes & Co's business at Alexandria offers to resident and traveller alike a selection and a service comparable to those obtaining in the modern London store.

**Departments.**—The chief departments, constantly re-stocked, cover sports requisites, travel necessities, haberdashery, silver and electro-plate, smokers' requisites, and footwear. The sole agency in Egypt is undertaken for "Sorosis" shoes for ladies and "Saxone" boots for men.

**Sports Gear.**—The firm is best known as purveyors of equipment for polo, football, cricket, lawn tennis, golf, and every other sport, maintaining a special department for all repairs to polo and tennis kit. It has done much to encourage Egyptian sport by presenting trophies for competitions.

**Mail Orders.** An efficient mail order department keeps pace with an increasing number of orders daily from all over Egypt, the Sudan, Palestine, Syria, Cyprus, and Persia, even from Athens.

**Offices.** Alexandria, Rue Sesostus, Cairo, Sharia Kasr-el Nil, also at Mansurah. Cables: "Sport," Alexandria.

**E. A. S. T. CO. (Eastern Automobile Supplies & Transport Co.)**

**Inception.** Under the provisions of the Egyptian Company Law, the organisation more familiarly known as the E. A. S. T. Company was formed in 1918, establishing its head office in Alexandria.

**Activities.** Acting as wholesale importers, engineers and contractors, the concern deals principally in Ford cars, Fordson tractors, general motor supplies and farming implements. Branches are controlled throughout Egypt and Palestine. In the last-named country the E. A. S. T. Co. is distributor for the Ruston Hornsby Oil Engine, a first favourite for well and pump operating owing to its simplicity, soundness and reliability.

**Factory and Sale Rooms.**—In the company's Alexandria factory, covering nearly 3 acres, the various machines are assembled and tested, special bodies built and main stock housed, while sales are effected from sale rooms located in all the large towns of Egypt and Palestine.

**ROBERTS, HUGHES & CO., Alexandria. Athletic and Sports Department**

**Administration.** T. S. Richmond (chairman), Alfred Flower (vice chairman), and E. W. Flower (managing director).

**Offices.**—Alexandria: 131 rue du Canal, Mahmoudieh, 20 rue Bonadier, 1 rue Adib, Cairo: 5 rue Soliman Pacha, London: 121, Victoria Street, Westminster, S.W. 1 (cables: "Flowerwheel" London). Codes: A B C 5th edition and Bentley's.

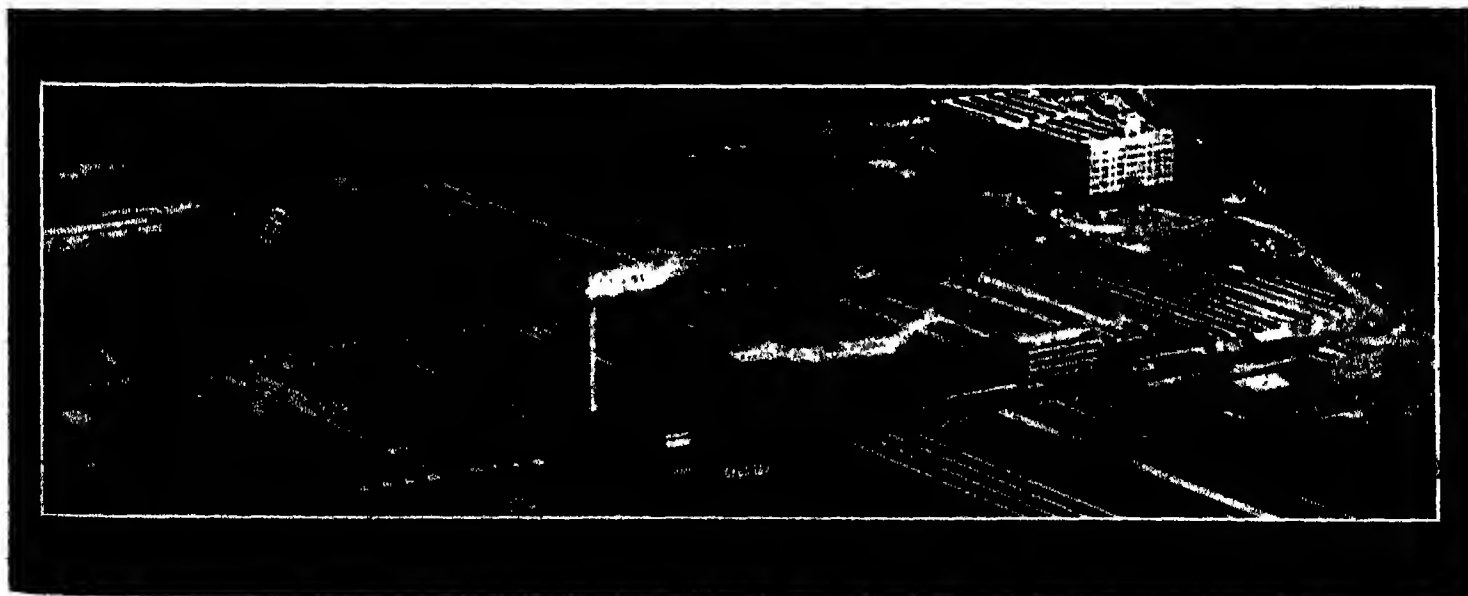
**M. E. T. S. CO. (Motor Equipment & Tractor Supplies Co.)**

**Inception.** Under the same administration as the E. A. S. T. Co. (Eastern Automobile Supplies & Transport Co.), this enterprise was inaugurated in 1925 to act as depositaries of the Dunlop Rubber Co. Ltd., distributing throughout Egypt the world famous Dunlop tyre and accessories.

**Dunlop Tyres.** An immense industry has been built upon Mr. J. B. Dunlop's invention in 1888 of the pneumatic tyre. At Fort Dunlop, Birmingham, millions of tyres for all types of vehicles are manufactured annually by the 12,000 operatives of the Dunlop Company, which employs throughout the world over 30,000 persons.

**Egyptian Activities.** In Egypt, as elsewhere, the Dunlop tyre is ubiquitous, being very largely supplied for desert cars, in which connection quality is of first importance. The manufacture of the Dunlop tyre has been of immense financial value to the country by introducing a new demand for cotton.

**Offices.**—24, rue Saleh el-Dine, Alexandria, 25, Sharia Mazloom Pacha, Cairo. (See also illustration page 98.)



**EASTERN AUTOMOBILES SUPPLIES & TRANSPORT CO., Alexandria: Representing the Dunlop Rubber Co. Ltd.**  
View of the Dunlop Mill at Birmingham

## OTHER COMMERCIAL ENTERPRISES

### ALEXANDRIA ENGINEERING WORKS.

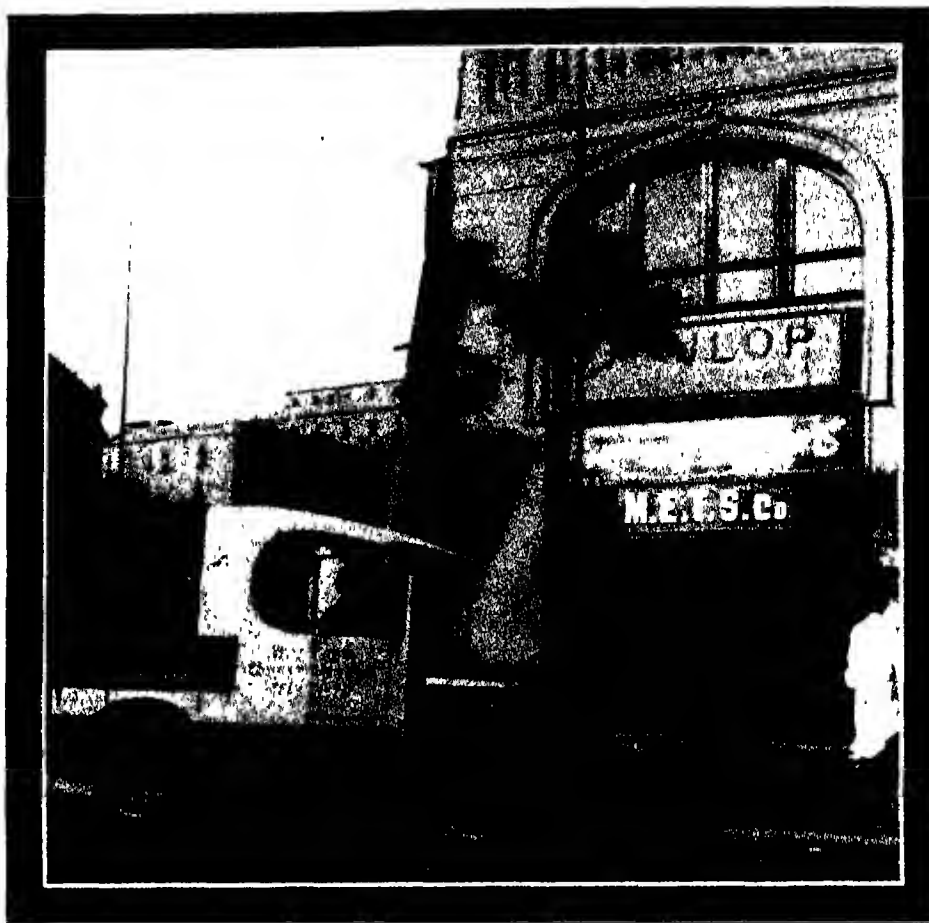
—Rue Bab el-Karasta, Alexandria. Managing director James Miller, M I N A, M I E S Manager J. E. Spurgeon, M I M E Secretary John Gadsby

**BARKER & CO.** — 11 rue Sesostri, Alexandria. Shipping agents, cotton exporters, and general merchants. Established 1850 by Mr. Frederick Barker, father of the present principal, Mr. Henry Barker. Represent, among other companies, Ellerman Wilson Line, Papayanni Line, Glover Bros., Hall Bros of Newcastle, Canadian Pacific Railway and Steamships, and are interested in further representations. Property includes wharves and warehouses. Office staff numbers 12. Mr. Henry Barker is chairman of the British Chamber of Commerce at Alexandria, chairman of the New Egyptian Company Ltd., and a director of the National Bank of Egypt, the Alexandria Water Co Ltd, the Filature Nationale d'Egypte, the Société Belge-Egyptienne de l'Ezbekieh, The National Insurance Co of Egypt, and various other commercial enterprises.

**BINNEY, BORG & CO.** Central Buildings, Rue Centrale, Alexandria. British firm, trading as general merchants, steamship, insurance and manufacturers' agents. Associated in the firm are Major A. T. Binney, O B E, Col W. E. Donohue, C B E, M Inst C E, M Inst M E, M Inst A E, M Inst T, and Mr. Alex. P. Borg. Major Binney, an expert engineer, has had wide technical and commercial experience in Egypt, being in 1915 appointed controller of mechanical transport in that country, and subsequently Palestine and Syria until 1920, when he became Assistant Commissioner to the Disposals Board (Egypt). Col. Donohue has had 35 years' experience in engineering appointments. Among important duties undertaken by him during the War were those as Inspector of expeditionary forces for transport services throughout the Eastern theatres of war, which explains the prominent transport representations held by the firm. Mr. Borg's general business experience covers practically the whole of the Near East, which he has travelled as special representative of firms of world-wide repute. Representations include Crossley and Leyland motors, Trojan and Portable fire pumps, Shelboke & Drewry "S D" freighter.

**BRANDT & CO. LTD.**—Rue Emad el-Dine, Cairo, and 5 rue Adib, Alexandria, also Copenhagen. Delegate director in Egypt, E. Brandt. Attorney at Alexandria, E. Abela.

**CHOREMI BENACHI & CO.**—13a rue Fouad rer, Alexandria. Established 1860. Among the largest firms interested in cotton export trade of Egypt. Agencies established throughout that country, also large factories at Kafr-Zayat, Barrage and Beni-Suef. The firm is well represented in Europe by Mr. Arist. D. Choremi, whose office is at 43, Peter Marianstrasse, Basel, Switzerland. British correspondents are Davies Benachi & Co., Orleans House, Edmund Street, Liverpool, and in America the firm is represented by Choremi Benachi & Co., 80, Federal Street, Boston, Mass. The present partners of Messrs Choremi Benachi & Co., Egypt, are: Const. J. Choremi, Ant. L. Benachi, Alex. L. Benachi, J. E. Lloyd, and Aug. Th. Sinadino.



EASTERN AUTOMOBILES SUPPLIES & TRANSPORT CO., Alexandria.

(See letterpress, page 97)

**COMMERCIAL & AGENCY COMPANY OF EGYPT LTD.**—10 rue du General Barle, Alexandria. Established in 1908. Importers, exporters and representatives. Head office, Alexandria. Branches: Cairo (Okelle, Leipmann, Hamzaoui), Port Said, rue Mokattam (immi Canpaola), Tantah, rue Darb el Fallala (immi Bahnassi), London, 7, Bloomsbury Square, W C. Administration: Victor F. Naggiar, J. S. Chesman, L. H. Rickards, J. A. Tarrel, W. Mackenzie, London secretary, 11 E. Verey.

**CUMING, F. W., & CO. LTD.**—5 rue Avéroff, Alexandria, also at Cairo. Head office: 7, Bloomsbury Square, London, W C. General manager, A. Kyan.

**CURWEN & CO.**—7 rue Adib and rue Centrale, Alexandria. Managing agents for Khedivial Mail Steamship and Graving Dock Co. Ltd. Agents for the Peninsular and Oriental Steam Navigation Co and the British India Steam Navigation Co Ltd. Managers for the Mediterranean Transport Company, now the premier water supply concern in Port Said and Suez. Telegraphic address "Indemnity," Alexandria.

**EGYPTIAN SALT & SODA CO. LTD.**—Gabbary, Alexandria. Established in 1899. Engaged in the pressing and trituration of oleaginous seeds, oil refining, soap manufacture, working of natural soda works at Wadi-Natron and salt works at Mex. Capital: £500,000 in 500,000 shares, all fully paid. Administration: C. Choremi (president), A. Hasda, Ed. Karam, A. J. Lowe, M. Salvago, D. Klat Bey. Central management:

General manager, A. Baerlocher, sub manager, G. Psacharopoulos, attorney, H. Chevalier. Works at Gabbary and Kafr-Zayat. Manager, G. Schneider. Works at Wadi-Natron. Manager, W. C. Hewgill. Works at Mex. Manager, Mohamed Ibrahim. Pulverising department. Managing director, A. J. Lowe.

**EGYPTIAN & SUDAN COTTON TRADING CO.**—Head office: 6 rue Eglise Debbané, Alexandria. Cotton merchants, dealing in all kinds of Egyptian and Sudanese cotton. Capital: £E 50,000. Branches: Kafr-el-Zayat, Kafr-el-Cheikh, Minet-el-Gamh, Mehalla-el-Kebir, Soneita, Tantah, Guizah, Embabeh, Beni Suef, Minieh, Babel, Beleda, Beni-Mazar, Wasta, Khartoum, Tokar. Chairman of the board, Maurice Viterbo. Managing director, Adrien Engel. Bankers: The National Bank of Egypt.

**ELECTRICITY & ICE SUPPLY CO. (S.A.).**—Head office: 8 rue Nabi Daniel, Alexandria. Headquarters of working. Ismailia. Established in 1906 as a reconstruction of the Société Electrique d'Ismailia. Capital: £E 35,200, comprising 17,600 ordinary shares of £E 2 each. Administration: Dr. Emile Hahnloser, A. Reinhart, J. G. Jacot Descombes, René Delaquis, Frédéric Alleman. Manager, S. Ambache.

**FILATURE NATIONALE D'EGYPTE (S.A.E.).**—Canal Mahmoudieh, Karmous. Established in 1899 under the style of the Anglo-Egyptian Spinning & Weaving Co. Ltd., adopting the present title in 1912. Head office: rue Port-Est, imm. Rofé,

Alexandria Capital £150,000, made up of 37,500 shares of £4 each, all fully paid. Financial year ends September 30. Administration M C Salvago (president), H Barker, A J Lowe, Ibrahim Rolo, Oswald J Finney, and L. Gasche (managing director).

**KAFR EL-ZAYAT COTTON COMPANY LTD.** Karmous, near Alexandria. Engaged in the working of grain mills at Kafr el Zayat, oil mills at Alexandria and Kafr el-Zayat, soap factories at Alexandria and Kafr el-Zayat, also dealing in and exporting cotton. Capital £120,000, divided into shares of £5, fully paid. Administrative Council: H Swinglehurst (president), C Watson (vice-president), A Padoa, A Bimsenstein and Vladimir Sursock. Managing director, Jean P Zerbin.

**NATIONAL INSURANCE COMPANY OF EGYPT.**—19 rue Nébi Daniel, Alexandria. Founded in 1900. Manager, A Sevastopulo.

**NEW EGYPTIAN COMPANY LTD.**—Head office 4 rue Adib, Alexandria. London office Pinner's Hall, Austin Friars, E.C. Capital £375,000 in 500,000 shares of 15s each. Chief operations the reclamation of agricultural estates in Egypt, which are purchased in a semi-reclaimed state and, when fully reclaimed, are sold to the fellahs in small plots, generally from 2 to 20 acres each. Land purchasers usually pay 50 per cent of the sale in cash and the balance in ten annuities with 7 per cent interest. The company has estates in both Upper and Lower Egypt, generally of about 2,500 acres each. Directorate: H E Barker (chairman), S Bonan (managing director), V F Naggiar, Edward Nathan. Manager, E J Perkins, secretary, Alfred Beinau. Cables, "Obchisk," Alexandria, and "Octuplette," London.

**PORT SAID SALT ASSOCIATION LTD.**—5 rue Toussoun Pacha, Alexandria. Engaged in the production and sale of salt. Capital £100,000, of which £80,000 is issued in 10s shares. Administration S Wellhoff (president), E Vermond, G Savon, P Fabri, S Tivoli. Manager, J A Bortolotti.

**SALONICA CIGARETTE COMPANY.**—18 rue Rassafah, Moharrem Bey, Alexandria. Founded in 1903. Capital £63,084. Administration G Grassi (president and delegate-director), Isaac Errera and S Pinto.

**SOCIETE ANONYME DU BEHERA.**—27 rue Chérif Pacha, Alexandria. Established in 1881, reconstituted in 1894. Engaged in agricultural and irrigation works, and all similar enterprises. Capital £1250,500, made up of 50,000 ordinary shares of £25 each, with 100,000 preference shares of £5 each, redeemable. Financial year ends January 31. Administration, M C Salvago (president), Ed Bourre, F S Richmond, F W P Foster, C M G, E Monnerat, O J Finney, R Ismaili, S Lagomco and H A Finney. Manager, G C Foster, managing director (territorial section), R W Andrews, manager (industrial section), F D Scott. Secretary and chief accountant, E Mordo. Bankers, National Bank of Egypt. Auditors, Russell & Co.

**SOCIETE ANONYME DES BIERES BOMONTI ET PYRAMIDES (S.A.E.).**—7 rue Averoff, Alexandria. Established in 1922 as successors to the Société Anon des Brasseries d'Egypte, the latter being established in 1909. Engaged in brewing beer, ice manufacturing, and decorticating rice. Capital Frs 4,000,000 at par, divided into 40,000 shares normally frs 100 each. Administration Jacques Ruch, Zurich (president), Rod Jost, Alexandria (delegate director), Curt Bomonti, Alexandria, Michel A Ralli, Alexandria, Jean Simmen, Alexandria. Alexandria offices, Usine Karmous and 7 rue Averoff, Cairo offices, Usine Gizeh and rue Elmad el Dine, imm Khedivial C.

**SOCIETE ANONYME "CROWN BREWERY."** Alexandria. Established in 1897. Brewers, ice and mineral water manufacturers. Plants at Ibrahimieh, Alexandria. Ice factory at Choubrah, Cairo. Head office Brussels. Capital Frs 2,701,000, comprising 27,010 shares of frs 1,000 each. Administration Ed Crewe (president), M Raybaud (delegate director), A Roland, A Bolonachi, F Rom, and Ch Cantoni (managing director).

**SOCIÉTÉ COMMERCIALE D'EGYPTE.**—8 rue Chérif Pacha, Alexandria. President, John Sinadino. Directors, S Sinadino and Ed Camilleri.

**SOCIÉTÉ DES ETABLISSEMENTS GAUMONT.**—2 rue Sidi Mehrez, Alexandria. Head office 57 rue St Roch, Paris. Works 28 rue des Alouettes and 35 rue du Plateau, Paris XIXe. [Capital Frs 10,000,000. Manager for Egypt, Syria and Palestine, René Labouret. Cables Cineloka.]

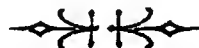
**SOCIETA EGIZIANA PER L'ESTRAZIONE ED IL COMMERCIO DEL FOSFATI.** Imm Banco Italo-Egiziano, Alexandria. Founded in 1912. Controls mines at Kosseir (Red Sea) and Sebarch (on the Nile, Upper Egypt). Administration Comm Grisante Vannucci (president), Cav Ing Emilio Bossa, Ing M Ismaili, Ing Luigi G. Maggioni, Ing Camillo Marchese, and Comm Av O Spigarelli.

**SOCIÉTÉ ELECTRIQUE DE LA BASSE-EGYPTE.**—rue Sidi Metwalli, Bur de la Cie du Gaz, Alexandria. President, Pierre Lebon (Paris), delegate director, J P de Suziri (Alexandria), manager, R M Manzoni (Iantah).

**SOCIÉTÉ GÉNÉRALE D'ELECTRICITÉ ET DE MÉCANIQUE.**—(Anciens Etabl Ing Nahman & Co and Ing Guido Maroni) 7 rue Gare du Caire, Alexandria, also at Cairo. Delegate-director, Benvenuto Campos, manager, Jacques J Bensussan.

**SOCIÉTÉ ORIENTALE DE PUBLICITÉ.**—28 rue Chérif Pacha, Alexandria. Founded in 1906. Branches at Cairo, Paris and London. Capital £40,000, comprising 10,000 ordinary shares of £4 each, 2,500 founders' shares without stated value are also issued. Financial year closes March 31.

**UNION COTTON COMPANY OF ALEXANDRIA.**—(Late V Toriel & Fils) 5 rue de la Gare du Caire, Alexandria. Delegate-director, Raphael Toriel.







GENERAL VIEW OF

## PORT OF

**A**LEXANDRIA was founded by Alexander the Great in 331 B.C. with the object of establishing a central port for the Levant and Middle East trade. This characteristic it maintained until the rise of Constantinople in the fifth century A.D., and now, after a long period of decline, the port has again taken its place in the Mediterranean as the leading entrepot of the Levant. Its early glory was long unaffected, as the Ptolemies, and afterwards the early Roman Emperors, made Alexandria the emporium of the world's commerce. The fleets of Rome carried back the silks, perfumes and precious stones of India and Persia to the Imperial City, while Egypt provided wheat and was the granary from which the turbulent populace of Rome drew its supplies.

The original harbour, of which the remains may still be traced under water, was divided by a mole, at the end of which stood the famous lighthouse, or Pharos. In the Middle Ages the port sank into comparative insignificance, being superseded by Damietta. The modern harbour dates from the reign of Mohammed Ali, whose genius transformed Egypt from a backward Oriental State into a wealthy agricultural country. Cotton, sugar and rice were first scientifically cultivated under his direction, and, as a natural complement to the creation of a transport trade, he realised the need of an adequately equipped port.

The Bassin de l'Arsenal was completed in 1837, and from that date onwards the construction of quays and breakwaters proceeded apace. By 1870 traffic had grown to such proportions that Khedive Ismail decided on new works. A number of quays, Customs sheds, and also the coaling quay, to which was added a protecting breakwater, were constructed at a cost of over £3,000,000 and were completed in 1880. They were, however, insufficient to meet the growing needs of the port, and extensive additions were found necessary. In 1890 the rocks around the entrance were removed to free the passage for ships of a deeper draught. A second channel was cut in 1907 to a depth of 34 feet. The largest liner can now enter, though it is not yet possible to berth it alongside the quays.

Later periods of construction were those dating from 1908 and 1913 respectively, when three projecting jetties were opened, the coaling quays were extended, the old breakwater was enlarged and a new one constructed, finally the two fine moles, E and K, with their warehouse accommodation, were built. Since 1870 the sum of approximately £5,500,000 has been spent on harbour works.

**ACCOMMODATION.**—The harbour of Alexandria is divided into an inner and an outer one, the former having an area of 466 acres, with a maximum depth of 40 feet. The outer harbour is 1,400 acres in extent, and has a maximum depth of 60 feet. The total linear quay space amounts to rather more than 12,000 metres, with depths alongside carrying from 12 to 30 feet.

The port is protected on the west by an exterior breakwater 7,856 feet in length, and on the south by a breakwater which also includes the quarantine landing stage. This quay to the Quai aux Charbons forms the Outer Harbour. In the area are the veterinary quarantine station, wharves for discharging nitrates, timber quays and the section known as Gabbari, at which is landed dangerous and inflammable merchandise. These last have special warehouses, in which matches, oils, acids and other inflammable articles are stored. In the same locality are petroleum tanks for the storage of oil in bulk.

The Inner Harbour, which is separated from the Outer Harbour by the coaling quay, is well protected against storms and has sufficient room for manœuvring. Next to the Quai aux Charbons is the Quai de Mahmoudieh (Mole E), which has an average depth of 22 feet (30 feet at berths Nos 34 to 41). It is a spacious and well-equipped mole, and was built to relieve the congestion at the Quai Central, Nouveau Quai and Quai de l'Arsenal. These three quays form the central and the busiest portion of the port. The passenger ships of the Messageries Maritimes, Societa Italiana de Servizi Marittimi (Sirmar), Lloyd Triestino and Fabre Lines, which have regular sailings to and from Europe, utilise these quays, and

in addition the cargo vessels of the Prince, Fillerman, Hall, Papayanni, Bruce, Moss and other Lines. The headquarters of the Customs Administration are in this section, and also the large bonded warehouses belonging to the Egyptian Bonded Warehouses Company, Limited. Vessels of 10,000 net registered tonnage may come alongside, the average depth of water being 22 feet. Adjoining the Quai de l'Arsenal is a landing and mooring stage (Bassin de l'Arénage) for small steamers and sailing vessels. This area, together with the wharf of the Khedivial Mail Steamship Company and the Bassin de l'Arsenal, was the old port of Mohammed Ali.

**WAREHOUSE ACCOMMODATION.**—The Customs Administration possesses a number of stores in all sections of the port, and in addition the warehouses of the Egyptian Bonded Warehouses Company Limited provide 53,000 square metres of accommodation in buildings fitted with electrical hoists and overhead cranes. By the Law of October 4, 1885, Alexandria was made a warehousing port, and consequently was rendered free for all nations to deposit and re-export merchandise without paying export duties. The effect of this law was soon felt, and a steady development has since taken place in outward transit to the Levant ports. The Egyptian Customs Administration does not publish statistics of goods arriving in bond and subsequently re-shipped in transit, but the following figures for 1925 are supplied by the Egyptian Bonded Warehouses Company, Limited: Rice, 31,532 metric tons, valued at £E.591,231; coffee, 1,541 metric tons, valued at £E.205,578; sugar, 22,294 metric tons, valued at £E.410,212; flour, 51,442 metric tons, valued at £E.1,028,855; cereals, 45,936 metric tons, valued at £E.57,788. In addition to the above, the Customs give the value of all re-exports as £E.1,040,000 for 1924.

The Customs Administration has a special warehouse in which all imported tobacco is stored.

**ANCHORAGE.**—The anchorage is good in both the inner and outer harbours, and there are no tides.



ALEXANDRIA HARBOUR.

## ALEXANDRIA

**BUNKERING.**—The coaling quays separate the Outer from the Inner Harbour. They possess 2,613 linear metres of quay line, and have berths for 12 colliers. The average depth is 20 to 30 feet. They are fitted with five overhead electrical cranes, which have a discharging capacity of 1½ tons per hoist. In nine working hours 350 tons may be handled. Bunkering is conducted day and night, and local labour is available. There are sufficient railway sidings, with a shunting and marshalling yard.

For bunkering oil-driven vessels there are pipe lines running out to a small jetty. No special oiling basin to accommodate tankers exists, but vessels stand off the Gabbari wharves or moor alongside the jetty if of light draught. Twenty tanks, having a capacity of 90,000 tons, are within convenient distance of the quay. Oil is obtained from the Red Sea oil fields, Rumania, Persia, and elsewhere.

**CARGO HANDLING.**—The shipping companies using the port land or ship their own merchandise. For heavy weights the port authorities possess floating sheers with lifts of 40, 20 and 8 tons respectively. The Khedivial Mail Steamship and Graving Dock Company, Limited, has a floating crane lifting 5 tons, and Messrs E. Barber & Sons have one of 20 tons. The Customs authorities, or the Egyptian Bonded Warehouses Company in the case of merchandise received direct from the quays into bond, transport all goods from the wharfside to the Customs sheds. The present charges of the Customs authorities range from 80 milhemes per metric ton to 160 milhemes, according to the kind of article.

**COMMERCIAL IMPORTANCE.**—The enlargement of the port undertaken by Khedive Ismail between 1870 and 1880 was the result of the steady growth in Egypt's prosperity brought about by the large increase in the area of cultivable land and the greater value of the crops produced. The far-sighted schemes of Mohammed Ali, which involved the introduction of improved methods of irrigation, were now bearing fruit, and to these must be added the vast sums expended upon public works by the Government and also by the Khedive, which

were contributory causes of the increase in trade reflected in the import and export returns of that period. Alexandria by reason of its position became the distributing centre for Egypt, and though at the time Ismail's ambitions of port construction were regarded as too imposing and costly, they proved within the short space of ten years inadequate to meet the growing demands of commerce.

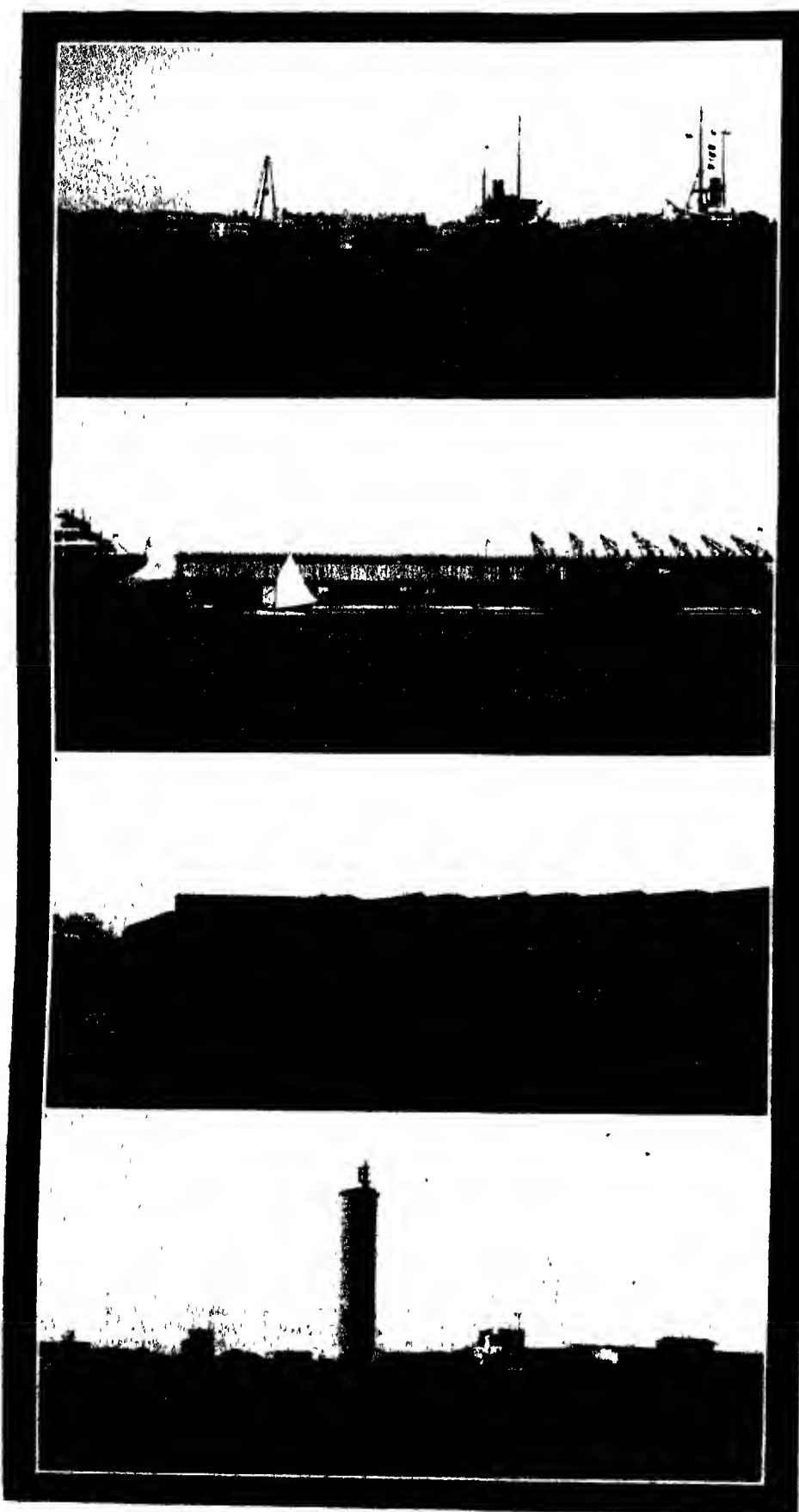
The average number of steamers entering the port for the years 1880-83 was 1,054, of a net registered tonnage of 1,096,000. By 1913 these figures had risen to 1,932 vessels of 3,719,000 tonnage. For 1924 the returns showed a slight decrease in the number of entries—1,881—but the tonnage, 4,206,760, had increased. Of these, 501 vessels were British, of a total net tonnage of 1,433,951. The quantity of merchandise entering amounted to 2,688,182 tons, and that shipped to 1,306,813 tons. From these figures it will be seen that Alexandria takes rank as the third Mediterranean port, following Marseilles and Genoa.

**IMPORTS AND EXPORTS.**—The value of imports through the port of Alexandria for the year 1924 was £E 37,500,447, of which tobacco was valued at £E 940,885. Exports amounted to £E 64,003,175, cotton and cotton-seed being the main items. For the season 1923-24 (September to August) 7,021,543 kantars of cotton, valued at £E 54,307,184, were shipped (a kantar = 99 lbs.), and 2,464,205 ardebs of cotton-seed valued at £E 2,974,574 (an ardeb = 267 lbs.). Shipments of cotton during the year ended August 31, 1925, totalled 7,086,874 kantars. The average of the exports of these two commodities for the five years 1920-1924 was Cotton, 5,947,684 kantars, valued at £E 52,204,920, cotton-seed, 2,304,873 ardebs, valued at £E 3,005,704. Through the port of Alexandria pass 74 per cent of Egypt's imports and 97 per cent of her exports.

**COMPETING LINES.**—London, Liverpool and Hull are in constant touch with Alexandria, the "Prince Combine," which includes a number of British lines, maintaining regular services. German and Dutch competition lies between four companies, of

which the Deutsche Orient Line is the most important. Antwerp is served by the Compagnie d'Entreprises Commerciales. A certain volume of trade is now being carried on by these vessels from Hull and other British ports. The Fabre, Dollar and Sitmar lines maintain regular sailings to and from the United States, and in addition there are frequent calls by American ships carrying petroleum products and general merchandise, of which motor cars form an important item. The large Mediterranean companies, French and Italian, run finely equipped passenger vessels and cargo steamers to and from European ports, and the Messageries Maritimes to Marseilles, the Societa Italiana di Servizi Marittimi (Sitmar) to Naples and Genoa and the Lloyd Triestino to Venice and Trieste. Subsidiary routes served by the Sitmar, Lloyd Mediterraneo and other Italian lines embrace the principal and many of the smaller ports of the Levant, while the Messageries steamers also run to Palestine, Syria and Greece. The Khedivial Mail Steamship and Graving Dock Company, a British concern, maintains a regular service to Cyprus, Constantinople and Asia Minor ports, as well as to the Red Sea. The steamers of the Royal Rumanian State Line call at Constanza and Black Sea ports. There is one company flying the Egyptian flag. During the tourist season the Cunard, White Star and other Atlantic liners call with passengers. The importance of Alexandria as a passenger port is shown by the number of persons disembarking during 1924, when the total reached was 49,774, and of those embarking 51,712.

**DRY DOCK.**—In 1903 the Egyptian Government purchased a dry dock, completed the previous year, from the Khedivial Mail Steamship Company. Its length is 520 feet and breadth at entrance 64 feet, while the depth of water at the sill is 23 feet. Three patent slips also exist in the Government Arsenal, available for small vessels up to 400, 200 and 90 tons dead weight respectively. For its volume of trade the port is poorly served in this connection, the nearest dry docks of importance being at Genoa and Naples. Minor ship repairs can be carried out locally.



PORT OF ALEXANDRIA.

1. Arsenal Basin.
2. New Sheds with Electric Cranes on Mole E.
3. Timber Sheds.
4. Ras-el-Tin Lighthouse.

**HARBOUR IMPROVEMENTS.**—In 1925 the Egyptian Government invited three marine engineers of international reputation to study and report upon a project involving the expenditure of £E 3,000,000 upon the port of Alexandria. The need has been long felt of measures which will relieve the present congestion of shipping in the Inner Harbour, and will allow the larger passenger and cargo vessels to berth alongside the wharves, while the present rapid expansion in the trade of the port and the increase in the volume of imports have also rendered improvements a matter of economic necessity. Early in 1926 the Commission submitted a scheme providing for improvement works estimated to cost about £E 5,000,000, spread over a period of 15 years. Work was expected to start on the construction of a new quay in April 1926. The harbour is to be deepened from 30 to 37 feet, quays are to be constructed in the Outer Harbour for the discharge of oil, the coal wharves are to be lengthened, and additional warehouses are to be erected on Moles E and K. Proposals are also being examined with a view to improving Damietta Harbour at a cost of £E 1,500,000, and providing shelter for shipping at Marsa, Matruh and Kossir. It should be mentioned here that European vessels do not at present trade at Damietta on account of the shallowness of water.

**MAHMOUDIEH CANAL.**—The Mahmoudieh Canal enters the inner harbour at the base of the Quai de Mahmoudieh. This waterway, along which there is a considerable goods traffic to Cairo, particularly in coal and building material, connects Alexandria with the River Nile and provides a cheap method of transport by sailing and steam barges, the time taken being usually three to four days. Some 220,000 tons of merchandise passed through the locks inwards during 1924, and 16,500 tons outwards to the port.

**PILOTAGE.**—Pilotage is not compulsory. Dues are: On entry and departure, £E 1,600 millimes for vessels of 25 feet in length, and £E 2,400 millimes for those over 20 feet in length. For mail and coastal steamers the dues are reduced one-sixth and 50 per cent respectively.

**PORT CHARGES.**—Light dues at all Egyptian ports are 5 millimes per ton up to and including 800 tons, and 2½ millimes per ton over 800 tons. For mail and coastal steamers a reduction of 50 per cent and 25 per cent respectively is made.

**BERTHAGE DUES** 20 millimes per linear metre and per day.

**COAL STORAGE**—For storage of coal on quays 7 millimes per square metre and per week.

**PAVING DUES** — ½ per mille ad valorem for all merchandise imported or exported.

**QUARANTINE DUES** — Navigation tax per ship, £E 1, passenger tax per head arriving in or departing from Egypt, 150 millimes, night service of any kind, £E 1. Mooring boat, 450 millimes.

**QUAY DUES** — 4½ per mille ad valorem for general merchandise imported, and 12 per mille ad valorem for general merchandise exported.

**TONNAGE DUES** — Those dues levied per ton on entering and leaving are: for mail steamers, 12½ millimes; coastal steamers, 7½ millimes; other steamers, 15 millimes; sailing vessels, 3½ millimes. Barges and lighters pay a fee of 35 millimes per ton and per year. Vessels in ballast are allowed a reduction of 50 per cent.

**WATER.**—Water is supplied at buoys or to vessels anchored in harbour at 12 P.T. per ton.

**RAILWAY FACILITIES.**—Alexandria being the principal distributing centre for Egypt, it follows that the system of rail communication should be extensive and modern. A goods station at Gabbari serves the port, and on all wharves railway sidings are laid, but hitherto the lack of wagons has restricted their full use. The Railway Administration has recently placed large orders for rolling stock and locomotives, which are badly needed to replace the worn-out wagons of the War period.

A new central station in the city is in course of construction, and plans are projected for the erection of a small station and yard from which goods loaded in the Customs enclosure may be laded, in place of being shunted as at present to different parts of the port.

**TIME SIGNALS.**—A black ball is hoisted at the Signal Station, Fort Napoleon, and dropped at noon Egyptian railway time, equal to 22h 0m 0s Greenwich mean time and 23h 50m 33s local mean time. A gun is also fired from Fort Caffarelli at the same time. A second signal is made at 1 p.m. Alexandria mean time is equal to 23h 0m 27s Greenwich mean time. (See also article "Shipping.")

## REPRESENTATIVE OIL, SHIPPING AND OTHER ENTERPRISES

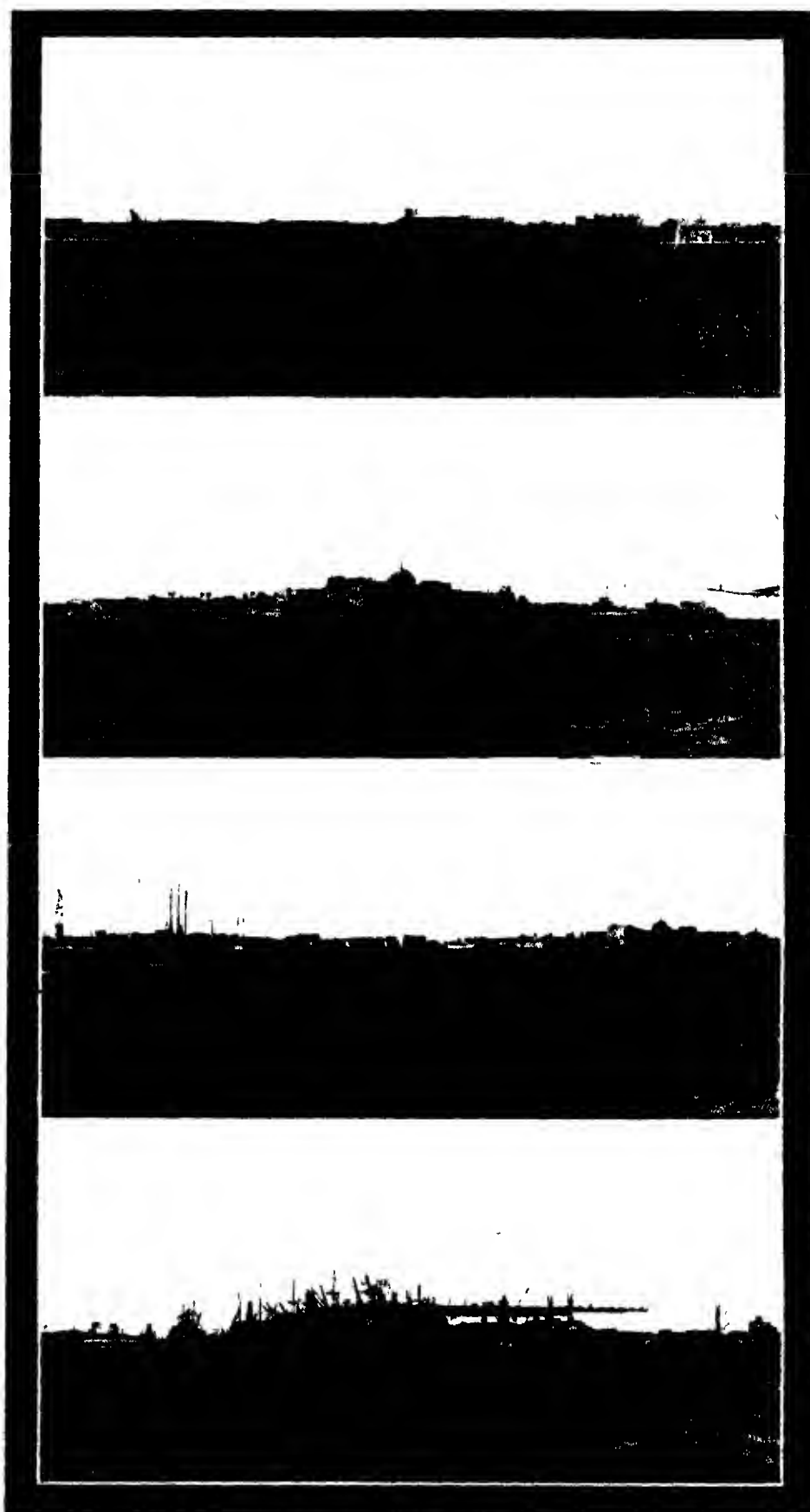
### VACUUM OIL COMPANY.

**Inception.** The present proud position of the Vacuum Oil Company in the industrial world is the accumulated result of over sixty years' manufacturing experience, the foundation dating back to October 6, 1866.

**Development.**—The life of the company covers practically the entire history of the mineral oil industry, and the story of its world-wide growth is one of the romances of modern business. Even in these days of gigantic enterprises, comparatively few other companies can boast of an organisation reaching from China to America and from Scandinavia to the Cape of Good Hope.

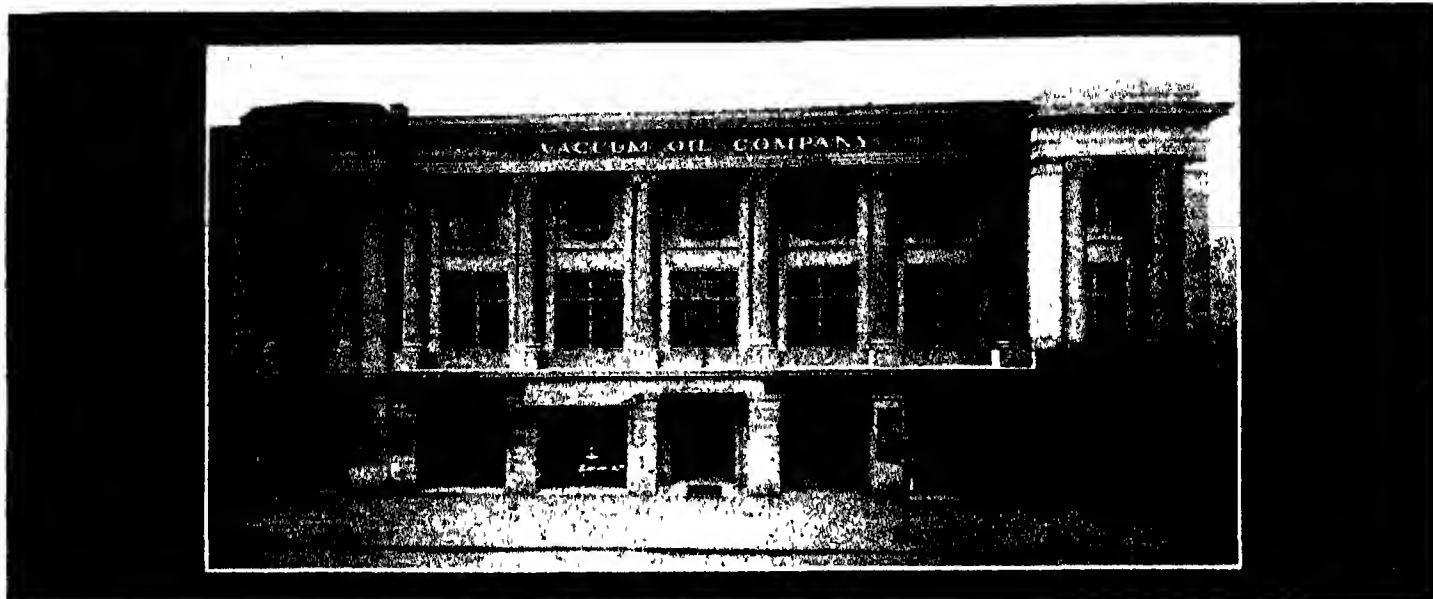
**Establishment in Egypt.**—In pursuance of its policy of world-wide distribution, the company turned its attention to Egypt many years ago, and soon the Mediterranean, Suez Canal and Red Sea ports on the main maritime traffic route of the Old World were components in a globe-encircling chain of service. In those early days the celebrated lubricants of the company were handled by a commission agency at Port Said. Consequent upon the inevitable expansion of trade this service was deemed inadequate, and a branch of the parent concern, the Vacuum Oil Company of New York, was established at Cairo.

**Progress.**—During the ensuing ten years this rapidly flourishing branch took under its dispensation the neighbouring countries, Palestine, Syria and the island of Cyprus, the central organisation developing accordingly. Such expansion continued unchecked, save when bulk supplies of petroleum and benzine were interrupted in transit by the War and by 1917 were unobtainable. Then, apart from business in lubricating oils, the activities of the branch were practically at a standstill, until the arrival at the end of April 1919 of one of the company's own fleet of tankers, the "Paulsboro." Since that date progress has been steadily continuous, the Sudan, Turkey and Greece having been



PORT OF ALEXANDRIA.

1. General View of S.W. entrance to the Harbour.
2. His Majesty's Ras-el-Tin Palace.
3. Ras-el-Tin Lighthouse (left) and Royal Palace (right).
4. Coal Quays.



VACUUM OIL COMPANY, Cairo  
The Head Office of the Vacuum Oil Company adorns the chief thoroughfare  
(See *Interpress*, page 103)

included in the area controlled from the Cairo headquarters. In the two last-named countries only lubricants are dealt with.

**Staff.**—The original staff at the Cairo branch comprised the general manager and eleven others. At the present stage of its development the Egyptian branch, with headquarters in that city, has over 700 employees in the countries under its charge, and is recognised as one of the most important industrial and commercial establishments in this part of the world.

**Lubricating Oils.**—The Vacuum Oil Company's lubricating oils are imported in original packages from the company's refineries at Rochester and Olean (New York), Bayonne and Paulsboro (New Jersey), to be marketed throughout the Near East under the familiar "Gargoyle" trade mark. The company's automotive lubricants, bearing the pro-

prietary brand-name of "Gargoyle Mobiloil," are obtainable in every city or village of the Near East where motor cars are driven.

**Benzine.**—The name of one of the country's most famous antiquities has been adopted to distinguish the company's brand of benzine, and reproductions of the "Sphinx" on benzine containers, tank waggons or wall signs, with inscriptions in English and Arabic, are to be encountered in every village throughout Upper and Lower Egypt, the Sudan, Palestine and Syria.

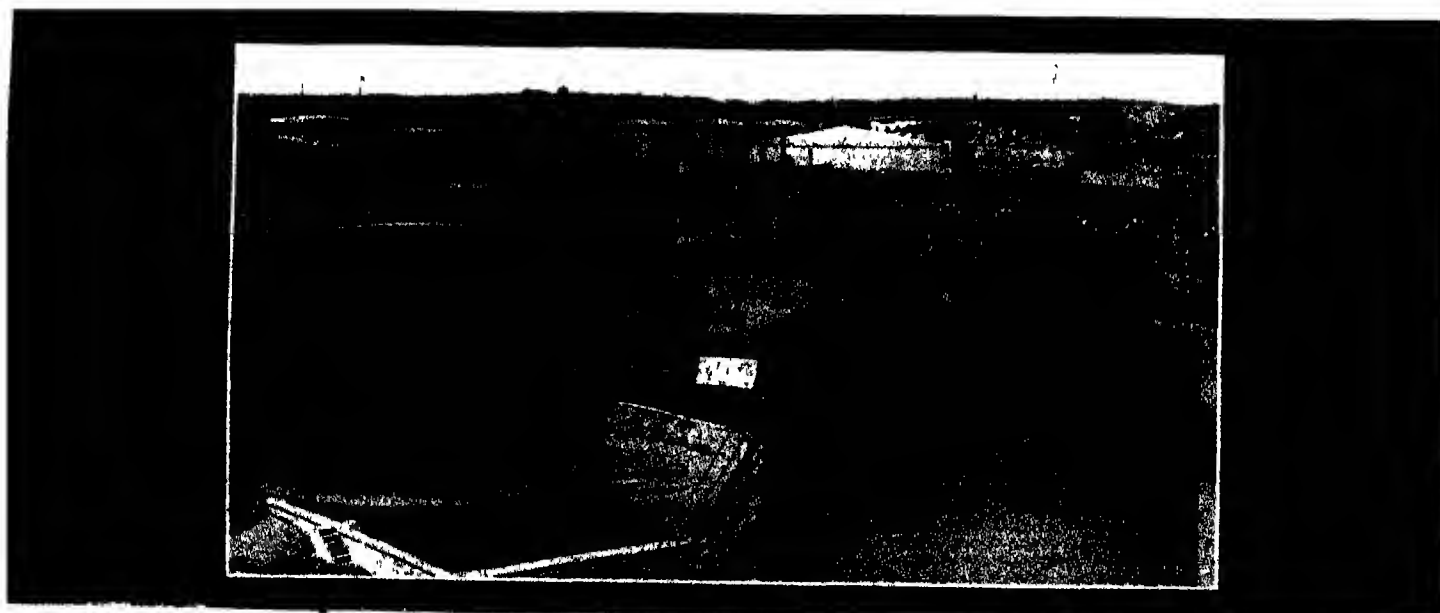
**Petroleum.**—In Egypt the "Elephant" is the identification mark of the petroleum distributed by the company while in Palestine, the Sudan and Syria the "Sunflower" brand of petroleum enjoys a firm reputation for high burning qualities.

**Storage and Distribution.** A modern petroleum installation has been developed

in recent years at Gabbary (Alexandria), with facilities for storing over 1,000,000 gallons of benzine and almost 7,000,000 gallons of petroleum. From this point supplies are sent in bulk and in tins to the company's depots and agents throughout the territory under the control of the Egyptian branch. These depôts in turn supply the whole of the interior regions, so that the service has become an integral part of the industrial resources of the area administered.

**Offices.**—New York (general offices) 61 Broadway, Cairo 6, Sharia Nubar Pasha, Alexandria, 3, Place Mohamed Aly, and Port Said. Cabiles "Vacuum," New York, Cairo, Alexandria, or Port Said.

**Bankers.**—Barclays Bank, Egypt, Anglo-Palestine Bank, Syria and Palestine, Bank of Athens, Greece, Ottoman Bank, Turkey, Ionian Bank, Ltd, Cyprus.



VACUUM OIL COMPANY, Cairo.  
The Firm's Petroleum Wharf at Alexandria. Modern Plant with capacity of 1,000,000 gallons of Benzine and over 6,000,000 gallons of Petroleum; a Tin Factory and extensive Offices are included in the equipment.  
(See *Interpress*, page 103)





VACUUM OIL COMPANY, Cairo

Motoring Visitors to the Sphinx and Pyramids at Giza are supplied with "Sphinx" Benzine and "Gargoyle" Mobiloil lubricants at this attractive Arabesque Kiosk at the foot of the Pyramid Plateau, opposite the famous Hostelry of Mena House. The second Pyramid (of Chephren) is visible in picture (See letterpress, page 103)

#### R. J. MOSS & CO.

**Inception.**—One of the oldest shipping firms in Alexandria and actively engaged in other branches of commerce, this well-known company has a record closely interwoven with the history of Egyptian trade for over 65 years. It was founded in 1861 by R. J. Moss and W. B. Moss, sons of William Miles Moss, senior partner in the firm of James Moss & Co., of Liverpool. The latter enterprise controlled a fleet of steamers inaugurating in 1850 the direct line from Liverpool to Alexandria and the coast of Syria. Formed into a private limited liability concern under the name of The Moss Steamship Co., Ltd., in 1873, with James Moss & Co. as managers, it is now owned and controlled by the large shipping group of which Lord Kylsant is Chairman.

**Shipping Activities.**—Since 1864 Messrs. R. J. Moss & Co. have been agents for the Moss Steamship Co. Ltd., which, as a signatory to the Alexandria Cotton Freight Agreement, carries its proportion of cotton to Liverpool, Manchester and the United States. They represent, in addition, Messrs. Bibby Bros. & Co., The Blue Funnel Line, the Orient Line, Messrs. Dims & Jas. Harrison, Messrs. H. E. Moss & Co., Messrs. Leopold Walford (London) Ltd., and others. They are also important charterers of steamers, principally employed in the carriage of cotton-seed and cake, eggs, onions and general cargo, from Alexandria to United Kingdom and other ports.

**Shipment of Cotton and Cotton-seed.**—In 1863 the young company undertook an experimental shipment of cotton-seed to Marseilles, and two years later shipped

the first cargo of that commodity reaching London. In the early days cotton itself was consigned in cumbersome, handpressed bales bulking from 65 to 85 cubic feet and weighing 500 to 650 pounds. In 1863 Messrs. R. J. Moss & Co. decided to employ steampresses, the first introduced into Egypt, and were speedily turning out compact bales occupying but 30 to 32 cubic feet.

**Coal.**—The firm entered the coal trade in 1864 and is the oldest enterprise in Alexandria so engaged at the present day. Bunkering contractors on many occasions to the British Navy and large shipping firms, it does a considerable trade with the interior, and has agents in the most important towns.

**Insurance.**—The company acts as marine agents for the Standard Marine Insurance Co. Ltd., the Norwich Union Fire Insurance



R. J. MOSS &amp; CO., Alexandria.

1. Moss Line Steamer loading Cotton and Cotton-Seed at Alexandria.

2. Moss Line Steamer discharging at the Company's Coal Quay.

Society Ltd, the Eagle Star & British Dominions Insurance Co Ltd, Elders Insurance Co. Ltd. and as fire agents for the Pearl Assurance Co Ltd

**Merchants.**—Messrs R J Moss & Co are always willing to advise merchants wishing to establish a business connection in Egypt

**Address.**—6 Boulevard Ramleh, Alexandria Cables "Moss," Alexandria Codes Scott's, Bentley's, Watkin's, A.B.C. 5th and 6th Editions

**Bankers.**—Anglo-Egyptian Bank (See also illustration page 105)

# EGYPTIAN BONDED WAREHOUSES CO., LTD.

**Inception.**—Authorised by Khedivial decree of May 25, 1888, as the Alexandria Bonded Warehouses Co. Ltd, this Egyptian company adopted its present style in 1907. Under the terms of a concession granted by the Egyptian Government, originally operative for a period of 25 years terminating in 1913, subsequently prolonged to 1942 and since extended to December 31, 1965, the company receives into its warehouses general merchandise deposited in bond

**Capital.**—The capital of the company, of which the first issue was £25,000, stands to-day at £230,395, divided into 40,000 ordinary shares of £4 each and 9,279 preference shares of £5 each. This capital is invested chiefly in buildings owned by the firm in Alexandria, Cairo, Port Said and Suez

**Activities.**—Operations in bond are carried out under the direct supervision of the Egyptian Customs Administration, the tariffs of the company being approved by the Director-General of Customs. In addition to warehousing goods in bond or after the payment of duty or for export, the company issues warrants which are negotiable documents transferable by endorsement. It undertakes also the handling of all classes of merchandise, the loading and unloading of goods on and from ships and railways, clearing and all customs formalities, forwarding, sales by public auction, and acts in addition as insurance agents

**Warehousing of Imports.**—Full cargoes are received into the company's stores on discharge from steamers. Special arrangements are made for the storage of flour, wheat, barley, coffee, rice, sugar, potatoes and other articles shipped in large quantities,

which are received direct from the quays into warehouses, the extra charges for transport into the Customs stores being thus avoided. A period of free storage is allowed. Practically the entire importation into Egypt of the commodities named is received into the bonded warehouses at Alexandria or Port Said. At present importers of cotton goods and other articles are accorded the advantage of storing bales at a fixed rate on a tonnage basis for a period of twelve months under contract arrangements.

**Alexandria Warehouses.** In Alexandria, the centre of Egypt's foreign trade, there is within the Customs enclosure warehousing accommodation amounting to 53,000 square metres, and outside that area a building for receiving duty-paid goods. In addition to these warehouses, the company's property, some 15,000 square metres of covered space were leased from the Customs Administration in 1925. The warehouses are fitted with sprinklers and drenchers, affording adequate protection against fire. The system, installed at a cost of £21,000, enables depositors to enjoy a minimum rate of insurance against fire risks. Electrical lifting apparatus, overhead cranes and other appliances ensure rapid handling.

The total entries in bond for Alexandria were 522,863 tons in 1925, as against 403,793 for the previous year. The former total included 182,000 tons of flour, 103,000 tons of cereals, 61,000 tons of sugar, 81,000 tons of rice, and 13,800 tons of cotton goods. For the same period the principal figures for exportation from bond were 54,000 tons of flour, 32,000 tons of rice and 25,000 tons of sugar.

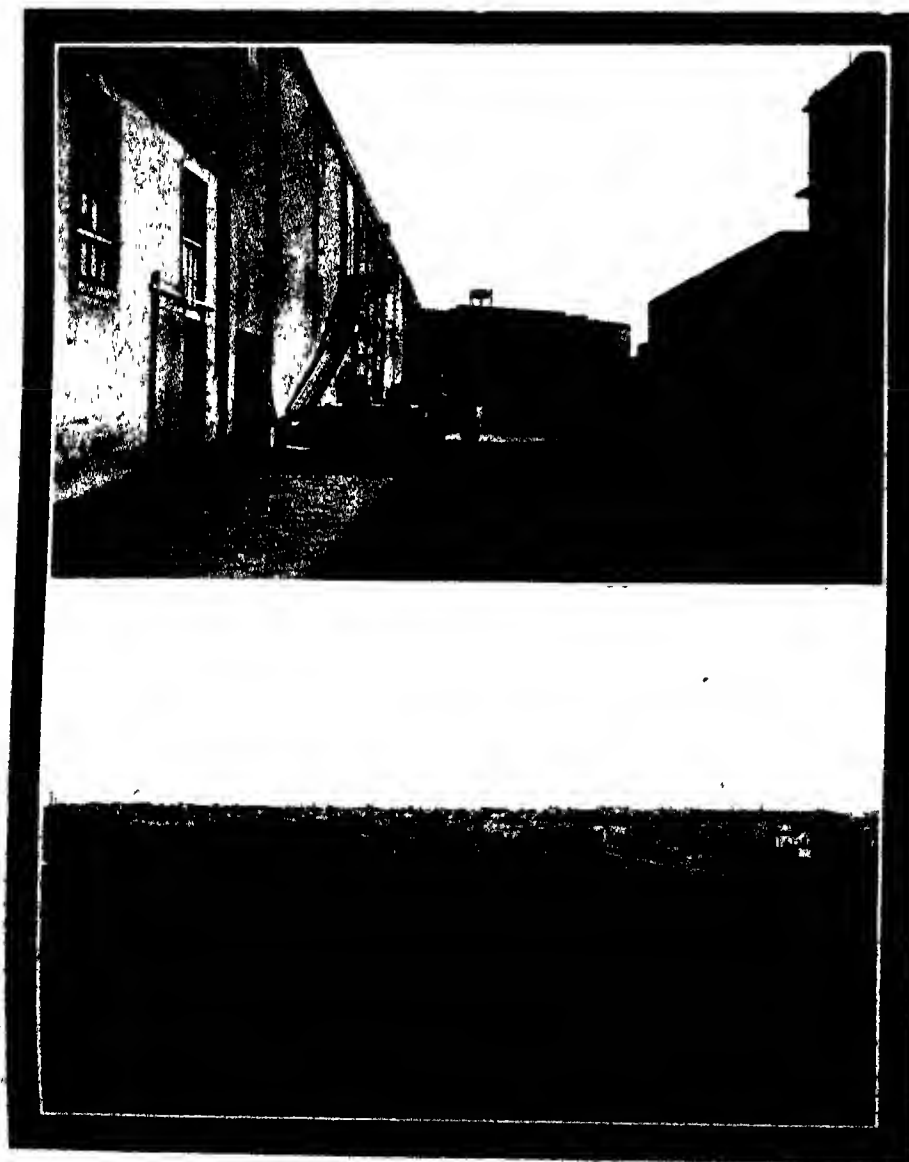
**Cairo Warehouses.** In Cairo the company acts on behalf of the Customs Administration for warehousing all goods in bond forwarded from Alexandria and other Egyptian ports. The accommodation for tobacco (of which during 1925 some 98,000 bales were received) and general merchandise amounts to 9,000 square metres, and the railway track alongside the warehouses enables off-loading direct under Customs supervision into the stores. On the banks of the Nile at Boulac (Cairo) another property is equipped with hangars for the reception of duty-paid goods dispatched by river.

**Port Said.** Special conditions arise at this port owing to the existence of a free zone within the precincts of the Suez Canal. In this area goods are relieved from the obligation of Customs supervision as well as the payment of duty, and as the Customs section adjoins the free zone, goods may conveniently be transferred from one area to the other. The company provides four warehouses for the reception of goods in the free zone, while maintaining within the Customs enclosure other warehouses for storing goods in bond. Special hangars are furnished for inflammable or dangerous articles. Such adequate provision for the reception and storage of goods has raised the degree of disposability of merchandise to a maximum for transit, transhipment, and also for importation.

During 1925, 129,000 tons of merchandise were received. Of this quantity, 60,000 tons were entered as transit and transhipment goods.

**Suez.**—This port is utilised chiefly as the entrepôt for gunny bags employed in packing agricultural produce, 7,200 bales being the complete importation during 1925.

**Total Entries.**—The entries for all the company's warehouses in Egypt totalled 720,395 tons in 1925, compared with 577,917 tons in 1924 and 543,996 tons in 1923.



EGYPTIAN BONDED WAREHOUSES CO. LTD., Alexandria.  
1. Looking towards "D" Block, the most recent addition to the Company's Warehouses.  
2. From the roof of "D" Block, looking towards "A," "B" and "C" Blocks.

**Staff.**—The company employs, in addition to clerical personnel, a large staff of competent warehousemen. 283 persons are on the pay-roll, excluding the many dockers and casual labourers.

**Subsidiary Companies.** On behalf of an affiliated company, The Egyptian Petroleum Storage Co., the parent concern undertakes the warehousing of inflammable and dangerous goods landed at Alexandria. The Levant Bonded Warehouses Co., Ltd., in which the controlling interest is held by the Egyptian Bonded Warehouses Co., Ltd., has branches at Jaffa and Haifa.

**Directorate.**—Messrs. S. Wellhoff (president), R. Ismailun (vice-president), Robert S. Rolo, Michel Ayoub Pacha, Baron F. de Menasse, S. R. P. Carver, and E. Pegna (general manager). Messrs. J. S. Mizrahi and J. B. Barron are sub-general managers. Auditors, Messrs. Russell & Co.

**Head Office.**—Bah-El-Karasta, Alexandria. Cables: "Bonded," Alexandria.

#### **NILE COLD STORAGE AND ICE COMPANY.**

**Inception.**—The operations for the hygienic conservation of all kinds of foodstuffs which climatic conditions make indispensable to the welfare of the country and of sea-borne traffic calling at its ports were commenced by this enterprise in 1904, the year of its establishment as an English company working in Egypt. Three years later it was incorporated as an Egyptian company.

**Development.** In 1904 the concern erected at Port Said cold-storage works having a capacity of 70,000 cubic feet, the refrigerating plant being supplied by the Haslam Foundry & Engineering Co., Ltd., of Derby. Subsidiary cold-stores were started at Cairo in the following year. In 1911 a similar establishment was inaugurated at Alexandria and in 1923 another at Suez. The close of the European War was followed by a considerable enlargement of the Port Said depot, new machinery, consisting of a Diesel oil engine driving a direct-coupled Sulzer ammonia compressor, being installed. Additions were made at the same time to the ice-making plant.

**Activities.**—The company handles all kinds of refrigerated goods, obtaining from Australia meat, butter, milk, poultry, etc., from England, game, fish, poultry and other comestibles, and from Canada, cheese, salmon, turbot and other fresh fish. These articles are supplied in turn to the various shipping lines passing through the Suez Canal, and to the luxurious tourist steamers visiting places of interest on the Nile. Hotels and European residents in Cairo, Alexandria and Suez are also catered for, while recent years have seen the gradual development of a trade with the native population of Egypt and Palestine.

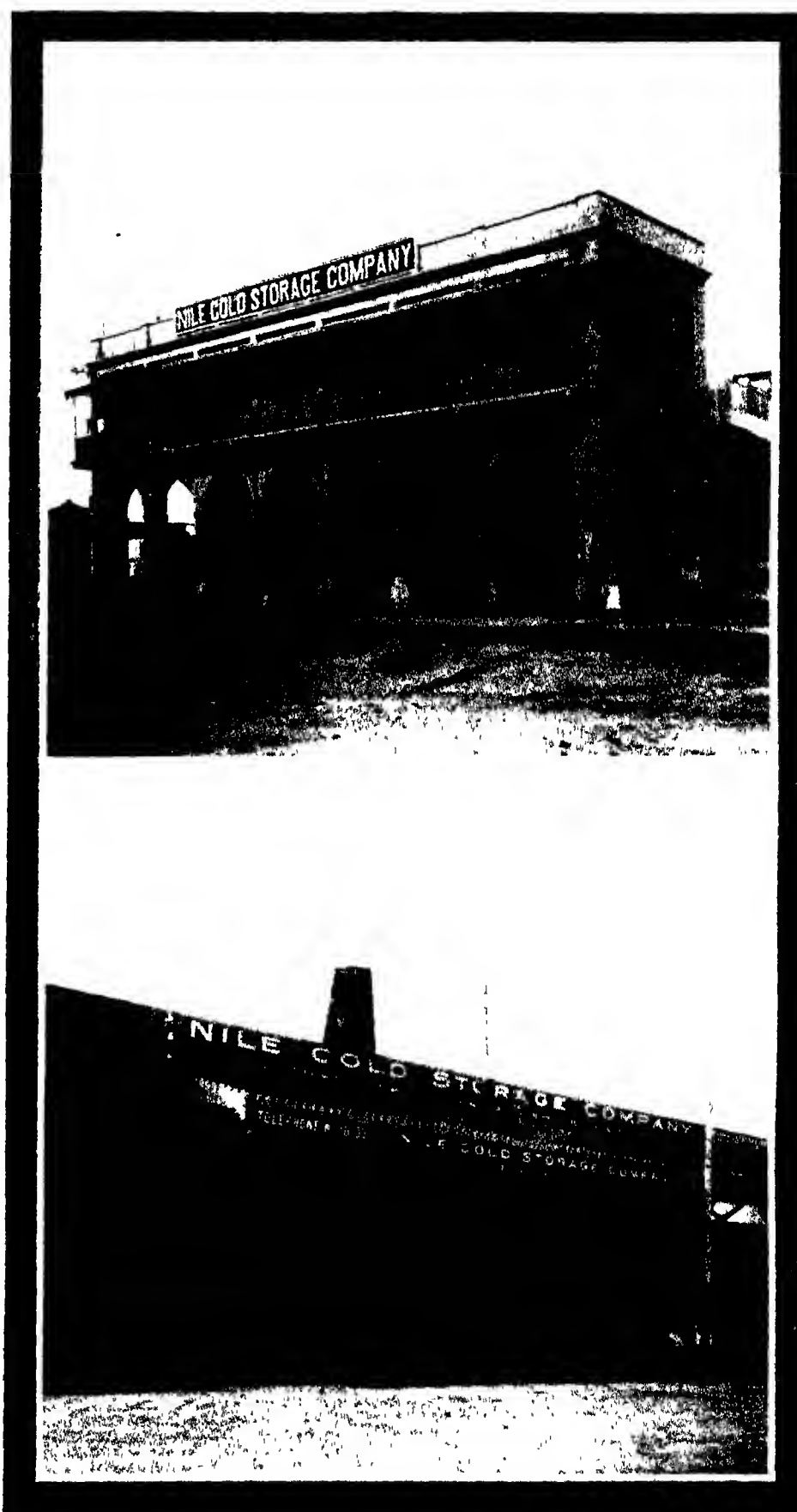
**Ice-making.**—Ice-making plants are situated at Port Said and Suez, where ice is supplied to ships, as well as to general customers.

**Branches.**—The chief entrepôt for the goods handled by the Nile Cold Storage and Ice Company is at Port Said, that being a principal port of call for refrigerator and other vessels passing between Great Britain and the Far East. Branches flourish also at Cairo, Alexandria, Suez (Port Tewfik) and Ismailia, in which cities the company also has retail shops.

**Administration.**—The company is entirely under British control, Mr. W. H. Perkins being the general manager. The managers of the different branches are likewise British.

**Head Office.**—19 Sharia Fuad El Awal, Cairo. Cables: "Coldstores," for Cairo and all branches. Codes: A.B.C. 5th and 6th Editions, Western Union, Bentley's.

**Bankers.**—National Bank of Egypt.



**NILE COLD STORAGE & ICE CO., Cairo.**

1. Cold Storage Plant at Suez.
2. Store Room.

# TRANSPORT

## SHIPPING

## RAILWAYS

## AIR, RIVER AND ROAD

### SHIPPING

**T**HE administration of all Egyptian ports and lighthouses is controlled by a department of the Ministry of Communications. Alexandria, Port Said and Suez are the three principal ports, smaller harbours for coastal trade existing at Damietta, Rosetta, Marsa Matrûh, and Sollûm. The direction of shipping facilities and of the various docks and harbour works is also under the Department of Ports and Lighthouses, which is represented in each port by highly-skilled marine and technical officers.

**LIGHTHOUSES.**—Along the Mediterranean and Red Sea littorals there are respectively eleven and nine lighthouses, twenty in all. Of these, seven guard the approaches to the port of Alexandria, and important lights are those outside Damietta and Port Said harbours. The Red Sea coast is well protected throughout with a series of lighthouses, of which the two known as "The Brothers" and "Sanganib Reef" respectively are the most important.

**MERCANTILE MARINE.**—A very definite step towards the provision of an Egyptian commercial fleet was taken early in 1926, when the Council of Ministers was asked to sanction the allotment of £1,720,000 in the 1926-27 budget of the Ministry of Communications to go towards the purchase of two steamers. It is proposed that these two steamers shall form the nucleus of a fleet of six or eight vessels, to be engaged mainly in the transport from British and Continental ports to Egypt of heavy bulk cargoes, such as coal, iron, and steel, etc., on behalf of the State Railways and other Government Departments. Cotton, cotton-seed, onions and other Egyptian cargoes will be carried in these Government bottoms to the United Kingdom and the Continent. Another field of use suggested is the transport from Suez to Jeddah of Moslem pilgrims for Mecca and their return.

**SHIPPING COMPETITION.**—During the years 1924 and 1925 there was no fresh feature of great interest in the shipping world as regards Egyptian ports. In spite of competition from State-owned and State-subsidised tonnage, the British shipowner continued to hold his own in much of the trade in and out of Alexandria and Port Said. (See also article "Port of Alexandria.")

**TRADE WITH ENGLAND, THE FAR EAST AND DOMINIONS.**—The shipment of cotton from Alexandria to England and the import of cotton goods from England are entirely in the hands of British liners, as is practically the whole of the import of machinery and general goods from the United Kingdom. The transport of coal from England, and the shipment to England of cotton-seed, oilcake, eggs and onions is open to competition from ships flying all flags, which naturally has the effect of keeping freights at a low level, and often at a very unprofitable one, but, in spite of this, British tonnage predominates.

Imports of flour from Australia and rice from Burma are usually carried in British bottoms, the bulk of the ships conveying the former being owned by the Australian Commonwealth Government.

**TRADE WITH EUROPE.**—The regular Mediterranean liners of France and Italy are heavily subsidised by the respective Governments of the countries named, and control the entire maritime trade between Egypt and the French and Italian ports. With Germany, nearly all the trade is done by German boats. With Greece and the Near East, a proportion of the traffic is catered for by one British steamship company whose activities are confined to the Levant and the Red Sea, but a large share of it goes to French, Italian and Greek boats. The French and the three Italian lines trading in the Eastern Mediterranean are

able to compete keenly with the British steamship company in question because, although their ships, which are maintained in a high state of efficiency are understood to run at a heavy loss, they receive considerable subsidies from their respective Governments. This, however, is not all, as competition in the Eastern Mediterranean is further increased by the fact that many small boats of Greek, Italian and other nationalities, owing to their condition and the meagre crews with which they are manned, are able to quote freights considerably below those of the British steamship line. Since 1924 German lines have come into active competition with those under British and Dutch flags.

**TRADE WITH THE UNITED STATES.**—Since the War the British shipowner has been almost entirely driven out of this trade, in so far as imports are concerned, by American owned boats, the losses on which are understood to be high. As regards exports from Egypt to the United States, principally cotton, these are carried in the main by British and American ships in about equal proportions in accordance with the arrangements which exist between the United States Shipping Board and the English Shipping Companies.

**SHIPPING STATISTICS.**—The following table shows the number and tonnage of the total arrivals at and departures from all Egyptian ports during the years named.

ARRIVALS	1924	1925
No. of vessels	3,010	3,337
Net reg. tonnage	5,020,132	6,746,376
Tons of cargo landed	3,569,944	4,196,178
DEPARTURES		
No. of vessels	3,037	3,341
Net reg. tonnage	5,987,901	6,757,785
Tons of cargo shipped	1,543,826	1,424,843



1. GABBARI DRY DOCK, ALEXANDRIA.

2. PORTS AND LIGHTS ADMINISTRATION OFFICES, ALEXANDRIA.

**PASSENGER TRAFFIC**—In 1925 the total number of passengers landed at Egyptian ports, including Suez Canal traffic, was 74,372, compared with 80,742 in 1924.

**SHIPPING BY FLAGS**—A glance at the figures relating to the nationalities of vessels using Egyptian ports evidences at once the commanding position occupied by British shipping. The following table shows the nationalities of vessels arriving in all Egyptian ports during the year named—

NATIONALITY OF VESSELS	1925	
	No. OF VESSELS	NET REGISTERED TONNAGE
Egyptian	271	151,357
British	1,331	2,786,457
American	77	321,486
Belgian	44	86,471
Dutch	50	128,307
French	230	944,453
German	146	264,235
Greek	338	295,114
Italian	617	1,333,278
Norwegian	30	50,795
Others	107	384,423
Total	3,337	6,746,376

For 1924 the figures were: Egyptian vessels, 173, tonnage 79,315; British, 1,227 (2,334,188 tons); American, 77 (313,019 tons); Belgian, 44 (83,480); Dutch, 70 (175,856 tons); French, 217 (868,005); German, 154 (219,580 tons); Greek, 277 (246,232 tons); Italian, 614 (1,306,351 tons); Norwegian, 21 (43,619 tons); Others, 142 (259,178 tons), a grand total of 3,016 vessels and 5,029,132 tons.

**SHIPPING BY PORTS**—The following table shows the number of vessels arriving, their tonnage, and the amount of merchandise entering and shipped from the principal Egyptian ports during the years named—

ALEXANDRIA	1924		1925	
	No. of vessels entering	Net reg. tonnage	No. of vessels entering	Net reg. tonnage
	1,881	4,206,769	2,102	4,781,305
		2,688,182		3,410,248
		1,306,813		1,141,517
PORT SAID	1924		1925	
	No. of vessels entering	Net reg. tonnage	No. of vessels entering	Net reg. tonnage
	5,580	20,946,473	5,880	22,382,888
		148,798		583,962
		104,833		89,520
SUZ	1924		1925	
	No. of vessels entering	Net reg. tonnage	No. of vessels entering	Net reg. tonnage
	400	417,176	370	436,927
		432,064		501,968
		132,180		103,806

Of the vessels and tonnage entering Port Said in 1924, 5,021 ships of 19,800,823 net tonnage were in transit; in 1925 the number of such vessels was 5,237, while the net tonnage was 21,051,866.

**STEAMER LINES.**—The following is a list of shipping companies trading with Egypt, classified according to nationality, their services being indicated—

#### BRITISH

Anchor Line, from Liverpool, via Gibraltar, to Port Said  
 Australian Commonwealth Line, London to Port Said  
 Bibby Line, from Liverpool, via Marseilles, to Port Said  
 Blue Funnel Line, Liverpool to Port Said  
 British India Line, from London direct, or via Marseilles, to Port Said  
 Ellerman & Bucknall S.S. Company, from Southampton, via Marseilles, to Port Said  
 Ellerman & Papayanni Lines, from Liverpool to Alexandria  
 Ellerman's City and Hall Lines, from Liverpool (occasionally from Marseilles or Naples) to Port Said.

Glen Line, from London to Port Said  
 Henderson Line, from Liverpool to Port Said

Moss Line from Liverpool, via Malta, to Alexandria

Orient Line, from London, via Gibraltar, London and Naples, to Port Said

P & O Navigation Company, from London, via Gibraltar and Marseilles or direct to Port Said

Union Castle Line, London to Port Said

#### DUTCH

Nederland Royal Mail Line from Amsterdam, via Southampton, Algiers and Genoa, to Port Said

Rotterdam Lloyd Line, from Rotterdam, via Southampton, Langier and Marseilles, to Port Said

#### EGYPTIAN

Khedivial Mail Line from Constantinople via Piraeus, to Alexandria

#### FRENCH

Fabre Line, Marseilles to Alexandria  
 Messageries Maritimes Line, Marseilles to Alexandria or Port Said

#### GERMAN

Hamburg-Amerika Line, from Hamburg, via Genoa, to Port Said

Holland Afrika Line, from Hamburg, via Amsterdam and Antwerp, to Port Said

Norddeutscher Lloyd Line, from Hamburg, via Rotterdam, Antwerp and Genoa, to Port Said

#### ITALIAN

Lloyd Triestino Express Services, from Trieste, via Brindisi, to Alexandria, main lines from Trieste and Venice, via Brindisi,

to Port Said, also intermediate (Syrian) services from Trieste Venice and Brindisi, via Greece, to Alexandria

Marittima Italiana from Genoa, via Naples, to Port Said

"Sitimar" (Societa Italiana di Servizi Marittimi) from Genoa and Naples, Syracuse, or Catania, to Alexandria Express service per S.S. "Esperia" also the "Linea Celere" at lower fares

#### JAPAN

Nippon Yusen Kaisha (Japan Mail Line), from London, via Gibraltar, Marseilles and Naples, to Port Said

#### RUMANIAN

Rumanian S.S. Company, from Constanza via Constantinople and Smyrna to Alexandria

#### RUSSIAN

Russian Line, from Odessa, via Constantinople, Smyrna and the Piraeus, to Alexandria

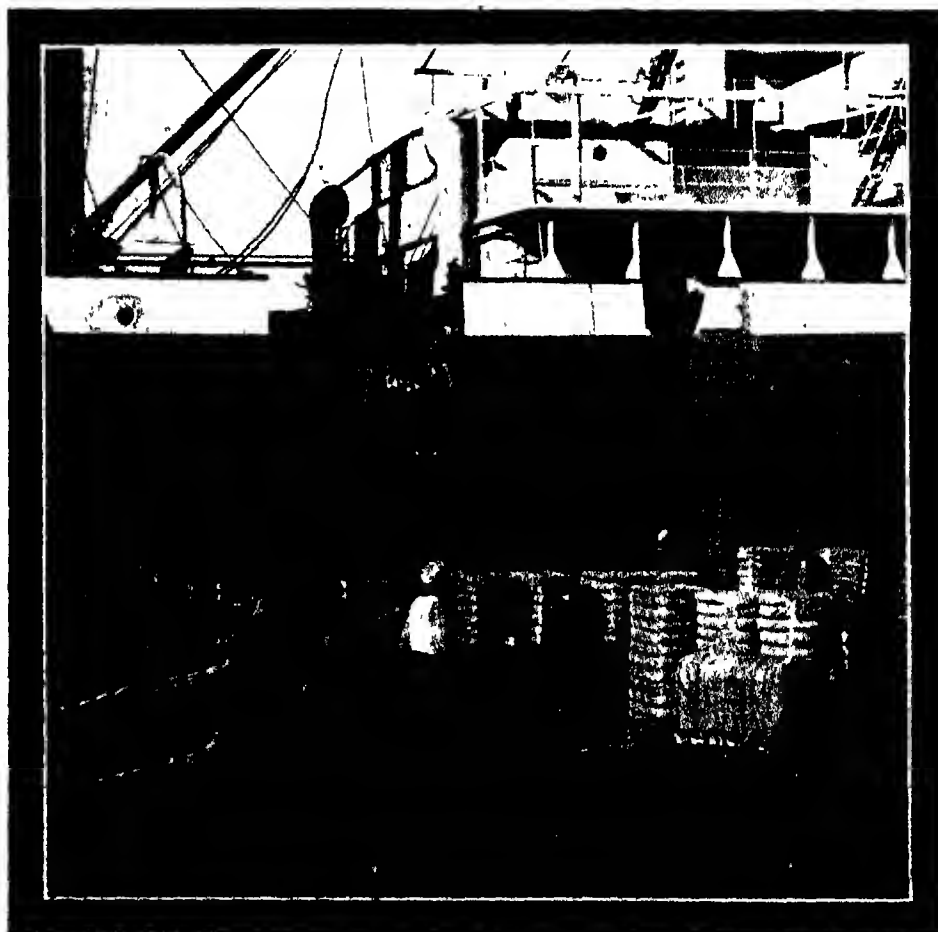
#### UNITED STATES

Cunard Line Sailings during winter season from New York, via Madeira, Gibraltar, Algiers, Villefranche or Naples, to Alexandria

Red Star Line Sailings during the winter season from New York, via Madeira, Gibraltar, Algiers, Monaco, Naples, Athens, Constantinople, and Haifa to Alexandria

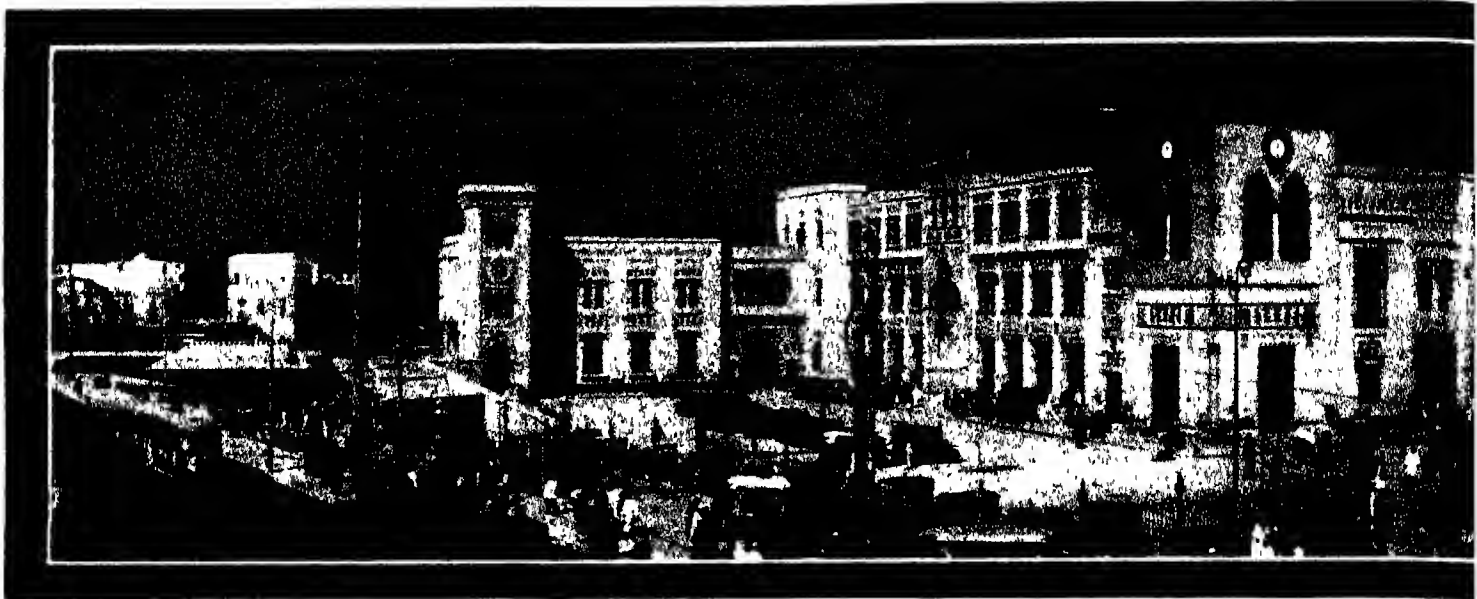
White Star Line Sailings during the winter season from New York, via Madeira, Gibraltar, Algiers, Monaco, Naples, Athens, Constantinople and Haifa, to Alexandria

**SUEZ CANAL.** (For description of and shipping and tonnage statistics relating to the Canal, see special article pages 118-121)



LOADING A SHIPMENT OF COTTON FOR MESSRS. PEEL & CO.





THE EGYPTIAN STATE  
The Capital's

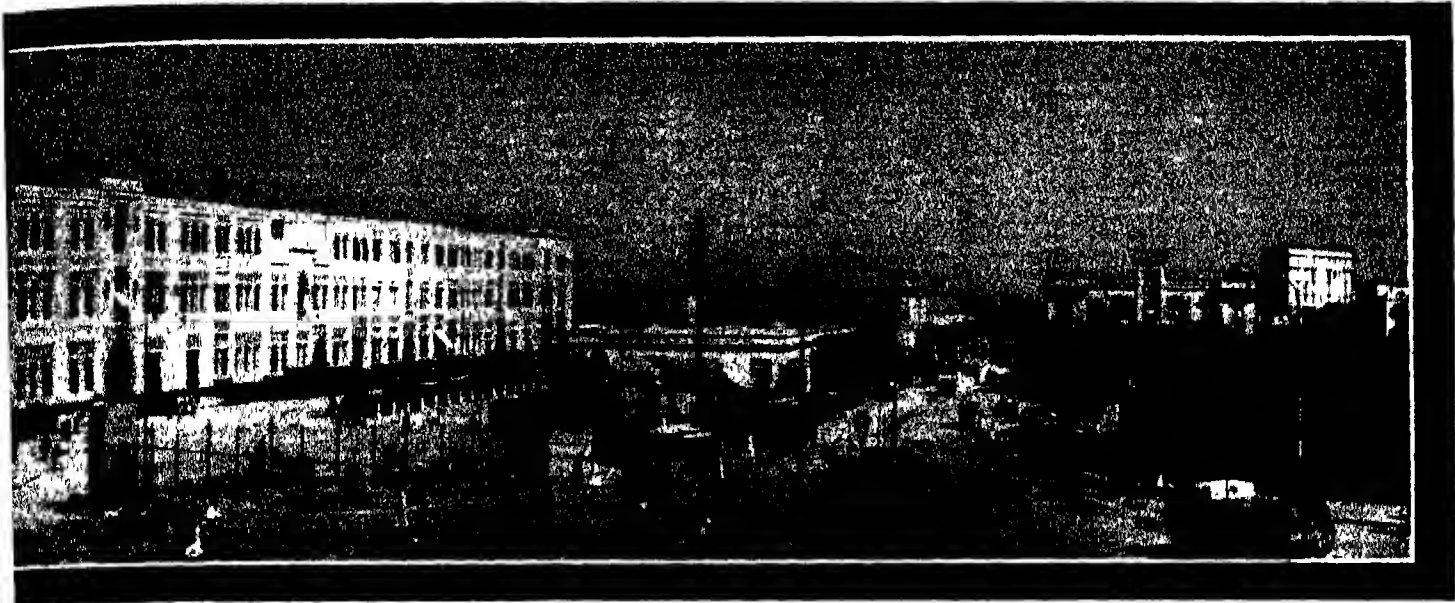
## RAIL THE EGYPTIAN



THE EGYPTIAN STATE RAILWAYS.  
Head Quarters Engineering Department, Cairo.

**R**AILWAY construction in Egypt has always been a comparatively simple task, there being no mountain ranges to tunnel or stiff gradients to climb. In consequence of these advantages and the small amount that has had to be spent on engineering works the capital outlay for line building has been kept at a low figure per mile compared with many other systems. Maintenance and haulage costs can also be kept at a moderate level, and as the passenger and goods traffic on the Egyptian railways is fairly heavy the Administration is able to devote a large part of its revenues to maintaining the very high standard of efficiency for which its system has been noted. Whereas formerly the Nile was the great highway of Egypt, the railways can now claim to be the swiftest and cheapest means of visiting the wonderful tombs, the ruined cities and temples of the Pharaohs. The famous expresses-de-luxe which run between Cairo and Upper Egypt can vie with any in the world, the accommodation is not only luxurious, but (compared with England) inexpensive, and all visitors to Egypt will be quick to acknowledge the ready courtesy and attention to their comfort which is everywhere given by the railway personnel of all grades.

**ADMINISTRATION.**—The administration of the State Railways (which includes that of the State Telegraphs and Telephones) is controlled by the Ministry of Communications, and is in the hands of a General Manager, aided by a Deputy General Manager and an Assistant General Manager, with head offices at Cairo Central Station. For administrative purposes the system consists of the Cairo, Lower Egypt, Gabbary and Upper Egypt Divisions, also the Port Said-Suez and Luxor-Assuan Lines. In the administrative, accountants', ways and locomotive services alike many leading positions are occupied by British officials and engineers.



RAILWAYS. Cairo  
Fine Station

## WAYS

### STATE SYSTEM

The present General Manager of the E. S. R. is H. E. Abdul-Hamid Sulman Pasha, the first Egyptian to occupy the post in which, it is generally agreed, he is fully maintaining the high standard of efficiency set by his predecessors.

**EARLY HISTORY.**—The first line of railway to be constructed in Egypt dates from the year 1852, when, under the reign of the Viceroy Abbas Pasha, the famous British engineer, Robert Stephenson, was commissioned to build a line from Gabbary (Alexandria) to Cairo. The laying of the track was commenced simultaneously from Cairo northwards, as well as from Benha to Cairo. Pending the construction of an iron bridge at Kafr el-Zayat, a steam ferry was used there. The line was opened in 1856. Two years later, to complete the overland route to India, a track was laid from Cairo to Suez. In those days the overland traffic between Alexandria to Suez was an important item, bringing in a revenue of three-quarters of a million sterling annually, and the new "Desert Line" proved to be a brilliant financial success. All the earth-works and buildings of this railway were carried out by means of the "corvée" (i.e. forced labour), long since abolished. The land was taken without payment. In 1868 a line was laid from Suez to Ismailia, half way to Port Said on the newly-constructed Suez Canal. The opening of the latter in the following year put an end to the overland traffic between Alexandria and Suez, and the line from Cairo to Suez was taken up. A year previously (1867) the construction of a railway from Boulac Dacrou to Minia was commenced. The junction line from Cairo to Boulac Dacrou was not then in existence, and passengers had to find their own way to the last-named place until as late as 1891, when the Embabeh bridge over the Nile near Cairo was opened to traffic.



THE EGYPTIAN STATE RAILWAYS.  
Main Station in Cairo.

On November 18, 1876, a Khedivial decree was issued placing the control of the railways under a mixed administration composed of a President and two Directors, but on November 20, 1905, the International Board ceased to exist, and its members were replaced by a General Manager.

In 1801 the construction of the following new lines was commenced: Chebin el-Kom to Achemonn, Damanhour to Rahmanieh, Cherbine to Kafr el-Chikh, Fayyum to Sannoures, and the Upper Egypt line was extended from Assuit to Luxor also afterwards to Assuan. By an arrangement with the Suez Canal Company dated February, 1902, the Administration built a new standard gauge line from Ismailia to Port Said to replace the narrow-gauge steam tramway belonging to the Canal Company. The doubling of the line from Cairo to Mima was carried out in six years (1903-1908) over a distance of 247 kilometres.

**EMPLOYEES.** The total number of persons employed on the State Railways in 1925 exceeded 30,000.

**GAUGE.**—In April 1925 the length of line on the Egyptian State Railway system was 2,230 kilometres of standard gauge and 210 kilometres of 3 ft 6 in track, this latter being the Luxor-Assuan stretch, which, however, before the end of 1926 had been converted to the first-named gauge in time for the winter season.

**LINES (STATE).** The principal lines owned by the Egyptian Government are usually known as the Main Lines, Auxiliary Lines and the Oasis Line. In Lower Egypt the chief lines are the three radiating from Cairo to the coast, Cairo-Alexandria, Benha-Suez-Port Said, and Tanta-Damietta. Two transverse lines unite these main lines, viz. that from Zagazig to Mensurah via Abu-Kebir, which joins the Suez line to that from Damietta, and the line from Cherbine to Damanhour, via Belbeis, which unites the Damietta and Alexandria lines. Branch lines run from Gahoub to Zagazig, from Mehallet Roh to Kalline and from Cairo to Teli-el-Baroud.

The Upper Egypt system is distinguished by the main line which follows the course of the Nile as far as Luxor. From that point a narrow-gauge line ascends the river

as far as Shellal on the Sudan frontier. This system also includes the Fayyum lines which serve Medinet-el-Fayyum, Aboukhah and Sannoures, joining the main Cairo-Assuan line at Wasta.

In addition to the Egyptian State Railways proper, there are 515 kilometres of standard gauge auxiliary lines known as the Auxiliary Railways of Upper Egypt, the headquarters of which are in Mima, and 227 kilometres of narrow gauge track from Khargeh Junction (about 540 kilometres south of Cairo), connecting the Nile Valley with the oases of Khargeh.

**PASSENGERS.**—The total number of passengers carried by the Egyptian State Railways in 1924-25 was 28,975,818, made up of 916,091 first class, 3,207,513 second class and 24,852,214 third class. These figures show an increase in passenger traffic over the previous year, when 27,585,256 passengers in all were carried. The coaching train kilometrage in 1924-25 amounted to 10,175,087.

**REVENUE AND EXPENDITURE.** The earnings of the Egyptian State Railways, not including the Auxiliary Railways, for the year ending March 31, 1925, were £E 7,044,000, compared with £E 7,148,161 in 1923-24 (£E 1 approximately /10s 6d sterling). Receipts for 1924-25 were derived from coaching traffic, £E 3,131,251, goods, minerals and live stock £E 3,809,770, sundry earnings made up from rents, profits on sales, interest, advertising receipts, etc. £E 103,645. Receipts from passenger traffic amounted to 308 millions per coaching train kilometre.

**EXPENDITURE.**—The expenditure in 1924-25 totalled £E 3,091,007, as against £E 5,337,074 in 1923-24. This showed a credit balance of £E 3,053,059 compared with one of £E 1,810,487. The following table gives the main items of revenue and expenditure for the years named.

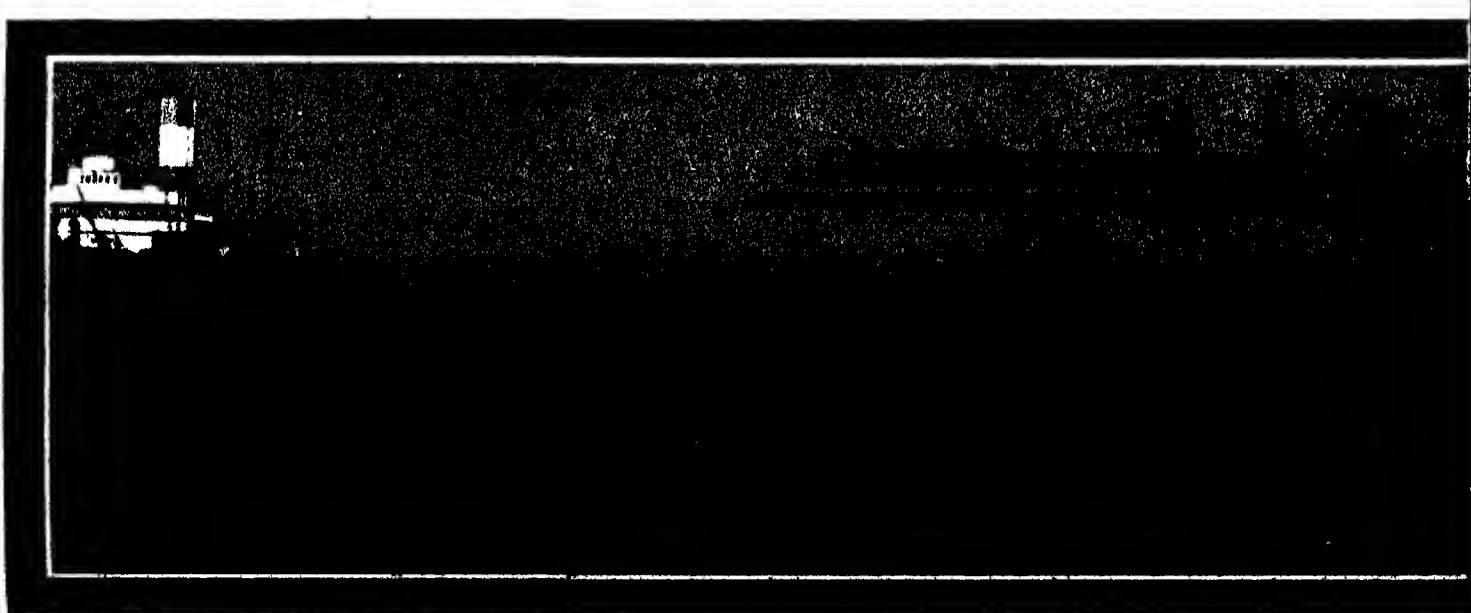
	1923-4	1924-5
REVENUE	£E	£E
Passenger traffic	3,065,632	3,131,251
Goods traffic	3,966,738	3,809,770
Various	115,791	103,645
Total	7,148,161	7,044,666

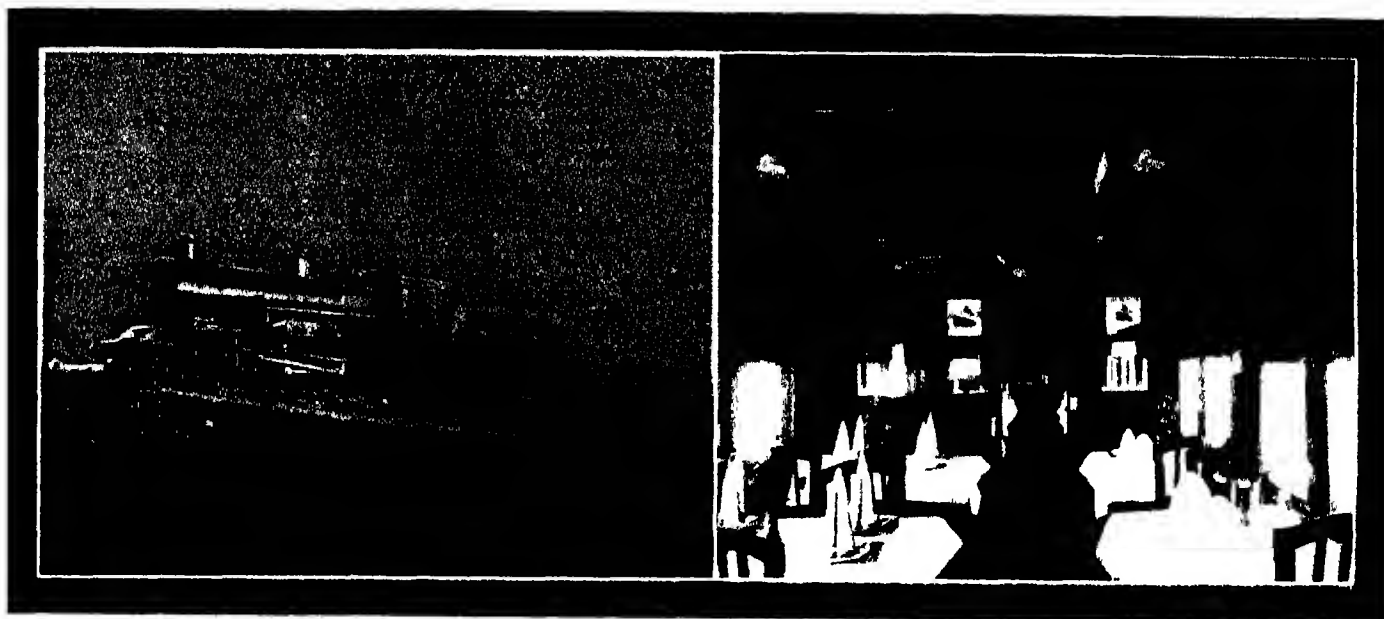
	1923-4	1924-5
EXPENDITURE	£E	£E
Ways and Works	810,498	714,860
Locomotive service	2,904,982	1,705,262
Rolling stock	409,275	302,071
Expenses of movement	794,800	774,919
General expenses	270,532	259,779
Special expenses	141,587	154,707
Total	5,337,674	3,091,697

**ROLLING STOCK.**—The rolling stock of the Egyptian State Railways consisted in 1925 of 684 engines, 1,541 passenger carriages, 13,844 wagons and 330 service and miscellaneous vehicles.

The coaching stock is thoroughly up-to-date, and is lighted either by electricity or gas, the standard first-class being bogie corridor coaches fitted with lavatories and clerestory roofs. The interior fittings throughout are consistent with the necessities of a hot climate, and photographic views of places of various interest adorn either side of each compartment. The branch line traffic and local trains consist mostly of the six-wheel corridor stock of varnished teak, which rendered excellent service on the main lines prior to the introduction of bogie stock, and which is still eminently suitable for local work. The first-class coaches are fitted with lavatories. The third-class coaches are open from end to end, and contain seats in rows down each side. The standard bogie third class carriages have this same arrangement, but are fitted with lavatories. The standard brake throughout is the vacuum automatic.

**GOODS STOCK.** The goods stock comprises bogie 30 ton steel box and open trucks (the latter for coal and similar traffic) and a large quantity of four wheel 10 ton open trucks, fitted in most cases with high ends for timber traffic, but equally useful for the large cotton and onion traffic. Ten ton steel or wooden box trucks are also largely used and special low sided steel 30 ton bogie trucks are provided for ballast work and transport of rails, etc. for the Permanent Way Department. Each locomotive depot of importance is furnished with a travelling steam crane, with the usual complete breakdown train containing all necessary appliances, acetylene flare lamps, etc.





THE EGYPTIAN STATE RAILWAYS

1 Type of New British Express Engine recently put into service.

2 Dining Car

**NARROW GAUGE STOCK**—On the line from Luxor to Assuan the coaching stock is of the bogie corridor type, with lavatories and smoked glass windows as a protection against the glare of the sun, and the interiors are fitted in a similar manner to the broad gauge stock. Dining cars are run on the important trains, i.e., those running in connection with the standard gauge trains to and from Cairo.

**SAFETY FOR TRAVELLERS.**—The guiding principle of the Egyptian State Railways is "Safety First." Compared with America and some European countries, the speed, even of the express trains between Cairo and Alexandria, where the 130 miles is covered in three and a half hours, is not great. The longest through run from Luxor to Cairo (424 miles), which is done by the nightly train-de-luxe of the winter season, occupies eleven hours. But the policy of

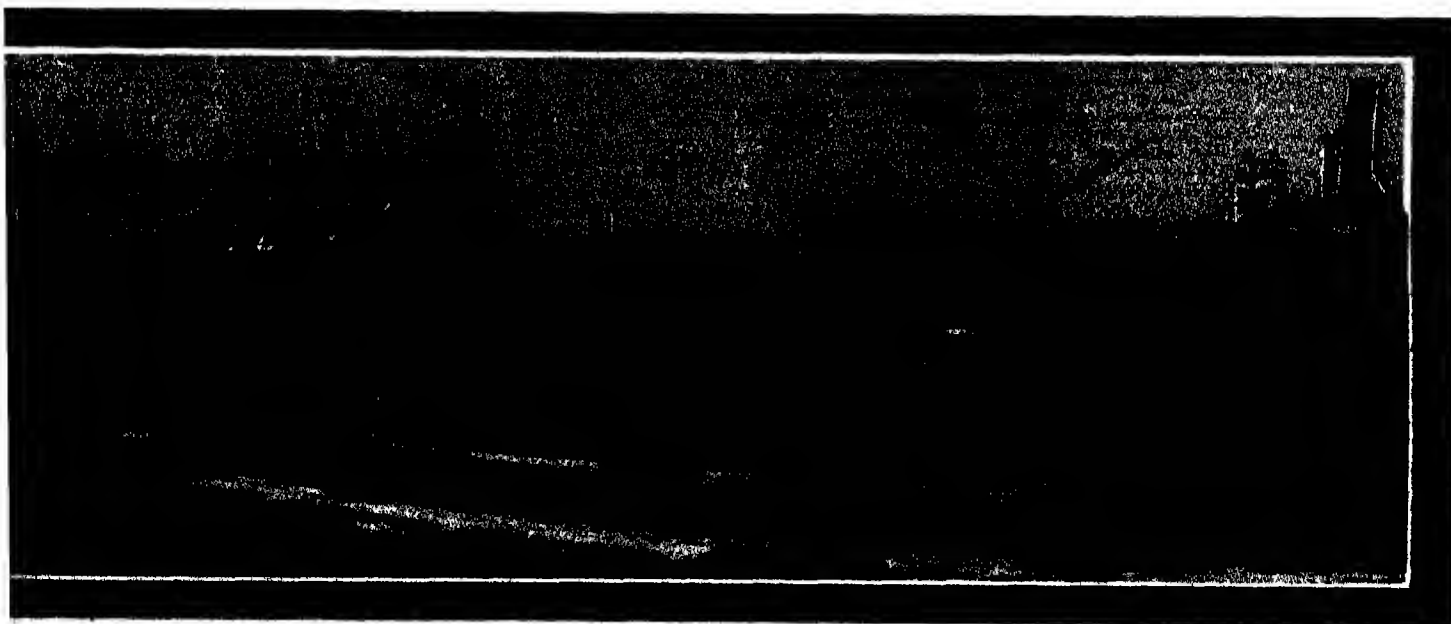
the E.S.R. finds its justification in the comparatively low cost of running, which mounts up disproportionately if the speed be increased beyond a certain point, while a further vindication of the management's motto lies in the fact that the Egyptian Railways enjoy an immunity from serious accidents which is probably unrivalled by any system in the world. In 1923 only 12 persons were killed on the State railways, two of whom were passengers. As regards punctuality, too, the E.S.R. may justifiably feel proud, for schedule timings are very closely adhered to.

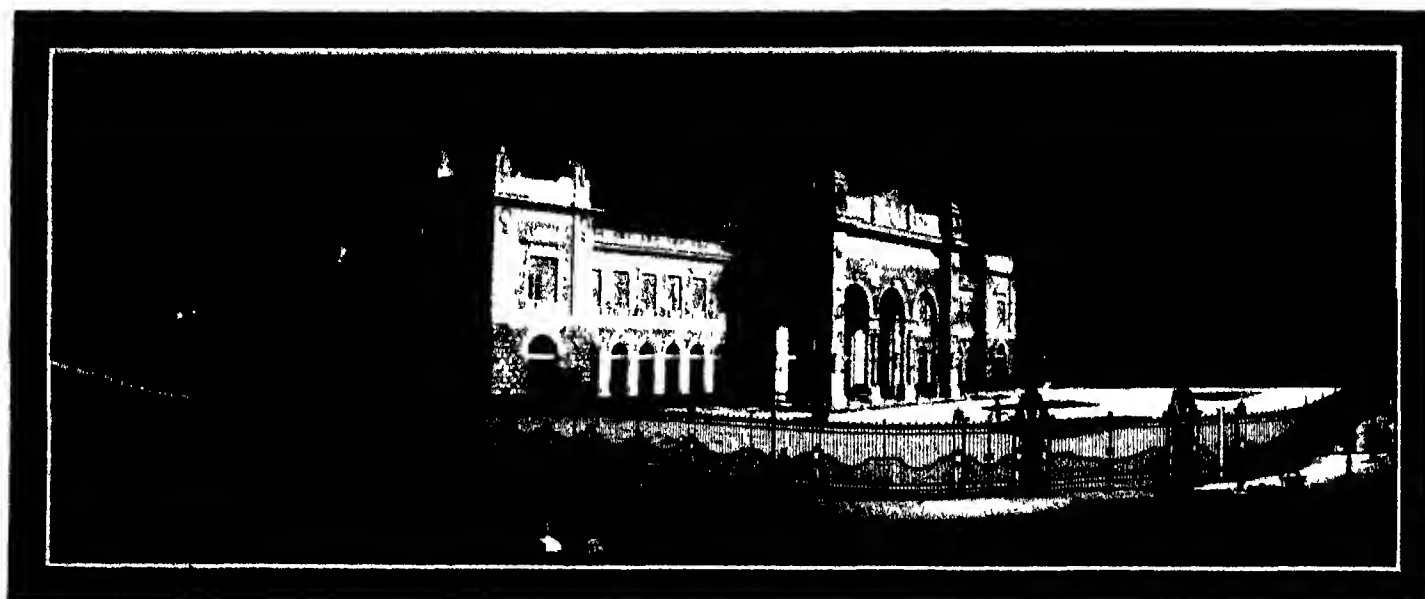
**SIGNALLING.**—The system of inter-locked signalling has made rapid progress in recent years on the Egyptian State Railways. The whole of the main line Alexandria-Cairo, Port Said-Cairo and Cairo-Luxor is already thus equipped, and branch and goods yards are now being signalled. At Cairo itself

the station and yard are power-worked, the Westinghouse electro-pneumatic system having been adopted.

**SUBURBAN SERVICE (CAIRO).**—Special attention is given to the excellent suburban services between Cairo and the outlying residential districts (Pont-Imam Station for northern suburbs, and Bab el-Lark Station for Maadi and Helwan) inhabited largely by Cairo business men and Government officials.

**SWING BRIDGES.**—There are about 250 bridges on the system, eight of which span the Nile, the remainder crossing broad navigable canals. A large number of these are provided with swing spans to allow of the passage of the heavy boat traffic. There exist in addition a number of subways and over-crossings. The swing bridges are opened and closed to boat traffic at fixed hours, the times being established with due

STATE RAILWAYS.  
Alexandria.



THE EGYPTIAN STATE RAILWAYS.  
New Station at Alexandria.

regard to the comparative interests of the boat and rail traffic. The average number of daily openings is three per swing bridge, each opening lasting from 40 to 60 minutes.

**TOURIST TRAFFIC.**—Much of the super-excellence of the Egyptian railway system and the high standard of comfort offered to travellers is undoubtedly due to the large amount of tourist traffic for which the Administration caters every year. The country of the Pharaohs now attracts many thousands of tourists each winter, and these are almost entirely drawn from a class which expects and is prepared to pay for the highest class of accommodation. Naturally, the State Railways have always made special provision for this tourist traffic, and it may be added that their efforts in that direction have been ably seconded by the International Sleeping Car Company, which, in addition to providing and managing the luxurious sleeping cars attached to the night

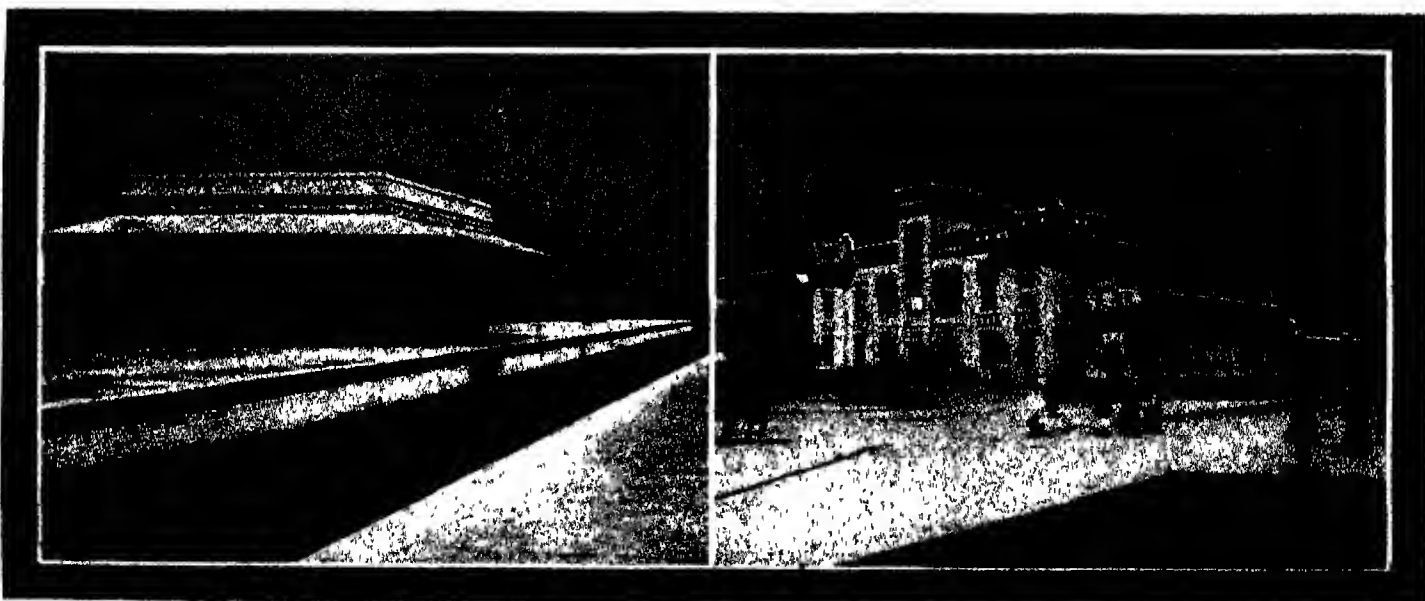
express trains between Cairo and Alexandria, Cairo and Port Said and Cairo and Luxor, furnishes and controls the restaurant cars and also the buffets which are provided at the main stations. The trains-de-luxe, consisting entirely of sleeping cars and a dining car, run three times weekly in each direction during the winter between Cairo and Luxor. The International Sleeping Car Company recently resolved to introduce a novelty in the shape of Pullman cars, the first four of which were to be put into commission during 1926.

**TRAFFIC FIGURES.** In 1924-25 the total tonnage of public goods carried on the State Railways was 4,003,253, as against 4,300,000 tons in 1923-24. In the last-named year 599,000 animals were also carried. The cotton transported, ginned and unginned, in 1924-25 amounted to 300,675 tons and 137,715 tons respectively, the receipts for the same totalling £E 414,355 and £E 55,023.

Sugar and molasses produced £E 152,380, and the quantity transported amounted to 186,638 tons.

The goods earnings furnished 54.08 per cent of the gross earnings, and, based on the total goods kilometrage of 6,080,750, produced 626 millimes per goods train kilometre.

**WORKSHOPS.**—The principal shops for the repair of rolling stock are situated at Cairo, and comprise a locomotive shop, carriage shop, foundry and running and steam sheds, covering an area of over 30 acres. The locomotive works include machine and erecting shops, smithy, boiler and paint shops. Electric overhead cranes are used, also electric traversers. The works are equipped with up to date machinery, and compare generally very favourably with similar shops in Europe. The carriage works are also well equipped for repairs to coaching and wagon stock, the greater



1. Type of Wayside Station.

THE EGYPTIAN STATE RAILWAYS.

2. Pant-Limoun Station, Mataria, Suburban Line.



part of the latter, however, is dealt with at Gabbary, Alexandria where large wagon shops have been built.

The foundry is at Cano. The outdoor department is operated in divisions, having headquarters at Alexandria (where locomotive repair shops are situated), Cairo, Tanta and Minia where running sheds and (in the case of the latter, too) small repair shops with a few machines are provided. These divisions are again subdivided into districts having headquarters at Zagazig, Ismaïha, Port Said, Suéz, Boulac, Dairout, Wasta and Sobag. The narrow gauge stock is kept in repair by the Luxor shops.

#### THE LIGHT RAILWAYS OF EGYPT.

In addition to the State Railways of Egypt which have just been described and which include the auxiliary Railways of Upper Egypt and the Western Oases Railway, the country possesses three important systems of light railways. These are the Delta Light Railways, the Basse Egypte Light Railways, and the Fayyum Light Railways.

The Egyptian Delta Light Railways Company obtained a concession in March 1907 for 70 years, and has constructed some miles of line of the 2 ft. 6 in. gauge (75 metre). The Fayyum Light Railways have a similar gauge and concession while the Basse Egypte Company owns a metre gauge system and has only a 50 years' concession. (See article following.)

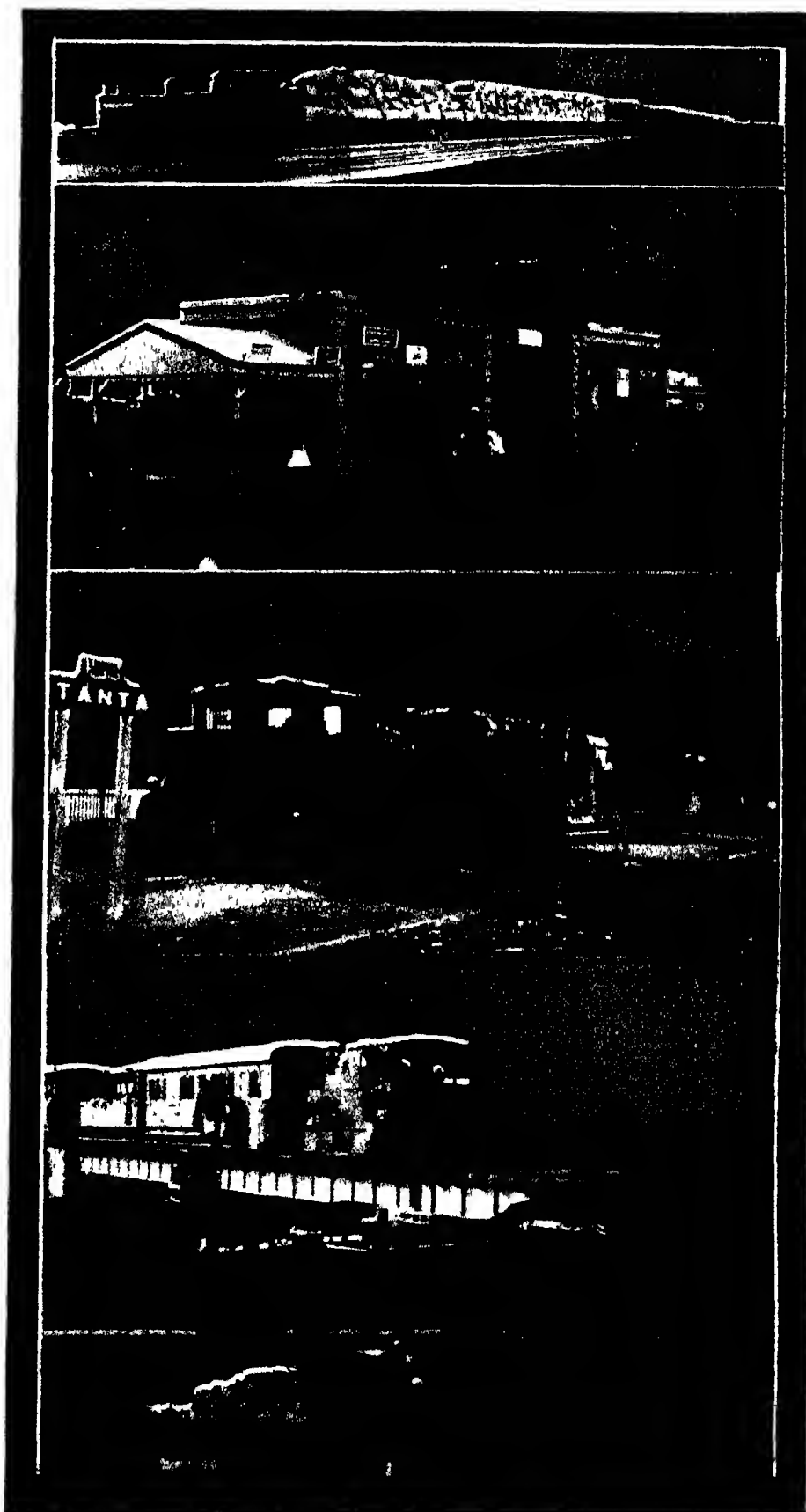
Altogether the working of these three lines forms an interesting experiment in the development of the country generally, and an object lesson as to the way in which light railways can be used with advantage to main line railways.

#### EGYPTIAN DELTA LIGHT RAILWAYS, LTD.

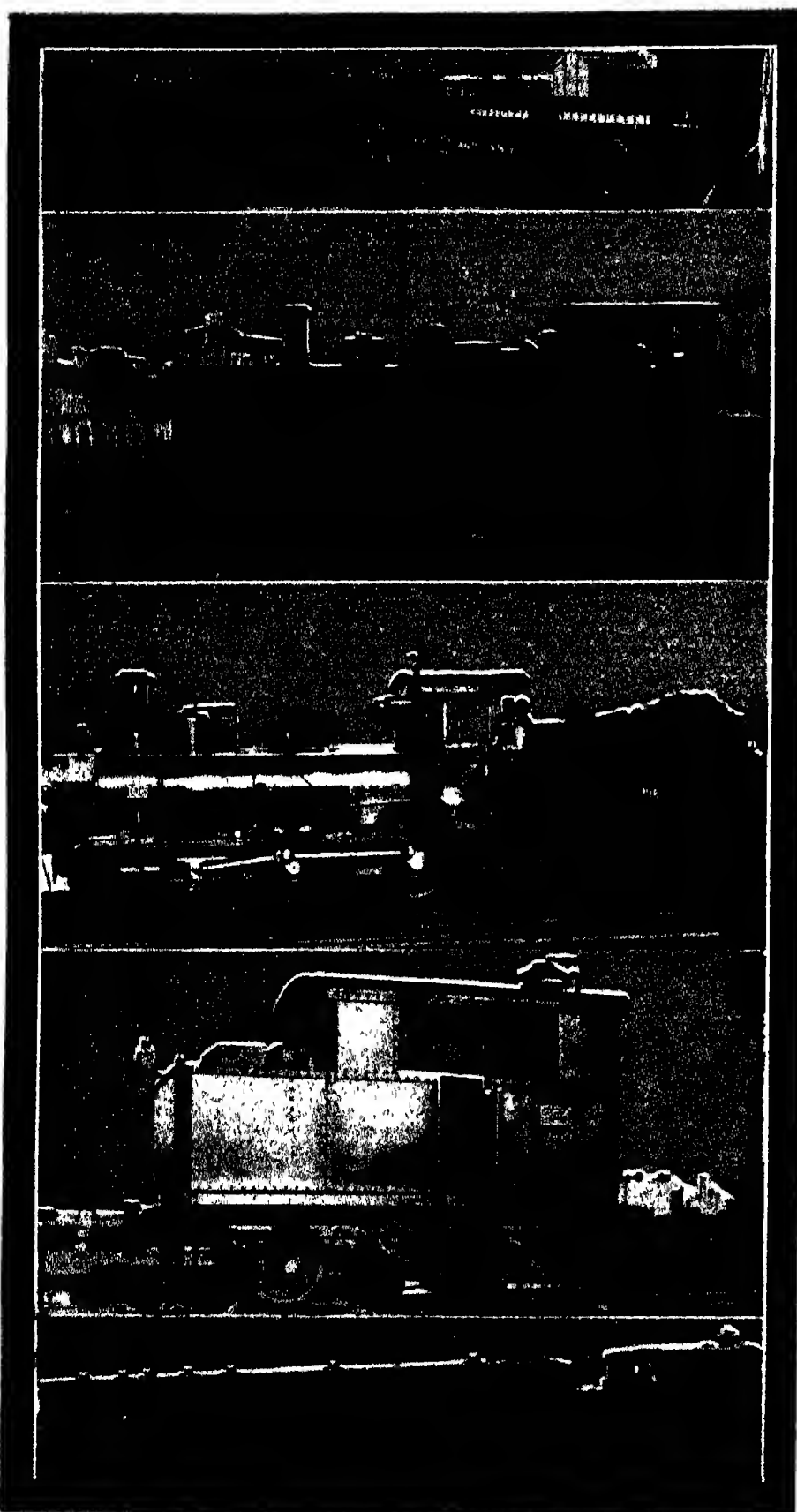
**Inception.** To this British registered company a concession was granted by the Egyptian Government in 1894 to construct agricultural railways in the Nile Delta provinces of Behera, Gharbieh, Dakahlieh, Charkieh and Caloubeh.

**Capital.** - The authorised capital of the company stands at £2,255,300 and the paid up capital at £1,926,039 10s. These sums are composed respectively as follows:-

AUTHORISED CAPITAL		
125,000 preference shares		
5½% cumulative of £10 each	£1,250,000	0 0
11,000 deferred shares of £10 each	£110,000	0 0
6,453 debentures (5%) of £100 each	£645,300	0 0
	£2,005,300	0 0
12,500 "1st" debentures (3½%) of £20 each	£250,000	0 0
	£2,255,300	0 0
PAID UP CAPITAL		
104,078 (5½% cumulative) preference shares of £10 each	£1,040,780	0 0
Deduct calls in arrear	£180	10 0
	£1,040,599	10 0
11,000 deferred shares of £10 each	£110,000	0 0
5,633 (5%) debentures of £100 each	£563,300	0 0
12,500 (3½%) "Est" debentures of £20 ea	£250,000	0 0
Less		
1,893 redeemed to date	£37,860	0 0
	£212,140	0 0
10,607	£1,926,039	10 0



EGYPTIAN DELTA LIGHT RAILWAYS LTD., Alexandria.  
 1. Train entering Kafr el-Zayat Station with 250 tons of Cotton.  
 2. Type of Station, Eastern District.  
 3. Tanta Station.  
 4. Train crossing Swing Bridge.  
 5. Goods Train.



EGYPTIAN DELTA LIGHT RAILWAYS LTD., Alexandria.

1. Swing Bridge over Tewfikieh Canal.
2. Heavy Goods Engine.
3. Passenger Locomotive.
4. Sentinel Tractor.
5. Passenger Train drawn by Sentinel Tractor.

**Activities.**—The system constructed is intended to serve the needs of the dense agricultural population of the Delta and to provide feeders to the Egyptian State Railways system. It consists of a network of lines totalling in length about 1,000 kilometres, irrespective of sidings serving most of the principal towns and villages in the Lower Delta.

**Coaching Traffic.**—Of the total revenue, about 65 per cent is derived from the passenger traffic. The numbers of passengers carried yearly during the five years ending March 31, 1925, were as follows:

Year ending March 31	1921	7,389,149
" "	1922	5,500,001
" "	1923	4,790,814
" "	1924	5,135,454
" "	1925	6,679,666

Two classes of accommodation, first and third, are provided. The existing coaching stock comprises 180 bogie vehicles and 45 four-wheeled vehicles.

**Goods Traffic.** The most important operation of the goods traffic is the conveying of unginned cotton from the villages to the markets or ginning factories in the large towns. During the year ending March 1925 the approximate tonnage of various classes of goods carried was as follows: Unginned cotton, 140,000 tons; manure, 51,000 tons; cereals, 45,000 tons; stone, 65,000 tons; fruits and vegetables, 25,000 tons; building materials, 60,000 tons; various, 130,000 tons. These commodities give an aggregate tonnage of 522,000 for the year 1925.

The goods stock at present employed in this traffic consists of 725 bogie wagons (each of ten tons carrying capacity), 17 bogie animal trucks, 548 four-wheeled trucks (with a carrying capacity of five tons), 25 four-wheeled cattle trucks and 40 brake vans of various types.

**Locomotives.**—The company owns 98 locomotives, which may be classified in three categories: (1) Heavy locomotives designed to haul mixed and goods trains consisting of up to 25 bogie vehicles of a total carrying capacity of 250 tons; (2) light locomotives for use with passenger or light mixed trains; (3) Sentinel tractors for drawing light passenger trains. Owing to the very low running expenses of the last named, recently introduced by the company, they are suitable for service on sections where traffic is light.

**Financial.**—Particulars furnished in July, 1926, of the working of the system during the past year included the following: The gross receipts for the year amounted to £369,335, while working expenses totalled £249,401. To the general reserve was carried £10,000 for capital expenditure. A dividend of 4½ per cent on preference shares was paid, leaving £40,420 to be brought forward.

**Administration.**—The affairs of the company are administered by a board of directors in London, with an agent and general manager in Egypt.

**Directorate.**—Sir Montagu Sharpe, K.C. (president), W. Home, C.I.E., Field Marshal The Right Hon. The Viscount Allenby, G.C.B., G.C.M.G., Hon. W.B.E. Barrington, E.W.P. Foster, C.M.G., and F.G. Bonham-Carter, Secretary, F.J. Horne.

**Agent and General Manager in Egypt.**—Lieut. Col. J. R. Marryat, D.S.O., M.C., R.E.

**London Offices.**—211, Gresham House, Old Broad Street, E.C.

**Administration Offices in Egypt.**—15 Rue de la Gare du Caire, Alexandria. Cables: "Deltalight," Alexandria.

**Bankers.**—Bank of England (London), National Bank of Egypt (London and Egypt).

## AIR, RIVER AND ROAD

### AIR

**T**HE important position which Egypt occupies as regards aerial communications between Europe and both India and South Africa has led during the past year or two to a considerable amount of experimental work in connection with both military and commercial aviation. The great interest excited by Mr. Alan Cobham's flight from London to Capetown and back was nowhere more evident than at Cairo and other places in Egypt and the Sudan where the intrepid aviator alighted for repairs or supplies. Early in 1926 it was officially stated that an agreement had been made with the British Air Ministry for Imperial Airways, Limited, to maintain an air service between Egypt and India, the terminus proposed being at or near Cairo and at Karachi, in India. The distance between these two points is approximately 2,500 miles, and the saving of time will be increased by days, not hours. By this service India will be brought nearer to England by five days, with a possible saving of ten days in the time taken by a return letter. It was confidently expected that the first aeroplane would leave Cairo for India not later than the beginning of January, 1927. It is also considered possible to establish extensions later on to Bombay, Calcutta, Rangoon and Singapore, while an air connection between Cairo and Basle may still further increase the saving of time between London and Karachi.

### RIVER

The possible routes of travel through Egypt and the Sudan are simplified in a manner denied to any other country. From the Delta to more than 1,000 miles within the confines of the Sudan the Nile has been from time immemorial the great highway of the country, and though the excellent railways which follow its course have to some extent reduced the volume of traffic upon its waters, the ancient river is still busy, not only with commercial freightage but with the ever-growing tourist traffic which is attracted during the winter season.

**CANALS.**—Something has been said of the canals of Egypt in the section of this volume devoted to Public Works. All the large canals of Lower Egypt are navigable throughout the year, except during the period of winter closure, which begins about the middle of December and continues till the end of January. The most important are the Ismailia, Tewfikia, Bahr-el-Saghir, Bahr-el-Moes, Minufiya, Bagurivah, Shihin, Bahr Tirah and Mahmudiya canals. In Upper Egypt, the Ibrahimiya canal is closed from Dairût northwards for about a month in the winter, and no boat can pass Dairût during flood. The Bahr el-Yussuf is closed during January.

**FERRIES.**—All ferries on the Nile, some 250 in number, are controlled by the Inland Navigation Department of the Ministry of Communications, and are let out to concessionaires, who are subject to strict regulations. Ferry boats ply at all times between sunrise and sunset and as often as may be necessary by the reasonable requirements of traffic.

**STEAMERS ON THE NILE.**—It is possible to travel by boat from Ismailia or from Alexandria to Rejaf, 1,100 miles above

Khartoum, and, making allowances for curves, the prevailing wind over the whole distance blows up-stream. The portion, however, from just below the Second Cataract, that is to say from Wadi Halfa round the Dar Dongola bend to Abn Hamid, which lies a little above the Fourth Cataract, and from Abn Hamid past the Fifth and Sixth Cataracts to Khartoum, is only navigable throughout flood water. Even at that time some of the passages are likely to make tow and stay ropes necessary.

From Cairo to Assuan from November to the middle of March, the journey can be made, either up or down, by the tourist steamers of Messrs. Thomas Cook and Son Ltd., or by those of the Anglo American Nile and Tourist Company. The journey up takes fourteen days, down six days. Stoppages are made at all the principal towns and temples. The steamers of both these companies are famous for the comfortable, and even luxurious, accommodation which they offer. From Shellal a steamboat station just above the First Cataract and the Great Assuan Dam, the Sudan Government Express steamers also run bi-weekly to Halfa, the time taken being two and a half days either way. It should be remembered that there is no service of steamers from Halfa to Khartoum, but railway communication only.

**PRIVATE STEAMERS.**—A feature of great interest on the Nile during the winter season is the large number of private steamers and of dhabeahs, or "houseboats" in which the wealthy Egyptians and tourists take their pleasure on Egypt's ancient waterway. Many of these are most sumptuously fitted up, and houseboats of varying capacity can be hired from the principal tourist companies.

### ROAD

The Egyptian Government has during recent years paid considerable attention to the development of good roads. Eventually, through the combined efforts of the Land Department of the principal municipalities and the Department of Main Roads and Bridges of the Ministry of Communications, a net-work of first-class roads is planned to connect all the important cities of the Delta and extend along both sides of the Nile from Cairo to the villages of Upper Egypt, and Westward to Fayyum. Road transport is, of course, no novelty in Egypt, although the Nile and its canals have always been, and must ever be, the more natural and less costly means of communication in a country everywhere intersected by waterways. But the land transport methods of the past, and still in a great degree of the present, the donkey and the camel, require, not hard metalled roads, but the less smooth surface of the desert track. So, though Egypt has roads in plenty, not all of them are practicable for motoring, and none is to be compared with the main roads of England or the long straight highways of France. Wheeled transport on Egyptian roads is an innovation of the last twenty years, and it is surprising that tracks made for and by the camel's padded hoof prove so suited as they do for the modern motor car.

**MAIN ROADS.**—The most famous, and, eighty years ago, the busiest main road in Egypt, the overland Indian mail route from

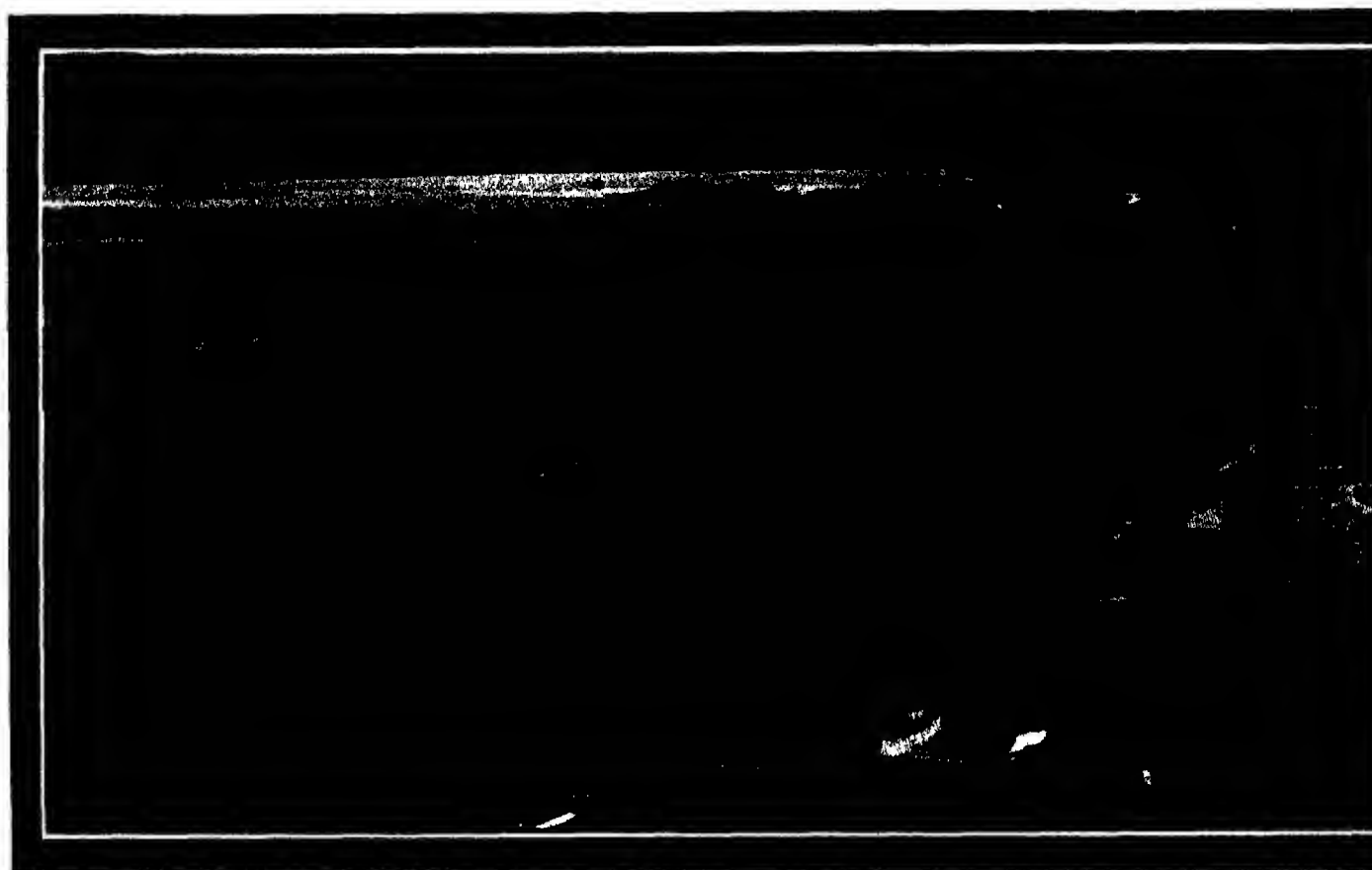
Cairo to Suez, has now fallen into disuse, killed by the Canal. Motorists still make the trip, attracted partly by the fifteen Napoleonic watch-towers and the three or four ruined castles by which the road passes, but the journey is regarded as somewhat of an adventure. Most used of all Egyptian main roads is that between Cairo and Alexandria, 150 miles, though only a short stretch of this is metalled, the surface, however being good for nearly the whole distance. Other good roads are those radiating from the capital, to Ismailia and thence by the wartime military road along the Suez Canal to Port Said, to Assiut and Minia in Upper Egypt and to the Fayyum, a lovely district with picturesque scenery not found elsewhere in Egypt.

### METHODS OF CONSTRUCTION.

The macadam roads improved during recent years are surfaced with local bitumen, a mineral oil similar to the road preservatives and surface preparations used in the United States. The bitumen is hauled to the scene of the work in steel drums and applied after heating. The native road workers are paid about 25 cents a day. The newly surfaced roads are some 18 feet wide, with a very slight crown. The dry climate and almost uniformly level topography offer little difficulty in the way of grades and drainage. The nature of the traffic is not such as to damage a well macadamized road, as camels and donkeys carry the bulk of the load, and few vehicles except automobiles are in use. The narrow-tired heavy carts used in Southern European countries, which are so destructive to roads, are not found in Egypt.

**MOTORING IN EGYPT.**—The Royal Automobile Club of Egypt, which was founded in 1924 under the patronage of His Majesty King Fuad I and under the presidency of His Highness Prince Djemil Tousseum, has done much by its activities to facilitate motor touring in Egypt, not only by route making and mapping, but by the erection of guide posts on roads and the provision of stations for the supply of accessories on the different routes, in towns and villages alike.

In addition to the Royal Automobile Club d'Egypte, there are three other motoring organisations in Egypt, the Egyptian Motorists' Association, an Alexandrian body, which has done much good work for motoring, especially in inducing the police to enforce a standard system of signals, both for traffic control and by motorists themselves, but which has no social side and has never extended its activities much beyond Alexandria; the Cairo Motor Cycle Club, which caters for owners of two and three wheeled vehicles, and the Desert Touring Club. The latter body probably has no counterpart in any other country. It consists of a little group of enthusiasts who regularly throughout the winter go off on long week-end expeditions into the sandy wastes on each side of the Delta. Trips have been made to the oasis of Siwa, a fascinating spot, two hundred miles from anywhere, in the midst of the Libyan Desert, to Sollûm on the Tripolitan frontier, to the Fayyum by desert, and to other spots where motor cars seldom go. For membership of the Desert Touring Club an essential qualification, in addition to an adventurous spirit, is the possession of a car with a high ground clearance and the ability to stand up to prolonged arduous conditions.



PANORAMA OF PORT SAID.

## THE SUEZ

By GEORGES DOUIN

**T**HE Suez Canal is little more than half a century old, and, constructed at a period when industry could not boast such mechanical contrivances as it can to-day, gives to the world a lesson in energy as well as a fine example of the unselfish character of the man who designed it. It is a work of the greatest importance, and one which is bound to develop year by year so as to meet ever-growing commercial needs and to provide a passage for ships of continuously increasing dimensions.

Cut through the open desert, the Canal has fertilised it and given it fresh life. A new town, Port Said, was built on the Mediterranean, and numbers to-day nearly 80,000 inhabitants. In the middle of the Isthmus is the important Ismailian group, where the Canal Company has its chief centre. On the Red Sea, the piercing of the Isthmus has given new strength to the port of Suez, which formerly had gradually fallen in the main to the level of a miserable village.

By the bringing closer together of East and West the Suez Canal has helped to secure more quickly the exchange of ideas and riches between the different peoples of the old world, and has thereby exercised in marked degree a noteworthy influence on economic life and on contemporary civilisation.

### DE LESSEPS AND THE CONCESSION.—

The Suez Canal is the work of Ferdinand de Lesseps. Inspired by the ideas of the

experts who had accompanied Bonaparte to Egypt and by the work of Saint-Simonians, Ferdinand de Lesseps also knew how to utilise to the best advantage for the ultimate success of his project the many important friendships which he had formed during a period spent in the Consular Service in Egypt. On November 30, 1854, he succeeded in obtaining from the Viceroy, Mohammed Said Pasha, a provisional concession for the Canal which, having been subjected to careful investigation and study, was completed and confirmed on January 5, 1856.

The concession thus granted by the Egyptian Government in exchange for a return of 15 per cent of the company's net profits gave M de Lesseps the exclusive privilege of constituting a company with a view to opening up the Isthmus of Suez on a contract of 99 years' duration, at the expiration of which the rights of the company would again revert in full to the Egyptian Government, the company to build a canal suitable to the requirements of heavy shipping, and a shipping tax to be charged not exceeding the sum of 10 francs per ton net capacity, with 10 francs per passenger. Finally, a special article stipulated that the naval canal and the dependent port would be "always open as a neutral passage to commercial ships without any preference whatsoever, either to individuals or nationalities."

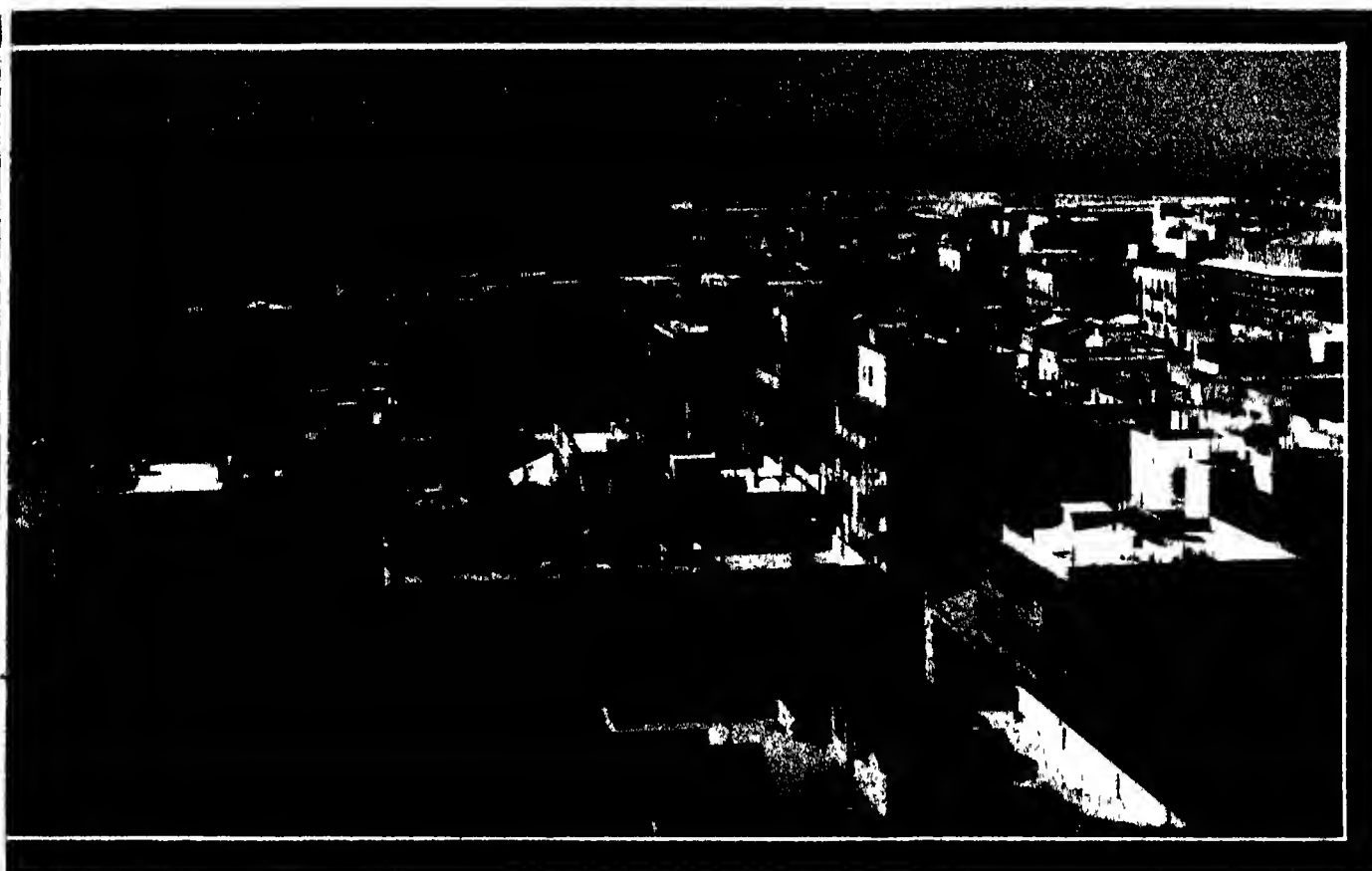
**COMPANY FORMED.**—No useful purpose can be served by recalling here the hostility shown by the British Government

towards M de Lesseps' plan, the indefatigable patience and activity of the latter, and the public help which he so ably succeeded in obtaining even in England by convincing the people of the importance of the work in hand. Overcoming all obstacles which were raised, M de Lesseps formed the Universal Company of the Suez Canal with a capital of 200,000,000 francs, divided into 400,000 shares of 500 francs each. The French public subscribed for more than half of the shares, England, Austria, Russia and the United States withholding subscriptions, and the Viceroy of Egypt subscribing for the remainder.

### CONSTRUCTION OF THE CANAL.—

Actual operations for the digging of the Canal were begun on April 25, 1859, at Port Said. The work lasted ten years. It was at first undertaken by native workers, who knew only how to use pick and shovel, and those workers had to be replaced by machinery when the Ottoman Government in 1863 ordered the suppression of the "sweated labour" of native workers. Messrs Borel & Lavalley introduced the use of dredgers provided with strainers to divert waste soil on to the banks, and thereby completed the work more rapidly.

The Canal was inaugurated on November 17, 1869. Its measurements were: 164 kilometres in length, 8 metres in depth, and 22 metres in width. The amount excavated totalled 74 million cubic metres, and the expenditure incurred was 287 million francs.



SHOWING ENTRANCE TO THE SUEZ CANAL.

## CANAL

### (Controller of Navigation)

**FINANCIAL CRISIS** - After the opening of the Canal to universal navigation, the company was confronted with further difficulties financial and political. The financial crisis was caused by insufficient income during the first few years of the company's activities. In 1871 the shares decreased in value to 167.50 francs. To meet its engagements the company decided to bring into operation the tax on transit to which, in accordance with the original concession, it was entitled not only on net tonnage but also on gross weight. This decision having provoked loud protest from shipowners, an international meeting was held at Constantinople in 1873, when it was decided that the conditions in the concession applied only to *net* tonnage, and gauging rules, which are still in force, were laid down, the company, in order to meet its liabilities, being permitted to levy taxes which with the increase of income should gradually disappear. From January 1875 the shares again reached par. The last tax was suppressed on January 1, 1884.

#### **POLITICAL CRISIS FORMATION OF COUNCIL OF ADMINISTRATION**

The political crisis was the result of the British military occupation of Egypt in 1882, which event was not foreseen by the company. The purchase by the British Government in November 1875 of 176,002 shares belonging to the Khedive Ismail constituted England the company's principal shareholder as well as its chief client. Three Crown delegates were appointed at this

time to the Administrative Council of the Canal. But in 1883, following on the occupation of Egypt, a serious agitation arose in English commercial shipping centres, the British Government being urged to press its claim to a share in the administration of the Canal proportionate to its holdings in the company, and to insist on numerous and important improvements under threat, in the case of refusal, of demanding from the Khedive the right to build a second canal. To end these disputes F. de Lesseps and his eldest son, Charles de Lesseps, went to London, and, after negotiations with British shipping authorities, a programme was drawn up which comprised the addition of seven English shipowners to the Council of Administration, the establishment in London of an agency for the purpose of furnishing necessary information, the progressive reduction of taxes, and the working out of a programme for the improvement of the Canal. This agency is at present established at 6, Bishopsgate, E.C.

From that time onwards the company has worked amicably with its principal client. Its Council of Administration is formed of 32 members: 21 French, 10 English and 1 Dutch. An important central office in Paris—1, rue d'Astorg—controls the general affairs of the company.

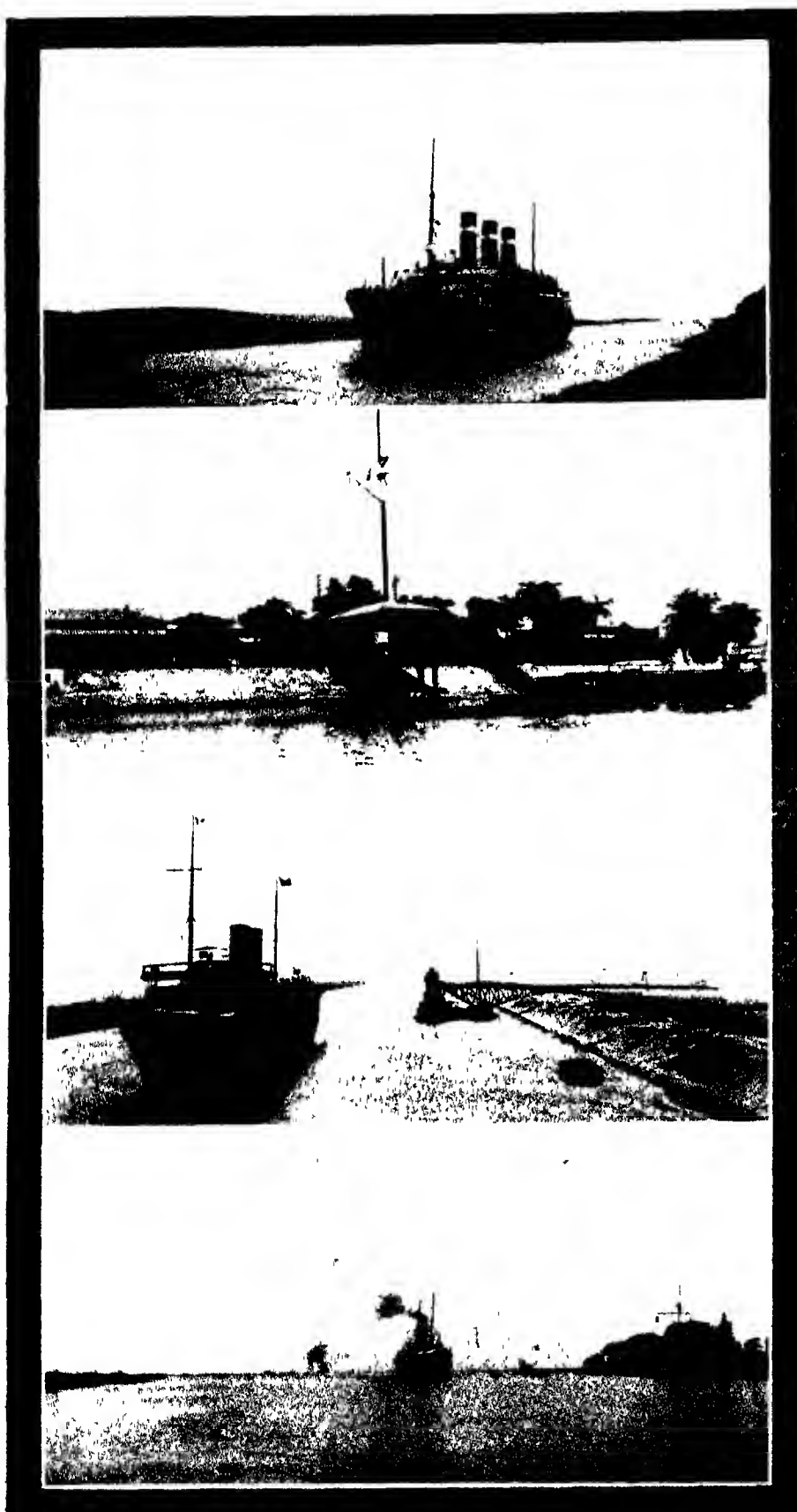
**DESCRIPTION OF THE CANAL.**—Being required to connect two seas of equal level and to pass between altitudes which do not exceed 25 metres, the Suez Canal was constructed without locks. Enlargements

both of width and depth are therefore always possible for the ever increasing requirements of ocean traffic. The actual extent of the Canal is now 168 kilometres, the original length of 164 kilometres having been increased by four kilometres out to sea so as to permit steamers to gain easy access to the waterway. Of this length, 147 kilometres run in a straight direction while the remaining 21 kilometres are of a curved nature. The minimum radius of these curves is 3,000 metres, but this does not materially affect navigation.

The actual depth of the Naval Canal reaches 38 feet, and it is proposed to increase this to 41 feet by means of dredging. The surface of the Canal has a consistent width of 15 metres. This width has already been extended to 60 metres south of the Bitter Lakes, and work is at present being carried out to bring about a width of the same dimensions between the Mediterranean and these lakes. The surface measurements differ according to the ground through which the Canal flows, the incline of the banks varying from 1 in 4 on shaly ground to 1 in 2 on firm ground. The width of the Canal at water level varies in consequence.

**LAKE TIMSAH AND THE BITTER LAKES**—A ship entering the Canal at Port Said traverses in succession the regions of the Lakes Menzaleh and Timsah and the Bitter Lakes, keeping at first a straight course for nearly 50 km. It passes in succession the naval stations of Raz-el-Ech, Tineh, and Le Cap, which are placed at





## SUEZ CANAL.

1. The "Belgenland," 27,500 tons, near Toussoum.
2. A Canal Station.
3. View near Port Said.
4. Canal Entrance to the Large Bitter Lakes.

distances of 10 km for surveillance purposes. It then reaches the station of Kantara, which has become since the War the chief station of the Palestine Railway. After a succession of bends the Canal reaches Lake Timsah, a natural basin on the shores of which stands the town of Ismailia. Formerly the bottom of this lake was about six metres below the level of the Mediterranean. In 1866 sixty-seven million cubic metres of water were run into it, while in its centre a large basin of 700 metres has been sunk so as to permit ships coming from north to south to pass one another.

After passing Toussoum the Canal crosses the cutting of Serapeum, which separates Lake Timsah from the larger of the Bitter Lakes, passes the station of Déversoir and enters the Great Bitter Lake, the immense basin of which, completely dry at the time of the work on the Canal, was filled up in 1869 by water flowing from the Mediterranean and the Red Sea. It is estimated that about one milliard and a half cubic metres of water were required. The bottom of this basin, which was eight metres below the level of the sea, was covered with a thick layer of salt, the continuous dissolving of which suffices to keep the depth of the lake at the required level without the need for dredging. Where it enters the Great Bitter Lake the Canal has been enlarged to 100 metres to facilitate navigation. When passing Kabret station the width remains the same. The ship now crosses the smaller of the Bitter Lakes and enters the last section, where the Canal has a surface width of 60 metres, and continuing its course passes Genéfié, Chalouf and Port Tewfik, till it enters the Suez roadstead.

**DREDGING.**—Since 1874 it has been necessary to dredge 200 million cubic metres, in order to keep the Canal in the condition above described. This work has involved an expenditure of about 845,000,000 francs.

**EXPLOITATION.**—The Canal which has just been described may be used by all vessels irrespective of width, length, or height of masts, providing they do not draw more than 32 feet of water. The authorized draught of ships may by successive stages reach 35 feet, but 32 feet is the limit laid down by the company in its list of rules recently and finally embodied in its "programme d'améliorations."

Any ship that has complied with the laws of tonnage duty at the offices of the company is allowed to enter the Canal. These duties are levied at the rate of Frs 7.25 per net ton, a reduction of Frs 2.50 being allowed to vessels in ballast.

**PILOTAGE.**—All vessels of over 300 tons are required to engage a pilot, who is relieved half-way, i.e. at Lake Timsah. The pilot does not take control of the ship, but is there to give the benefit of his knowledge and experience and to provide advice and assistance should they be needed. The captain alone is in charge, and on him rests the responsibility for any wreckage, accident or damage caused to any third party or to any property owned by the company.

Ships sail through the Canal day and night. At night they carry on the bow a projecting light, which must be of such power that embankments or other obstacles may be seen from a distance of 1,200 metres. The Canal is illuminated by flares and revolving lights to enable ships to sail in safety.

**SHIPS' MOVEMENTS (REGULATION OF).**—Movements of ships in the Canal are regulated so as to ensure security as far as possible to all vessels, and to enable postal steamers to proceed rapidly and

safely. No ship is allowed to overtake another except in Lake Timsah and the Great Bitter Lake, elsewhere, should one ship be obliged to pass in front of another, one of the vessels must cast anchor. In these cases instructions are given from the stations.

Enlargements bringing the surface measurements to 60 metres in width have been effected to the right of the stations so as to allow the largest ships to cross in front of each other. When the Canal has been enlarged throughout to that width all ships at any point will be able to cross. This smooth system of working has resulted in reducing to a minimum the time lost in waiting by ships, either in the ports of access or at the stations. During the first seven months of 1925 no ship was held up for longer than 15 hrs. 20 mins.

**STRANDING (ACCIDENTS FROM).**—For the safe navigation of the Canal a captain must have iron nerves and be an able judge of distances. The man at the helm must have a clear outlook, the pilot needs smooth working machinery, the rudder must work freely, and in case of necessity a spare one should be in readiness.

In the event of accident or grounding in the Canal the company has in readiness powerful tug-boats which are sent to relieve the ship in distress. Accidents, however, are rare. In the first seven months of 1925, though 3,126 journeys were made, only 10 vessels were stranded (i.e. 3 per 1,000), of which four were relieved in less than six hours and the remaining six in a slightly longer time. It should be pointed out that in these cases little damage was done owing to the softness of the mud-banks.

**TOWNS AND PORTS.**—The Suez Canal is linked up with the interior of Egypt by a railway which runs between Ismailia and Cairo and by the Ismailia Canal, through which the Nile water flows, running into the Isthmus. A railway runs through the whole length of the Isthmus, joining Port Said at Suez and branching off at Ismailia on the line to Cairo. The Ismailia Canal has two extensions, one towards Port Said, the other in the direction of Suez and supplying water to those two towns. The distance from Ismailia to Cairo is 160 kilometres, the railway journey taking 2½ hours.

**PORT SAID.**—Of the towns and ports on the Suez Canal, Port Said is by far the most important. Built and directed entirely by the Company, it serves as a transit port for the importation and exportation of goods destined for Egypt and coming therefrom. Every year more than 5,000 steamers call at the port for a short stay to coal, take in water, etc., while transit steamers here are provided with projectors and anchoring appliances necessary for the passage through the Canal. These materials are furnished by private companies. There are also privately owned repairing shops, apart from those of the Company, and a petrol depot for ships using benzine. (See also article on "Port Said.")

**PORT TEWFIK (SUEZ).**—At Port Tewfik, ships having goods to unload may anchor at buoys, which are placed in front of the open spaces belonging to the Suez Canal, or they may enter Port Ibrahim, belonging to the Egyptian Government, which has recently been built in the roadstead of Suez as a port designed especially for the commerce of petrol. Finally, the Khedivial Mail Co. works a repairing dock at Suez capable of holding steamers 400 feet in length by 80 feet wide, with a draught of 25½ feet.

**TRAFFIC STATISTICS.**—Traffic in the Canal showed the most remarkable results in 1925, the net tonnage exceeding by 6.6 per cent that of 1924—the previous highest record—and registering an improvement of 33.5 per cent. over 1913. The following table shows the figures for 1913 and for all post-war years to 1925 —

YEAR	NO OF VESSELS	NET TONNAGE TONS
1913	5,085	20,034,000
1919	3,986	16,014,000
1920	4,009	17,575,000
1921	3,975	18,119,000
1922	4,345	20,743,000
1923	4,621	22,730,000
1924	5,122	25,110,000
1925	5,337	26,762,000

The average tonnage of ships passing through was higher in 1925 than in any other year, amounting to a gross total of 6,916 tons, as against 6,765 tons in 1924, net tonnage, 5,014, against 4,902 in 1924. Ships of gross tonnage higher than 10,000 made in the year 1925 seventy journeys as against fifty-one in 1924. The most important voyage in this category was that of the S.S. "Belgenland," measuring 211.68 metres in length, gross tonnage 27,807, net tonnage 18,347, this was the largest ship that had ever passed through the canal.

Of 1,854 ships which made 5,337 journeys in the year 1925, 273 (15 per cent of the whole) passed through for the first time. In the list is the "Empress of Scotland" (18,330 tons), "l'Oronsay" (13,772 tons), the "l'Artagnan" (11,317 tons), the "Ranchi" (10,526 tons), the "Ranpura" (10,577 tons), and the "Rawalpindi" (10,452 tons).

The number of journeys made by motor vessels should be noted—330 as against 233 in 1924. The figures for 1925 show 6.2 per cent of the total of journeys, as against that of 4.5 per cent in 1924.

**INCREASE OR DECREASE OF TONNAGE.** The following table shows the increase or decrease in tonnage of the various shipping lines using the canal —

LINES	NET TONNAGE 1925 TONS	DIFFERENCE COMPARED WITH 1924 TONS
P & O and allied companies	2,998,000	+ 275,000
British Tanker	2,004,000	+ 160,000
Ellerman Lines	1,833,000	+ 100,000
Alfred Holt & Co	1,599,000	— 9,000
Messageries Maritimes	970,000	— 7,000
Netherland Line	941,000	+ 14,000
Rotterdamsche Lloyd	849,000	— 80,000

The tonnage belonging to the British Government comes next—831,000 tons, showing an increase of 94,000 tons. This includes the services of the Australian Commonwealth Line, which is responsible for almost the whole of the increase.

**MERCHANDISE (MOVEMENT OF).**—In 1924 merchandise traffic through the Canal almost equalled the previous highest total of 1913. In 1925 this was exceeded by 802,000 tons, the total being 26,578,000 tons. The following table shows the movement of merchandise in thousands of tons for 1913 and all post-war years to 1925. —

YEAR	OUTWARD	HOMEWARD	TOTAL
1913	11,320	14,456	25,776
1919	3,762	10,211	13,973
1920	6,318	10,729	17,047
1921	6,576	10,933	17,509
1922	8,192	13,168	21,360
1923	7,704	15,073	22,777
1924	8,818	16,711	25,529
1925	8,802	17,776	26,578

From 1913 progress was made in spite of a very marked decrease in out-bound traffic, less in 1925 by 2,518,000 tons. This decrease specially related to coal (minus 512,000 tons), wrought metals (minus 397,000 tons) and petrol (minus 188,000 tons), land fertilising materials, however, showed an increase of 250,000 tons. Home-bound traffic, on the other hand, showed an increase of 3,320,000 tons, that is, 23 per cent over that of 1913. It is noticeable that more than a third of this increase is due to mineral oils. Rice and grain from the Far East showed decreases. A remarkable feature of the total increase of 802,000 tons which 1925 showed over 1913 is that the traffic between the United States and countries beyond the Canal was responsible for 634,000 tons, or 79 per cent.

**SHIPPING BY FLAGS.**—In 1924 and 1925 the distribution of tonnage passing through the Canal by flags was as under —

NATIONALITY	1924	1925
British	14,995,000	16,016,000
Dutch	2,488,000	2,699,000
German	1,647,000	1,791,000
French	1,497,000	1,628,000
Italian	1,483,000	1,416,000
Japanese	872,000	1,007,000

The British proportion of the total tonnage was 59.9 per cent in 1925, as compared with 59.7 per cent in 1924. The tonnages earned under British, Dutch and French flags respectively in 1925 established records.

**TRAFFIC IN BALLAST.**—As regards navigation in ballast, the tonnage of tank steamers alone showed an increase —

	1924 TONS	1925 TONS
Tank steamers	1,327,000	1,648,000
Other vessels	980,000	934,000
Totals	2,307,000	2,582,000

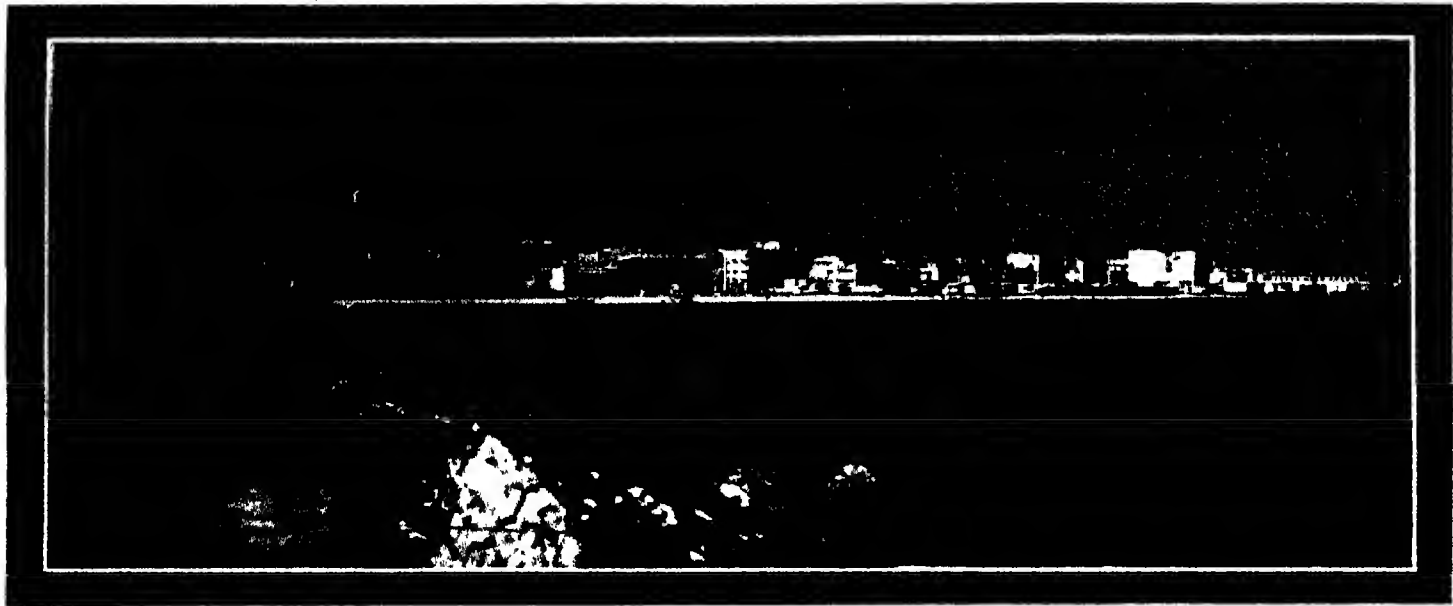
Both loaded and in ballast, tank steamers in 1925 totalled 3,422,000 tons (12.8 per cent of the entire tonnage using the Canal), against 2,832,000 tons (11.3 per cent) in 1924.

**TRAFFIC (REGIONAL DISTRIBUTION OF).**—Of the net tonnage carried between the two great regions linked by the Canal, British India ranked first in 1925 with 9,070,000 tons, or 33.9 per cent of the whole. The second in importance was Eastern Asia, including China and Japan, with 5,709,000 tons or 21.3 per cent, and this in spite of the troubled state of China. In the third place came Australia and New Zealand—3,388,000 tons or 12.6 per cent. The Persian Gulf was fourth with 2,960,000 tons—11.1 per cent. In 1924 India showed a slight falling off, but Oriental Asia has hardly varied. Australia and the Persian Gulf region have, on the other hand, increased their traffic through the Canal.

As to the total exchange of traffic between Europe and beyond the Suez, the increase over 1913 was, on the contrary, weak, showing the small amount of 168,000 tons. The net difference was apportioned as follows —

DIRECTION	1913	1925	DIFFERENCE
North-South	10,461	8,227	— 2,234
South-North	13,561	15,963	+ 2,402
	24,022	24,190	+ 168

From these figures it will be seen how restricted exports from Europe to countries beyond the Canal have become, while the imports from the latter have only increased by some 18 per cent.



GENERAL VIEW OF PORT SAID, SHOWING STATUE OF DE LESSEPS

## PORT SAID

### CITY

**P**ORT SAID, a fine city of nearly 70,000 inhabitants of whom about 20,000 are Europeans is noteworthy for its shipping, also for its commercial and industrial life. The picturesque and well kept streets, the splendid stretch of sandy beach with excellent bathing facilities, and the invigorating atmosphere make it one of the most attractive resorts of health and pleasure in Egypt. The old Port Said of insatiable and evil repute has, indeed, almost disappeared, its place having been taken by a well-drained, well-watered and attractive town. The city is of quite recent growth, and, as does the port, owes its existence entirely to the Suez Canal.

**BUILDINGS, ETC.** The most important structures in Port Said are the Egyptian Government Buildings, the British Hospital, and the massive offices of the Suez Canal Company, which latter occupy an enclosure between the Bassin du Commerce and the Bassin de l'Arsenal, facing on to the fairway leading into the Canal (Bassin d'Ismail). Their polished domes, glittering in the sun, are visible for some distance. The large Mussulman School is also a finely constructed edifice, and mention may be made here of the noble statue of Ferdinand de Lesseps, which stands near the Mole, having been erected in 1899. The monument is 22½ and the pedestal 34½ ft high.

**CHURCHES.**—There are Anglican, Roman Catholic and Greek Churches in Port Said, also several mosques.

**EXCHANGE.**—The City is probably the most cosmopolitan place in the world so far as money is concerned. English, French, Egyptian, Greek, Indian or any other coins seem to be accepted, at least by the shopkeepers, but the official coinage is, of course, Egyptian.

**HOSPITALS.**—These include a large General (Government) Hospital, a British Hospital, and an Egyptian Government Fever Hospital, all of which have done good work.

**HOTELS.**—Port Said can boast of many excellent hotels, three of these, the Eastern Exchange, the Bristol and the Casino Palace, being in the front rank.

**SPORT AND RECREATION.**—For European residents and visitors there are good tennis and golf clubs, the golf course near the Manzala Canal has recently been made into one of 18-holes. An interesting steamer trip can be taken on Lake Manzala, while good shooting and fishing are at command for those who desire them. There is a splendid stretch of sandy beach for children, and bathers are perfectly safe, as they can walk practically until they are tired without getting out of their depth. Surf-bathing is also a popular pastime.

**STREETS AND GARDENS.**—During the British occupation and since the installation of Egyptian administration, clean, regular streets have been laid out in the European style and planted with shade trees. The Rue du Nil and the Rue de Commerce are really fine thoroughfares, possessing many

handsome buildings and attractive shops. As might be expected, the town which has become par excellence the gateway of two hemispheres would be lacking in enterprise did it not offer to the traveller the wares of the two worlds it divides. Here one can purchase Egyptian antiquities, Indian, Chinese and Japanese goods of every conceivable variety.

Fine gardens have been laid out and are under the care of the Municipality.

### PORT

The harbour was commenced in 1859, and was originally intended to serve as an entrance basin. Its development as a great coaling station was not at first foreseen, but at a later period coaling wharves for lighters with a depth of 10 ft were constructed on the Asiatic side of the Canal. Between 1884 and 1893 the Bassin du Commerce was built on the African or western bank, as well as an isolated basin for discharging petroleum products in bulk.

As a result of an agreement between the Egyptian Government and the Canal Company, the extension of coaling wharves was pushed forward rapidly. Work was continuous between 1903 and 1912, some 19,000,000 francs being spent. Landing stages and quays now line the western bank, at which lighters and small vessels can berth. Ordinary-sized craft are moored stern-on to the quays, to which merchandise is transferred by barges and lighters. The area of the port is at present 650 acres, of which 410 are in deep water. The average depth of the Canal is 34 feet, and the breadth is about 160 feet.

**APPROACH.**—The coast in the neighbourhood of Port Said is unusually low, the lighthouse tower and the shipping being the only objects seen from the offing. At six miles to the west the coast is marked by Fort Chemil, a low square building standing by itself, but to the east of the port there is nothing to indicate the low shore. The current is uncertain, depending on the wind, the general direction is to the east, at from  $\frac{1}{2}$  to  $1\frac{1}{2}$  knots per hour. Owing to the current and low shore, more than usual caution is necessary in approaching the harbour. There is a good straight channel 50 yards wide at the narrowest point that leads up to the harbour, with a general depth of water of 34 feet.

**CARGO HANDLING.** A very complete equipment is maintained by the Canal Company. Three floating cranes of 60, 40 and 12 tons respectively are available, and also a number of powerful tugs. Ship repairs of a minor character can be carried out notably at the works of Messrs Savon and Company. The Floating Dock, owned by the Canal Company, is 295 ft in length and 61 ft at the entrance. The depth of water at the sill is 18 feet. There are three patent ships having a lifting power of 1,000, 400 and 200 tons respectively.

**COAL AND OIL BUNKERING.** Some 1,700,000 tons of coal are received annually, of which 200,000 tons are for home consumption, the balance being used on vessels in transit. The coaling depots are on the eastern bank, and the trade is almost exclusively in British hands. Operations are carried on by local labour, the coaling gangs being famous for the rapidity with which they supply the ships.

A number of oil tanks have been erected, their storage capacity amounting to 82,000 tons. The port is a convenient station for ships designed to convert their fuel system from coal to oil, but in this respect Aden has hitherto taken first place in the Far East trade.

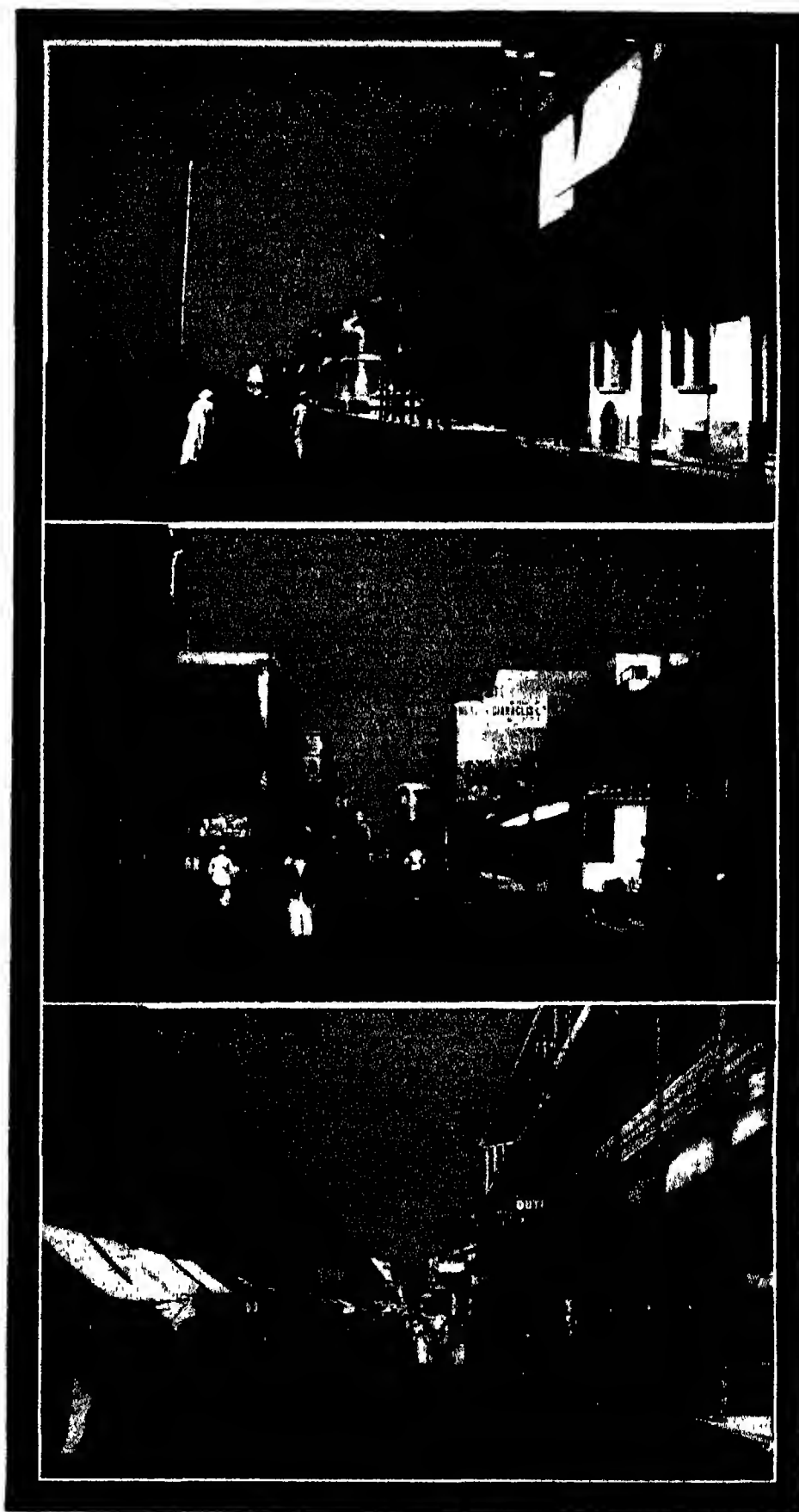
**COMMUNICATIONS.** Water communication between the Suez Canal and the Nile by way of Menzala was established in 1913. This waterway thus connects the harbour with the interior of Egypt, enabling goods to be transported via Damietta and Mansurah. Transport facilities are controlled by the Menzala Canal and Navigation Company. There is good railway communication with Cairo, the comfortable trains of the Egyptian State Railways taking about 4½ hours to complete the journey.

**NEW WORKS.**—The Suez Canal Company is excavating and enlarging the Bassin de l'Arsenal for use as an import centre. New Customs buildings are to be erected between this basin and the Cherif Basin. In addition, quays are projected for the landing of inflammable and dangerous merchandise, the present site at Rassouah being only a temporary landing stage.

More important still is the work now going forward of carrying the minimum depth of the Canal to 40 feet and its width to 200 feet. The company has also recently completed its scheme of moving the workshops and the living quarters of a very considerable staff from Port Said to a site on the eastern bank, known as Port Fuad.

**PILOTAGE.**—This is compulsory. Pilotage dues are levied on entering and leaving the port on all ships over 100 tons gross. Steamers pay 25 francs per diem and sailing vessels 10 francs. The tariff for night work is doubled.

Whatever length of time ships may stay in the harbour of Port Said, and whatever



1. SULTAN HUSSEIN, RUNNING PARALLEL TO THE CANAL. Offices of The Port Said and Suez Coal Co. on right.
2. SHARIA FOUAD I.
3. SHARIA PRINCE FAROUK. The Shopping Centre for Tourists.

commercial operations they may transact there, total remission will be made of the pilotage charges for day-time entrance, or remission of half the charge for night-time entrance, if they decide to go through the Canal. The signal for a pilot for a vessel in the roads is lights exhibited at the fore-masthead, followed either by rockets or blue lights.

**PORT AND CANAL DUES.**—Light dues are collected by the Egyptian Government on the same basis as at Alexandria.

**ANCHORAGE DUES.**—These are fixed on a basis of two centimes per ton and per day, excluding the first 24 hours.

**QUARANTINE DUES.**—These are as at Alexandria.

**QUAY DUES.**—On all imported merchandise, 7 per mille ad valorem, and 12 per mille on exports.

**TOW AGE.**—In or out of port, 20 cents per ton. Tug, 1st class, 650 francs per hour, 2nd class, 140 francs. Hulks, 80 to 100 francs for first hour, half after. Coolie labour, 15 piastres per man per day.

**WATER.**—5d per ton.

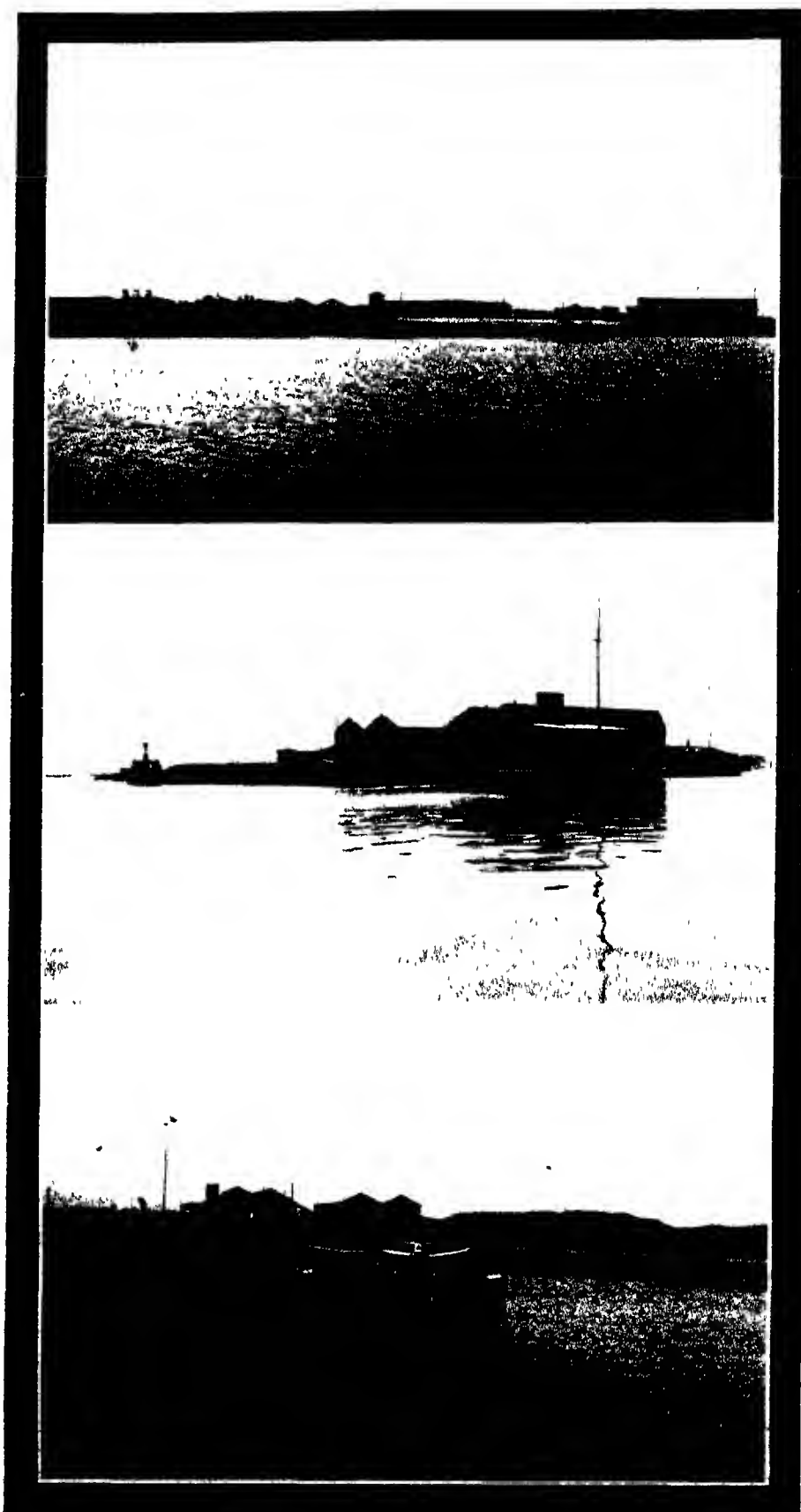
**STORAGE FACILITIES.**—The special facilities for the storage of merchandise that exist at Port Said are due to the fact that the Canal Company has control over all traffic entering the Canal. The port is a dependency of the Canal, though the sovereign rights of Egypt are recognised and respected. Goods for purposes of importation are landed on wharves controlled by the Customs, but outside this area is the free zone, in which the Customs authorities exercise no control over goods. Port Said in this respect enjoys a privileged position. In the free zone are the warehouses, leased from the Canal Company, of the Egyptian Bonded Warehouses Company, Limited, and on the opposite side of the Cherif Basin are the Customs and other warehouses. Merchandise destined for transit may therefore be landed in the free zone, transferred to the import zone or reshipped. Other stores, the property of the principal shipping companies, for the warehousing of goods to be reshipped exist on the eastern bank.

**TIME SIGNALS.** A black ball, hoisted on an iron latticework mast 5 minutes before the signal is made, is dropped at 8 a.m., noon and 4 p.m. Egyptian standard mean time, equal to 18h, 22h, and 2h Greenwich mean time, and 20h, 9m, 15s, 0h, 9m, 15s, and 4h, 9m, 15s local mean time. The Radio-telegraph Station at Navy House, Cherif Basin, is worked by Lloyds, the call sign being "S 11 13".

**TRADE AND SHIPPING.**—In 1870 the gross tonnage of shipping entering Port Said was 986,963 tons, of which 654,914 passed in transit. By 1890, thirty years after the opening of the Canal, the gross tonnage had risen to 15,884,000 tons, of which 13,739,258 tons were in transit. In 1925 these figures were considerably increased, the returns for that year being as follow:—

	No OF SHIPS	NET REG TONNAGE.
In transit ..	5,237	21,051,866
Non-transit ..	643	1,331,022
Totals ..	5,880	22,382,888

In the same year 583,962 tons of cargo were discharged and 193,806 tons shipped. Imports in the preceding year were valued at £E 5,364,234, exports at £E 263,572 and re-exports at £E 239,461.



THE PORT SAID AND SUEZ COAL CO. (Lambert Bros. Ltd.), Port Said.

1. General View of the Depot.
2. The Depot taken from the corner.
3. View from the Background.



## PORT SAID AND SUEZ COAL COMPANY (LAMBERT BROTHERS, LTD.).

**Inception.** The business of Lambert Brothers has been in existence since the days of sailing ships. As times changed, its successive controllers, adapting themselves to the altered conditions, increased and extended its operations, so that in the course of half a century it has become one of the big concerns engaged in the international coal trade of the world. The firm is, in fact, interested in coaling depôts in nearly every maritime country, and among coaling stations exclusively its own are those of the Port Said & Suez Coal Company, situated at both ends of the Suez Canal.

**Capital.** Converted into a limited liability company in 1902, the enterprise has a paid up capital of £1,000,000, which amount alone was covered in 1925 by British Government securities as investments.

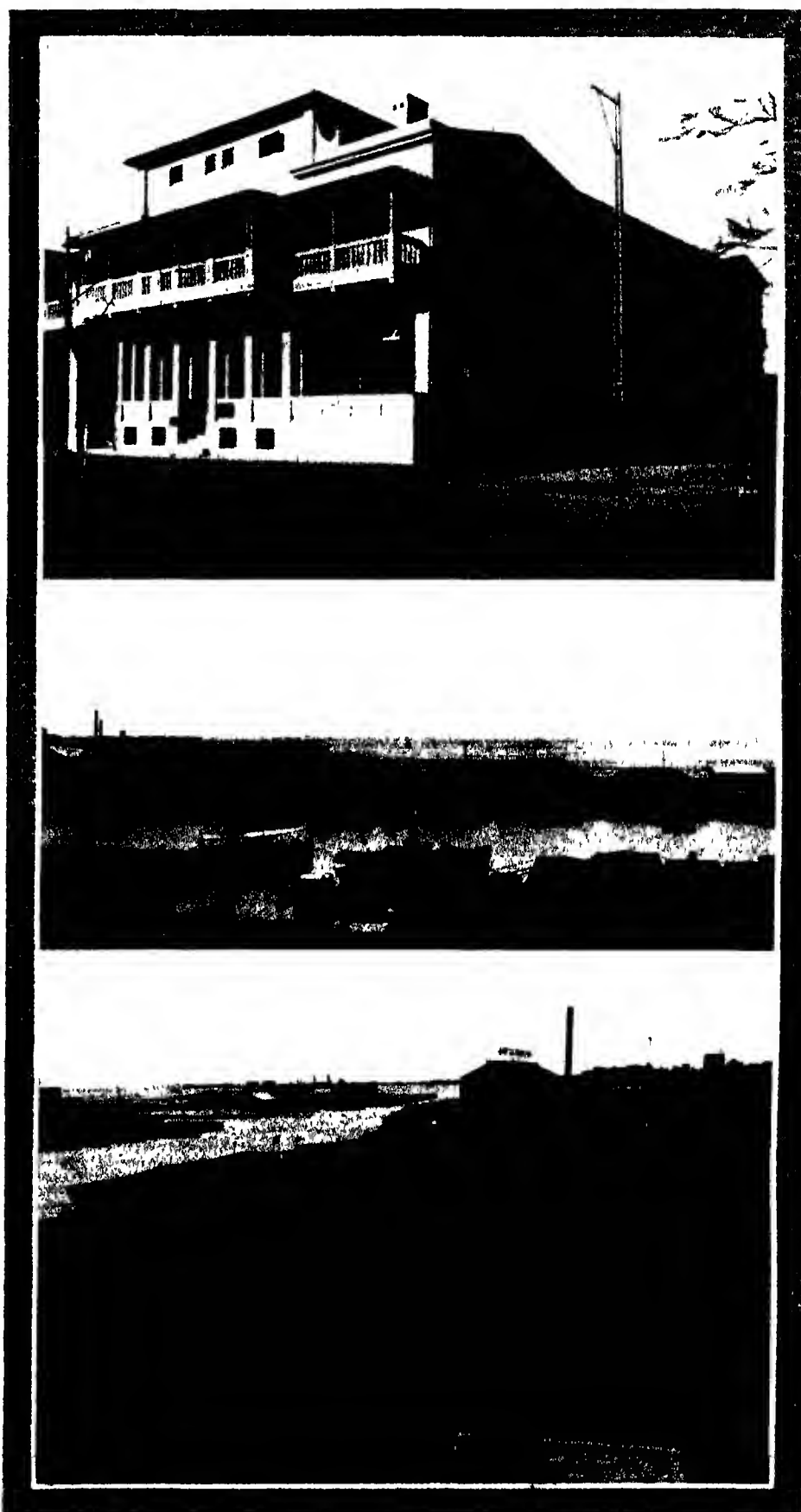
**Personal.**—When the Suez Canal was opened in 1869, the original Lambert Brothers persuaded Mr. George Royle to look after their interests and open their depôts on the Canal. Mr. Royle was a remarkable character. Starting in the Merchant Service, where he received his Master's ticket, he transferred to and was commissioned in the Royal Navy, taking an active part in the Chinese War (1860). He was also in India during the Mutiny. Leaving the Navy, he took up law, and was called to the Bar at Lincoln's Inn in 1870. Shortly afterwards Mr. Royle went to Port Said, at that time considered one of the worst places in the world. Bearing a striking resemblance to the late King Edward, whose host he was privileged to be on more than one occasion, Mr. Royle was one of the outstanding British personalities in Egypt during the late Victorian and Edwardian eras. His influence in Port Said was a powerful lever in ridding it of undesirables, and converting it into one of the safest and cleanest ports in the East.

Upon his death in 1912 he was succeeded by his immediate assistant, Mr. A. J. Tweedie, upon whom fell the heavy task of directing the company's affairs in Egypt throughout the War. Handling, as the Admiralty Contractors, millions of tons of coal for H.M. ships on active service, the firm's organisation under Mr. Tweedie's direction proved so equal to the crucial test as to be mentioned in despatches, while the commendation received from the Local Naval and Military authorities was most flattering.

In 1922 Mr. Tweedie retired after 40 years' service with the company. To meet the changed post-war conditions, Messrs. Lambert Brothers Ltd. promoted Mr. H. E. Newbould and Mr. W. T. Bond, the seniors of the technical and executive branches of the company's business in Port Said, to be joint managers, thus enabling the directors always to have one administrator in residence during the absence of the other.

**Equipment.**—The company has its own offices, coal yards, lighters, tugs, launches, etc., at both Port Said and Suez. In addition, at the former port are maintained small, model workshops for executing all the firm's repairs. A visit to the coal yard will show how clean such a place can be kept. The proper stacking of coal on concrete floors which can be swept and hosed when empty practically eradicates the danger of spontaneous combustion.

**Coaling Rapidity.**—Port Said still claims to be one of the fastest coaling ports in the world, coolie labour being the agency employed. As an illustration, a troopship in



THE BRITISH COALING DEPÔTS LTD.

1. Offices of the Company and those of the Anglo-Persian Oil Co. Ltd., Port Said.
- 2 & 3 Views showing the large stocks of coal maintained by the first-named Company.

(See letterpress, page 126)



ANGLO-PERSIAN  
1 Tanks at Rasswa, Port Said

1921 took five days to coal at a port of the United Kingdom, while the same large quantity of coal was put and trimmed into her bunkers in ten hours by the Port Said & Suez Coal Co. at Port Said incidentally to the disgust of certain passenger officers on board who anticipated at least three days' leave in Cairo before continuing the voyage to India.

**Other Services.**—Electric searchlights to enable vessels to traverse the Suez Canal at night, fresh water barges, cargo and cattle lighters, etc., are included in the company's plant, and necessitate skilled workmen being kept on the pay roll.

**Offices.** In passing through the Canal one is certain to notice the offices of the company, prominently situated on the quays at Port Said and Port Tewfik. The visitors' book kept on the premises shows the signatures of many distinguished and inter-

esting personages who have transited the Canal. The offices are open day and night and are fully staffed for all branches of shipping work.

**Head Offices.** Omar Sultan Hussein 1er, Port Said. Cables "Royle" Port Said or Suez. Codes: Scott's, Bentley's, Watkins, ABC 5th Edition.

**Bankers.**—National Bank of Egypt, at Port Said and Suez.  
(See illustration, page 124.)

#### THE BRITISH COALING DEPÔTS LTD.

**Inception.**—This company commenced operations at Port Said and Suez in 1909 as steamship agents and coal suppliers.

**Development.** The business has steadily increased, and they are now one of the most important concerns on the Suez Canal.

**Activities.** The firm acts as agents for many leading shipping lines and also represents The Anglo-Persian Oil Co. Ltd.

**Address.** P.O. Box 328, Port Said (cables "Albion," Port Said and Suez).

**Head Office.**—117-121, Leadenhall Street, London, E.C.3.

**Bankers.**—Barclays Bank (Dominion, Colonial and Overseas).

#### ANGLO-PERSIAN OIL CO. LTD.

**Installations.**—Figuring among the world's most prominent oil-producing corporations, this company has an oil fuel installation at Rasswa, Port Said, consisting of tank storage for Diesel and furnace grade oils, with powerful pumping machinery capable of discharging at the rate of about 350 tons per hour if required. Barges of 500 tons' capacity each are also available, each capable of discharging at the rate of 250 tons per hour.

Another fuel oil installation is erected at Suez, and will be operated as soon as the New Harbour Works are completed.

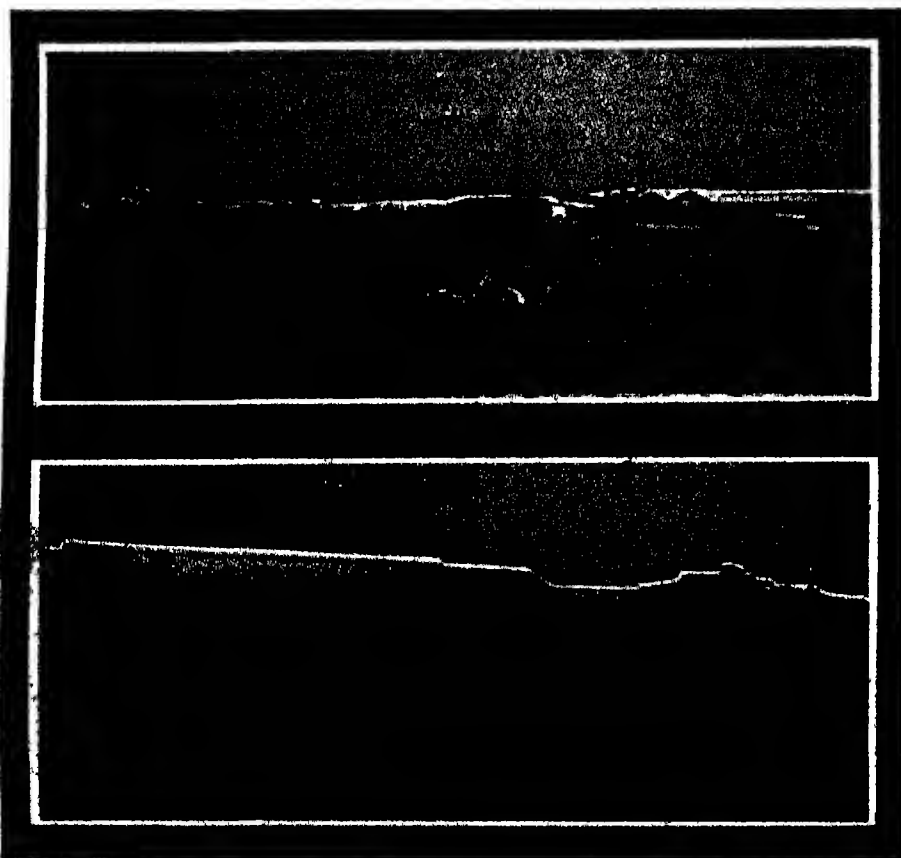
**Supply to Ships.** Supplies of Diesel and furnace oil are effected to motor and steam driven vessels by direct pipeline or by barges, there being four deep-water berths adjacent to the Canal fairway necessitating the minimum possible deviation only.

**Land Supplies.** The Egyptian Government and various important public utility companies all over Egypt are also large consumers of Anglo-Persian oils for both Diesel engine and boiler work, despatched to them in tank-wagons from the company's railway siding.

**Agents.**—Agents in Egypt are the British Coaling Depôts Ltd., Port Said and Port Tewfik, Suez.

#### EASTERN TELEGRAPH COMPANY LTD.

—Opposite P & O Anchorage, Port Said. Other Egyptian stations at Rue du Telegraphe Anglais, Alexandria, Rue Emad El-Dine, Cairo, Suez Town and Port Tewfik Docks. Telegrams by direct cable routes to all parts of the world. The Company's method of automatic working throughout ensures speed and accuracy, and its extensive system of duplexed cables reduces delay to a minimum. Telegrams for the Company's cables are accepted at all Egyptian State telegraph offices, but should be marked "Via Eastern." No charge is made for this indication. Time is saved and greater accuracy secured, however, by the handing in of telegrams at the stations mentioned above, where books of telegram forms, tariffs, etc., can be obtained on application. Head office: Electra House, Moorgate, London, E.C.2.



THE BRITISH COALING DEPÔTS LTD.  
1. General view of the Depôts.  
2. Showing cleanliness of coal piles.



OIL CO. LTD.

2. Oil Bunkering with pipe line at Rasswa.

**WM. STAPLEDON & SONS.**

**Inception.** This well-known firm was established shortly after the opening of the Suez Canal, and forms the only purely steamship agency in that important zone not being concerned with the supply of coal or other fuel.

**Development.**—Beginning with the Blue Funnel Line, whose vessels now transit the Canal to the number of about five weekly, the company's business has gradually expanded until it handles to-day some 800 steamers yearly.

**Steamship Agencies.**—Among prominent passenger steamship organisations for which Messrs. Wm. Stapledon & Sons are agents are the Orient Line, with three 20,000-ton palatial steamers (shortly to be increased to four) maintaining communication between England and Australia, the Bibby Line, to

Rangoon, the Union Castle Line, to the East Coast of Africa, and the Hall and Ellerman-Bucknall Lines, to India and the Far East. In connection with the "round the world" cruises now an established feature of ocean travel, this organisation acts as agents for the Cunard, White Star and Red Star Lines, whose vessels are the largest and fastest to visit Egypt. Among liners recently transiting the Canal are the Cunarders "Carinthia" and "Laconia" while the "Belgenland" (Red Star Line), with a tonnage of 27,200, is the largest commercial steamer that has yet made the passage.

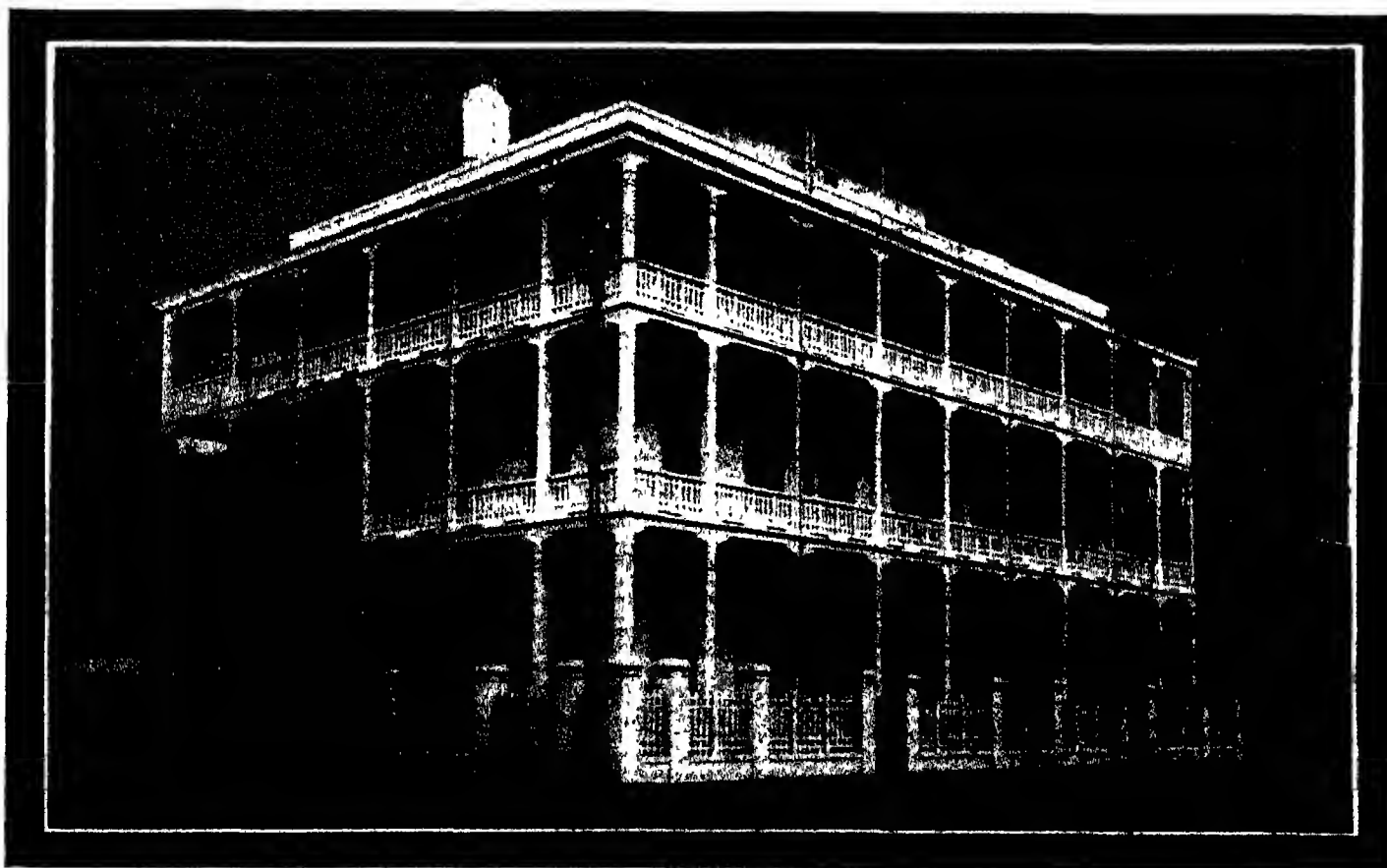
The company specialises in clearing and forwarding cargo to all parts of Egypt, Palestine, the Levant, etc. Among the purely cargo lines it handles are the Anchor-Brookbank, the old-established service of vessels to Calcutta, the Shaw Savill &

Albion and the Atlantic Transport Co., from New Zealand and Australia.

**Offices.** The new offices of this organisation at Port Said were completed in 1924. The building, in the Egyptian style, is particularly adapted to both climatic conditions and modern business requirements. Many competent judges consider these offices among the best designed in the country. At Port Tewfik, Messrs. Stapledon & Sons have a large and important office controlled by the Port Said management.

**Addresses.** 30 rue Waghorn and 1 rue Constantinich, Port Said; 2 Port Tewfik, Suez. Cables: "Stapledon" Port Said, and "Stapledon," Suez. Codes: Scott's 10th edition, Standard Bentley's Phrase ABC 5th and 6th Editions. A 1.

**Bankers.** National Provincial Bank, Ltd. and Messrs. Worms & Co.



WM. STAPLEDON & SONS, Port Said.  
The Firm's New Offices in that City

## SUEZ

### CITY AND PORT

**T**HE city and port of Suez, which lie at the northern extremity of the Gulf of Suez and at the termination of the Canal, date only from 1860, when the works were begun, though there previously existed a large but unimportant village, whose inhabitants lived by fishing and by work on the big steamers which then embarked and disembarked passengers by the overland route. To-day the town, which has been provided with a good water supply, has a population of some 28,000, but its growth has hardly kept pace with the development of other Egyptian cities, and it possesses few features of interest. A statue to Thomas Waghorn, who organised the overland service from Cairo to Suez for passengers to India, stands on the island which was formed by De Lesseps from the dredgings of the canal. Seven miles distant from Suez is a small oasis, where tradition states there formerly existed seven gardens or groves and twelve fountains of salt water. It is known as the Well or Fountain of Moses, and has been variously identified with the point from which the Israelites crossed the Red Sea and with Marah, whose waters Moses made sweet.

**PORT.**—The port of Suez is also known as Port Tewhik. From 1860 its creation was continued intermittently until 1873, by which time the sum of £E 1,500,000 had been spent upon it. Nothing further was attempted until 1906, when works which consisted mainly of dredging went on until 1910. The main channel and entrances were deepened, and a new quay added. Important additions to the port have been carried out since 1918, and are still in progress, the close proximity of Suez to the Egyptian oilfields necessitating the construction of an oil-basin, together with a mole, which will berth seven tankers at once. The waterway is also being dredged to a depth of 38 feet. These improvements, which are an economic necessity to the petroleum industry, should considerably assist in reviving the trade of the port.

**ACCOMMODATION**—The harbour of Suez includes the north and south basins of Port Ibrahim, with two outer quays and one inner, having connecting wharves. There is in all 4,878 ft of quayage, also one jetty 1,830 ft long. The water area is 99 acres, and the average depth 26 ft at low water. Large vessels being unable to enter, they discharge their cargoes outside. Coaling and cargo operations are sometimes rendered difficult in winter, as the roads are only slightly sheltered.

**ANCHORAGE**—The bay is open to the south, but well protected to the east, north and north-west. The best anchorage for large vessels is in 5 to 5½ fathoms with Kalah-Kobireh lighthouse bearing SW., and the outer end of the Canal breakwater E½S.; bottom stiff clay.

**BUNKERING**—The extraction of crude petroleum and its products to the south of Suez is of considerable economic importance to Egypt. At present the supply is far from adequate to the needs of the country. There are two refineries, of which the larger, owned by the Anglo-Egyptian Oilfields Company, is capable of refining about 1,000 tons per

diem. The company possesses two small steamers for supplying vessels in the roads with oil fuel, and also two large barges for the same purpose. A pipe line runs along the causeway to the port. The storage capacity provided by tanks and the two refineries are sufficient for the present day needs of shipping. A stock of coal is kept, vessels coaling from the wharf or from lighters.

**COMMUNICATIONS**—Originally the port was constructed to provide an entrepôt at the northern end of the Red Sea for the importation of Eastern produce and its distribution to Cairo and Upper Egypt. A railway line was built communicating directly with Cairo, but this was afterwards demolished, the Suez-Ismaïlia branch now connecting the town with the main State railway system.

**DRY DOCK**—The dry dock is the property of the Khedivial Mail Steamship and Graving Dock Company. It has a length of 406 ft., and a breadth at entrance of 73 ft. The depth of sill at high water is 23 feet.

**PILOTAGE**—Compulsory. Dues are £E 2 per vessel on entrance and £E 1 on leaving.

**PORT CHARGES**—Vessels entering the basins pay anchorage dues (droits de bassin) based upon tonnage, the scale of charges varying from £E 1 for vessels of 1,001 to 1,500 tons to £E 4 for vessels of 4,001 tons and over. Mail and coastal steamers enjoy a reduction of 5 per cent and 50 per cent respectively.

**Light Dues**—10 millemes per ton up to and including 800 tons, 5 millemes per ton over 800 tons.

**Quarantine Dues and Quay Dues**—The same as at Alexandria.

**TRADE AND SHIPPING**—Competition with Alexandria, and to a lesser degree with Port Said, has damaged much of the trade of Suez in general merchandise. The port, however, still retains its lead in gunny bags, the importation of which it shares with Port Said. In 1924 the imports of cotton, onion, sugar and cereal sacks were valued at £E 411,920, weighing 9,400 metric tons. A considerable trade was at one time also carried on with the small ports of the Red Sea, and this Suez now shares with Port Said.

The number of vessels entering in 1925 was 370, having a net registered tonnage of 436,927. Of these vessels, 297 were British. The quantity of merchandise landed was 501,968 tons, and of that shipped 193,806 tons. Imports in the preceding year were valued at £E 2,042,684, and exports at £E 791,988.

**Canal Traffic**—During the first six months of 1926 the total of cargo passing through the Canal showed a decrease of 1,000,000 deadweight tons, as compared with the corresponding period of 1925, the figures being 12,935,000 tons, of which 7,768,000 were north-bound and 5,167,000 south-bound, as against 14,082,000 tons in the first half of 1925, of which 9,865,000 were north-bound and 4,217,000 south-bound. This decrease was due chiefly to the fact that exports from both Australia and British India were considerably lighter than the exceptionally heavy exports during 1925, the north-bound traffic therefore suffering considerable loss. The increase in south-bound traffic, however, made up for almost 50 per cent of this loss. Mail services through the Canal between January and June 1926 exceeded 4,000,000 tons for the first time in a six-months period.

## OTHER CITIES AND PORTS

### ABYDOS

Abydos was formerly one of the largest and most important cities in Upper Egypt, and was famous as the burial-place of Osiris, to whose worship the temple was dedicated. The remains of Abydos comprise the Temple of Seti I., better known as the Memnium, famous for its sculptures, the Tablet of Abydos which gives the names of 76 Kings of Egypt, beginning with Menes and ending with Seti I., and the temple of Rameses II., dedicated to the god Osiris. Modern Abydos, which lives largely by visitors who come to view the ruins, has a population of 10,004.

### ASSIÛT

Situated 250 miles from Cairo, Assiût is the capital of the province of the same name, and is the largest and best built town of Upper Egypt. At the last census it had a population of 51,431, its position on one of the leading caravan routes from the Sudan having always given it a certain commercial importance. There has been a city here ever since ancient Egyptian times, and the Greeks knew it as Lycopolis or "wolf city," probably because the jackal-headed Anubis was worshipped there. The present city has spacious bazars and fine mosques, one of which is remarkable for its lofty minaret. The American Mission has a large establishment at Assiût, and the education of the natives is undertaken on an extensive scale. The city is also famous for its red pottery, carved ivory figures and sticks, inlaid tables and boxes, shawls worked in gold and silver and beautiful round ivory beads, also for its market, to which wares from Arabia and Upper Egypt are brought.

**ASSIÛT BARRAGE.** The chief importance of the Assiût district lies in the fact that it is the starting point of the great Ibrahimiyah Canal, which is nearly 200 ft. wide and some 200 miles long, it supplies Middle Egypt and the Fayyûm with water. This canal carries enough water in flood-time for all purposes, but when the Nile is low its supply is insufficient for the irrigation of the lands on its banks. When the great reservoir at Assuan was decided upon, it was felt that a barrage at Assiût must form part of the scheme, and a site was chosen about a mile from the town, where the river is nearly 3,000 ft. wide. The barrage is an arched viaduct, somewhat similar to that near Cairo, the width of the roadway over it is 183 ft., and provision is made for wheeled traffic. It contains 111 openings, and has two sluice gates 8 ft. 2 in. high, the total length of the barrage between the abutment faces is 2,691 feet. The waterway between the piers is 1,821 ft. wide, and the superficial area of flood waterway is 63,924 sq. feet. The precise sum paid for the Assuan Dam and the Assiût Barrage was £E 3,439,684, but before the certificates are fully redeemed in 1933 the Egyptian Government will have disbursed altogether £E 4,598,880. (See also special article on "The Control of the Nile.")

### ASSUAN

Assuan (Aswân), situated in the southern limit of Egypt proper at the foot of the First Cataract, has of late years become the permanent winter home of many English and American visitors, who find it an admirable centre for both sightseeing and social enjoyment. The modern town, which has a

population of about 15,000, is the successor of more than one ancient city, the Greek town of Syene having stood on the slope of a hill to the south west of the present place. The original frontier town was situated on the Island of Elephantine, and occupied an important position as the starting-point of all expeditions into the Sudan. In Ptolemaic times Assuan was famous for its wines. During the British occupation of Egypt, the town acquired distinction from being the site of the greatest engineering enterprise ever undertaken in Egypt—the Assuan Dam. Apart from the famous Temples of Philae and other historical remains, the native bazars, with their Sudanese wares and Dervish arms and armour, are always interesting to visitors.

**ASSUAN DAM.**—The wonder of Assuan is its dam across the Nile at the head of the First Cataract. Begun in 1898, it was completed in 1902, in 1907 it was raised and made as it now stands. It is a triumph of engineering skill for which British engineers and contractors are alone responsible, and will rank for many years to come as the most magnificent reservoir in the world. Sir William Willcocks, Sir William Gairdner and Sir Benjamin Baker as engineers, and Sir Ernest Cassel as financier, will long be remembered in connection with the stupendous work, which, at a total cost of £4,000,000, has increased Egypt's productivity a hundred fold by turning the Nile between Korosko and the First Cataract into an immense reservoir when water is plentiful in the winter, and allowing it to escape when the cotton fields of Egypt are thirsting. The Assuan Dam has already worked wonders. (See also article on "The Control of the Nile.")

**FIRST CATARACT.**—Assuan lies at the foot of the First Cataract, where the scenery (for Egypt) is peculiarly beautiful and wild. The Cataract can be reached easily from the dam, along the top of which runs a tramway from one bank to the other. As the big Nile steamers cannot pass the Cataract the service is here interrupted, starting again six miles up at Shellal, whence the boats proceed to Wadi Halfa. On the other hand Shellal is the terminus of the Egyptian Railway System, beyond there is no railway communication until the Wadi Halfa terminus of the Sudan Railways is reached.

**ISLAND OF ELEPHANTINE.**—This island lies a little to the north of the First Cataract, just opposite Assuan, and has been famous in all ages as the key of Egypt from the south. The famous Nilometer described by Strabo stood here, a single stairway of 52 steps being all that is now left. The ruins on the island are of great interest, comprising several rock hewn tombs dating from the earlier dynasties and from the Roman occupation.

**PHILAE.**—Philae was the name given by the Greeks and Romans to the two islands which are situated at the head of the First Cataract, about six miles south of Assuan. The larger island is called Bigah, the Senemet of the Egyptian texts, and the name Philae now generally refers to the smaller island, on which stands the group of ancient temples of the Ptolemaic and Roman periods. Herein were offered, of old, sacrifices to the gods Isis and Osiris, and beautiful indeed must have been some of the temples. The remains of these buildings rise above the water under which the island is now submerged for six months every year, and the great temple of Isis, the picturesque and unfinished Kiosk, and the Temple of Hathor are only the chief of the many architectural glories of the island.

The neighbouring quarries are of great interest, and mark the source from which were formerly obtained the huge blocks of red porphyry used for the construction of obelisks and sarcophagi. How these were transported is still a mystery.

### BENI SUEF

A large and important town, the capital of the province of that name. Beni Suef is three hours up the Nile from Cairo. The population numbers about 11,000. The chief industries there are in connection with the manufacture of woollen carpets and coarse linen stuffs for the fellahen, it is also a centre of the flax industry, with a large weekly market. From Beni Suef extends one of the principal routes to the Fayûm.

### DAMIETTA

This is one of the largest towns in Lower Egypt, having a population at the last census of 30,084. It was once famous (under its old names of Thamiates and Damiyat) as the principal emporium on the east side of the Delta, a great trade having been done in the Middle Ages in a kind of linen stuff called, from the name of the place "dumity," oil cloth, dates, fish, etc. The old Damietta of that time was destroyed by the Crusaders in 1249, after Louis IX. of France had been held to ransom by the Arabs, and the new town was built further inland. The commercial importance of Damietta has much declined since those days, and though the harbor is still crowded with all kinds of sailing craft, only a limited trade is done with Syria and Greece. Vessels of a deeper draught than six feet cannot enter the port, which is almost entirely closed by a triple line of dangerous breakers formed by sand banks.

### GIRGÂ

A town of 21,652 inhabitants, on the west bank of the Nile a few miles south of Men-shiya. Girga has a large Coptic population, and is said to occupy the site of the ancient This, whence sprang the first dynasty of historical Egyptian Kings. Several interesting tombs lie a few miles to the west, and the oldest Roman Catholic Monastery in Egypt is situated here.

### ISMAILIA

The town of Ismailia, situated about 94 miles north-east of Cairo, has a population of between fifteen and sixteen thousand. It is a modern place, dating only from 1862, after the work of constructing the Suez Canal was commenced. At one time it had an invariable name for malaria, the Suez Canal Company having spent some £30,000 on sanitary works and medicine alone up to the end of 1897. In 1902 the methods of Sir Ronald Ross in dealing with the anopheles mosquito were adopted, and since then the cases of fever have dropped from 2,200 to under 200 a year. The town is well laid out, and contains many handsome villas with gardens, two or three good squares, and streets and roads planted with labbaik trees.

### LUXOR

Luxor, in Arabic El-Aqsar, or El-Qusur, "the Castles," which occupies part of the site of ancient Thebes, is situated on the east bank of the Nile, some 450 miles from Cairo, and may be said to owe its present prosperity largely to the enterprise of the well-known firm of Thomas Cook and Son in attracting tourists to visit the famous ruins in the vicinity. As recently as 1885

Luxor was no more than a straggling and untidy Egyptian village. To-day it is a well-built town of about 10,000 inhabitants, its roads being some of the best in Egypt, the sanitary conditions are good and the water supply is excellent. A handsome Mosque was built in 1906 to which almshouses are attached, and there is also a boarding school for girls maintained by the American Mission.

During the last thirty years Luxor has become the most popular health resort in Upper Egypt, and the large hotels which have sprung up to accommodate visitors from all parts of the world provide for their guests every form of social entertainment. Certainly there is nowhere in the Nile Valley a more convenient centre for sight-seeing, and no better place in which to acquire a knowledge of Egypt's historic past. Here are the famed ruins of Karnak and Thebes, the valley of the Kings with the recently opened tomb of Tutankhamen as its principal attraction, the temples of Edfu and Medinet Habu, and the Temple of Ammon. The Temple of Luxor is in the town itself, the group of temples known as Karnak can be reached by car, carriage or donkey-rick, the tombs on the west bank involve a longer journey, but one which at any time may be delightful, and the hotels and tourist agencies make all the necessary arrangements for trips and expeditions to the more distant remains of Thebes.

**ANCIENT THEBES.** The name Thebes probably comes from Apt given by the old Egyptians to that quarter of the city in which the temple of Karnak stood. Called Iâpé by the Copts and pronounced in dialect Thaba, the Greek designation of Theba or Thebes was a perfectly natural one. In Greek times Thebes was called Diospolis Magna, which answers to Hat-Amen, "the Abode of Amen." The city stood partly on the east and partly on the west bank of the Nile. The western division had the distinctive appellation of Pathyris (Pa-Hathor), being under the peculiar protection of Hathor, who is called the "President of the West," for though Amen (or Amen-Ra) was the chief deity worshipped there, Hathor had a peculiar claim over the necropolis beneath the western mountain, where she was fabulously reported to receive the setting sun into her arms.

The period of the foundation of Thebes is still uncertain, but it is now known that it did not become a city of the first importance until after the decay of Memphis. The fame of its greatness had reached the Greeks of Homer's age for its "hundred gates" and 20,000 war chariots are mentioned in the Iliad, and as, during the reign of the XVIIIth and XIXth dynasties over Egypt, the local god Amen-Ra became the great god of all Egypt, so his dwelling-place Thebes gained in importance and splendour. The decline of Thebes set in immediately after the death of Rameses III., B.C. 1200, when the priests usurped the power of the weak kings of the XXth dynasty. After a three years' siege it was destroyed by one of the Ptolemies, and became henceforward no longer a capital, but simply "the villages."

**RUINS OF THEBES.** The most famous remains of the ancient city of Thebes are the two gigantic statues known as the Colossi, the Ramesseum, or mortuary temple of Rameses II., the Dêr el-Medina, formerly a temple erected to Ptolemy Philopator I., the ruins at Medinet Habu, of which the chief is the great Temple and Palace of Rameses III., the Temple of Queen Hatshepsut, the tombs of the Queens,



and the tombs of the Kings, amongst the latter being the tomb of King Tutankhamen, the discovery and opening of which attained world-wide publicity only a few years ago. This is actually the first tomb in what is known as the Valley of the Kings, and its position probably accounts for its late discovery. After the opening of the tomb, which, it will be remembered, was the result of unwearied exertions on the part of the late Lord Carnarvon and Mr Howard Carter, the golden coffin containing the mask which covered the head and shoulders of the boy king's mummy were despatched to the Egyptian Museum at Cairo (see "City of Cairo"), together with a number of the valuable and beautiful objects found in the tomb. Many glories of antique art, however, still remain in the tomb, the total contents of which have been valued at £500,000.

The exploration for three more tombs is still progressing in the Valley of the Kings, and many archaeologists think that the burial place of Joseph, the son of Jacob, will be discovered here. It is held that his position with the Pharaoh was such that his sepulchre is likely to equal in magnificence and possibly even to surpass, those of many of the Kings.

**KARNAK.**—The Karnak ruins occupy an area nearly two miles in circumference, and from the top of the great propylon, about one hundred feet in height, an extensive view of the plan of the city can be obtained. The temples of Karnak and Luxor were formerly united by an avenue over a mile in length and eighty feet wide, lined by great stone sphinxes, only a few of which, however, now remain, and these are greatly mutilated. The great Temple of Amen is, on the whole, regarded as the most wonderful of any in Egypt. It was nearly 3,000 years in building, having been begun by Osirtasen I, B.C. 3000, and greatly added to by Thothmes III, B.C. 1600, also by succeeding Kings to about 100 B.C. These Kings vied with one another in increasing its great and many attractions, the chief of which are the famous "Hall of Columns" (124 in number), the great gateway or propylon, and a much mutilated red granite statue of Rameses II. There are also subsidiary temples of Khonsu, Mentu,

Ptah and Mut. The collection of statues and inscriptions is of the greatest interest, historically and archaeologically.

**TEMPLE OF LUXOR.**—Compared with Karnak, the temple of Ammon in Luxor itself is not of the greatest importance, it dates from the XVIIIth and XIXth dynasties. The Obelisk in the Place de la Concorde, Paris, originally stood here, its companion still stands where it was erected. Much excavation work has been accomplished and a lot still remains to be done. The sculptures on the walls of the Court of Rameses II are interesting.

### MANSURAH

Mansurah, the "City of Victory," is the capital of the province of Dakaliya, and stands about 95 miles from Cairo on the east bank of the Damietta branch of the Nile. The place is not older than the time of the Crusades, and it was to this spot that the Egyptians fled when Louis IX of France seized Damietta. The name given to the city was from the crushing defeat which the Mamelukes inflicted on the French king and his three armies in 1250, it was at Mansurah (then in the building) that Louis was imprisoned. To-day the town, which has a population of 49,238, is concerned principally with the cotton trade and there are several large ginneries and oil-pressing factories at work. The streets are wide and the houses large, being well built according to the French pattern. The Mosque is worth a visit, and an interesting excursion from the town is that down the Canal of Menzala to the Lake of the same name, the journey occupying about three days.

### MENSHIYA

Menshiya (Al-Manshiyah), on the west bank of the Nile, 328 miles from Cairo, stands on the site of a city which is said to have been the capital of an ancient nome, its Coptic name was Psou. Founded probably by Ptolemy I, it has always been famous for its large cattle and corn market. In the quarries of Gabal Tûkh, close by, are many ancient inscriptions. The population numbers 21,652.

### MINIYA

This is a large and important town on the west bank of the Nile, 153 miles south of Cairo. It is the capital of the province of Miniya, and the residence of the Mudir, or Governor, overlooks the river. The first sugar factory established in Egypt was built here and still exists, greatly enlarged and improved. During the cane-harvest, and when the mills are in full activity, the town, which has a population of 39,495, presents a busy and animated appearance. There is always a large and interesting weekly market.

### QINÂ

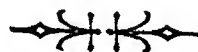
Qinâ (Ginâ), capital of the province of Qina, is famous for its dates and its trade in Konlas, or porous drinking bottles, and has a population of some 23,000 inhabitants. It is the usual starting point for visiting the famous Temple of Dendera, which dates possibly from the time of the later Ptolemies. It is a monument of imposing appearance and of considerable interest to archaeologists.

### SUHÂK

Capital of the province of Garga, Suhâk is a well-built and important town of over 20,000 inhabitants. Near it are the famous White and Red Monasteries, built by the Empress Helena in the ancient Egyptian style. Suhâk has also given its name to the Suhakiyah Canal, which takes the water of the Nile into the interior during the inundation, and is similar in size to the Bahr Yusuf, near Tanuf. There are also other smaller canals near Suhâk, and in the winter good duck shooting may be found on them.

### TAHTA

A large town in Upper Egypt of 20,658 inhabitants, Tahta is distinguished from afar by its extensive mounds, which probably mark the site of the ancient Hesopis. Tahta has several fine mosques and a Christian Church. There are many Copts here, and the town is one of the neatest and cleanest on the Nile.



# PALESTINE

By J. B. BARRON, O.B.E., M.C.

**T**HE marine frontier of Palestine begins on the south at Rafah and extends northward to the Ladder of Tyre. Its greatest length is approximately 265 miles. On the east the frontier follows the line of the River Jordan and the Dead Sea. The northern and southern frontiers are determined less by geographical features than by political necessities, the former following roughly the northern limits of the old Turkish kazas of Acre and Safad, and the latter the old Ottoman boundary running from Rafah south-east to the Gulf of Akaba.

Small in area—comparable in size to Belgium or Wales—its geographical position rendered Palestine in ancient times a centre of importance to the commercial traffic of the larger territories surrounding it. Palestine was the bridgehead between Asia and the Mediterranean countries. Its modern character is based upon religious and racial considerations as the home of three great religions—Christianity, Judaism and Mohammedanism—and as a country suitable for intensive immigration.

The main portion of the territory lies between 30° and 33° N latitude, but within the limits of a small province it offers the varieties of soil and climate of a continent. It is a country of plain, of desert and deep valleys, of lake and seaboard, of barren land and of broad stretches of fruitful soil. These differences in climate and soil have influenced, and are influencing, its progress to a marked degree by providing means of sustenance to European settlers and a favourable condition in which pioneer work, mainly agricultural—may be carried on. The population, according to the official census taken in 1922, was 757,182, of whom 78 per cent were Moslems, 11 per cent Jews and 9.6 per cent Christians. Since that date there has been a large influx of Jews, which has increased the total numbers to probably 820,000. The rainfall of Jerusalem equals that of London, but it descends between the months of November and April inclusive.

**ADMINISTRATION.** Following the occupation of Palestine by the military forces of Great Britain during the War, a Civil Government was formed in July, 1920. A British Mandate was approved by the Council of the League of Nations in 1922, and subsequently the Palestine Order-in-Council, promulgated on August 10, 1922, prescribed the form of government. The Administration has so far been essentially British in character and in personnel, and has followed the lines of the ordinary government of a Crown Colony. No Legislative Council, however, exists, though there are twenty-two municipalities and a number of local councils which have certain powers in rural districts or over groups of villages. The tendency has thus been to create local centres of self-government responsible to the Administration.

**AGRICULTURE.**—The economic rehabilitation of Palestine depends largely upon the fullest possible development of its agricultural resources. It has no established local supplies of raw material, and possesses no fuel supplies that have yet been developed. Petroleum has been tapped around the Dead Sea basin, but there is no assurance that this valuable product is present in quantities sufficient to form a commercial

asset. Industrial development along purely manufacturing lines is not yet feasible, and the principal industries depend therefore upon agriculture.

Excluding the uninhabited waterless desert south of Lat 31° N., the territory embraces not more than four and a half million acres (1,820,000 hectares) of exploitable land surface. A large proportion, amounting to 700,000 hectares, is uncultivable in its present condition. This area includes several distinct physical formations such as the desert in the south, portions of the rocky plateau of Judea, and alternatively swamps and sand dunes along the coast. Dry farming and afforestation, dairy and sheep husbandry, drainage and irrigation are all measures of reclamation and are being applied with success. In this connection the work of the Jewish agricultural settlements is noteworthy. There are some 70 of these colonies, large and small, with a population of approximately 22,000. They practise all processes of agriculture, and are a force of great economic importance to Palestine. The Arabs form the majority of the agricultural population, but, though diligent and thrifty, they are severely handicapped through lack of knowledge and by utilising antiquated methods.

Of administrative measures through which progress may be registered that of the settlement of land titles should be mentioned. These are often in a chaotic condition, a legacy of the Turkish regime, but Government action is steadily removing this evil. A land survey has been commenced, an effective method of ownership enforced and an onerous title levied on the total produce grown reduced from 12½ per cent to 10 per cent. The Administration is also considering the possibility of an entire change in the system of land taxation, including the tithe, that should be of great benefit to agriculture.

The coastal plain and the Plain of Esdraelon are the most extensively cultivated areas, while the Jordan Valley is suitable to the growth of tropical products and fruits.

**CEREALS.**—The two former areas possess rich soil producing barley (Gaza District) and wheat, which form the staple crops of the territory. The barley crop was exported before the War in large quantities to Great Britain, and is now in great demand throughout the Levant. Crops vary much from year to year, being dependent upon the rainfall, but the current production of wheat may be estimated at 120,000 metric tons per annum and that of barley at 65,000 metric tons. Indian millet is exported to Egypt. Several leguminous crops are grown, such as beans, peas, lentils, and kersennah, and are consumed locally.

**FRUITS.**—The oranges grown near Jaffa are justly renowned for their excellence. They form the leading item of the export trade, and as a commercial crop have been developed during the past 30 years, mainly through the efforts of Jewish and German settlers. Modern methods of cultivation are employed, the gardens being tended and the fruit marketed in accordance with the requirements of European markets. Before the War the export crop was 1,000,000 cases, and this figure has since been much exceeded. Exports of oranges amounted to 1,868,291 cases in 1925, as compared with 1,880,783

cases in 1924. Great Britain and Egypt are the chief consumers.

Large quantities of grapes are grown throughout the territory, American vines being introduced some 40 years ago. The soil is particularly adaptable to their cultivation, the best varieties being produced in the Jewish colonies of the Jaffa Plain. The native grape of Hebron is also famous from Biblical times.

Although oranges and grapes are of first economic importance, other fruits are worthy of mention. Lemons, figs, watermelons and olives are all produced in large quantities, and there can be no doubt that fruit growing will assume considerable proportions in the near future. Upon it are dependent a number of local industries which are increasing in economic importance, and which are establishing markets in Egypt, Syria and Asia Minor.

**TOBACCO.**—Under the Turks all tobacco grown or sold within the Ottoman Empire was a monopoly of the Public Debt Commission, which, in turn, farmed out its rights to a foreign company. The monopoly was abolished by the British authorities in 1921, and since that date tobacco may be raised under license, and foreign cigarettes and manufactured tobacco imported on payment of special import duties. With the introduction of up-to-date methods of curing, there is no reason why the varied soils and climates of Palestine should not prove capable of producing tobacco equal to the most favoured products. Some 3,000 acres were planted with tobacco and tombac during 1925, and about 40 per cent of the tobacco grown is utilised locally. Seven tobacco and cigarette factories and seven tombac factories are in operation.

**VARIOUS INDUSTRIES.**—First in importance may be mentioned the wine industry. At Richon-le-Zion, a Jewish colony near Jaffa, the wine cellars have a storage capacity of 1,540,000 gallons and are said to be the largest single installation in the world. Of the total production, 80 per cent is of the dry red wine of a claret type for table use. The industry has, however, suffered a set back since the War owing to high European import duties and the difficulty of finding markets further afield. Soap is manufactured at Nablus and Jaffa from the native olive, and is exported to Egypt and Syria. It is an industry that has been developed by the Arab section of the population, and though the methods of production are not up-to-date, the article holds a high place on the markets of the Levant. Other by-products from fruits are also manufactured, such as refined olive oil at Haifa. The scope for this class of article appears to be promising, but the territory suffered during the War through numbers of olive and almond trees being cut down for firewood. Smaller industries exist, having arisen mainly through the demands of immigrants or to satisfy the needs of tourists. Efforts are being made by Jewish colonists to make Palestine as self-supporting as its lack of the essential raw materials will allow. Thus cement works and flour mills at Haifa, brick and tile factories at Tel Aviv, and numerous other small factories are producing articles of first necessity. The tourist is supplied with articles of olive-wood and mother-of-pearl work made in Bethlehem.

**COMMERCE.**—The total value of imports for the year 1925 amounted to £E 7,603,923, as compared with £E 5,589,679 for the previous year. This large increase is due to the steady recovery from the trade depression of 1923, assisted by the stimulus of new settlers furnished with capital. The export trade, however, has not recovered in the same degree, the value of exports in 1925 being £E 1,588,157, compared with £E 2,120,931 in 1924. It is difficult to arrive at a true calculation of exports since there is a large traffic by way of the innumerable country tracts over the land frontiers into Arabia and Syria for which no customs' records are established. In considering the balance of trade it should be remembered that there is a big investment of money in Palestine from outside sources, such as contributions to different religious bodies and subscriptions from all parts of the world to the many Zionist activities. The trade balance is also favourably influenced by the numbers of tourists—13,000 in 1925—who visit Palestine every year.

Great Britain and Syria claim the largest share (each 14.5 per cent.) of the import trade, followed by France and U.S.A. Exports go to Egypt (44 per cent.) and Great Britain (34 per cent.), with small quantities to Syria. The total number of steam vessels entered in 1925 was 754, with a net registered tonnage of 1,831,619, which is an increase of 149 vessels as compared with 1924.

**CUSTOMS TARIFF.**—The Customs Tariff varies from an ad valorem system to a number of specific duties. Local trade with Syria is free of duties, and for foreign articles exported from or imported into Palestine a system of exchange duties with the Syrian Customs authorities enables a transit and re-exportation trade to be carried on with a minimum of restriction and customs formalities. No duties are payable between Palestine and Transjordan or the Arabian States by way of the land frontiers. Goods entering Palestine by railway from Egypt are sent forward in sealed trucks to the larger centres where customs duties are payable. Internal taxation, in so far as the trader is concerned, is light. The immovable property tax paid by the proprietor and the municipal rate, which averages about 6 per cent. of the rental value payable by occupiers, are the principal imposts. Licensing regulations for dangerous or unhealthy trades exist, while the production and sale of salt constitute a Government monopoly.

Chambers of Commerce exist at Jerusalem, Jaffa and Haifa, with trading associations at Nablus and Hebron.

**FINANCE AND BANKING.**—Palestine has as yet no currency of its own, but uses the Egyptian pound of 100 piastres. The pound

sterling is worth the fixed value of 97½ Egyptian piastres. It is probable that in the near future the basis of the currency will be changed to a Palestine pound containing one thousand millimes of equal value to that of the English gold sovereign.

The Jerusalem branch of Barclays Bank (Anglo-Egyptian) is the principal bank in the country, and also serves as the Government bank. Other banks are The Anglo Palestine Company, Ottoman Bank, Banco di Roma and Credit Lyonnais. These institutions have agencies or connections in Jaffa and Haifa as well as in Jerusalem.

Restricted credit facilities are available, as the banks confine their business almost exclusively to receiving money for deposit and to paying cheques, to buying and selling gilt-edged negotiable paper and to making short-term loans against adequate security. The average bank rate of discount, or of interest, is from 8 to 9 per cent.

**HYDRO-ELECTRIC AND IRRIGATION DEVELOPMENT.**—The primary needs of the territory are water for irrigation purposes and cheap energy for industrial development. At Jaffa and Haifa the works of Mr. P. Rutenberg, whose company holds an important concession, are in operation, and electrical energy is now supplied. By far the most important project is that of the utilization of the waters of the Sea of Galilee and of the River Jordan. It is proposed to erect a barrage at the southern end of the Sea of Galilee which will act as a reservoir for a main power-house to be built a few miles south on the Jordan. Other power-houses are to be constructed at intervals down the river valley. For irrigation purposes the project contemplates the construction of a canalisation system for supplying the slopes between the foothills and the river. When realised, there can be no doubt that these schemes will materially improve the economic conditions of the territory and advance its prosperity to a marked degree. Of other works of a public character now in course of construction, mention should be made of the Jerusalem water supply. Hitherto the city has depended upon the rainfall stored in cisterns and on an inadequate supply installed by the British Military authorities. A number of springs to the south of Jerusalem are now being harnessed to provide a continuous supply with reservoir accommodation.

**RAILWAYS.**—The railways are administered by the Government, and are divided into two groups in accordance with the gauge. The standard gauge extends from Kantarah on the Suez Canal across the Sinai Peninsula to the Egyptian boundary at Rafah and on to Haifa. From Ludd Junction a branch line connects Jerusalem and Jaffa with the main system.

The narrow gauge lines consist of those portions of the Hedjaz Railway lying within Palestine and the Tulkarem-Nablus-Afulah line. The Haifa-Damascus sector of the Hedjaz Railway passes under the control of the French authorities at El Hamma (just beyond Semakh on the Sea of Galilee).

Cairo is within 12 hours of Jerusalem, but under the present time-table the journey takes longer owing to a wait at Kantarah, where passengers cross the Canal by a boat service. Trucks are ferried across.

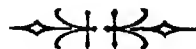
The railway service is exceptionally good for so small a territory. Dining and sleeping cars are attached to the principal passenger trains. The standard gauge line is 918 and the narrow gauge 539 kilometres in length.

The main roads are metalled and are maintained in good condition. Considerable goods traffic by lorry service passes between Jaffa and Jerusalem.

**SHIPPING FACILITIES.**—There are no ports properly speaking, but Haifa possesses a protected bay in which steamers may land goods into lighters without interruption, excepting in very heavy weather. The largest quantity of goods is discharged at Jaffa, which is an open roadstead subject to dangerous swells and storms. Customs accommodation is inadequate and landing charges are heavy.

A project is under consideration by the Administration to build a port at Haifa. It possesses natural advantages for the construction of a harbour at reasonable cost. The port is expected to become the export centre for the large quantities of wheat grown in the Hauran and in Transjordan. Being in direct railway communication with Damascus in the north-east and Cairo in the south it is probable that there will be a considerable development of trade in the near future. Schemes are also on foot to make Haifa the outlet for the Mesopotamian oilfields by laying a pipe-line across the Arabian desert.

**TRANSJORDAN.**—The district to the east of the River Jordan, known as Transjordan, has its own administration responsible to his Majesty's Government through the High Commissioner for Palestine. The head of the local government is the Emir Abdallah, who is advised by a British Resident. The territory is entirely inhabited by Bedouin tribes and a few settled inhabitants at Es-Salt and Amman, numbering in all about 250,000. Wheat is the principal crop, and is renowned for its quality. The country is very rich in agricultural possibilities and possesses a more assured rainfall than Palestine. The mineral wealth is unexplored. The Hedjaz Railway from Deraa Junction skirts the desert boundary to Maan and southwards to Medina. The territory extends to the Gulf of Akaba.



# THE SUDAN

**3** It is only a little more than twenty-five years since the genius of Kitchener brought to an end the chaos and strife which had so long been the normal condition of the Sudan Province. Thus not alone freed Egypt from constant menace, but began in the regions of the Upper Nile an era of progress almost unparalleled in history when there are borne in mind the tremendous forces of nature against which the battle had to be waged. With money poured out freely, a substantial return has already been received, the development of the region thus far being truly amazing when it is remembered that the Sudan was once regarded as a desert, incapable of yielding anything of benefit to mankind.

The Anglo-Egyptian Sudan extends from Halfa in the north to Gondokoro in the south, about 1,300 miles. It has a small sea-board on the Red Sea with the ports of Suakim and Port Sudan. On this eastern side the country is mountainous, and there are also hilly tracts in the western Province of Kordofan but the most important and valuable territory is that which lies within the basin of the Nile and its tributaries, especially that immediately to the south of Khartoum, a great triangle formed by the junction of the Blue Nile from Abyssinia and the White Nile which oozes out of the vast swamps of the Congo region.

Much of the scenery of the Sudan is magnificent, even the desert being famous for its wonderful colouring. The climate during the winter months can hardly be excelled anywhere in the world, the nights being rarely more than pleasantly cool.

**ADMINISTRATION.**—By an agreement signed in 1899 after the overthrow of the Khalifa (see "Egypt" and "History"), the Sudan is under the joint management of Great Britain and Egypt, the Governor-General being appointed by Egypt with the assent of Great Britain. The British and Egyptian flags are used together, laws are made by proclamation, no duties may be levied on imports from Egypt, while duties on imports from other countries, via the Red Sea, may not exceed those levied in Egypt, and the import and export of slaves are forbidden. Each of the fifteen provinces into which the country is divided has its own resident Mudir, or governor, administration being carried out through British District Commissioners in charge of districts. An increasing number of Sudanese are being employed in administrative posts. The Governor-General's Council assists in the discharge of executive and legislative powers.

The successive Governors-General, invariably a British General, have been Lord Kitchener, who may be regarded as the creator of the modern Sudan, Sir Reginald Wingate, Bart., the late Sir Lee O. Stack, who was assassinated in Cairo in November, 1924, and Sir Geoffrey Archer, KCMG, who, after a lifetime spent in the service of his country, was unfortunately compelled in 1926, for reasons of health, to tender his resignation. In October of the same year Sir John Loader Maffey, KCVO, CSI, CIE, was appointed to the Governor-Generalship.

**LAW AND ORDER.**—Civil justice is administered by a Chief Justice and four Puisne Judges, one of whom is also Registrar-General of Lands. There is no general code of civil and commercial law such as is in

force in Egypt and many Continental countries, and in many cases the religious law of Islam is the determining factor. The Sudan is garrisoned by native troops, forming the Sudan Defence Force, from which, since the unrest which culminated in the murder of the Sudar in 1924, Egyptian officers have been excluded. A small British garrison is quartered at Khartoum.

**CITY OF KHARTOUM.**—Khartoum, the capital of the Sudan, stands at the junction of the Blue and White Niles. For nearly a century the old native town served as the great emporium for the ivory and gum of the Sudan, and until the British occupation it was a great slave market. The modern city (the town having been almost altogether rebuilt) is spacious, beautiful and well-ordered, indeed the visitor finds it hard to realise that this handsome city is the place where Gordon fought and died, the town upon which the hand of the Mahdi fell so heavily in bygone years.

**BUILDINGS.**—The principal buildings are the palace of the Governor-General with magnificent gardens laid out by Lord Kitchener, the Anglican Cathedral, the Gordon Memorial College and the new and handsome Mohammedan Mosque. The population of the city at the last census was 33,513. Opposite Khartoum, on the Blue Nile, is Khartoum North with 19,121 inhabitants, and on the White Nile a few miles distant, is Omdurman (population, 81,776), the city where first the Mahdi and subsequently the Khalifa gathered all the warriors of the Sudan with their harems in order that protectors might be always at hand.

**SPORT AND RECREATION.**—Khartoum is a recognised centre for some of the best wild-game shooting in the world, and the town also possesses a first class English Club, likewise a racecourse for the holding of meetings during the season. There is excellent hotel accommodation, and at the Grand Hotel weekly dances are arranged. Polo, tennis and golf are all played.

A variety of game is plentiful along the river banks, and elephants, lions, leopards, buffaloes, the wild boar of the country and innumerable species of antelopes can be found without great difficulty. There is also excellent fishing in the territory of the Nuer and the Dinkas.

**COMMERCE.**—The principal exports from the Sudan are gum arabic, ivory and cotton, and there is also a growing export trade in cattle and sheep, Egypt having depended for many years on the Sudan for her meat supply. Considerable quantities of salt are exported annually to Abyssinia. The value of Sudanese exports rose from £1,185,186 in 1913 to £4,000,000 in 1925, while that of imports, mainly cotton goods, machinery and unmanufactured goods, increased during the same period from £2,109,776 to £6,000,000.

**COMMUNICATIONS.**—In 1925 there were 1,800 miles of railways open to traffic. Since the opening of the Eastern Railway the Red Sea ports of Port Sudan and Suakim have received much of the trade which formerly passed northwards. The new railway to Kassala, 215 miles in length, connects with the Red Sea line at Hara Junction, 126 miles west of Port Sudan. South of Khartoum communication is established by steamers and boats on the Blue and White Niles, Sobat, and Bahr-el-Ghazal, and inland

chiefly by camels and donkeys. All the principal towns are in telegraphic communication with Khartoum, the total mileage of lines exceeding 4,500. There is also telegraphic communication with Egypt, Ethiopia and Abyssinia.

**FINANCE.**—The revenue and expenditure of the Sudan according to the budget estimates of 1925, balanced at £3,688,000, compared with a revenue in 1924 of £4,298,856 and an expenditure of £3,453,273. The main sources of revenue are land tax, animal tax, royalties, customs, railways and steamers, and posts and telegraphs.

**HISTORY.**—See "History," in the "Egypt" Section of this book.

**IRRIGATION.**—This has been dealt with in the special article on "The Control of the Nile," to be found in the "Egypt" Section of the volume. It may here be recalled that the great Semar Dam, one of the biggest engineering works in the world was completed in the autumn of 1925 and was opened in January 1926 by the High Commissioner for Egypt and the Sudan, Lord Lloyd of Dolobran.

**PEOPLES.**—Twenty-five years ago the province of the Sudan was utterly desolate, and its few inhabitants could scarcely keep body and soul together. In 1909 after ten years of British administration the population had grown to about two millions. In 1925 it was estimated at five and a half millions of whom roughly 3,500 are Europeans, the remainder being made up of Egyptians, Abyssinians, Indians and the various negro tribes which constitute the Sudanese population. These are generally classed as Berbers or Nubians, Arabs, and pure black and negroid tribes from whom in former times the enormous traffic in slaves was obtained. The greater number of the inhabitants are Mohammedans, the religion of Mohammed having come into the Sudan from Egypt by way of Nubia, from Arabia by way of Suakim and Massowah, and from North Africa by way of the desert road from Tunis to Dufur and Kordofan. The negro tribes are heathen, and in some places worship many strange objects. Amongst them a belief in witchcraft and fetishes is universal. There are many Christian missions working in the country, but very few converts are made, the great obstacle to the spread of Christianity being the insistence by the missionaries on monogamy. Arabic is the language usually spoken, and there are four or five local dialects of a so-called Nubian language.

**PRODUCTION.**—The Sudan is the chief source of the world's supply of gum arabic and ivory. Egyptian cotton has been successfully established, and increasing quantities, which compare favourably with corresponding varieties grown in Egypt, are being produced annually. Other products include sesame, senna leaves and pods, groundnuts, dates, hides and skins, salt and gold. The principal grain crops are dura (great millet), the staple food of the people in the Sudan and used as cattle and poultry food outside the Sudan, and dukhu (bulrush millet). In the last year for which statistics are available there were in the Sudan 174,374 horses, 536,268 asses, 66,035 mules, 1,840,209 cattle, 8,214,585 sheep, 2,646,005 goats, 55,681 pigs, and 113,693 camels.

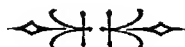
*COTTON GROWING.*—There can be little doubt that in the future prosperity of the Sudan cotton is destined to play an enormous, if not a dominating, part. The main regions where cotton is at present cultivated are the deltas of the Baraka and Gash rivers in the Eastern Sudan, along the Nile northwards from Khartoum, south of Khartoum in the Gezira, and a small area in the heavy rainfall region to the extreme south. As a result of the irrigation work being carried out in the Gash delta area by the well-known Kassala Cotton Company, something like 100,000 feddans (of which 15,000 were sown in 1926) will eventually be put under flood irrigation and be made to produce Sakellaris cotton. It may be added that a more recent inspection of the region lying between Gedaref and the Blue

Nile has shown that it comprises a vast area eminently suitable for rain-grown cotton, which can be developed as soon as the railway is extended from Kassala westwards or from Makwar eastwards.

The strong position as regards cotton production in which the Sudan now finds itself is due in great measure to the fact that steps were taken at a sufficiently early stage by the agricultural authorities to ensure control of ginneries, seed, and pests. In this respect the Sudan is far in advance of any country, and a practical example of what control in the Sudan can achieve is afforded by the Tokar crop, the quality and yield of which have been improved out of all knowledge in the space of relatively a few years. If finally the project for pro-

hibiting the export of "Baladi" (local) cotton is put into effect, all fear of the quality of cotton produced either under the irrigation or rain system being diminished by the admixture of the very inferior local variety will be eliminated, and cotton cultivation in the Sudan, whether American or Egyptian, should have a very promising future.

*FORESTS.*—The forests which line the Blue Nile banks, rich in fibres and tanning materials, extend to the frontier of Abyssinia. On the White Nile they contain valuable trees—the ebony, gum acacia, bamboo and rubber creeper, whilst the Sudd area in the upper reaches is composed of an inexhaustible quantity of papyrus. The finest gum forests are in Kordofan, and the best rubber is in the Bahr-el-Ghazal.





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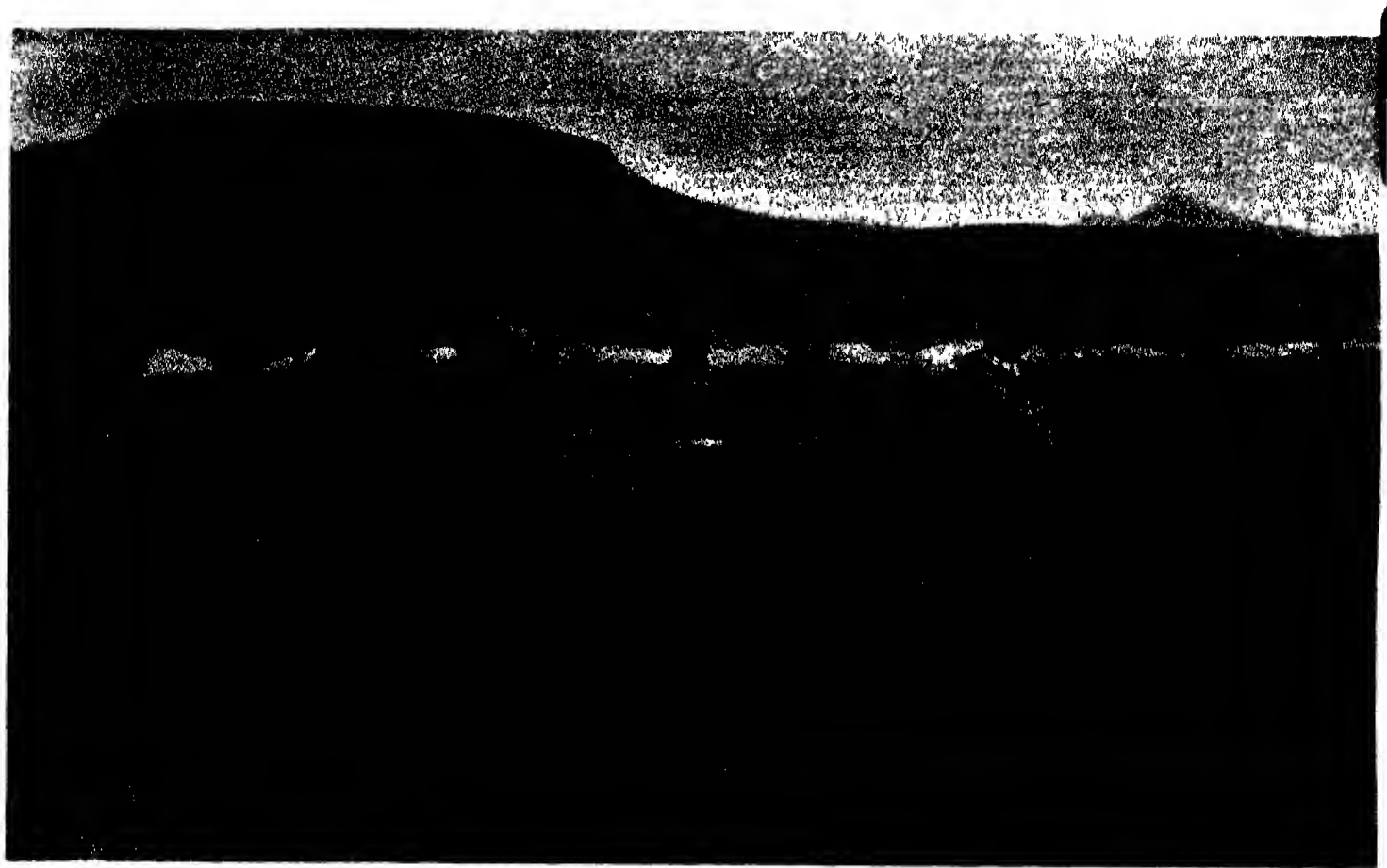
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ZULU WOMEN PORTERS.

# AFRICA

## SOUTH AFRICA

### PHYSICAL GEOGRAPHY

#### CLIMATE

#### GEOLOGY

#### FAUNA

#### FLORA

#### PHYSICAL GEOGRAPHY



**G**EOGRAPHICALLY, South Africa comprises all the country south of the Zambesi River. The total area of the Union is 472,347 square miles, but if Southern Rhodesia, South-West Africa (over which the Union holds a mandate) and the Bechuanaland Protectorate be included, the entire area of South Africa south of the Zambesi exceeds 1,200,000 square miles, and is roughly equivalent to that of British India or the Argentine Republic. It is in general a high lying, plateau-like country, 40 per cent of it being 4,000 ft above sea-level, with only a narrow strip along the coast less than

1,000 ft above sea-level. The western side of the peninsula differs from the eastern in that it contains fewer high mountains and rivers, as also in having a lower average level and a larger extent of desert.

The Cape Province has a long seaboard and a great extent of coast country, but it also extends far into the inland plateau, and therefore contains within its borders nearly all the geographical conditions which are to be found in South Africa generally.

Natal, on the eastern slope of the continent, comprises coast land and ascending terraces. It reaches the crest of the dividing range, but does not cross it into the high veld.

Zululand (part of Natal) is in the main a coast country, while Basutoland, which is often called the Switzerland of South Africa, is an entirely inland country among the mountain heights whence flow the Orange and Caledon Rivers.

The Orange Free State, the Transvaal, the Bechuanaland Protectorate, South-West Africa, and Southern Rhodesia form part of the great plateau of the African Continent, with the ground beyond the basin of the Limpopo rising towards the north-east, so that Lake Ngami, in the Kalahari Desert, is at a much lower level than Fort Salisbury in Southern Rhodesia.

Portuguese East Africa (Mozambique) is a vast territory, consisting largely of flat and swampy coast lands, with an interior of rich agricultural possibilities and extensive forest resources. It is watered by the Zambesi, Limpopo and other navigable rivers.

Southern Rhodesia, together with the greater part of the Bechuanaland Protectorate, is within the tropics.

North of the Zambesi is the territory of Northern Rhodesia, including on the west the great plain of Barotseland, and on the



east the extensive plateau bounded on the north by Lake Tanganyika

**AREA.**—The total area of South Africa comprised in the Union (472,347 square miles) is distributed by provinces as follows—Cape of Good Hope, 276,966 sq m, Natal, 35,284 sq m, Transvaal, 110,450 sq m, Orange Free State, 49,647 sq m. The area in question is equivalent to rather more than five times that of Great Britain, or 2½ times that of Germany. Outside the Union proper, the areas of the mandated territory, native protectorates, and Rhodesia are as follow—South-West Africa, 312,194 sq m, Bechuanaland, 275,000 sq m (estimated), Basutoland, 11,710 sq m, Swaziland, 6,678 sq m, Southern Rhodesia, 150,344 sq m, Northern Rhodesia, 291,000 sq m. The area of Portuguese East Africa is roughly 293,400 square miles.

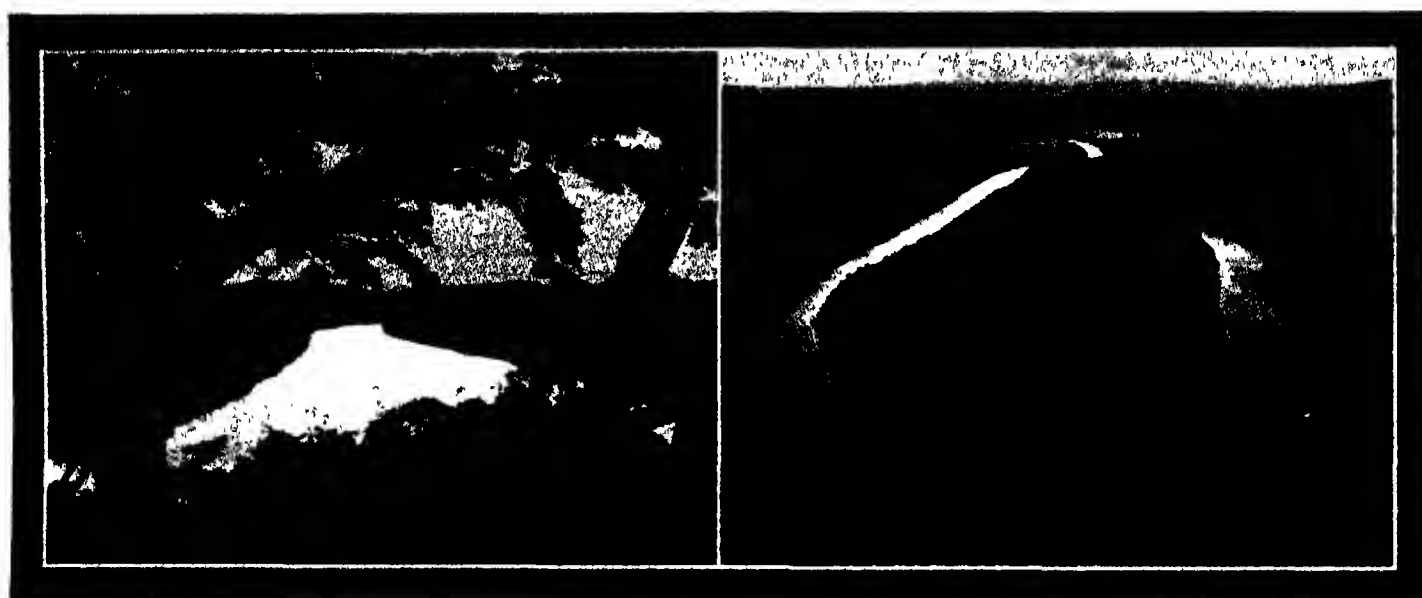
**COAST LINE.**—The main feature of the coast line of South Africa is its extraordinary regularity, and the absence of islands such

leading to a vast table-land covering about 9,000 square miles, with a mean elevation of 4,000 ft, the highest part of the plateau—the High Veld of the Transvaal—being fully 6,000 ft above the sea. The huge mass of Table Mountain, which rises like a wall to guard Capetown, is the best known peak, the whole escarpment which separates the plateau from the coast region is known successively as the Drakensberg of the Transvaal, the Drakensberg or Quathlamba of Natal, the Stormberg of the North-Eastern Cape Province, and the Suenwberg, Nieuweveld, Komsberg, Roggeveld, Bokkeberg, and Kannesberg further south and west. The highest peaks of the Drakensberg, Gaunt's Castle, Cathkin Peak, and Mont aux Sources, are all in Natal.

**PANS.**—A characteristic feature of certain parts of the country, usually where the horizontally-lying Karoo rocks are being stripped from the older formation by denudation, are shallow depressions called "pans." These become filled with water during the

is for the most part arranged in long dunes. Grass is the principal vegetation, and there is good grazing in parts. The High Veld is the most distinctive as well as the most agricultural area in South Africa, and where the land can be put under water it becomes extremely fertile. It also contains the famous ridges of the Witwatersrand ("ridge of white waters"), Gats Rand and Zinkerbosch Rand. The Bushveld is an undulating sandy country covered with grass and bush, lying between 3,300 and 4,000 ft above sea-level in the middle of the Transvaal. It has not been settled so extensively as has the High Veld.

The Upper Karoo, geologically the most interesting of the South African formations, consists of characteristic plains from which rise flat-topped hills. Droughts are frequent here, and farming is practically confined to the more favoured areas to the south and east. The Karoo is also interesting historically as having been the scene of some of South Africa's greatest battles, the names of Talana, Elandslaagter, Colenso, Spion Kop,



UMZIM KULU RIVER, PORT SHEPSTONE, SOUTHERN NATAL.

KOWIE RIVER, PORT ALFRID, CAPE COLONY

as occur so frequently around Europe and Asia. From the neighbourhood of the Equator on the West Coast to the Mozambique Channel on the East Coast, a distance of over 4,000 miles, there is not a single island of importance. This absence of islands and navigable rivers is held to be largely responsible for the slow development of the country by the native population before the European occupation. Owing to the regularity of its coast line South Africa has few good natural harbours, all but Durban and Simonstown being either open roadsteads or artificially protected.

**MOUNTAINS.**—The dominating physical feature of South Africa is the rampart of hills which rises behind the low-lying coast lands, these latter extending in general from 50 to 250 miles inland. Sometimes the mountains, which run in lines parallel to the coast, approach close to the ocean, as at Table Bay. In the south-east, in the Drakensberg, they attain heights of 10,000 to 11,000 ft; elsewhere the highest points are between 8,000 and 9,000 ft. They form in reality a series of terrace-like steps,

rainy season, and in winter are either wholly or partially dry. Most of them are saline and, on drying up, the floor of the pan is covered with dazzling incrustations of salt, in some cases commercially exploited. They owe their existence to numerous circumstances, but Dr A. W. Rogers, the Director of Geological Survey, considers that the action of the wind under favourable conditions of rock-structure and weathering is the most potent factor in their production. The pans vary considerably in extent, the largest being up to 100 square miles.

**PLATEAUX.**—The great interior table-land forming the larger part of the Union of South Africa contains several regions differing more or less from each other. These plateaux are the Kalahari and Bushmanland, the Kaap Plateau, the Limpopo Highlands, the Bushveld, the Highveld of the Transvaal, the Basuto Highlands, the Upper Karoo, the Middle Veld, and the Namaqua Highlands. Of the number, the Kalahari and Bushmanland approximate most nearly to desert, their chief characteristic being the almost universal covering of reddish sand, which

Magersfontein, Modder River, and Mafeking being inseparably connected with memories of the Anglo-Boer War. The Namaqua Highlands contain the copper mines of the Union, but afford little scope for agriculture. In the Middle Veld are the diamondiferous regions, and iron ore abounds.

**RIVERS.**—South Africa has always suffered from an almost complete absence of navigable waterways, and, in addition, its rivers are not of much value as yet for irrigation purposes. Generally speaking, they are very rapid when constant, while the streams of the plateau are dry during a great part of the year.

In Cape Province the greatest waterway system is that of the Orange River, which rises in the highest part of the Drakensberg and flows for over 1,000 miles to the Western Sea, draining with its tributaries (of which the Caledon and the Vaal are the chief) an estimated area of 300,000 square miles.

On the west coast are the Olifants and Berg Rivers, on the south coast the Breede, Gauritz, Knysna, Gamtoos, and Sunday Rivers; and on the south-east coast the

Great Fish River, also the Keiskamma, Buffalo, Kei, Bashee, Umtata, and Umzimvubu Rivers.

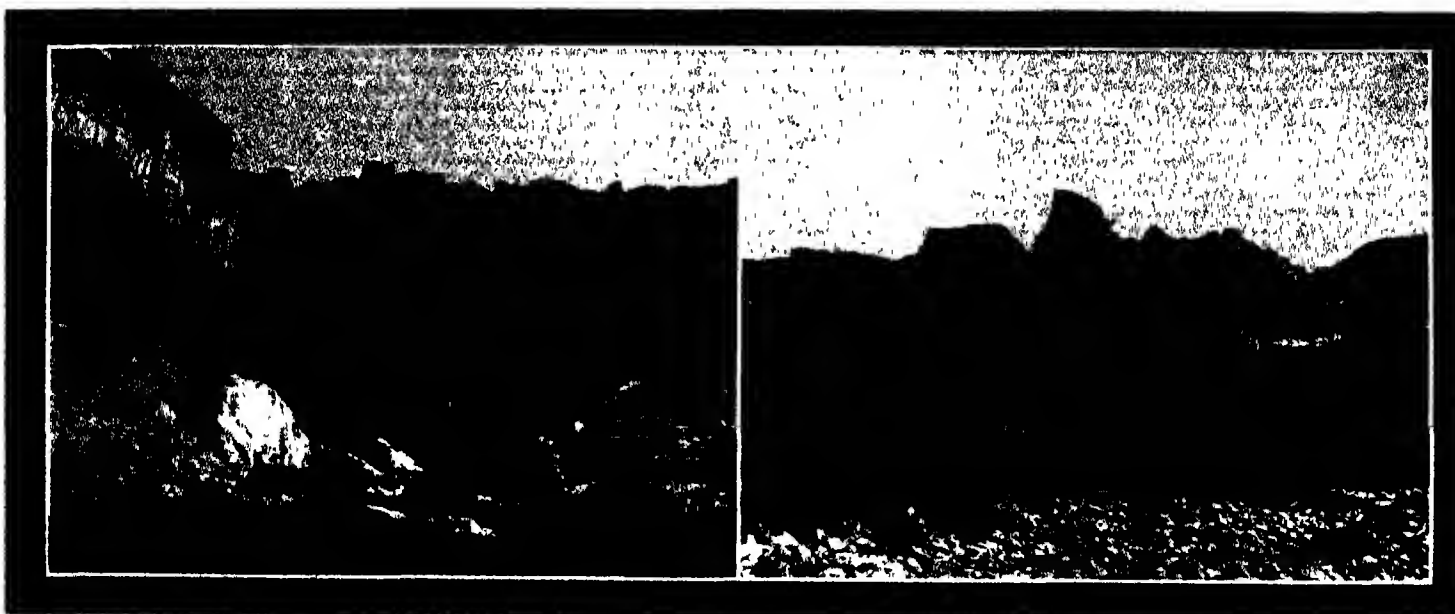
The Province of Natal is well watered, but its rivers are of little use for navigation. The largest is the Tugela (200 miles), which divides Natal from Zululand and drains half the province. It begins with a waterfall and ends with a bar, and for many miles of its course is a strong stream flowing through rocky ravines. Among its feeders are the Buffalo, the Klip River, the Umgeni, and the Bushman and Mooi Rivers. In Zululand are many rivers, the Amatikulu, the Dimalazi, the Umfolosi, the Mkusi, and the Pongola. Apart from the Orange River, already mentioned, the leading rivers of the Orange River Colony and the Transvaal are the Vaal, which separates them, and the Limpopo, which describes a semicircle of nearly 1,000 miles between its source south-west of Pretoria and its mouth to the north-east of Delagoa Bay, and serves as the boundary between the Transvaal and Southern Rhodesia.

of frequent thunderstorms, and in winter, although frosts occur with fair regularity between the months of May and September, when temperatures as low as 6° Fahr have been recorded, the days are clear and sunny. In the coastal regions, where conditions are more humid, frosts are rare, even in winter.

The mean daily range of temperature generally increases from the coast landwards, averaging about 12° F. on the south coast and 28° F. or more on the high veld. Extreme shade temperatures of 125° F. and 6° F. have been recorded, but these are exceptional. There is, indeed, a remarkable uniformity of mean annual temperature over the greater part of the Union. Thus Cape Agulhas, the most southerly point of Cape Province, has a mean yearly temperature of 61° 5" F., whilst Johannesburg, in the Transvaal High Veld, has one of 60° 6" F., a difference of only 0° 9" F. Of the two capitals, nearly 1,000 miles distant, Capetown has an average of 62° 6" F., whilst Pretoria has a mean temperature of 63° 5" F. These temperatures are practically the same as

growing a very precarious pursuit in the south-east of the Transvaal and in Kafraria, in parts of the last area it is usual to protect windows of houses from destruction by means of wire netting.

**RAINFALL.**—The average rainfall varies enormously over the country, ranging from over 200 inches in the mountainous district of the south-west of Cape Province (Wemmer's Hoek and Berg River areas) to 2.5 inches at Port Nolloth, and 0.3 inches at Walvis Bay. Over the Transvaal the amounts vary between 82 inches at Woodbush Forest in the Zoutpansberg District to 18.5 inches at Christiana in the extreme south-west of the Province. Over the Orange Free State it is much more uniform, varying from 35 inches in the eastern portion to 18 inches at Jacobsdal in the west, over Rhodesia, from 65 inches at Helvetia in the east to 14 inches at Juli in the Limpopo Valley. In Natal (including Zululand) it ranges from 53 inches at Eshowe and 51 inches at Qudeni to 25.5 inches at Weenen. It is therefore obvious that these widely varying quantities, com-



MAIN GORGE, SOURCE OF THE TUGELA, DRAKENSBURG, NATAL

DRAKENSBURG, NATAL

## CLIMATE

Owing to the position of the Union between the fairly low latitudes of 22° S. and 35° S., a variety of climates is encountered, but generally speaking the climate is temperate and cooler than that met with in similar latitudes in the Northern Hemisphere. This is the result of the configuration of the country, which consists of a series of huge elevated plains or plateaux, and of the comparatively small land area and large extent of coast line, which admit of the winds from the vast surrounding oceans exercising a moderating influence over the territory.

**AVERAGE TEMPERATURE.**—The climate of South Africa is on the whole equable and pleasant, extremes of heat or cold being uncommon. Much of the interior high veld region has a bracing climate, to which the white man has readily adapted himself, while invalids, especially those who suffer from pulmonary diseases, have found the clear dry air of the Karoo extremely beneficial. The summer heat of the interior plateau is largely counteracted by the cooling effects

the summer temperatures of England, and about the same as many of the best known health resorts of the Mediterranean.

The warmest place in the Union is Koomati Poort, in the Transvaal, on the border of Portuguese East Africa, where the mean annual temperature is 73° 1" F. The coldest station is Dusa Head, on Table Mountain, in Cape Peninsula, where the yearly mean is only 54° 7" F. Thus the difference between the warmest and coldest parts of the Union is only 18° 4" F.

**DUSTSTORMS.** The most disagreeable feature of the South African climate is undoubtedly to be found in the frequent duststorms which are met with all over the country from about the end of winter, when the anticyclone is beginning to break up, to the beginning of autumn. Fortunately they do not last long, and are usually succeeded—over the higher plateaux at least—by rain, mostly from thunderstorms.

**HAILSTORMS.**—Destructive hailstorms are of most frequent occurrence in the middle districts of Natal, while they render fruit-

bined with the variations in temperature, must cause a considerable diversity of climate over the different parts of the country. Generally speaking, the mean annual rainfall decreases from east to west and from south to north, the wettest portions being Cape Peninsula, with an average of about 38 inches, and the south-west, which includes the mountainous regions of the Berg River and Wemmer's Hoek. The driest part of the country is that part of Cape Province west of the Karree and Kamies Bergen between the Olifants and Orange Rivers, including Great Bushmanland, to the east of the Namaqualand Plateau, where the annual rainfall is less than 5 inches.

**SNOW.**—Snow is liable to occur three or four times in the course of a year at places exceeding 3,000 feet, although it is much more frequently seen on the mountains. Only on rare occasions is snow to be met with on the flats along the coast, but the coastal mountain ranges are very often covered during winter. It may, however, be noted that in only eleven years in fifty

seven has snow been registered in the Transvaal, whilst only on seven occasions in forty-three years has snow been seen on the face of Table Mountain in Cape Peninsula.

**SUNSHINE.**—South Africa is rightly called "Sunny," the percentage of possible hours of sunshine being 66 at Capetown, 78 at Kimberley, and 73 at Johannesburg, as compared with 26 at London and 56 at New York.

**WINDS.**—The direction of the chief rain-bearing winds varies, in the west it is from the north-west, at Port Elizabeth, from the south-west, at East London, from north-east and south-west, but chiefly the latter, as is also the case at Durban. The area of "constant rains" along the south coast is watered chiefly by south-westerly winds, while the greater part of the interior area of "summer rains" owes its rainfall principally to the north-easterly and easterly winds, which, coming from the warm moist latitudes of the Indian Ocean and passing to higher and cooler latitudes, are able to carry their moisture further south and more inland than the south-westerly winds. Gales are by no means uncommon along the coasts. Table Bay having long been known for its north-westerly visitations.

**HOT WINDS.**—A disagreeable feature of the coastal districts and of the area inland near the foot of the plateau is the occurrence of hot, dry winds, known as "Beig Winds." These winds, which may blow only for a few hours or for as long as two or three days, sometimes cause a practical inversion of the seasons, the maximum temperature recorded during the winter months being frequently 15 to 25 degrees higher than in summer. They produce a feeling of great oppression, when the wind changes its direction, it brings cool, cloudy weather and occasionally rain with a welcome feeling of relief. During a hot wind in January 1923 a maximum temperature of 117° 5" was recorded at Litenhage and 118° at Dunbrody both in the south of Cape Province, and as a result of the intense heat meads and other crops were destroyed, whilst cattle, ostriches, a large number of fowls, small birds, and bees died.

## GEOLOGY

The geological record of South Africa is obscured by the fact that no fossils are known to exist earlier than those of the Devonian age, with the result that the important Cambrian and Paleozoic systems are not clearly recognisable. The older rocks have, therefore, received of necessity a purely South African nomenclature, the most notable of these being the Cape, Karoo, Transvaal, Ventersdorp, Witwatersrand, and Swaziland systems. Speaking generally, the surface configuration of the whole of South Africa has been largely determined by the enormous period during which it has been exposed to atmospheric influences. From the Cape ranges northwards to Central Africa the country has probably been subject to the air since Triassic times, and for a further period stretching back to Devonian times the sea is not known to have encroached upon it. Hence the marine deposits are confined to the coastal regions and are of minor importance, whereas sedimentary deposits under fresh water are evident over wide areas of the Karoo, Transkei, Free State, Natal, and Southern Transvaal.

**CAPE SYSTEM.**—The Cape system is developed in the south and west of Cape Province, it appears again on the south-east coast near Port St Johns, and continues

through the coast belt to Natal. It contains the Table Mountain series of sandstones and shales, and the Bokkeveld group of shales and sandstones, in the lower part of which marine fossils are found.

**KAROO SYSTEM.**—The Karoo system occupies the whole of the central part of Cape Province, almost the whole of the Orange Free State, the western side of Natal, and a large area in the South-Eastern Transvaal. The presence throughout this system of a hard boulder-clay or tillite has been taken as a proof of glacial origin, and of the theory that an Arctic region prevailed over a great area in the Southern Hemisphere at the remote period when the coal measures of the northern hemisphere were being formed, or soon afterwards. The various groups of the Karoo series are known as the Dwyka, the Ecca, the Beaufort, and the Stormberg series. In the Ecca series are the coal beds of Natal and the Transvaal.

**SWAZILAND SYSTEM.**—The Swaziland system comprises all sedimentary and volcanic rocks older than (or supposed to be older than) the Witwatersrand beds. Until more satisfactory evidence of their age is found, the Swaziland system is simply a class into which the very old strata of South Africa can be conveniently placed. These older strata are found in the Pongola, Kwaupan, Barberton, and Pietersburg districts and in Namaqualand.

**TRANSSVAAL SYSTEM.**—This is the most widely distributed of the pre-Karoo sedimentary rocks in the Union, and it also forms very large areas in South West Africa. At its base is the Black Reef series, a group of quartzites and conglomerates with intercalations of shales. The Black Reef series forms the great escarpment of the Eastern Transvaal, where it is thicker than elsewhere, giving rise to some of the finest scenery in the province. It received its name from the occurrence of black carbonaceous matter in the conglomerates mined for their gold content in the Southern Transvaal. The Transvaal system contains, besides, the Dolomite series, the only water-bearing formation on a large scale in South Africa, the Vaalburg series of crystalline limestones, and the Pretoria series, in which are valuable deposits of iron ore.

**VENTERSDORP SYSTEM.**—The Ventersdorp system is mainly a volcanic group, and contains three sub-divisions, the Zoethef, Kuip, and Pniel series.

**WITWATERSRAND SYSTEM.**—This system is found in the Southern Transvaal and the adjoining part of the Orange Free State, and it is probably represented by certain beds in Natal, though the question is at present unsettled.

What is known as the Upper Witwatersrand group contains the most important beds from an economic point of view, because they yield the gold won on the Witwatersrand goldfield. In the Central Rand there are three reefs of banket—the local name for a gold-bearing conglomerate of quartz pebbles set in a matrix of pyritic quartzite. These are known as the Main Reef, Main Reef Leader, and South Reef. The Main and South Reefs thin out eastwards, leaving the Main Reef Leader as the productive reef there, and the latter disappears westwards.

## FAUNA

A wealth of wild animal life was until comparatively recent times a feature of South Africa, old travellers and hunters, who penetrated the country in search of adventure deeming it a hunter's paradise.

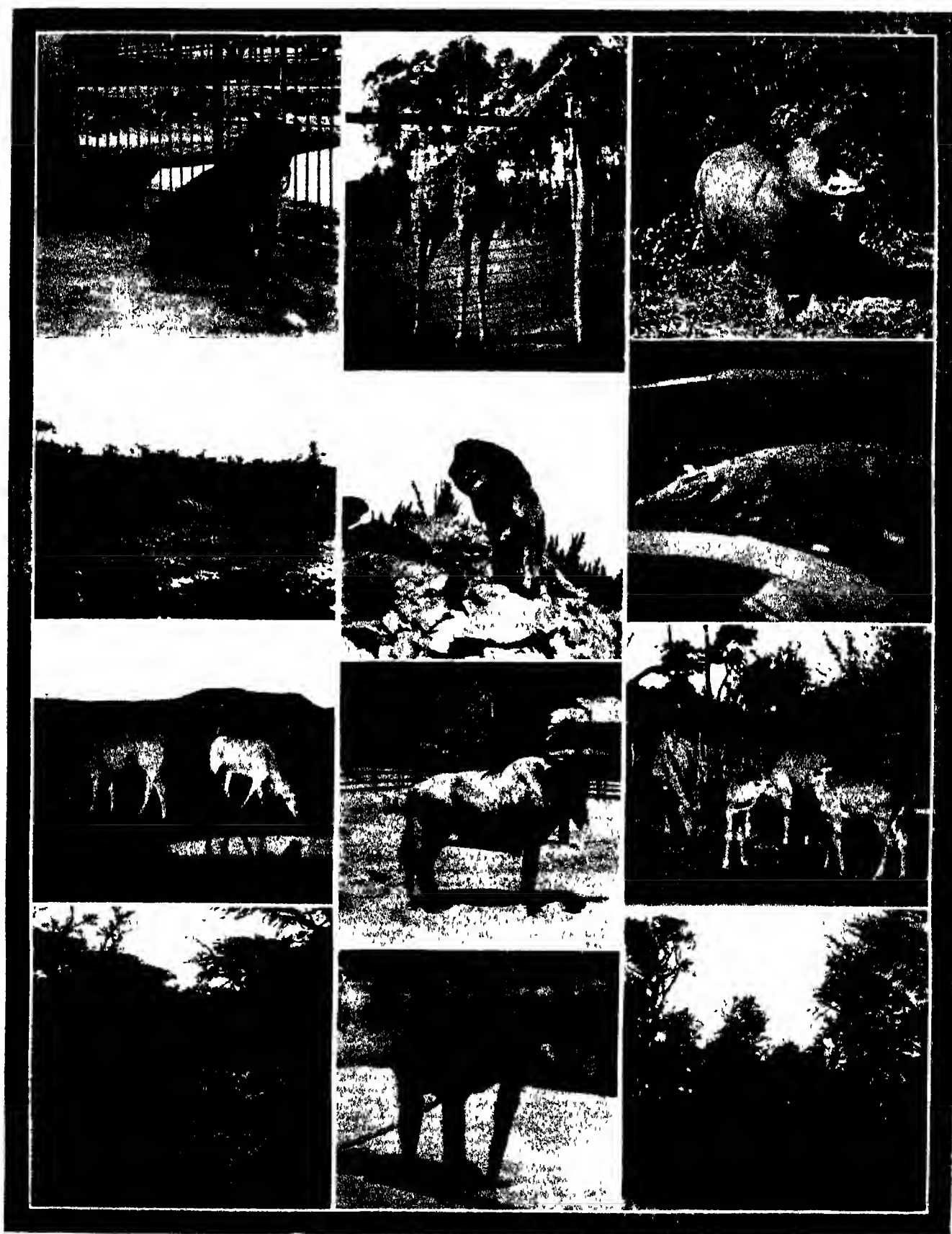
With the advance of European settlement all this has been changed, large numbers of game and other fauna having been ruthlessly destroyed, and some species even threatened with extinction. What is left of the rich indigenous fauna is now to be found chiefly on the various Government or privately-owned reserves and in the remote regions of Bechuanaland, Zululand, and the Transvaal. In some of these areas, with certain restrictions imposed by the Government, good big game shooting is still possible, and affords excellent winter pastime for many sportsmen both from the Union and overseas.

**ANIMALS.**—Africa is without doubt the chief home of the larger forms of animal life, no other continent possessing such an assemblage of the bigger herbivores as is formed by the elephant, rhinoceros, giraffe, buffalo, hippopotamus, and the various genera of the larger antelopes. Of these there are still in Cape Province two herds of wild elephants, one in the Knysna forest, the other in the Addo Bush near Port Elizabeth, whilst there are also a fair number to be found in the wilder parts of Rhodesia. Two species of rhinoceros still survive, but are both scarce, the buffalo, the giraffe, and the hippopotamus are to be met with in the remote parts of South Africa, and are more numerous in the neighbourhood of the Victoria Falls.

About 35 different kinds of antelopes have been found in South Africa, but the lion is now only in the remoter districts of Rhodesia and the Transvaal. The leopard, called tiger by the Boers, is more plentiful, and of the smaller carnivora wild cats, cheetah, hyenas, civets and others abound. The scarcity of forest country in South Africa accounts for the comparative absence of monkeys, baboons, however, are common, as are also several species of lemurs.

**BIRDS.**—No less than 420 species of birds are said to occur in Africa south of the Zambesi, among those peculiar to South Africa being the long tailed sugar birds, the plantain eaters, the bush shrikes and the colies. The one representative of the Ratite or wingless birds, is the ostrich (*Struthio australis*), which has now become a domesticated bird throughout the greater part of Cape Province and is bred and kept for the sake of its plumes. Among migratory birds are the common barn swallow, the lesser grey shrike, the stork, and the cuckoo. A remarkable bird is the great-tail widow bird, commonly called the sekabuli by South Africans. It lives on the open grassy plains, and in spring each male, accompanied by ten or twelve females, selects a suitable spot for nesting in the long grass. Here each hen builds a separate nest, while the cock watches the proceedings from some vantage spot ready to warn the hens of approaching danger and to drive off intruders.

**FISHES.**—Fresh-water fishes in temperate South Africa are not numerous, owing largely to the scarcity of permanent rivers and lakes. The carp family is most largely represented, the majority of the species being of the genus *Barbus*. Cat-fishes are also numerous. During the last 30 years the acclimatisation of British trout in various rivers, streams, and reservoirs has been successfully carried out. In Rhodesian rivers the best sport is provided by the tiger fish, which is handsome and a fierce fighter, readily distinguished by its brilliant colouring and sharp interlocking teeth. Off the coasts various species of whales are found, as well as the Cape sea-lion, or fur seal, while it is probable that great possibilities for deep-sea fishing exist over the whole of the Agulhas Bank. The snoek (the barracouta of Australia), silverfish,



NATIVE ANIMALS OF THE GAME COUNTRY.

hottentots, pangas, geelbek (or Cape salmon), mackerel, anchovy, crawfish, rock-cod, red and grey mullet, sea pike, shad, and tasselfish are among the many varieties of marine fish found in the Cape and Natal waters.

**INSECTS.**—There are said to be about 40,000 different species of insects in South Africa alone, of which the Coleoptera have more than 15,000 representatives. The white ants, or termites, abound everywhere, and their huge smooth mounds of earth are a feature of the landscape in the warmer parts. One of the most dreaded of insects is the tsetse, which is the carrier of the blood parasite trypanosome from wild to domestic animals, and causes the fatal "nagana" disease, making it impossible to use horses and cattle in the "fly country." Many beautiful species of butterfly are found.

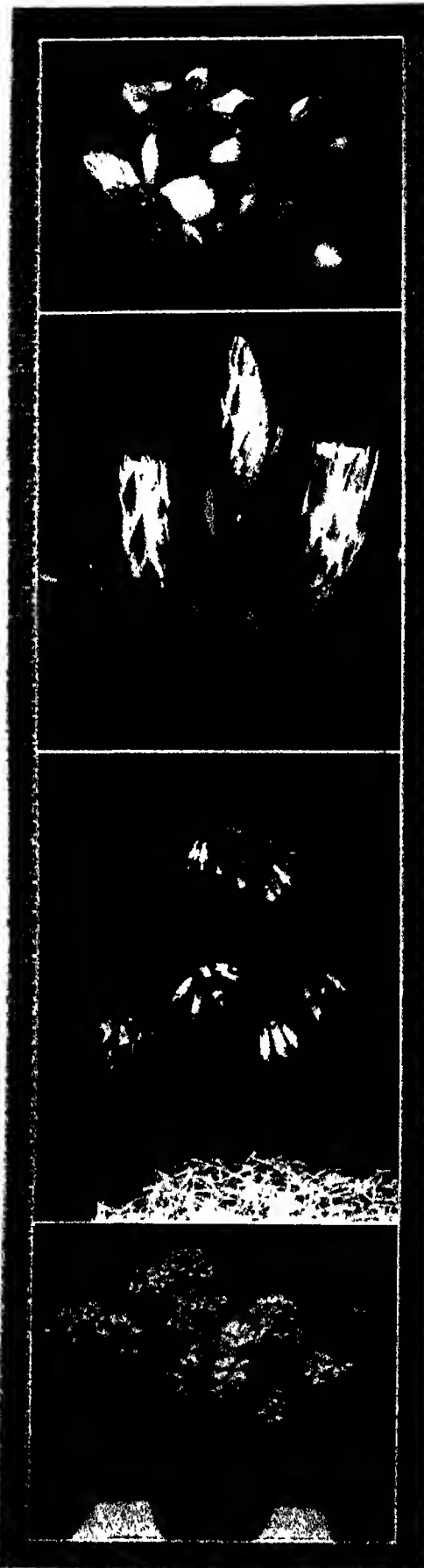
**REPTILES.**—The crocodile of the Nile and other parts of tropical Africa is found only in some of the South African rivers flowing into the Indian Ocean. Land tortoises and lizards are numerous, and there are nearly 100 species of snakes, of which 22 are reported to be poisonous. The dreaded mamba (*Dendraspis*) is only found in Natal and the low country of the east. It is more of a tree snake than the others, and sometimes reaches a length of ten feet. Among the smaller snakes the puff-adder, an ugly reptile of yellowish and orange brown, is the most dangerous. In the various strata of Karoo formation many remains of extinct reptiles of great interest have been found.

## FLORA

Since the character of the natural vegetation of any country is largely conditioned by rainfall, it follows that in South Africa, where such fall is often intercepted by the high mountains which fringe the central tableland, and where, owing to periodic droughts, plant life frequently has to contend with a scarcity of water, the vegetation is seldom luxuriant and often possesses marked peculiarities, some of which are in the direction of both obtaining and retaining a water supply. In other words, there is a predominance in many parts of succulent plants and shrubs. Generally speaking, the vegetation of South Africa is of a dull colour rather than of a vivid green, and only in a few favoured spots is there any approach to a luxurious forest growth. The absence of trees is, indeed, a feature of the greater part of the Veld and the Karoo.

**BUSH.**—Characteristic of the whole of Cape Province, except the eastern coast region, is the number of low-growing scattered shrubs of a dark or blueish-green hue. This is the "bush" country, and vast tracts of Cape Province are called the "Boschjesveld" (bush country) from the uniformity of its appearance. The chief bush is the Rhenosterbush (*Elytropappus rhinocerotis*); but it is intermingled with many others. All have usually very small leaves of a greyish or blueish-green colour. On the coast the bushes are larger, ranging from 4 to 8 ft., pelargoniums, brunias, stavias, tetragonias, asters, lobostemons, leucadendrons, and myrcias being most common. Interspersed among these are numerous plants of the orders orchidaceæ, iridaceæ, amaryllidaceæ, lilaceæ, with scattered tufts of restiaceæ, sedges and grasses. The bush of the Karoo consists largely of the acacia *horrida* (doornbloom).

**FLOWERS.**—The flowering plants of South Africa are numerous, and especially so in Cape Province, where the indigenous flora is very remarkable for an extraordinary variety of heaths and heathers. Of the



1. VICTORIA FALLS ORCHID.  
2. PROTEA (SUGAR BUSH), CAPE COLONY.  
3. CAPE HEATH.  
4. CHINCHERICHSEE.

beautiful heaths, with one mass of purple and pink blossom, which clothe the mountain sides there are said to be over 350 varieties. Among the rich flora of Cape Peninsula is the *Disa grandiflora*, the most beautiful of South African orchids, and many others of the same family, of which *Satyrium cornifolium* (a brilliant orange) and *Disa longicornis* (a lovely blue) may be mentioned. The beautiful arum lily (*Richardia africana*) is so common as to be almost a weed. Oxalises, with white, red and yellow flowers, stud the fields in early spring, and the white everlasting flower grows abundantly. On the high veld and Karoo the flowering plants are less numerous in variety than in the south, but are often extremely beautiful, especially after the heavy winter rains.

The multiplicity of plants of the Karoo are remarkable both for their beauty and singularity. After a time of copious rains the land that was a desolate and mournful desert puts forth sheets of vivid colour. There are many beautiful species of heliophila, of *cadaba juncea*, with its dark crimson flowers, and of the wigat boom which yields a bird not unlike the European caper. The speck boom or lit tree, has handsome pink flowers and is a favourite feed of cattle. There are also beautiful hibisci, melianthi, orchids, and acacias. The predominating feature of the Karoo region is the peculiar adaptation of its plant life to meet the severe conditions of the dry and hot climate and soil. Most of the plants are more or less succulent, and many have thorns.

**FORESTS.**—The Union of South Africa is comparatively a poorly timbered country. In the scrub forests, the trees are of small size only, and many of these have been ruthlessly cleared for agricultural purposes. The timber forests are found only on the seaward slopes of the mountain ranges within 100 miles or so of the coast, and at widely scattered intervals from Cape Peninsula in the south west to Zoutpansberg Mountain in the north-east. The Knysna, Tzitzikamma and Transkeian forests are the chief of these. Along the east coast from East London to Delagoa Bay and onwards there is a narrow strip of forest almost tropical in nature.

**TREES.**—The principal indigenous trees of the South African forests are the two species of yellow wood—*Outeiqua* yellow wood (*Podocarpus elongata*) and the upright yellow wood (*Podocarpus latifolia*)—which produce a hard and durable timber. Other native trees are the stinkwood or laurelwood (*Ocotea bullata*), known as the South African oak, sneezewood, which is somewhat like the Australian jarrah, the assegai and white pear waggon woods, cedars, ebony, ironwood, and the curious silvertree, peculiar to the slopes of Table Mountain. In the semi-tropical regions south-east of the Drakensberg—that is, the coastlands of Natal and Portuguese East Africa, where vegetation is abundant—mangroves, palms, baobab and bombax trees flourish. Of naturalised trees, the oak grows freely throughout the country, but reaches its best development only in the west, where the winter rains produce a climate similar to that of Southern Europe. The tree, which in South Africa yields an acorn twice as large as its northern brother, grows to perfection in Cape Peninsula, where it has been naturalised for more than 200 years. Other naturalised trees are the cluster pine, to be found on many parts of Table Mountain, the stone pine, the blue gum, and the poplar. Various kinds of acacia—the wattle bark—are being grown for industrial purposes.



# HISTORY

**T**HE history of South Africa differs in a most important particular from that of any other British Dominion.

In so far as it is from the outset a story of discovery and conquest, it resembles in broad outline the history of most parts of the Empire. In South Africa, however, a dual discovery and settlement by rival European Powers never ended with the total suppression or gradual absorption of one by the other. Side by side, and in bitter rivalry Dutch and British settlers conquered and made their own the great stretches of country which were peopled by wild and savage tribes. Each sought to gain power and wealth at the expense of the other, and within the last half century two wars left legacies of bitterness which it almost seemed beyond the power of time to eradicate. Then the genius of statesmanship Boer as much as British accomplished in only a few years the seemingly impossible task of uniting two races which had been at variance for centuries, and of consolidating in one Commonwealth those once irreconcilable peoples, the Boer and the Briton who, a few years later in a common cause, were to fight shoulder to shoulder in the jungles of East Africa, the deserts of Palestine and the trenches of Picardy.

**1487-1652 : DISCOVERY AND EARLY SETTLEMENT**—It is undisputed that the discovery of the Cape of Good Hope was made in 1487 by Bartholomew Diaz, the Portuguese navigator, and that ten years later Vasco da Gama landed at Mossel Bay, giving the name of Natal to the coast which he passed on Christmas Day. The sea-route to India was now in Portuguese hands, and in 1503 Antonio de Saldanha sailed into what was later named Table Bay. Here in 1510, Francisco de Almeida, the first Viceroy of the new Portuguese possessions in the East, fell, together with many officers and men, in a skirmish with the Hottentots on what are now known as the Woodstock beaches. Later, in 1580, our own Sir Francis Drake sailed round the Cape, saying of it: "This Cape is a most stately thing, and the fairest cape that we saw in the whole circumference of the earth." From then onwards, the English East India Company having been established in 1600, English ships called yearly at Table Bay for water and cattle.

Meanwhile, in 1602, the Dutch East India Company, for long the greatest of all companies which traded with the East, had been formed, and, as the result of one of its ships, the *Haarlem*, being wrecked in Table Bay and the crew stranded for five months on shore, representations were made to it to establish a fort at the Cape of Good Hope. The Company sent out John Van Riebeeck in 1652, from which year dates the first European settlement of South Africa, the place chosen for the Fort Good Hope being the present Parade Ground in the rear of the Post Office at Capetown, while the first garden laid out was on the site now occupied by the Dutch Reformed Church in Adderley Street.

**1652-1779 : EXPANSION OF DUTCH SETTLEMENT—HUGUENOT SETTLERS—THE FIRST TREKS**—The history of the next century is one of a period of steady development, first of the old Capetown and the immediate district, then of the new settlement of Stellenbosch, which was founded by that great Commander,

Simon Van der Stel. The Massacre of St Bartholomew in Paris in 1572 led to the emigration of a large number of Huguenots to the Cape, these being gradually, by the repression of their language, absorbed into a Dutch settlement. It was an era of prosperity and of ease, for all work was done by slaves, who were brought from Madagascar, Ceylon, and the Indies. Certain ambitions of the younger Van der Stel (who had succeeded his father as Governor) to extend the settlement and its industries clashed with the Company's idea of the Cape as no more than an outpost for the benefit of passing ships, and resulted in a decree that no Company's officer might own land there. The result of such an order, though not at once apparent, was that a number of the burghers began to break away from the narrow confines of the settlements and to make their way eastwards. The trek-fever began to make itself felt—that *wanderlust* which was in years to come to make a nation. With their flocks and herds and slaves these grave and silent farmers took their bibles and psalm books, gradually, from the need for presenting a united front to the attacks of the natives, the commando system developed itself. Swellendam was founded, the remote district of the Boschberg was penetrated, the little colony was extended, to the Great Fish River, and a stone which stands to this day was set up at Knysna to mark the adventurous journey of the Governor, Van Plettenberg. This was in 1778.

**1779-1789 : KAFFIR WARS—DECLINE OF THE LAST INDIA COMPANY**—The expansion of the Dutch settlements was not accomplished without opposition. On the north the frontier farmers found themselves harassed by the Bushmen, on the east by the warlike Kaffir tribes. In 1779 a commando under Van Jaarsveld fought and drove out the Kaffirs from the present districts of Somerset East and Albany, in 1789 the second Kaffir War, as it is called, ended less satisfactorily in the cession to the Kosa tribes of the district between the Fish and Boshman Rivers. The border farmers found themselves, not for the first time, in serious conflict with the central government (the Council of Policy) as to the methods to be used with the natives, added to which fact was the more serious one of the growing unpopularity of the East India Company. Dutch trade, owing to the war with England, was at a disastrously low ebb, the Council of Policy found itself in financial difficulties, being either unable or unwilling to help the frontier districts in their difficulties, and the spirit of dissatisfaction grew.

**1789-1815 : DUTCH REVOLT—ENGLISH CONQUESTS**—As far back as 1620 two sea captains, Andrew Shilling and Humphrey Fitzherbert, had formally taken possession of Table Bay and the continent adjoining in the name of King James I. Their action, however, had not been supported by the Government, and the Dutch settlement had not been interfered with. But the long war between England and the Batavian Republic towards the close of the 18th century provided the necessary pretext, and on July 14, 1795, Admiral Elphinstone effected a landing at Simon's Town. The Dutch Governor capitulated on September 15, and the English forces took possession. The two districts of Swellendam and Graaf

Reinet, which had just previously revolted from the government of the Dutch East India Company both submitted to English rule, but in February, 1803, in accordance with the provisions of the Treaty of Amiens, the country was restored to the Batavian Republic being now made a direct dependency. When war broke out again, a fleet under Sir Home Popham disembarked a force of over 4,000 men under Sir David Baird, which forced Capetown to surrender on January 10, 1806 after the defeat of a very inferior Dutch force two days earlier at the battle of Blueberg. The Colony was finally ceded to Great Britain by a Convention dated August 13, 1814, which was ratified by the Congress of Vienna in 1815.

**1815-1835 : SLACHTER'S NEK—ABOLITION OF SLAVERY—FOUNDATION OF DURBAN**—In 1814 the white population of Cape Colony numbered 26,000, and there were reckoned to be nearly two millions of free natives. During the first years the administration was entirely autocratic, it was not until 1825 that an Executive Council was established to share responsibility with the Governor. The problem of government was to a certain extent similar to that experienced in Canada after 1763, the control of alien colonists by British military officials. But in South Africa the existence of slavery and of a large native population were factors which complicated the situation, and invited the interference of the new missionary movement which exercised so powerful an influence in English life during the early 19th century. That the missionaries often did good is not disputed, but that they at times stirred up racial animosity between British and Dutch is equally certain. Bitterness between the two peoples had long been apparent, and the incident of Slachter's Nek brought it to a head. In 1815 a Dutchman at a frontier station resisted arrest on a charge of ill-treating a native, he fired on his pursuers and was shot dead. His brothers and others rose in revolt. They were surrounded and captured at Slachter's Nek, and five were tried and hanged for rebellion. Lord Charles Somerset, the Governor, refusing to mitigate the sentence. For nearly a century Slachter's Nek became a byword of British tyranny, and its consequences were immeasurable.

The year 1828 was memorable for the accession of Dingaan as chief of the Zulu tribes, for the establishment of a Supreme Court with English as the official language, and for the grant of legal equality with white men to all free natives. The emancipation of the slaves, in a manner, unfortunately, which provoked the cry of unfair treatment from the Boer farmers, was carried out in 1834, the year in which King William's Town was founded, and a new governor, Sir Benjamin D'Urban, found himself compelled to put down a serious Kaffir invasion of the Eastern Province. This successfully accomplished, a new province was formed and named Queen Adelaide Province, but it was abandoned in 1835 the year of the foundation of Durban.

**1835-1848 : THE GREAT TREK—DINGAAN'S DAY—NATAL MADE A BRITISH COLONY**—The causes of Boer discontent, which each year saw intensified, were manifold in detail, but all leading to one conclusion—hatred not so much of their British fellow-colonists as of

British methods of government. Racial feeling, religion, the favoured treatment accorded to the natives, emancipation, missionary activities, and the policy of limiting expansion in a boundless country, all contributed to produce the Great Trek, which was essentially an attempt to throw off British citizenship at the cost of much hardship and personal sacrifice. The first small parties set out from Cape Colony in 1836, and in the next few years some 10,000 Boers followed their example. The pioneers crossed the Orange River into what is now the Orange Free State. There they took different courses, some settling down around Winburg, others pushing northwards over the Vaal into the unknown country beyond, and still more crossing the Drakensberg range eastwards into Natal. Here were the bloodthirsty Zulus, who had exterminated or absorbed all the other tribes, while their kinsmen, the Matabele, lived across the Vaal. The first permanent Boer settlement on the further side of the Vaal was founded at Potchefstroom.

Meanwhile the main stream of Boers entered Natal under Pieter Retief in 1837-38. The leader and sixty followers were massacred by Dingaan at his kraal, and a few days later five hundred men, women and children of the emigrants were killed at the spot which is now called Weenen, the place of weeping. Boers and British under Andries Pretorius marched upon Ugingungkhlovo and on December 15, 1838, was fought the famous Blood River Battle, in which over 3,000 Zulus perished. The little church of the Voortrekkers was built three months later in pursuance of a vow made on the eve of battle, and round it grew the town which to-day bears the name of the two pioneers, Piet Retief and Gerrit Maritz. Pietermaritzburg, Dingaan was then assassinated by his own people, and his successor withdrew across the Tugela into Zululand proper, leaving Natal to the victors. Pretorius set up a republic, and for a time it seemed likely that the other republics which had been founded at Winburg and Potchefstroom might coalesce with it to form a single Dutch State. England, however, refused to acknowledge the republic which Pretorius had proclaimed, and in 1842 a detachment of troops was despatched to Durban, whence, after its reverse by the Boers, Dick King accomplished his historic ride of 400 miles to Grahamstown to obtain relief. In 1843 Natal was proclaimed a British Colony, and the majority of the emigrant Boers retired across the Drakensberg.

**1848-1860 : BOER REPUBLICS - SIR GEORGE GREY AND FEDERATION**—Alarmed by the continued trekking by Boers into the lands between the Orange and Vaal Rivers, Sir Harry Smith, the newly appointed Governor of the Cape, annexed the territory in question in 1848 under the name of the Orange River Sovereignty, British Kaffraria having been annexed as a British dependency in 1847. Pretorius and his friends took up arms, and were defeated at Boomplaat in August, 1848, the leaders escaping into the wild country beyond the Vaal and founding the Transvaal Republic.

This was the first Boer community to be recognised as independent, the Sand River Convention being signed on January 16, 1852, by which the emigrants beyond the Vaal obtained the right to govern themselves as an independent State on condition that there was to be no slavery within their jurisdiction. Of that jurisdiction the Vaal formed the southern frontier, but in other directions the borders were left vague, to provide a fruitful crop of disputes in the

future. Meanwhile the settlement of Europeans in the Orange River sovereignty had broken the missionary system of a belt of protected native tribes. There were hence and constant wars with the Kaffirs, Basutos and Hottentots, of which the Home Government began to weary, and a decision was reached to repudiate all responsibilities beyond the Orange River. Accordingly in February, 1854, by the Convention of Bloemfontein Great Britain granted independence to the Orange Province, henceforward known as the Orange Free State, on the same terms as those secured by the Transvaal.

It was in this year that Sir George Grey came to Capetown. His previous experience in New Zealand had convinced him that federation was the true policy for European colonies to pursue in a land where economic conditions were uniform and the native races strong. The Home Government was favourable to a joint control of the Cape, Natal, and British Kaffraria. But Grey went further, planning the inclusion of the two Boer States. The project was by no means impossible for the republics were in chronic trouble with the natives and a prey to internal dissensions. The Free State of its own motion made an offer to discuss the matter. Grey accepted it eagerly and laid it before the Cape Government. But Imperial statesmen took fright at the resumption of responsibilities beyond the Orange River. The proposal was vetoed, and Grey's governorship came to an end in 1859 with nothing accomplished.

**1860-1875 : ERA OF EXPANSION AND DEVELOPMENT DISCOVERY OF MINERAL WEALTH** At this point in her history the political future of South Africa might have seemed to be clearly defined. Two British colonies occupied the coast line and two Boer republics the interior. The latter surrounded in addition by a ring of Basutos, Zulus, Matabele, Bechnanas and Griquas. A period of comparative stability now set in, of which the internal progress of the several States forms the chief feature of interest. Basutoland was annexed in 1871, Cape Colony received responsible government in 1872, Griqualand West was established as a Crown Colony in 1873, and in 1875 Portugal made good her ownership of Delagoa Bay. The Orange Free State, under the able guidance of President afterwards Sir John Brand, was becoming more settled, but the Transvaal—now known as the South African Republic—was less happy and there were constant border troubles with Cetewayo and other native chiefs. In 1867 the discovery of diamonds near Kimberley marked the passing of the old order of things in South Africa. A sharp dispute as to the ownership of the Diamond Fields followed, ending only by the surrender of the Griqua chief's sovereignty to the British Crown, and the annexation of the territory under the title of Griqualand West, the Orange Free State accepting £90,000 to withdraw its claim.

**1875-1882 : BRITISH OPERATIONS AGAINST ZULUS—FIRST BOER WAR**—The unsettled condition of the Transvaal has already been mentioned. In 1876 events were drawing to a crisis. A Zulu invasion was feared, and this would probably have been the signal for a rising of black against white throughout South Africa. The British Government, under Lord Beaconsfield, thought it time to intervene, and Sir Theophilus Shepstone, an official of great experience in native affairs, was commissioned to visit the Transvaal, investigate its troubles, and proclaim a British annexation if he should be satisfied

that a majority of the inhabitants desired that step. He was cordially received at Pretoria, and convinced himself and his superiors that a majority in the country would welcome British sovereignty. Accordingly, in April, 1877, he hoisted the British flag and announced that the Transvaal was annexed. No one made any forcible resistance, though the President, T. F. Burgers, formally protested. Later events proved Shepstone to have been mistaken, for there was among the Boers a very passionate love of independence. Of this sentiment Paul Kruger, a candidate for the presidency, was a leading exponent.

**BRITISH-ZULU WAR**—For two-and-a-half years a military administrator governed at Pretoria amid the increasing discontent of the Boers. Meanwhile Sir Bartle Frere, the Governor and High Commissioner at the Cape, dealt with the boundary dispute between the Zulus and the Transvaal. His award at the end of 1878 gave a large recognition to the Zulu claims, but at the same time he sent to Cetewayo a demand for the disbandment of his army and the reception of a British Resident in his country. Civilisation could no longer tolerate the existence in South Africa of a military force trained in ideals of conquest and massacre and for ever chafing to exercise its prowess. The Zulus determined to fight for their traditions, and the campaign occupied the first half of 1879. Lord Chelmsford invaded Zululand at three different points. Of his own column, temporarily divided for the purpose of a reconnaissance, half was surrounded and massacred in its camp at Isandhlwana. Light hundred white troops fell together with 500 native allies, and a panic broke out in Natal. The heroic defence of Rorke's Drift and its relief by Chelmsford saved the colony. With the advent of reinforcements Lord Chelmsford was able to finish the war, the Zulus being finally defeated at Ulundi on July 4, 1879. Zululand became a protectorate and was annexed in 1887.

**FIRST BOER WAR**—The reaction in England against the strong imperialist policy of Beaconsfield, voiced by his successor Gladstone, excited the Boers to a still stronger agitation for the restoration of their independence. In December 1880 Kruger and other leaders proclaimed the republic re-established, though the Liberal Government in England had refused to restore it. They attacked the small British detachments in the country and gathered their main force on the Natal frontier to resist a column which Sir George Colley was leading to a re-conquest. In January and February 1881 Colley, with forces too small for his task, was foiled at Laing's Nek and Ingogo, and heavily defeated at Majuba Hill with the loss of his own life. Large reinforcements were seen to be necessary for the invasion of the Transvaal, and whilst they were yet on their way to the Cape the Government decided to yield to the Boers. The dilemma was a difficult one, to give way seemed like being intimidated by a military defeat; to persist entailed the subjection of a people who were averse from British rule and claimed the right to independence. It was apparent when too late that the course taken with humiliation in 1881 could have been followed with honour a year earlier. The Pretoria Convention of 1881 nominally yielded to the Boers something between complete independence and the status of a self governing colony. They were to elect their President and their Raad, and to make their own laws unhindered, but their foreign affairs were to be subject to British control and the ill-

defined "suzerainty" of the Queen was asserted. A further convention of 1884 definitely accorded to the Transvaal the title of the South African Republic.

**1882-1895 : FURTHER EXPANSION - GOLD DISCOVERY RHODES AND KRUGER**—With the close of the war a new period of European expansion through out South Africa began. German traders and missionaries had long been operating in Damara and Namaqualand, and in 1884 the Government declared this region a protectorate under the name of German South West Africa. A single harbour on this coast, Walvisch (now Walvis) Bay, remained in British occupation, having been annexed in 1878. The Transvaal was still inclined to extend its borders at the expense of the natives, and 1883-84 bands of Boers trekked westwards into Bechuanaland and sought to establish republics. The natives appealed to Great Britain, and the new settlers were turned back by force in 1884. Then followed the proclamation of a British protectorate over Bechuanaland, the southern part of which was converted into a crown colony in 1885 and annexed to the Cape ten years later. The annexation of Zululand in 1887 has already been recorded.

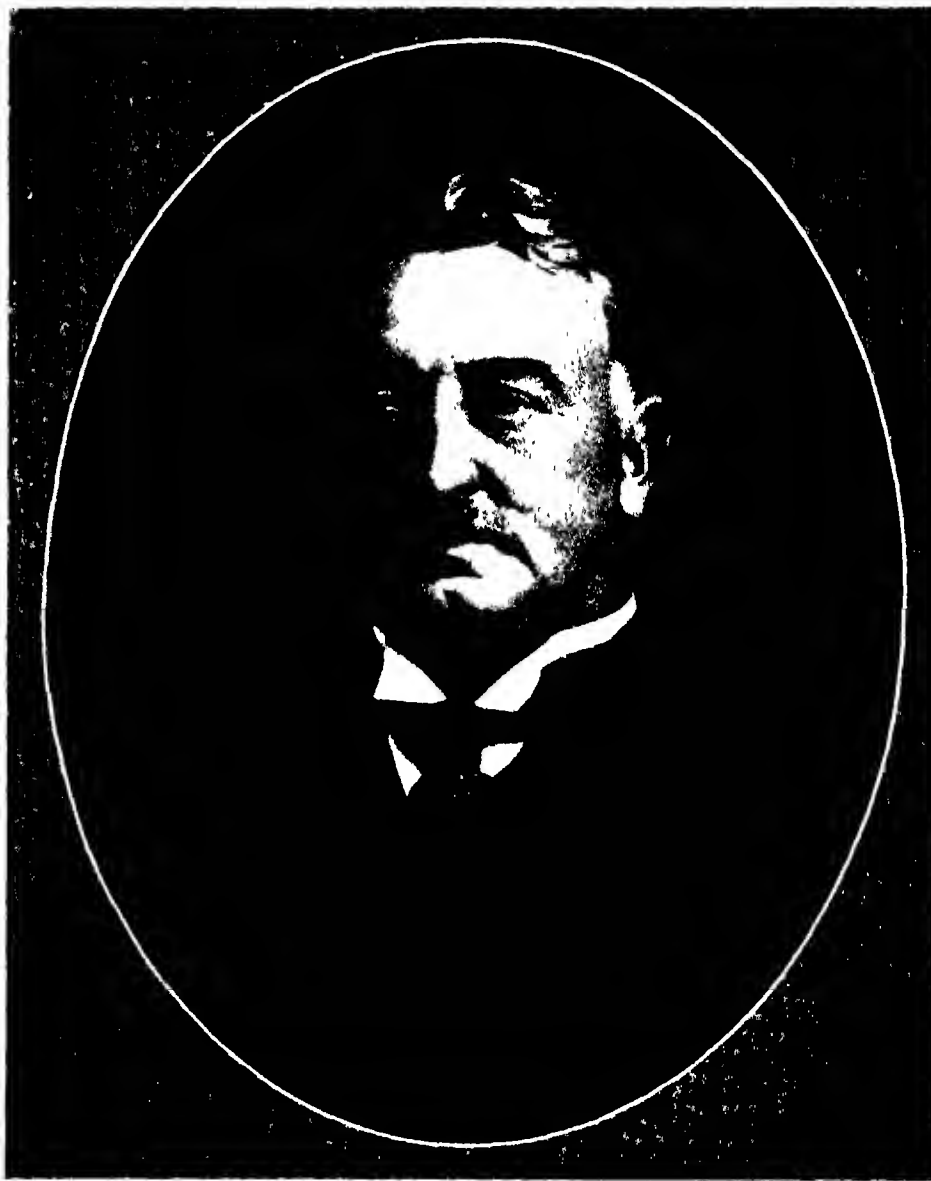
The next move began in 1888 in the shape of a British extension into the vast region north of the Transvaal. At this time Paul Kruger was firmly established in the presidency which he was to hold for nearly 20 years. He was an old man, one of the trekkers of 1836, patriotic but narrow and prejudiced, with no desire for the industrial development of his country though ready enough to profit by its results.

At the head of the movement to extend British colonisation stood Cecil Rhodes, who had entered South African politics in 1884 and had done much to eradicate from the Afrikaner Bond, or Nationalist Party, some of its anti-British sentiment. His ambition was to colonise the area now known as Rhodesia. In 1889 a charter was granted to the British South African Company, which lost no time in establishing trading forts at Salisbury, Victoria and other places. An agreement with Portugal in 1891 defined its frontier with Portuguese East Africa, and a Boer attempt to trek northwards over the Limpopo was repulsed. The Matabele, who declared war in 1893, were reduced to submission, a further rising in 1896 being also suppressed. In a few years Southern Rhodesia became an ordered territory, the immediate political importance of Rhodes' work being that it encircled the Transvaal on the north with British territory, an encirclement which the extension of Zululand and the protection of Tongaland in 1895 completed on the East.

The other important event marking this period was the great discovery of gold on the Witwatersrand, south-west of Pretoria, which occurred in 1886. The Boers were mostly incapable of developing mineral wealth, and thousands of outsiders (Uitlanders), chiefly British subjects, crowded in to work the mines. The new city of Johannesburg became in a short time the richest and most populous in South Africa, and with the growth of this alien and enormously rich population new and grave political questions were raised. Broadly, the struggle was between the unthinking conservatism of the Boer, as typified by President Kruger, and the Imperialist ideals of the Uitlander, translated into action by Rhodes and Milner. It was the clash of two incompatible social systems; the refusal of the old order to give way to the new.

**1895-1899 : QUESTION OF CITIZENSHIP - JAMESON RAID AND ITS RESULTS**—Although the new comers to the Transvaal actually out-numbered the Boer citizens of the Republic and between them contributed more than nine-tenths of its revenues, paying all ordinary taxation and being mulcted in addition in special mining duties, they enjoyed no political privileges. They had no representation in the Volksraad and no right to education for their children. Under the Pretoria Convention it had been agreed that all "actual

**JAMESON RAID**—It is here necessary to recall that in 1884 the concession of all rights to make railways had been acquired by a number of German and Hollander capitalists and the Netherlands Railway Company formed, much of the gold exported being carried by this company shute to Delagoa Bay for shipment. President Kruger refused to enter a Custom Union with Natal, the Cape Colony, and the Orange Free State, seeking in this way to make the Transvaal independent as regards its sea-borne traffic, of the ports and railways of the British



THE LATE RIGHT HON. CECIL JOHN RHODES.

and potential residents in the Transvaal should be entitled to the rights of citizenship after a residence of two years." In 1882 the Transvaal Government had raised the necessary period of residence to five years, and in 1890 had enacted that the qualifications for full franchise should be extended to ten years. Then in 1884 a law was passed by which no newcomer could obtain the franchise until he had been fourteen years in the country.

colonies. A prohibitive tariff was imposed on all goods coming across the Vaal River, while railway rates were raised enormously. When the Johannesburg merchants installed a service of ox wagons to transport goods at low rates, the President retaliated by closing the drifts. This action, though under pressure from the Imperial Government the drifts were afterwards reopened, the refusal of the franchise, and the important part which German intrigue was felt to be

playing irritated the Uitlanders to a point at which peaceful agitation gave way to revolutionary endeavour. A conspiracy was hatched by the Uitlanders and leading Rand capitalists, as also prominent politicians. The plan was for the Uitlanders to rise in revolt, seize the arms at the Pretoria arsenal, and retire to hold Johannesburg in anticipation of British mediation. At the same time an irregular force under Dr Jameson, the administrator of Rhodesia, was to collect upon the frontier in readiness to co-operate if required. At the last moment a difference of opinion arose as to the flag to be hoisted, Rhodes' desire to see the Transvaal federated with the rest of South Africa under the British flag not being acceptable to some of the Reformers. Whilst the matter was being debated, Jameson precipitated events by crossing the frontier on his own responsibility. He rode to within a few miles of Johannesburg, and was surrounded and captured at Doornkop by a Boer Commando under Piet Cronje on January 2, 1896.

Apart from all questions of morality, the Raid was a bad blunder, for it played right into the hands of the reactionary party, and aroused almost world-wide sympathy for them and denunciation of Great Britain. Rhodes was driven from office, many of the Reform Committee were fined or imprisoned, and Dr Jameson and his men were sentenced by a British Court to various terms of imprisonment. Kruger could afford to act with apparent generosity, for the Transvaal and the Orange Free State were now united as they had never been before.

**RESULTS OF THE RAID**—From this moment the Boers rapidly armed for war, whilst the British Government, as the only hope of peace, pressed reform upon them, and three years of sterile negotiations ensued. Sir Alfred (afterwards Lord) Milner, who was now High Commissioner at the Cape, did his best to secure a grant of the Transvaal franchise to immigrants after five years' residence, but in the spring of 1899 he warned Mr Chamberlain, the Colonial Secretary, that the position was becoming intolerable. In May of that year he met Kruger at Bloemfontein, but could come to no agreement, and throughout the summer the haggling continued, each side acting as if it thought the other would yield in the end without resorting to force. Towards the end of August the President offered substantial concessions to the Uitlanders on condition that the British would refrain from active interference, drop the claim to suzerainty, and submit disputes to arbitration. But even this offer was withdrawn almost at once in default of literal acceptance, and by September war was seen to be imminent. Many causes reaching far back into the past had contributed to it, the most contributory one, perhaps, being the attitude shown throughout by President Kruger, who, with all the large and fine qualities of mind that might have made him a great leader of men, was constitutionally unable to look beyond the limits of his own State.

**1899-1902: SOUTH AFRICAN WAR—BRITISH OFFENSIVE—FORMAL ANNEXATION**—On October 11, 1899, an ultimatum having been presented forty-eight hours previously by the Transvaal Government, war was declared between the two Boer Republics and Her Majesty's Government, and on the following day the first shot was fired, the Boer forces attacking an armoured train at Kraaipan, a station in Cape Colony south of Mafeking. At this time, so little bent on war was the British Government, there were just, and only just, enough Imperial troops in South Africa to

hold the Orange River on the south of the Republics and the Natal border on the east, to prevent the Boer forces from sweeping down on Capetown or Durban before reinforcements could arrive from England. The British force at the commencement of hostilities numbered only 22,000 men.

Kimberley was quickly cut off, and Mafeking invested. The first British victory at Talana Hill was a barren one, for General Penn Symons was killed and the British force had to retire on Ladysmith, which was closely besieged. To its relief the army corps under General Sir Redvers Buller, which landed on November 9, was at once sent. There was rebellion to be quelled in Cape Colony, and the British organisation was already severely tested when hard on each other came the defeats at Modder River, Stormberg, Magersfontein, and Colenso. The year closed on a note of gloom, and it was realised at last that the magnificent fighting qualities of the Boers had been altogether underestimated. The names of Joubert, Louis Botha, de la Rey, Piet Cronje, Smuts, and Christian de Wet are alone sufficient to recall their splendid leadership.

**BRITISH OFFENSIVE**—With the year 1900 came the great British offensive, the sharing of the burden by every unit of the Empire, and the arrival at Capetown of the two great British Generals of the day—Lord Roberts and Lord Kitchener of Khartoum. Meanwhile the beleaguered garrisons of Ladysmith, Mafeking and Kimberley held their own, two strong Boer attempts to take Ladysmith being foiled at Caesar's Camp and Wagon Hill. On January 10, 1900 Lord Roberts arrived, and on the 24th Buller met with a severe repulse at Spion Kop, losing 1,700 men, but on February 28 the garrison of Ladysmith, under General White, was relieved after suffering acute hardships. The Boer invaders fell back to the north of Natal, Kimberley was relieved on February 15 and on February 29 was fought the battle of Paardeberg, which resulted in the surrender of General Cronje with 4,000 Boers.

**FORMAL ANNEXATION**—Bloemfontein, the capital of the Orange Free State, was taken on March 13, and the country was formally annexed on May 24, Johannesburg being occupied on May 27, and the British flag hoisted over the Raadsaal at Pretoria on June 5. It should be mentioned that Boer leadership had suffered a great loss in the death of their gallant and chivalrous Commandant-General, Joubert, in March. Mafeking was relieved on May 17, after a siege of seven months, the Transvaal was annexed on September 1, President Kruger having made good his escape to Lourenço Marques and thence to Europe. It seemed as though the war were over, and Lord Roberts left for England, the duties of Commander-in-Chief devolving upon Lord Kitchener.

Eighteen months of guerilla warfare followed before peace negotiations were opened in April, 1902, but on May 19 a Special Commission delegated from Vereeniging met Lord Milner and Lord Kitchener at Pretoria, the final articles of peace being signed on May 31, 1902.

**1902-1909: PEACE AND RECONSTRUCTION—CONSTITUTION**—June 1, 1902, is a day memorable in the history of South Africa. Peace then dawned for the first time for many years, and it was a peace with honour to both sides. By the terms of the Vereeniging Agreement representative institutions were to be set up in the two provinces—described as the Transvaal and Orange River Colony—as

soon as possible, to be followed in due course by responsible government, the British Government was to make a free grant of £3,000,000 for the resettlement of the Boers upon their farms, supplemented by loans for the same purpose upon very easy terms, the Dutch language was to be safeguarded, and the large questions of native policy were to be reserved until the establishment of self-government. The equality of the two dominant white races in South Africa was now secured. In 1907 both the Transvaal and the Orange River Colony obtained full responsible government. The first elections gave the Dutch element a majority in each, and at the same time the Bond party returned to power in Cape Colony.

Cecil Rhodes had died in 1902, soon after the declaration of peace, his old adversary, Kruger, dying in exile two years later. Lord Milner had been succeeded as High Commissioner by Lord Selborne, whose weighty memorandum was to bring the question of Union into practical politics. The need of a central South African Government was being increasingly felt, the chief problems in question were those of the natives, the customs, and the railways.

The natives outnumbered the whites by five to one, and were increasing at a more rapid rate. The customs question was pregnant with trouble owing to the fact that two provinces had no outlet to the sea save through the territory of the others or through that of Portugal. The coast provinces in the main favoured protection and the Transvaal free trade. Lord Milner in 1903 had induced the four South African units to agree to a customs union and a uniform tariff, but on attaining responsible government the Transvaal threatened to secede from the arrangement. Railways constituted a similarly difficult question, the railway focus of South Africa was the Rand, where three systems converged from the Cape, Natal, and Delagoa Bay, the railways were State-owned, and each province drew much of its revenue from this source, there was thus an ever present danger of an economic war in default of some regulation by a central authority.

**CONSTITUTION**—The remedy for these troubles was plain, yet by no means easy of accomplishment, for co-operation meant individual sacrifice. In October, 1908, a convention of delegates from the four Parliaments met at Durban and completed its work at Capetown in the following year. Its draft of a Constitution, largely due to the statesmanship of the Transvaal members, prominent among whom was General G. C. Smuts, then went to the several Parliaments for approval. The Transvaal accepted it entire, the Cape and the Orange River Colony (henceforward to resume its ancient name) demanded amendments. The Natal Legislature was hostile to the whole scheme, but a referendum of the people showed a majority in favour. The amendments entailed the abandonment of proportional representation of minorities in the Lower House, but the principle was retained for the Senate. On these terms the four provinces accepted the Constitution, and thus, to use the words of a British statesman (Lord Balfour), was achieved in a few months "a work which is without parallel in history," the union under one flag of two peoples who for years had been in constant and often bitter enmity.

**1909-1914: THE UNION AND ITS RESULTS**—On September 20, 1909, the South Africa Act passed through the Imperial Parliament and received the Royal Assent, May 31, 1910, being fixed as the date of the actual establishment of the Union. The Premier chosen by the first Governor-



General, Lord Gladstone, was General Louis Botha, one of the most prominent of the Boer Generals in the war of ten years previously, who was to be called upon later to display, in the service of the Empire, all those qualities of leadership and statesmanship which he possessed in so high a degree. It was perhaps, inevitable that racial hatred and suspicion should die hard even under the altered conditions. The Nationalist, or Separatist, Party was strong, especially in the Orange Free State and parts of the Transvaal, but General Botha refused to countenance the movement, and from the first set himself to the task of blending the two races to the formation of one free nation. The Union Government began to put its house in order, and it was well it did so. Questions of defence invited early consideration. Sir Ian Hamilton, the Inspector-General of Overseas Forces, having paid a visit to South Africa in 1911. In 1912 the wonderful memorial to Cecil Rhodes was unveiled on the Groote-Schuur Estate, and General Botha formed his second Ministry. The year 1913 was remarkable for serious miners' strikes and riots on the Witwatersrand, also for Indian riots and disturbances in Natal. These industrial and racial conflicts continued into 1914, right up to the time when the shadow of the coming War was being felt the world over. South Africa found herself suddenly confronted, not only with the question of her response to the Empire's call for united action, but with rebellion within her own borders.

**1914-1918 : UNION IN GREAT BRITAIN—REBELLION—CAMPAIGN IN SOUTH-WEST AFRICA—EXPEDITIONARY FORCE ON EUROPEAN FRONT—OPERATIONS IN EAST AFRICA.** The outbreak of the European War on August 4, 1914, affected South Africa more immediately than any other Dominion. Twelve years only had passed since the Boers had been in arms against Great Britain, and there were long and bitter memories still at work, nor were there existent the ties of kinship, affection, and a common tongue and heritage which bound the other Dominions to the Mother Country. There was still a strong spirit of racialism, which during the preceding years had been sedulously fostered by German intrigue, large numbers of the Dutch were led to believe that the War was no concern of theirs and that South Africa should remain neutral. Undoubtedly the German Government had counted on this, unfortunately for their plans, the attitude of General Botha and his colleagues was never in doubt, and the latter were soon called upon to show their patriotism.

Early in August the Union Government was asked if it would send an expedition against German South-West Africa, the former having already intimated that it would undertake its own defence. In September, Botha announced that the Government would do so, a step that was followed by the resignation by General Beyers of his post as Commander-General of the Union Forces. A concerted movement for rebellion was planned, with Beyers, Lieut-Colonel Maritz, Generals Christian de Wet and De La Rey, and Major J. Kemp as leaders, Maritz being the Commander of the Union forces on the German frontier. The situation was serious, and might easily have become very dangerous. De La Rey was shot by police, and Maritz was defeated in October, being forced to take refuge over the border. The ex-President of the Orange Free State, Steyn, after a long delay, did something to bring the rebels to reason, but by November Botha was forced to take the

field against his old colleagues, De Wet and Beyers. De Wet surrendered after a defeat near Winburg, and Beyers was drowned when in flight. The last of the rebel commanders, Fourie, was defeated in December, he alone suffered the death penalty, having deserted while on active service. De Wet was sentenced to 6 years' imprisonment, but was released after a few months. Altogether, about 10,000 men had been in armed rebellion. On the Government side 132 were killed and 277 wounded, of the rebels over 5,700 were either captured or surrendered.

**CAMPAIGN IN SOUTH-WEST AFRICA.**—The campaign in South-West Africa which had been held up by the rebellion, occupied the greater part of 1915. The country was attacked by sea and land, the expeditionary forces consisting of 3,516 officers and 63,721 men. Many and great natural obstacles had to be overcome, but the enemy's resistance was speedily broken by the determination and fighting qualities of the Union troops. Windhoek was occupied on May 12, and on July 9, 1915 the German forces surrendered at Korab, from thence onward until 1920 the country was occupied by the Union Forces as a conquered territory.

**EXPEDITIONARY FORCE ON EUROPEAN FRONT.**—Immediately after this campaign vigorous steps were taken to organise forces for overseas service. Recruiting was general throughout the Union, and an expeditionary force, consisting of a Heavy Artillery Brigade, an Infantry Brigade, Medical Units, and a Signalling Unit, was organised, trained, and despatched to Europe. This force was maintained throughout the War on the European front, was repeatedly in action and earned undying fame by the heroic sacrifices it made at the battle of Delville Wood in July 1916. No less than 471 officers and 30,248 other ranks (Europeans) served on the Western Front, to which must be added 131 nurses, a Coloured Labour Battalion numbering 1,925, and the Native Labour Contingents, which totalled 25,111. On this front (including the casualties incurred in Egypt and Palestine) the total deaths were 4,454, while 10,325 officers and men were wounded and 1,437 were taken prisoners of war, the total casualties being 14,779.

**OPERATIONS IN EAST AFRICA.**—At the close of 1915 General Botha agreed to provide a force for service in East Africa. He relied entirely on volunteers, the response to his appeal being excellent. The 2nd South African Infantry Brigade, which had been destined for service in Europe, was sent to East Africa, under the command of General P. S. Beves. A mounted brigade under Brigadier-General J. P. Van Deventer and a brigade consisting of 5 batteries of South African Field Artillery, with all the necessary administrative and other units, were also formed, so that the South African Contingent was complete and self-contained. Later this contingent was increased by another infantry brigade, a second mounted brigade, and the Cape Boys' Battalion. This was the largest body of white troops that had ever taken the field in tropical Africa. At its head the Imperial Government placed General Smuts, at that time Minister of Defence. He reached Mombasa on February 19, 1916, the South African Contingent having a week previously suffered heavy losses at Salaita. General Smuts' first endeavour was to occupy the whole Kilimanjaro area and to encircle the German commander, Von Lettow. In this he was only partially successful, but the operations in the early months of 1916 opened the door into German East Africa, while the four months' march on Tanga showed alike General Smuts' qualities as an

organiser and leader, and the wonderful qualities of endurance possessed by his men. By the end of that year the back of the enemy's resistance was broken, though Von Lettow kept up a guerilla warfare until the end of the war. In January, 1917, General Smuts gave up the command to go to England as a member of the War Cabinet. In March, 1917, the 10th South African Horse carried out perhaps the most remarkable raid of the whole campaign, when they trekked down a large German force. In October and November 1917, there was occasional severe fighting, and, as stated, Von Lettow, with the remnant of his forces, did not surrender until he was notified of the Armistice. In all, 43,477 white troops took part in the East African campaign, in addition to a Native Labour Contingent of 16,845. The total casualties were 2,762, of whom 1,611 were killed in action or died from wounds or disease, the latter taking heavy toll.

It only remains to mention that the South African Field Artillery and the Cape Corps (composed of coloured persons recruited mainly in Cape Province) did good service in Egypt and Palestine after serving in the East African Campaign. From first to last the Union (apart from forces used in suppressing the rebellion) raised 145,515 white men and 84,694 natives and coloured men. In all campaigns there were killed in action (or died from wounds) 4,632, while 1,914 died of accident and disease, 12,036 were wounded, and 2,400 were taken prisoners of war, the total casualties being 18,042.

The cost of the German South-West African campaign was £12,000,000, and of the Rebellion £5,000,000; in addition, Union funds bore an expenditure of £9,575,000 for excess pay (Union rates over Imperial rates) of members of the Union contingents and other war expenditure. The total war expenditure of the Union was £26,675,000.

**1918-1925 : THE UNION AFTER THE WAR—DEATH OF GENERAL BOTHA—INDUSTRIAL STRUGGLES—LAST OF THE PRINCE OF WALES.**

—The end of the Great War coincided with a most disastrous epidemic of influenza, almost world-wide in extent and particularly deadly in South Africa, where 11,726 whites and 127,745 of the coloured population died from it. The Prime Minister, General Botha, proceeded to Europe to participate in the Peace Conference, and he and General Smuts were signatories to the Treaty of Versailles on June 28, 1919. Under the Treaty, the Union accepted a mandate over South West Africa. On August 27 of the same year Louis Botha died, leaving to his country and the world a record of patriotism and statesmanship that can rarely have been equalled. His successor in the Premiership was General the Rt. Hon. J. C. Smuts. The elections in 1920 gave the Nationalists 45 seats, the South African Party 40, the Unionists 25, Labour 21 (a significant increase), and there were three Independents. General Smuts, whose political position was one of difficulty, decided to carry on with the help of the Unionists, and in November 1920 there was a formal fusion of the Unionist and South African Parties, followed by another General Election in 1921, which was definitely fought on the Republican issue and resulted in a triumph for Smuts and the enlarged South African Party, though, it is to be noticed, only at the expense of the Labour Party. The year 1921 was notable for a serious outbreak by a native religious sect ("the Israelites") at Bullhoek Location, near Queenstown, culminating in an armed conflict with the police, in which nearly 200 natives were killed. In 1921 also the defence of South Africa was taken over by the Union



Government, Capetown Castle was handed to the South African nation, and the Imperial troops were withdrawn.

About this time there commenced a period of severe economic depression, the worst feature of which was a succession of long and bitter strikes in the diamond, gold, and coal mining industries. In 1922 in different parts of the Reef area there were violent outbreaks, which culminated in the declaration of a general strike by the South African Industrial Federation and a widespread revolutionary movement in the mining districts, to suppress which martial law and the mobilisation of the Union forces became necessary. Other incidents of a memorable year were the inauguration of the Witwatersrand University and the agreement made with the English Marconi Company to erect a high-power wireless station for direct communication with Great Britain.

During 1923 economic and industrial conditions became more normal, and trade generally improved. H. R. H. Prince Arthur of Connaught, who had ably filled the office of Governor-General during trying times, was succeeded by the Earl of Athlone, who assumed office on January 21, 1924. On May 9 the House of Assembly was dissolved, and a general election resulted in the return of the Nationalist Party to power, General Hertzog becoming Premier.

The year 1925 will be for long memorable in South African history by reason of the visit of H. R. H. the Prince of Wales, who made an exhaustive tour of the Union and Rhodesia, and was everywhere received with a whole-hearted enthusiasm which, in some quarters, had hardly been anticipated. The latter half of the year was unfortunately marred by a disastrous strike in the ports of the Union, it adversely affected trade

and caused much bitter feeling, but finally collapsed in October.

An important step taken in 1925 was the passing of the Act naturalising as British subjects the German settlers in South-West Africa, and the granting of a modified form of home rule to the Territory. The question of native policy also received much attention, and in this connection full discussion of the matter was postponed to 1926, when the Prime Minister promised to table proposals. In that year, which opened with every prospect of continued prosperity, the difficult and long-debated question of the Indians in South Africa was referred to a Round-table Conference, all proposed legislation bearing on the matter being meanwhile suspended. A somewhat serious native outbreak in Bechuanaland which at one time threatened civil war was quickly suppressed and order restored.

## THE PRINCE OF WALES' VISIT

**T**HE long anticipated journey of H. R. H. the Prince of Wales to the British Possessions in West and South Africa (a tour which was afterwards extended to South America) took place in 1925, having been postponed from the previous year on account of the incidence of a General Election in the Union of South Africa. Before giving a necessarily brief account of the main features of the tour, it may be stated that, rich as it was in varied incident, spectacle and historical associations, it was successful even beyond anticipation, in the enthusiasm which it everywhere aroused and the impression which it consistently left of the happiest accord between the Royal visitor and those diverse peoples over whom he is, in the natural order of things, destined one day to rule.

It was on March 28, 1925, that the battle-cruiser "Repulse," carrying the Prince and his suite, left Portsmouth Harbour. The first portion of the Prince's itinerary took in the old-established and historic colonies of Gambia, Sierra Leone, the Gold Coast and Nigeria. Here were visited the harbours and towns of Bathurst, Freetown, Sekondi, Accra, Kano and Lagos. The "Grand Palavers" held at Kumasi and Accra were notable for the number of chiefs who attended and the almost delirious excitement of the native crowds which witnessed them. In Nigeria the Prince held a *darbar* on the great Kano plain, where the cavalcade of 20,000 riders under the Moslem chieftains of the Northern Territories and the long and gorgeous procession of all the Emirs and Chiefs must have left ineffaceable memories. On April 22, 1925, the foundation stone of the Cathedral of Lagos was laid, and on the 23rd the "Repulse" crossed the line on her journey south to the youngest Dominion of the Empire.

**CAPE PROVINCE.**—On May 1, 1925, the Prince landed at Capetown, the gateway of the country in which he was to spend exactly two months. Welcomed by his kinsman, the Earl of Athlone, the Governor-General of the Union, by General Hertzog, the Premier, and his Cabinet, and by General Smuts and Sir Thomas Smartt, representatives of an older regime, the Prince was plunged at once into a rapturous crowd whose enthusiastic welcome almost defies description. A State Ball at Government House was followed by the investiture of the Prince

as Chancellor of the new University of Capetown, by visits to Groot Constantia, Groote Schuur (where His Royal Highness laid the foundation stone of the new University), Simon's Town and Koenigsberg, and by the memorable banquet at Parliament House, which the Prince attended as the guest of the Union Senate and Assembly.

There followed a Royal trek through the Western Divisions of the Province. In turn, Steinkubosch, Mossel Bay, Knysna, Oudtshoorn and the Cango Caves, Worcester, Litenhage, Graaf Reinet, Colesberg, Cradock and Port Elizabeth were visited. From Addo the Sunday's River Settlement received the Prince, and Grahamstown (most English-looking of towns) gave him a students' welcome. The return journey took in such widely different places of interest as Kowie, West Bathurst, Bedford, Fort Beaufort, King William's Town (where a Bantu *Indaba* was held), East London, the Transkei, Queenstown, Molteno and Burgersdorp. Already (May 22) the Royal visitor had journeyed 2,000 miles since leaving Capetown.

**FREE STATE PROVINCE (THE).** The outstanding features of the crowded week which the Prince spent in the Orange Free State and Basutoland were the public reception given to his Royal Highness at Bloemfontein, the official banquet and ball offered by the Mayor and the Administration of the Province, necessarily brief visits to the centres of Winburg, Kroonstad, Ladybrand and Harrismith, and last, but not least, the greatest native *Pitso* (*darbar*) that Basutoland had ever known, which was held on the flats above Maseru. As he left the Free State Province at Harrismith, the Prince could say, in all sincerity, "Your welcome has been so spontaneous, so real and unaffected that if it lies with me in the future I shall do my best to come and see you again," and it is probable that by this short visit the Prince did a service to the cause of Empire which only a future generation will be able to estimate at its true value.

**NATAL PROVINCE.**—From the giant range of the Drakensberg the royal train descended some 2,300 feet in twenty-five miles, and the Prince made his first acquaintance with Natal. It was inevitable that the famous battlefields of 1899 and 1900 should be visited, and from Ladysmith, with the memories of its siege, excursions were made to all the principal points of interest. Durban

welcomed the Prince with the happy title of "Edward the Conqueror," and nearly 100,000 spectators were estimated to occupy the great square in front of the Town Hall, where in 1908 the Union Constitution was framed and where now the official reception took place. A race meeting, a Rugby football match, dancing, polo, and the opening of the Prince of Wales' Graving Dock preceded his departure from Natal's great commercial centre for the capital, Pietermaritzburg, where an equally warm welcome awaited him. Estcourt, Newcastle, Dundee and Veyheid were in turn visited, and on June 5 the Royal coaches crossed the Tugela into Zululand, where a visit, historic in every respect, was rendered especially notable by the great *Indaba* and subsequent native dance ceremonies at Eshowe, which were probably the last function of their kind and magnitude which will ever be organised.

**TRANSVAAL PROVINCE.**—The High Veld welcomed the Prince at Ermelo, where a commando of 400 Afrikaner horsemen rode out to meet him. Here and at various stages His Royal Highness met veterans of the first and second Boer campaigns, who could now almost fight again to be the first to shake hands with "ons Prinze." At Embabagan, in Swaziland, the chiefs and peoples of the Swazi nation gathered on June 15 to acclaim and entertain the Royal visitor, who returned to fulfil a round of visits to the scattered towns and dorps of the Transvaal. Barberton, Koomatipoort, the Zoutpansberg goldfields and Pietersburg in turn preceded a triumphal entry into Pretoria, where, in the amphitheatre of the great Union Government Building, the Senior Predikant offered a prayer of thanksgiving and the "Old Hundredth" was sung in Afrikaans. The four days which the Prince spent at Government House were amongst the busiest of his tour. Included in the functions arranged and duly carried out were the parade of 13,000 school children at the eastern sports ground, the meeting with 20,000 natives, the Administrator's banquet, and the church parade of ex-service men, the latter immediately preceding the Prince's happy visit to lay a wreath on the grave of President Kruger.

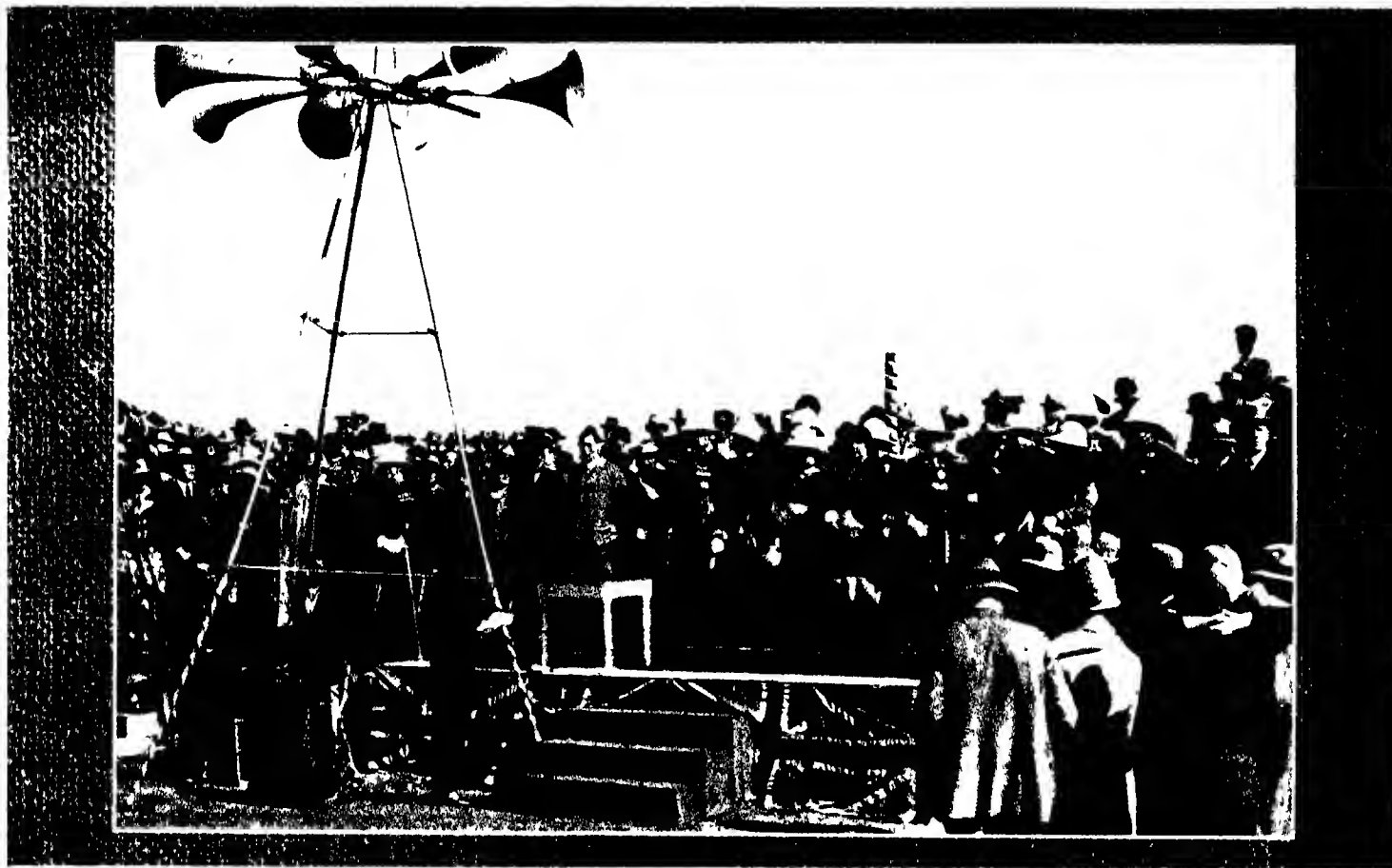
The reception accorded to the "Ambassador of Empire" at Johannesburg may be said to have been the culminating feature of the tour. Here the Prince celebrated his thirty-

first birthday, probably the busiest he will ever spend, a golden casket to which every mine on the Rand had contributed one ounce of pure gold, the gift of the Chamber of Mines and the Municipality, being one of the many presents he received. During his stay the Prince visited the important mining centres of Springs, Brakpan, Benoni, Boksburg and Germiston, and later at Milner Park opened the new building of the Witwatersrand University, where he was duly "capped". Then, after the memorable Civic Banquet on June 24, the West Rand was traversed and the Paardekraal Monument was visited. The tour of the West Rand culminated in an exhaustive survey of the Crown Gold Mine, in the various workings of which the Prince showed the liveliest interest

and their attendant warriors, many of whom had taken part in the war of 1893. On July 1 the Bulawayo War Memorial was unveiled and an agricultural show opened, on the 2nd the Prince visited the tomb of Rhodes in the Matopos. The Zimbabwe Ruins, a shooting trip in the heart of the "Central Estates" and a Royal Indaba at Range provided a welcome change from the round of civic receptions, a war memorial in the shape of a swimming bath was visited at Gwelo, and then came the official reception and fêting at Salisbury, the capital, where the Prince held an investiture of a number of Rhodesians to whom honours had been granted, and also an Indaba of Mashona chiefs and natives. Gatooma and Que Que were the last places at which the Prince had engagements in Southern Rhodesia. His

put into operation a few weeks earlier and which represent the fulfilment of a marvellous harnessing scheme.

Broken Hill was the peak and turning point of the Prince of Wales' long pilgrimage in South Africa. From its "farthest north" he turned to face the long journey of over 2,000 miles back to the Cape, in the course of which Kimberley and the diamond mines were visited, as well as De Aar, Hutchinson and Beaufort West. In all, the Prince had travelled 9,680 miles by train and 3,400 miles by road in fulfilment of his mission. On the evening of July 29, 1925, he sailed from Simon's Town in the "Repulse," laying emphasis in his last message to its people that he was leaving South Africa with regret and with the hope of a future visit ever present in his mind. The regrets

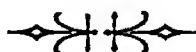


H.R.H. The Prince of Wales addressing 30,000 natives at the Pitso in Basutoland by means of the Western Electric Address System.

**VICTORIA FALLS AND RHODESIA.**—On the last day of June, 1925, the Prince of Wales arrived in Rhodesia, and was met at Bulawayo by the Governor, Sir John Chancellor and the Prime Minister, Sir Charles Coghlan. On the "Kings' Ground" was held a meeting with the native chiefs

visit to the countries of Cecil John Rhodes were to conclude fitly with one to Livingstone, the capital and administrative headquarters of Northern Rhodesia, to the Victoria Falls, in the neighbourhood of which he spent an entire day, and to the Mulungushi Dam and Power Works, which had been

of South Africans of all races, parties and classes were not less real. The Prince's visit, as to the wisdom of which some doubts had been expressed in 1924, had proved the greatest of successes, and it is certain that he left behind him a lasting place in the affections of all South Africans.



# UNION OF SOUTH AFRICA

## PEOPLES

## POPULATION

## IMMIGRATION

## LABOUR

## EDUCATION

## SPORT

## PRESS

## POPULATION

**P**RIOR to the incorporation of the four Colonies in the Union, each conducted a census of its population at varying periods, that taken in 1904 in the divisions in question being the first simultaneous census in South Africa. In the year 1911 the first Union census was taken, in 1918 a census of the European population was to a certain extent unsatisfactory, owing to the large number of South Africans who were absent on active service or for other purposes connected with the War, and in 1921 the last census of the whole population was undertaken. The following table summarises the results of these four censuses—

	European	Non-European	All Races
1904	1,116,806	4,050,018	5,175,824
1911	1,276,242	4,097,152	5,973,394
1918	1,421,781	—	—
1921	1,519,488	5,409,092	6,928,580

In 1921 the total population of the whole of British South Africa was 8,814,231, distributed as follows—

	European	Non-European	Total
Union of South Africa	1,519,488	5,409,092	6,928,580
South-West Africa	19,432	208,307	227,739
Basutoland	1,603	497,178	498,781
Bechuanaland	1,743	151,240	152,983
Swaziland	2,205	104,756	106,961
Southern Rhodesia	33,620	865,567	899,187
	1,578,091	7,236,140	8,814,231

## DISTRIBUTION OF POPULATION.—

The distribution of the population of the larger area of British South Africa has already been shown. That of the Union by provinces, and distinguishing between European and non-European, was as follows at the last two censuses—

	1911	1921
CAPE OF GOOD HOPE		
European	582,377	650,609
Non-European	1,982,588	2,132,110
All Races	2,564,965	2,782,719
NATAL		
European	98,114	136,838
Non-European	1,095,929	1,292,560
All Races	1,194,043	1,429,398

	1911	1921
TRANSVAAL		
European	420,562	543,485
Non-European	1,265,650	1,544,151
All Races	1,686,212	2,087,636
ORANGE FREE STATE		
European	175,180	188,550
Non-European	352,985	440,271
All Races	528,174	628,827
Grand Total	5,973,394	6,928,580

**DENSITY.** The total area of the Union is 472,347 square miles, divided between the Provinces as follows—

PROVINCE	Area in Sq. Miles	Proportion per cent. of Total Area of Union	Proportion per cent. of Total Population, 1921
Cape Province	276,066	58.64	40.16
Natal	35,284	7.47	20.63
Transvaal	110,450	23.38	30.13
Orange Free State	49,647	10.51	9.08

The Cape, though the largest, was in 1921 the most thinly populated Province, while Natal, with the smallest area, had the largest number of persons to the square mile, there being one individual to 15.80 acres, compared with one to 63.68 in Cape Province, 51.28 in the Orange Free State, and 33.86 in the Transvaal. The number of persons to the square mile in the Union was 14.64, of whom 3.21 were of European race and 11.41 of other races. The density of the population in each of the four Provinces and in the Union in the years named was as follows—

	1911	1921
Cape	9.26	10.05
Natal	33.83	40.51
Transvaal	15.27	18.90
Orange Free State	10.64	12.67
Union	12.64	14.67

**RACIAL DISTRIBUTION.**—The racial distribution of the total population of the Union at the census of 1921 and the proportions of each race to the total, shown in brackets, were as follow—European, 1,519,488 (21.9); Native, 4,699,433 (67.8); Asiatic, 163,896 (2.4); Mixed and other, 545,548 (7.9); the Non-Europeans totalling 5,409,092 (78.1).

**URBAN AND RURAL DISTRIBUTIONS.**—Details of the proportions of the four main race divisions of the population in the urban and rural areas of the Union

will be found in the two following tables—  
(A)—Proportion per cent. of each race

	Urban	Rural	Total
European	48.83	12.94	21.93
Bantu	33.82	79.16	67.80
Asiatic	2.95	2.21	2.39
Mixed and other	14.40	5.69	7.88
Total	100.00	100.00	100.00

(B)—Percentage Distribution of Races

	Urban	Rural	Total
European	55.78	44.22	100
Bantu	12.50	87.50	100
Asiatic	30.90	69.10	100
Mixed and other	45.82	54.18	100
Total	25.05	74.95	100

The percentage of the urban European population varied from 46.50 in the Transvaal to 52.71 in the Orange Free State. The percentage of the rural European population presented marked contrasts, the Cape and Transvaal Provinces being almost on a level with 14.05 and 15.37 per cent. respectively, while Natal had only 4.42 per cent. and the Orange Free State 23.37 per cent.

**EUROPEANS.**—Since the establishment of the Union the census returns have discriminated only between Europeans and others, not between British and Boer. Theoretically there is no longer any distinction of nationality, for all save some 24,000 foreign subjects are British. Some guide to the relative proportions of English and Boers (adopting the old nomenclature) may be gathered from the information collected at the census of 1921 in regard to the number of Europeans speaking either or both of the official languages of the country. Of the whole European population of the Union aged 7 years and over, 50.71 per cent. were bi-lingual, while 25.16 per cent. and 23.79 per cent. spoke only English and Dutch respectively.

As will have been seen from a table already given, the total European population of British South Africa in 1921 was 1,578,091, the increase in numbers since 1911 being 274,072. In the Union itself the Europeans numbered 1,519,488, compared with 1,276,242 in 1911. Of the former total, 1,463,601 were returned as British by birth, 30,900 as British naturalised, and 24,987 as foreign subjects. Of these latter, Russians numbered 6,705; Germans, 4,194; Dutch (Netherlands), 2,505; and Scandinavians, 1,960.

**NON-EUROPEANS.**—These may be classified as Bantu, or pure native, Asiatic, and Mixed or other. There are other aboriginal peoples scattered about the Union and the native territories, but separate returns of the numbers of these are not available. The following table shows the numbers of the Non-European population of the Union at the censuses of 1904, 1911 and 1921 (for purposes of comparison the European population is also given) —

	1904	1911	1921
European	1,116,806	1,276,242	1,519,488
Bantu	3,491,056	4,019,006	4,697,813
Asiatic	122,734	152,309	165,731
Mixed and other	445,228	525,837	545,548

Total Non-European population 4,059,018 4,697,152 5,409,092

**ABORIGINAL RACES** — Since (in 1652) Table Bay was made a port of call by the Dutch East India Company, the aboriginal races with which the European settlers have come in contact have been (1) the various branches of the Bantu race, who are dark-skinned, and (2) the yellow-skinned Bushmen and Hottentots. The latter constituted the "Native" population of Cape Colony up to the regime of the Dutch East India Company in 1795, but to-day they have become practically extinct as separate races, although the Hottentot stock has contributed largely to the population of mixed European and African blood known officially as "Coloured persons." The former, with the expansion of the area of European occupation, after more than a century of costly and sometimes desperate wars, have been brought with varying degrees of completeness under the control of European officials and, having benefited physically by a modified introduction of European methods of government, now show a rate of increase slightly higher than that of the European population of the Union.

**ASIATIC POPULATION** — In Natal, the geographical position of Durban in relation to India led in the past to the introduction on a large scale, mainly under the indenture system, of cheap coolie labour from the last named country for the sugar plantations and other works. A certain number of these passed into the Transvaal and other provinces, but their total outside Natal is not considerable. The presence of these Indians has long been a source of embarrassment, and has led to difficulties not yet overcome with the Government of India. It is probable that what has been called the "Asiatic menace" has been exaggerated, and public opinion in both South Africa and India welcomed the announcement made in April 1926 that the Union Government had decided upon a round-table conference to consider the position of Indians in South Africa.

The number of Asiatics in the Union increased from 152,203 in 1911 to 165,731 in 1921, but the increase was almost entirely one of females, 12,327 as against 1,201 males. Of this total, 161,339 were returned as Indians, 102,323 of whom had been born in South Africa. Under the Immigration Act, 1913, Asiatics, with the exception of wives and children of domiciled relatives, are prohibited from entering the Union. (See under "Immigration.")

**BANTU RACE** — The Bantu of South Africa are a virile and prolific race, the word itself, derived from "Aba-ntu," being the plural of "Um-ntu," which, in the dialects of the principal east coast tribes, means a "human being." The actual birth-place



1. MAKALANGA NATIVES, RHODESIA.  
2. ZULU CHIEF.  
3. ZULU NATIVE WOMEN HAIRDRESSING.

of the race has not been determined, but all the signs point to a migration from Central Africa and to an early intermarriage with the Phœnicians, Arabs and Indians who from some time immemorial had their settlements on the east coast of Africa. The determining characteristics of the Bantu are (1) a tribal organisation under paramount and lesser chiefs, with a system of communal land-tenure and communal or collective responsibility for crime, maintained by a body of customary law, (2) a knowledge of agriculture, especially of stock, and of some of the useful arts, (3) the institution of polygamy, and the passing of cattle from the intending husband to the father of the bride, which, with the consent of the latter, constitutes a contract of marriage under the native custom, (4) a natural instinct for war and a special aptitude for military discipline. This last characteristic is so pronounced as to have been the means of a great part of the Bantu race having secured possession of the most fertile and well-watered regions of South Africa notably in the Transvaal, Natal and the old Transkeian territories which now form the North Eastern portion of Cape Province, as also to have occasioned the savage wars waged by the Zulus, Matabeles, Herreros, and other tribes against Dutch, English, and German supremacy.

**BUSHMEN** The Bushman is a very ancient representative of South Africa, though there are traces of an earlier Rhodesian race. Certain of the Bushman peoples, such as the Koranas, present anatomical features of a low forehead, beetling eyebrows, and a small brain capacity, which link them to very primitive peoples such as the modern Australian aboriginal and to pre-historic types of being like the Neanderthal man. To-day the Bushmen are reduced to living in the most unfavourable areas. Little bands of them dwell in the extreme north of the South West Protectorate, while all the others in the Union are in the Kalahari desert. They are divided into small hunting bands, each of which owns a definite hunting territory over which it wanders, and out of which it is dangerous to go except with the permission of the neighbouring band. The cave paintings which have always been the chief object of interest in connection with these people belong to the realm of archaeology, for no living people have been found to interpret them, and they may be said to remain only as a very valuable record of a lost art.

**HOTTENTOTS** — These are one of the two purely pastoral peoples of South Africa, the other being the Herreros of Bantu origin. The Hottentots are a dwindling race, whose culture is in the last stages of decay, they are nomadic, and as many as four Hottentot languages have been differentiated. Generally speaking, they are of a higher degree of intelligence than the Bushmen, but are inferior to the Bantu peoples.

**MIXED POPULATION** — The mixed population of Cape Province is an outcome of various conditions which have not obtained in other parts of South Africa, and especially of the former slave population. In 1834, when slavery was abolished, the slaves numbered nearly 40,000 and included a large proportion of imported Malays. Pure-bred Malays still exist in the neighbourhood of Capetown in quarters of their own, but the union of Malays, Hottentots, Bushmen, and Kaffirs, with an admixture of European blood, has produced a nondescript mixed race, the male members of which are generally referred to all over South Africa as "Cape Boys." In other provinces of the Union their number is generally insignificant.

**NATIVE POPULATION (DISTRIBUTION).**

—At the census of 1921 the number of natives in the Union, exclusive of mixed and other coloured population was 4,690,433, compared with 4,019,000 ten years previously. The former total was distributed as follows: Cape Province, 1,640,102; Natal, 1,139,804; Transvaal, 1,495,869; Orange Free State, 421,978. In the Territory of South West Africa the native population was estimated at 195,440; in Basutoland at 497,178; in Bechuanaland at 150,185; and in Swaziland at 110,295.

In the Union the bulk of the Bantu population is distributed in pretty clearly defined areas. In Cape Province it is centred in the Native Territories and a number of Eastern districts, with King William's Town as the area with the densest native population. In Natal about one quarter of the Bantu population is found in Zululand, the rest being distributed throughout the province. In the Transvaal the bulk of the native population is contained in the Witwatersrand area and in the northern portion of the Province, while in the Orange Free State the natives are principally located in the central and eastern districts adjoining the Basutoland border.

**OFFICIAL LANGUAGES.** The languages spoken in South Africa by the inhabitants of European descent are English and Dutch, the latter chiefly in the form of a patois colloquially known as the Taal and officially as Afrikaans. Portuguese is, of course, spoken in Portuguese East Africa, but a knowledge of English or Dutch is also frequent there. The history of the Dutch language in South Africa is intimately bound up with the history of the South African Dutch people. The basis of the language as spoken to-day is the 17th century Dutch of Holland which the first settlers brought into the country, and the Cape Dutch of to-day is far nearer to the Dutch which was common in the 17th century than it is to the language now spoken in Holland. Cape Dutch has a very limited vocabulary, due to the facts that the early settlers were drawn chiefly from the peasant class and that they had to make their language intelligible to the natives by whom they were surrounded. There thus grew up an ungrammatical dialect of Dutch suited only to the most ordinary requirements of the everyday life of a rural population. In short, it became a language with neither a syntax nor a literature. But side by side with this language of everyday life a purer form of Dutch has continued to exist and be used under certain conditions. This is the pure Dutch of the Bible and Catechism, which are known to every Boer. The services of the Reformed Church, too, are conducted not in the Taal, but in grammatical Dutch, and the consequence of this is that the Boer has little difficulty in reading and understanding pure Dutch. Under the influence of Afrikaner nationalism strenuous efforts have been made to teach the language in the schools throughout the greater part of South Africa. In the Transvaal and Orange Free State education was for long imparted almost entirely in Dutch. Since the formation of the Union both languages are now on a footing of equality.

**PUBLIC HOLIDAYS.**—The following are the statutory public holidays of the Union: New Year's Day, Good Friday, Easter Monday, and Ascension Day, Victoria Day (May 24), Union Day (May 31), King's Birthday (first Monday in August), the first Monday in October, Dingaan's Day (December 16), Christmas Day, and Boxing Day.

**IMMIGRATION**

Immigration, which in the case of most of the British Dominions is closely bound up with the question of labour, has little or no connection with it in South Africa, where there is an enormous coloured population. It has not, therefore, acquired the importance or exercised the influence within the Union that it has in Australia or New Zealand. Yet there has always been a steady stream of immigration, the volume of which has at times been abnormally increased or decreased at certain periods by important events such as the discovery of diamonds and gold and the duration and aftermath of the South African War of 1899-1902 and the European War (1914-18).

Apart from these periodic influxes of mine-workers or ex-service men the great majority of emigrants to South Africa from Great Britain have been men with small capital which they were able to invest advantageously in the purchase of land for stock raising, mixed farming, or fruit farming, the latter industry having attracted a good number of settlers during recent years.

**GOVERNMENT ASSISTANCE AND REGULATION.** There is no system of State-aided immigration as in other Dominions, the conditions of labour in South Africa being altogether different. At various times the Government has granted passages from England but this assistance has been limited almost entirely to female domestic servants and the wives and families of Europeans settled in the country. On the other hand, no obstacle is placed in the way of the admission of white immigrants provided that they are of good health and character, and are able themselves, or through their friends or employers, to show that they have means of support. The sum of £20 is the usual amount required to be in possession of an immigrant on landing, but this may be considerably lowered in certain cases, and in others raised.

The policy of the present Union Government, as announced by the Prime Minister on April 20, 1926, is to oppose any scheme of State-aided immigration until all the whites already in South Africa are assured of a livelihood.

**NATIONALITIES OF IMMIGRANTS.**—In 1923 the total number of new arrivals in the Union was 12,604. Of these, 12,027 were Europeans and 577 non-Europeans, 326 of the latter coming from the United States. British-born immigrants totalled 9,573 and British-naturalized 139, alien immigrants thus aggregating 2,829. The leading nationalities of the alien immigrants were: Belgian, 900; German, 315; Norwegian, 193; Lithuanian, 190; Dutch, 174; Italian, 139; and Russian, 86.

In 1925 emigrants (persons relinquishing domicile within the Union) exceeded immigrants by 7 but European immigrants totalled 5,428, against 4,483 emigrants, a net gain of 945 persons. Non-Europeans emigrating numbered 1,558, against 696 assuming domicile, a loss of 952. British Indians emigrating showed an excess of 971 over immigrants, and Chinese a net increase of 32. Of Europeans, British-born emigrants totalled 3,918, and those assuming domicile 3,245, a loss of 593 persons.

**NATURALIZATION.**—The Naturalization of Aliens Act, 1910, was one of the first laws to be passed by the Union Parliament. Briefly, to be eligible for naturalization an alien (a) must have attained the age of 21 years; (b) must have resided in the Union for a period of not less than two years within the five years immediately preceding the date of his application; (c) must be of good

character and repute, and (d) must intend, if naturalized, to reside in the Union, or to serve under the Crown in the Union. The alien's intention to apply for naturalization must be published in the "Union Gazette" (cost, 5s. 6d.). The price of the certificate is £5, the total expenses, including revenue stamps, amounting to £6 7s. 6d.

It is important to note that a person naturalized in the Union is only while in the Union entitled to the privileges and subject to the obligations of a British subject, and that he cannot claim the rights of a British subject in the United Kingdom or in any British Dominion or Colony other than the Union of South Africa.

In 1923 the number of aliens naturalized was 331, of whom 166 were Rumanians and 56 Germans.

**OCCUPATIONS OF IMMIGRANTS.**—Of the 12,604 immigrants arriving in 1923, no less than 4,282 were classified as independent or indefinite, 3,901 as dependents of persons already resident in the Union, 1,152 as professional, 864 as commercial, 742 as industrial, 349 as agricultural, 251 as domestic, 171 as engaged on transport and communications, 31 as miners, and 861 as unspecified.

**PASSPORTS.**—These are required by all intending settlers, or by tourists visiting South Africa. British passports, with a few exceptions, are valid for travel throughout the Empire, consequently the holder of a British passport may travel from one part of the Empire to another without a fresh endorsement at the commencement of each journey, providing the validity of the passport has not expired. Passports are issued to persons in the Union who are natural born British subjects, to their wives (and widows), and to persons who have been naturalized in the United Kingdom or in the Union. These passports are available for two years. The fee for a passport is £1, and a fee of 2s. is charged for each renewal of visa.

**PERMISSION TO LAND.**—Persons are not allowed to land in the Union of South Africa unless they satisfy the requirements of the Union Immigration Regulation Act. These requirements may be generally stated as follows: That the person has visible means of subsistence for a period of at least 12 months, and is not likely to become a pauper or a public charge; That he is of good character, mentally sound, and free from any loathsome or dangerous contagious disease; and that he is able to write out and sign in one of the European languages an application to the satisfaction of the authorities. In the very large majority of cases immigrants have no difficulty whatever in meeting these requirements.

**PERMITS.**—Under the Immigrants Regulation Act provision is made for the issue by an immigration officer of a permit, described as a certificate of identity, to any person proving lawful residence in the Union who desires to leave the country and return to it within a specified time. The fee charged is 2s. 6d. Holders of these certificates who do not return to the Union within the period named on them may be required to undergo the tests imposed by law; and may ordinarily be taken to have abandoned any domicile they may previously have acquired in the Union. The permits to travel to Portuguese East Africa are valid for any number of journeys between the Union and that territory during a period of one year from the date of issue.

**PROHIBITED IMMIGRANTS.**—These include persons convicted of serious crime; insane or diseased persons, including those suffering from tuberculosis; those likely to



become a public charge, and any persons, or classes of persons, whose presence for economic or other reasons is considered undesirable. It is under this latter clause that the immigration of Asiatics is prohibited.

**SETTLERS' ASSOCIATIONS.**—The 1820 Memorial Settlers' Association, whose headquarters are at 175, Piccadilly, London, W. 1, accepts and assists approved applicants wishing to settle in South Africa. Such applicants, if single, must possess at least £1,500; if married, at least £2,000. A rebate of 15 per cent. is secured on the passage out, assistance is given on arrival in South Africa, and eventually facilities for the study of farming, etc., are arranged. The association is recognised by and receives help from the Rhodes Trust. The acquisition of small holdings in irrigated areas is particularly encouraged. In one year recently the Association introduced into South Africa 652 adult settlers with 370 of their wives and children and a combined capital of £1,727,000, and found work for many who must otherwise have left the country. The

Orange Free State and the Transvaal to the white worker, more especially to the miner, and the colour of his skin really determines whether a man may receive 25s. a shift or 2s. and his food. These restrictions have during recent years provoked much irritation north of the Orange River, and as recently as 1925 when an attempt was made by means of the Mines and Factory Bill (popularly known as the Colour Bar Bill) to extend them to the Cape Province and so reserve its traditional native policy, the existence of very strong feeling on the matter was made evident. The Colour Bar Bill though it passed the Lower House, was thrown out by the Senate.

At present, therefore, all unskilled labour in the mines, on the land, and in industry is performed by the coloured population, the Bantu race being the main source of supply. At the census of 1921 the Bantus numbered about 5,000,000, all other coloured races, including half-caste and about 200,000 Asiatics, being under 700,000. As a worker the Bantu is not of the highest class. He

**GOVERNMENT LABOUR DEPARTMENT.**—All questions relating to industry and labour, and to employment and unemployment are dealt with by the Department of Mines and Industries, which has established a network of Employment Exchanges under the Labour Department. In 1923 the number of persons provided with employment through the exchanges was 4,176, compared with 4,626 in 1922 and 12,711 in 1921. In addition 8,714 men were sent to relief works.

**HOURS OF LABOUR (EUROPEAN EMPLOYEES).**—The hours of labour worked by Europeans in the various occupations and branches of industry in the Union have of recent years tended towards greater uniformity. Except in a few instances, the terms of the 48 hour week recommended by the International Labour Conference at Washington apply throughout South Africa.

**HOURS OF LABOUR (NON-EUROPEAN).**—The hours of labour worked by coloured persons and natives in the Union approxi-



NATIVE KRAAL, NATAL

MAKALANGA NATIVE GIRLS, RHODESIA

Overseas Settlement Office, 3 and 4, Clement's Inn, Strand, London, W.C. 2, also exists for the purpose of advising intending settlers.

## LABOUR

The question of labour in South Africa is one with that of colour. The existence of native, Asiatic, and other coloured workers far outnumbering the white workers of the country has influenced the development of South Africa from the earliest days, when the farmers were able to command slave labour. The freeing of the slaves in 1834 had consequences in the Boer treks which have vitally affected all South African history, while the "apprenticeship" system which was allowed in the South African Republic by the Convention of 1852 has resulted in a categorical denial of equality between black and white north of the Orange and Vaal Rivers, and in the "colour bar" which to-day furnishes the focal points of unrest among the natives.

**COLOURED LABOUR.**—The "colour bar" reserves all remunerative labour in Natal,

has neither the patient application nor the manual dexterity of the Oriental, and he is naturally indolent. His best work is done in pastoral farming.

In Natal a great deal of very valuable labour has been furnished by Indian field-labourers, especially on the sugar, tea, cotton and other plantations requiring careful tillage. But the immigration of Asiatics is now prohibited. Other experiments in the way of regulating the supply of labour have been those of importing natives from the Portuguese territory south of lat. 22° and the temporary introduction of Chinese into the gold and diamond mines which led to tremendous agitation and was soon abandoned.

**DOMESTIC LABOUR.**—Serious difficulty in the way of white settlement in South Africa arises from the question of domestic servants. In the Cape Province the majority are coloured women, but in the rest of the Union the house servant is usually a native "boy," a state of affairs which is admittedly unsatisfactory, which has often been condemned, and which various efforts have been made to mitigate.

mate to those worked by Europeans in many fields of employment. Non-European workers in the engineering and building trades, whether skilled artisans or semi-skilled workers in the coastal Provinces, or labourers in the inland Provinces, work the same hours as Europeans. A variety of hours, ranging from 44 to 60, is worked by coloured and native workers in manufacturing, industry and trading.

**INDUSTRIAL DISPUTES.**—The constant rise in the cost of living during the later years of the War and those subsequent to the establishment of peace caused an increasing amount of industrial unrest. In 1915 only two industrial disputes occurred, in 1916 the number rose to 10, in 1917 and 1918 to 22 and 23 respectively, in 1919 to 47, and in 1920 to 60. A notable feature of the unrest during 1919 was the number of disputes which involved native and coloured workers exclusively. Many of these strikes were connected with mining, and a number were speedily settled. In 1921 only 25 industrial disputes took place, but these affected 10,000 workers, of whom more than

half were European miners on the Witwatersrand. In the early part of 1922 a very serious industrial situation arose on the Rand, the whole mining industry and various other important undertakings being involved. The dispute ended in a general strike being declared on March 7, and the proclamation of martial law two days later. Armed conflict occurred between the strikers and the Government forces, but on March 18 the strike ended, the trouble having lasted, from start to finish, two and a half months.

**INDUSTRIAL LEGISLATION.**—The leading industrial legislation which has come into operation in South Africa since the establishment of the Union includes the Workmen's Wages Protection Act, 1914, the Workmen's Compensation Act, 1914, the Regulation of Wages, Improvers and Apprentices Act, 1918, the Juveniles Act, 1921, the Apprenticeship Act, 1922, the Industrial Conciliation Act, 1924, and the Wage Act 1925.

The Workmen's Wages Protection Act was passed "to make better provision for securing the payment of workmen's wages" providing generally that wages shall form a first charge upon money payable to a contractor by his principal, and giving workmen whose wages are in arrear the right to serve a notice of attachment. The Workmen's Compensation Act extended in various directions the law providing for compensation for injuries suffered by workmen in the course of their employment or for death resulting from such injuries. The Regulation of Wages, Apprentices and Improvers Act provides for the establishment of Wages Boards and the regulation of the wages of women and young persons in certain trades and occupations. The Juveniles Act makes provision for the establishment of boards to deal with matters affecting the employment, training, welfare, and supervision of boys and girls under 18 years of age.

**INDUSTRIAL CONCILIATION ACT, 1924**—The primary purpose of this Act is "to make provision for the prevention and settlement of disputes between employers and employees by conciliation, and for the registration and regulation of trade unions and private registry offices." It applies to every industry, trade, and occupation, except, with certain exceptions, Government employment. All industrial councils must consist of an equal number of employers and employees, and must be registered. In areas where there are no industrial councils, conciliation boards may be formed. Where both parties to any dispute under consideration by an industrial council or a conciliation board apply to the Minister for the appointment of a mediator, or where the Minister thinks that settlement of the dispute would be assisted thereby, he may appoint such mediator. Where two arbitrators fail to agree an umpire may be appointed, awards made by either being binding. It is unlawful to strike or lock-out when agreement has been arrived at as the result of the appointment of an arbitrator or umpire, or during the period of operation of any award made as the outcome of such appointment. Lastly, it is unlawful for any employer, employers' association, trade union, or other person to declare any strike or lock-out until the matter at issue has been investigated by an industrial council or conciliation board.

**WAGE ACT, 1925**—In July 1925 the South African Senate passed, without substantial amendment of any kind, the third reading of the Wage Bill, the two leading provisions of which establish the machinery for fixing (1) a minimum, or subsistence, wage for semi-skilled industries, and (2) a fair wage for industries coming under the

Conciliation Act, that is to say, industries in which both employers and employees are organised. The Wage Act provides that when all the machinery of joint councils appointed *ad hoc* in any industrial dispute has failed to settle that dispute, the Minister may intervene and refer the matter to the Wage Board appointed under the Act, and that the Board may then make a "determination" as to the wages to be paid, which determination the Minister may either enforce or ignore, but may not vary.

A strong economic Wage Commission to carry out the duties imposed by the Act was immediately appointed by the Union Government, the chairman being Mr. Stephen Mills, C.M.G., who was Deputy-Commissioner of the Australian Inter State Commission in 1917.

In 1926 majority and minority reports were issued. The main points of the majority report are: (1) the lowest level of wages must be raised, (2) the Wage Act must not be used as an alternative and competitor of the Industrial Conciliation Act, (3) Native employment on a large scale must be maintained, and the substitution of Europeans for natives on unskilled labour is condemned. The minority report advocates the stoppage of the importation of native labourers, and is in this respect opposed to the majority report.

**INDUSTRIAL ORGANISATION.**—Trades Unionism has only figured prominently in South African life and conditions since 1911, when the Transvaal Federation of Trades was established, to become later the South African Industrial Federation. Since 1915 the Federation has occupied an important place in the workers' organisations throughout the Union, and in 1917 it organised the first Trade Union Congress in South Africa at Johannesburg. Under its guidance many unorganised classes of workers in various parts of the country have been induced to organise and have linked up with the Federation under the designation of the South African Federation Industrial Union. In September, 1923, there were 93 separate trade unions in the Union, with a total membership of 89,865. This would include a certain number of craftsmen who were members of more than one union.

**LABOUR COLONIES.**—It was announced in August, 1925, that the Union Government was drafting a Labour Colony Bill for the 1926 session, to give power to place the work-shy in special settlements to be managed on similar lines to those established some years ago in various parts of Europe. The basic principle of the new policy is that no more able-bodied whites are to be employed on purely relief works. The growth of a section of the South African community known as "poor whites" has long constituted a social and economic problem of great gravity, aggravated moreover by the fact that the Rand mining area can no longer absorb the unemployed.

**LABOUR IN MINES.**—See special articles on "Diamond Mining" and "Gold Mining."

**SKILLED TRADES.**—The white labour problem is further complicated by the fact that in skilled trades, where the Kaffir as yet plays an insignificant part, there are other and more serious competitors. Large numbers of Malays and other Asiatics in all parts of the country compete with whites as skilled mechanics on lower wages. At Capetown the shoemaking and tailoring trades are largely in the hands of Malays and other Asiatics. Many blacksmiths in all parts of the Union are coloured men, as are also large numbers of stone cutters, bricklayers, plasterers, gardeners, coachmen, upholsterers, harness makers, etc. Endeavours to introduce white labour on a

big scale have not in the past been altogether successful, an experiment by Lord Milner in the importation of a large number of Englishmen for railway construction proving economically unsound.

**UNEMPLOYMENT.**—In normal times unemployment was never acute in the Union, but the problem assumed serious proportions during the years immediately following the War. Various measures of relief works, many of which are of a permanent character (e.g., afforestation settlements), have been devised. Unemployment was intensified by the industrial disturbances on the Witwatersrand in 1922, and in August of that year 7,920 men were engaged on relief works. In May 1923 the number had dropped to 4,284, but had risen to 6,344 by February 1924.

**WAGES OF NON-EUROPEAN WORKERS.**—The ratio of coloured to European labour varies largely in different industries and fields of employment in the Union, but in occupations as a whole the non-European element preponderates to a considerable extent. In the gold mining industry there were in December 1923 approximately 180,000 native workers to 18,000 Europeans. In coal mining and in the manufacturing industry the coloured and native elements in employment are very much greater than the European. The bulk of general labouring work in agricultural and pastoral occupations is non-European, while in municipal service at the principal industrial centres approximately five coloured and native persons are employed to every two Europeans. These and similar circumstances in relation to employment and its distribution in the Union must be remembered when wage statistics are examined. The average rate of wages of coloured persons, other than native labourers, employed on the Witwatersrand gold mines in certain defined occupations underground is approximately one fifth of the amount earned by Europeans. The average earnings per shift of all native labourers, surface and underground, in September 1923 were 2s 2½d plus food. In unskilled occupations connected with the trade the average weekly rates of wage paid to coloured and native male workers ranged from 14s 5d at Bloemfontein to 17s 1d at Pretoria, 18s at Durban, Kimberley, and East London, 19s 11d on the Rand, 20s 6d at Port Elizabeth, and 27s 11d in Cape Peninsula.

**WEEKLY WAGES (EUROPEAN).**—The following tables show (a) the average nominal weekly wage rates for European adult workers in ten groups of occupation in the whole Union, and (b) the average nominal weekly wage received in nine industrial areas of the Union during the period 1921-23.

(A) AVERAGE WEEKLY WAGES IN LEADING OCCUPATIONS				
Occupation	1921 s d	1922 s d	1923 s d	
Mining ..	189	11	136	0
Engineering and Metal working	168	9	125	1
Building ..	156	4	135	3
Printing, Book-binding, etc.	160	11	153	5
General Manufacturing ..	129	2	118	3
Transport and Communications ..	126	8	124	0
Trading ..	141	11	138	4
Clerical ..	142	9	139	9
Domestic (Hotels, etc.) ..	110	4	104	5
Miscellaneous (including Police) ..	131	0	124	0
All Groups ..	150	1	131	7

(B) AVERAGE WEEKLY WAGE IN PRINCIPAL INDUSTRIAL AREAS

	1921		1922		1923	
	s	d	s	d	s	d
Cape Peninsula	131	8	116	0	116	5
Port Elizabeth	126	4	114	5	115	2
East London	126	6	114	3	113	3
Kimberley	154	11	131	10	129	5
Pietermaritzburg	130	7	119	0	119	10
Durban	142	8	129	8	128	11
Pretoria	159	2	141	5	142	6
Witwatersrand	172	7	140	1	141	9
Bloemfontein	140	0	128	7	130	2
Union	150	1	131	7	132	5

## EDUCATION

Within the limits of the Union the control of education, other than higher or University education, is granted to the four Provincial Administrations, each Province having an Education Department which exercises the direction of all public instruction.

Many things have combined to hinder and check the growth of education in South Africa. There is, to begin with, the existence of a country of about 473,000 square miles, with a total population—both white and coloured—the latter including Natives, Asiatics, and the Cape coloured—of seven millions, scattered over that vast area in rather small communities. About half the white population is in rural areas—in farms or in very small villages. Further, the incidence of two wars, during the latter of which the educational organisations of the Transvaal and the Orange Free State were practically destroyed, and the continued existence of two main language divisions—English and Afrikaans—have proved great obstacles in the way of extending educational facilities. But that they have been extended is indisputable. To day South Africa offers educational opportunities which compare favourably with those provided by any country in the world. The progress made in recent years may be gauged from the fact that between 1902 (the close of the Anglo-Boer War) and 1922 the number of white pupils in the State Schools rose from 82,000 to 331,000 and the cost of lower education from £2,300,000 in 1914 to nearly £7,000,000 in 1922, this being quite apart from native and coloured education which accounts for a further annual expenditure of £600,000. University education costs about £400,000 annually.

**CLASSIFICATION OF SCHOOLS.**—European schools are usually classified as primary schools, secondary or high schools, farm schools, special schools, training colleges, and vocational or technical schools. Generally speaking, no native, Indian or coloured children are allowed in schools other than those set apart for them. These, and the instruction therein, are usually provided by the various religious missions.

**FARM SCHOOLS.**—These schools, of which there are over 350 in Cape Province alone, provide instruction on the lines of the primary course at centres where it is not possible to secure a regular attendance of at least ten pupils, the minimum requirement for primary schools.

**NON-EUROPEAN EDUCATION.**—In 1922 there were 189,059 native boys and girls and 62,813 Asiatics and other coloured scholars, or a total of 251,872 non-Europeans, receiving education in State and State-aided schools in the Union. These latter comprised 3,260 primary and secondary schools, 26 training schools, and 8 special schools. There were 6,615 teachers employed, of whom 4,584 were certificated and 2,031 uncertificated.

**PRIMARY SCHOOLS.**—Each Province administers its own educational system, and there are therefore points of detail in the

regulation of primary schools which differ in broad outline, however, they agree throughout the Union. Primary education is compulsory from the end of its seventh year for every white child until the completion of its sixteenth year or the passing of Standard VI. The curriculum closely follows that of Great Britain (except that Afrikaans (the Taal) is a second language in the English speaking schools and English in the Afrikaans schools). The primary schools of the Union in 1922 numbered 4,524, with a total attendance for the last quarter of that year of 251,257 pupils, and an average attendance for the whole year of 232,906, the distribution by provinces being as follows—

	*No. of SCHOOLS	AVERAGE ATTENDANCE
Cape Province	2,284	72,098
Natal	339	18,168
Transvaal	1,068	101,554
Orange Free State	803	41,086
Total Union	4,524	232,906

\*Including farm schools.

**PRIVATE SCHOOLS.** There is little Government regulation of the activities of private schools in the Union. In Natal the Education Department may make grants-in-aid to such schools, and the Transvaal Education Department reserves a limited inspectorial power over like schools, which if attended by ten or more pupils, are required to register and supply returns. All private schools in the Orange Free State must also furnish returns to the Department. In 1923 there were 560 schools classified as private in the Union, of which 254 were for Europeans and 306 for non-Europeans. These schools, a large number of which are denominational, had a total roll of 35,877 pupils.

**SECONDARY SCHOOLS.** State-aided secondary, or high schools, in the Union numbered 309 in 1922, the average attendance for the year being 62,859 pupils. Cape Province led with 182 schools and an average attendance of 51,096.

**SPECIAL SCHOOLS.**—These numbered 61 in 1922 and of the total 45 were in Cape Province. These special schools are largely part-time and evening schools, and they include (in Cape Province) three art schools, three schools for deaf mutes, one school for the blind, two domestic science schools, twelve industrial schools for boys and five industrial schools for girls. In Natal amongst special schools are the Government School of Art Pietermaritzburg, the Technical Institute at the same city, and the Natal Technical College at Durban.

In the Transvaal there is a technical high school at Johannesburg, and there are three technical or trade schools maintained by the Government. In the Orange Free State there are several Trade and Industrial Schools, including schools of agriculture and housewifery, and continuation classes are also conducted in different centres of the Province.

**STATE EXPENDITURE ON EDUCATION.**—Few countries relatively spend as much on education as South Africa. Its expenditure per head of the population in 1921 was £3 19s. 9d, compared with the £1 5s. 9d of Australia and the £2 6s. 1d of New Zealand. In 1922-23 the total cost to the public of the education (other than higher education) of Europeans in each Province was as under—

	£
Cape Province	2,211,844
Natal	488,336
Transvaal	2,513,075
Orange Free State	822,293
Total	£6,035,548

Taking the Union as a whole, the cost of general administration and inspection was £164,960, or 10s. per scholar; salaries of teachers totalled £4 164,790 or £12 11s. 7d. per scholar, and the total cost of education (£6,035,548) worked out at £18 1s. 7d. per scholar, or £3 17s. 7d. per head of European population.

The State expenditure on the education of non-European scholars amounted in 1922-23 to £552,242, or £2 3s. 10d. per scholar.

**TEACHING.** Until recently the country's supply of teachers was largely obtained from Great Britain. There are now, however, numerous training colleges preparing students for the profession, while the Universities are training many more teachers for the high schools. The teaching conditions are more favourable in South Africa than in any other country of the Empire and as a result there has been a steady increase in the number of young men entering the profession. Hitherto each Province has had its own scale of salaries, but negotiations are in progress for the establishment of a national scale. At December 31, 1922, there were 14,214 teachers certificated and 2,777 uncertificated. Of the total of 26,035 548 expended by the four Provincial Administrations on education in 1922-23, no less than £4 186,168 was under the head of teachers' salaries.

**TRAINING COLLEGES.**—In 1922 there were 21 training colleges and schools in the Union, 13 being in Cape Province and five in the Transvaal. In these, which are apart from the Universities, there were nearly 3,000 students and over 200 teachers.

**UNIVERSITY EDUCATION.**—A striking advance has been made in recent years in the provision of higher or University training in South Africa, the first beginnings of which date from 1829, when the South African College at Capetown was established. In 1873 the University of the Cape of Good Hope was founded, but in 1915 it was dissolved and succeeded by the University of South Africa. There are now three separate Universities in the Union (Capetown, Stellenbosch, and Witwatersrand) and a Federal University—the above mentioned University of South Africa with six affiliated institutions. Each of the first three Universities has a large student roll, that of the Witwatersrand, although the youngest, has one of over 1,000. The total number of University students in South Africa at the end of 1923 was 4,717. All the colleges do good work, and the general level of university instruction is high. Stellenbosch and Pretoria specialise in agriculture, while Pretoria also does veterinary work in conjunction with the well equipped Government Veterinary Department at Onderstepoort. Capetown and Johannesburg Universities have each a strong medical school, and with the latter is associated the South African Institute for Medical Research, which has a fine record of achievements.

The fees at the various colleges are very low, and the manner of bursaries available is most liberal. Besides the munificent Rhodes scholarships, many other scholarships are offered to South Africans who wish to proceed to Europe for further education.

The following is a list of the Universities and affiliated colleges of the Union, with the numbers of students and teaching staff, and the expenditure for the year 1923—

	No. of Teaching Expenditure Students Staff 1923	
University of Capetown	1,534	156
University of Stellenbosch	644	65
		70,550

	No. of Teaching Expenditure Students Staff 1923		
University of Witwatersrand	1,008	96	102,685
University of South Africa	—	—	—
CONSTITUENT COLLEGES			
Grey University College, Bloemfontein	233	21	19,660
Huguenot University College, Wellington	82	15	9,805
Rhodes University College, Grahamstown	244	36	30,430
Transvaal University College, Pretoria	640	73	54,835
Natal University College, Pietermaritzburg	218	17	17,855
Potchefstroom University College	114	17	10,545
Totals	4,717	496	1430,885

The number of students in attendance at universities and university colleges in the Union during the half year ended December 31, 1925, was 5,570 (3,705 men and 1,865 women). The University of Capetown came first with 1,504 students, the Witwatersrand and Stellenbosch Universities having 1,250 and 860 respectively.

### SPORT

In common with the people of every part of the British wide-flung Empire, South Africans have always been noted for their love of sport, the two favourite ball-games of the Old Country—cricket and football

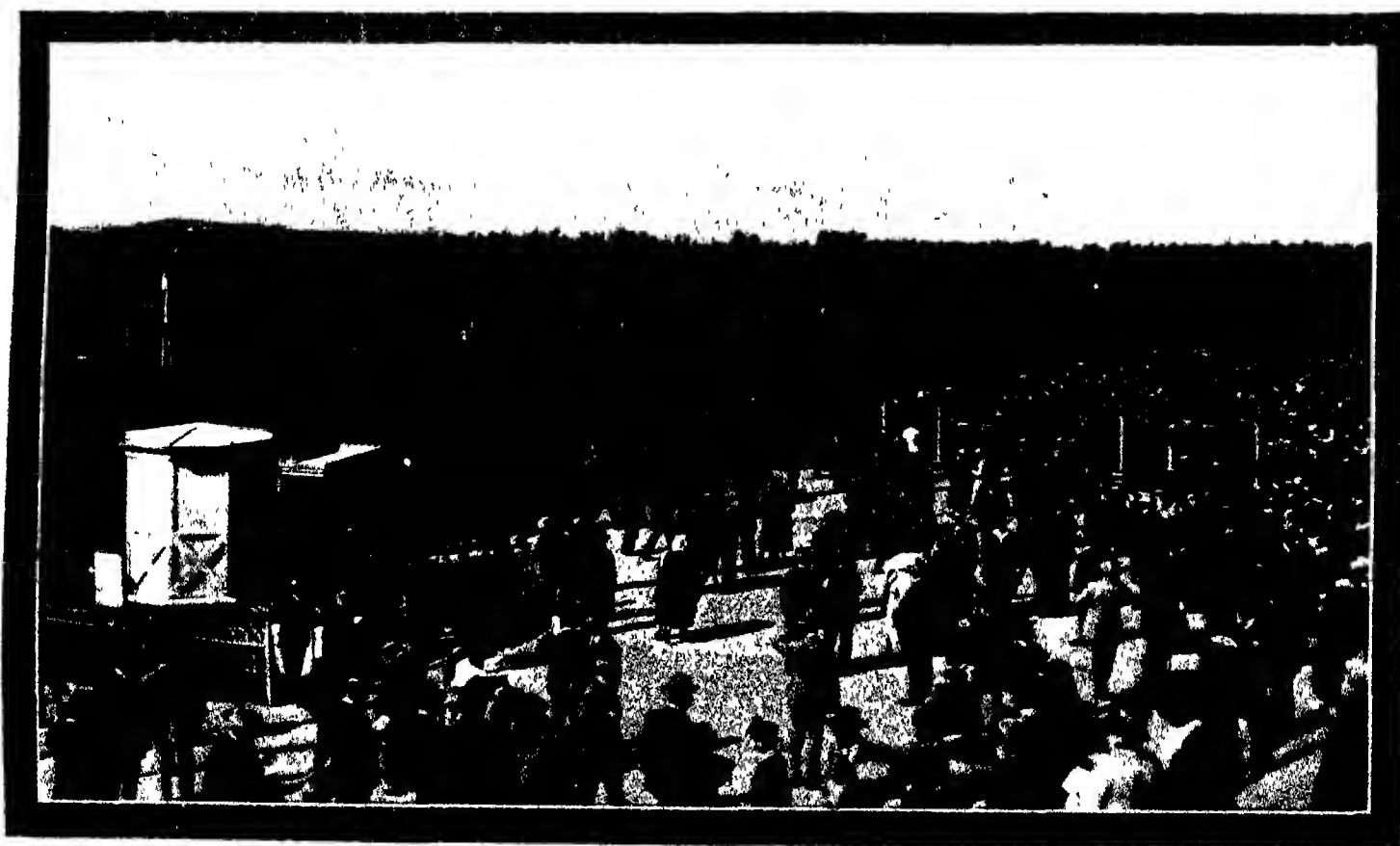
having, as is natural, obtained a pre-eminent place in the affections of the youth of the Union. But whereas cricket has ever appealed more to the South African of purely British stock, football (especially under the Rugby code) has drawn many of its most prominent exponents from the ranks of the Dutch-speaking settlers. Sport, however, in the Union is far from being confined to these games. Horse-racing has an immense hold in Johannesburg, Capetown and Durban, as well as in other centres of population, lawn-tennis grows in popularity every year, the golf course is a feature of most towns, whilst fishing, boating, swimming, and the pursuit of every kind of game have their enthusiastic adherents from Table Bay to the Matopos.

**ATHLETICS.**—Athletic contests—running, jumping, etc.—are more particularly confined to the public schools and universities, though the larger cities have their running tracks and yearly contests, in which athletes from all over the Union take part. In the Olympic Games of 1908 at London a notable victory was that obtained by the South African, R. E. Walker, in the 100 yards open to the athletes of the world.

**CRICKET.** Cricket, like many other British sports, found a footing in Cape Colony and Natal in the early days of settlement chiefly through the activities of the military and civil officials. The game was first played in Cape Colony in 1860, and the Port Elizabeth Club is the oldest in South Africa. A foretaste of the international rivalries to come was furnished when in 1862 the South Africans challenged the Home-born cricketers and from that day to this the "Home-born V. Colonials" has been a standing institution in the cricket fixtures of the Province.

The enthusiasm of Kimberley kept the game alive from 1870 to 1876. Mr. J. J. Sewell, a South African sportsman of deserved repute, largely contributing to its support. Port Elizabeth, Grahamstown, King Williams-town and Uitenhage have always been great cricketing centres, and among famous South African cricketers who have won laurels, not only on the home fields but in England and Australia, have been such well-known exponents of the game as A. B. Tancred, who was called the "Grace of South Africa," J. H. Smclair, Aubrey Faulkner (one of the greatest all-round players of his day), R. O. Schwartz, and the fast bowler Kotze. Since 1864 English teams have periodically visited South Africa, return visits to the Home country being made by representative South African teams, whose members, it may be mentioned, have always been handicapped to a considerable extent by having to play on turf instead of on the matting wickets to which they are accustomed.

**FISHING.** Probably the best fishing in South Africa is furnished by the many smaller and mountain-borne rivers in different parts of Cape Province and Natal, and to a lesser extent in the Transvaal. Both the rainbow and the brown trout are established in South African waters, the rainbow variety being the better suited to most of the rivers. October and November and March and April are the best months for indulging in this sport. The best trout fishing streams are considered to be the Eerste and Lourens, near Stellenbosch and Somerset West respectively; the Smalle blaar, Hollesluis and Jan du Toit, near Worcester; the Wildebeeste and its tributaries, which can be fished from Ugie, Maclear, or Psolo; the Little Pot, Big Pot, Moor, and



TWIFONTEIN RACECOURSE, JOHANNESBURG.

Tsitsa, all of which can be reached from Maclear, the Moor and Bushman's River in Natal, and Helpmakaar and Broederstroom, near Haenertsburg in the Transvaal. A great deal of the best fishing water is privately owned, but permission to fish most stretches free of charge can usually be obtained. Licences to fish can be secured from the Magistrate of any of the Districts where fishing is obtainable at a cost, in Cape Province, of £1, and in Natal, of 5s. (See also "Sea Fishing.")

**FOOTBALL.** South Africa did not come into the front rank of Association football-playing countries until recently, this game never having been so popular in the Union as the Rugby variety, though there are actually more Association than Rugby Clubs registered. The visit, however, of a strong English professional XI in 1924, following previous visits by the famous Corinthians team, has done much to increase the status of the game, while in 1924-25 a South African Association XI visited England and gave an exceedingly good account of itself against many of the best amateur and professional teams.

Rugby football has always occupied the premier position in the affections of South Africans. Previous to 1883 the game as played in the chief centres of the Union was a mixture of Association and Rugby, under what were known as the Winchester rules. The first club under real Rugby rules, unconnected with the universities, was the Hamilton (now Hamilton Sea Point) Rugby Football Club, and the Villagers' Club, which followed, continued during its first years many names now honoured in the history of the country. In 1900 the first "Springbok" team toured Great Britain, their magnificent playing being in the nature of a revelation to British footballers. The combination won 25 out of 28 matches played, losing only 2 and drawing one. The 1910 "Springbok" team won two out of the three best matches played, and later visiting teams have been almost equally successful, such giants of the game as A. J. Marsburg, Paul Roos, W. A. Millar, H. W. Carolin, and F. J. Dobbin having left indelible marks.

**GOLF.** The ancient and as it is popularly called the "Royal" game of golf has so many enthusiastic devotees in all parts of the world that it cannot be a matter of surprise that South Africa, with its natural sporting instincts, should long ago have fallen into line with other countries in establishing the recreation on a sound footing. The first course was planned and opened in 1885 on a site near Wynberg Camp, but was afterwards moved to Rondebosch Camp ground, where an excellent 9-hole course was provided. This, however, was found to be insufficient for the ever-increasing membership, and in 1906 it was decided to return to Wynberg, where a fine 18-hole course has been prepared. Apart from the golfing attractions of the links at Wynberg, the locality is famous for the magnificent panoramic views of the surrounding mountains and the exhilarating air which, during the summer months, sweeps along the links from over the waters of False Bay.

Since the establishment of the Wynberg links, golf courses have multiplied throughout the Union, and first class links, many of them of a most sporting nature, are to be found at all the large centres, the larger and more accessible ones taking their turns in staging the annual Open Championships meeting of South Africa, which is an event of great importance in the sporting world.

**MOUNTAINEERING.** Mountaineering in South Africa, if it does not present all the difficulties and excitements that are associated with the mountains of Switzerland, India or Japan, is fascinating enough to have taken hold of quite a big section of sport-loving residents, whose interests are well looked after by the Mountain Club of South Africa. Throughout the Drakensberg, parts of which still remain almost untouched, the best of rock-climbing can be had, and there is one district, which has Cathkin Peak as its centre and the Mont-aux-Sources and Gaunt's Castle at either extremity, where fifty or a hundred peaks offer most interesting ascents to the climber. In the Western Province, Table Mountain, with its wonderful crags, has over a hundred different routes laid down for its ascent, 30 of which are classified as exceptionally difficult. In the Klein Zwartbergen Range, near Ladismith (Cape), rises Toverkop, a remarkable split dome of some 300 ft., with uniformly precipitous sides, perched on the converging mass of the bulk of the mountain some 7,000 ft. high. This difficult ascent has only been made three times, the last in 1911.

**RACING.** There are no records of the earliest racing in South Africa, but it may be taken for granted that the sport was indulged in at Cape Peninsula some years before the South African Jockey Club was founded, about 1880. At that time Port Elizabeth was the most flourishing racing centre, and here it was that the club was founded which controlled racing until 1904. In that year the headquarters of racing were transferred to Johannesburg, and the South African Turf Club was established. To-day the chief centres of the sport are Johannesburg, Durban, Kimberley, and Capetown, and their racing clubs, together with those at Barkly West, Bethlehem, Bloemfontein, Maritzburg, Douglas, Benoni, Germiston, Grahamstown, King Williamstown, Kokstad, Milnerton, Port Elizabeth, Pretoria, Umtali, and Krugersdorp, operate under the aegis of the S.A.T.C. In Cape Province, Natal, and the Transvaal the Provincial Administration taxes both bets made with bookmakers and investments on the totalisator.

**SEA FISHING.**—Sea angling, or fishing for sport, in the waters of South Africa is carried on in either summer or winter, summer fishing being mostly for the larger fish, such as Cape Salmon or geelbek, albacore or yellow tail, kabeljauw and steenbras, while in winter the red stumpnose, biskop, wildepaand, and galjeon are the varieties fished for. The finest kinds of the big fish are caught off Cape Point, the albacore in particular being known for its fighting qualities, while the steenbras often run 20 or 30 lbs. in weight. The biskop is the king of the smaller winter fish, while the red stumpnose always provides good sport. In the Natal waters there is much good sea-fishing, as well as in the Zululand lagoons. These lagoons are open to the sea all the year round, and contain almost every variety of fish, from a 50 lb. salmon bass down to smelts.

**TENNIS.**—No sport has acquired greater popularity during recent years than lawn tennis, due in great measure to the excellent showing made by many representatives of South Africa at the Wimbledon and other international tournaments. In 1925-26 a team from England toured the Union, winning the first test match, drawing the second, and losing the third and last decisively to South Africa.

**WILD GAME SHOOTING.**—Wild game shooting is carefully restricted in the Union, Swaziland and Rhodesia. The term "royal game" is used to differentiate

between the larger and rarer game animals and the smaller and more common varieties. The term royal game embraces the following: elephant, rhinoceros, hippopotamus, giraffe, buffalo, eland, koodoo, hartbeest, bontebok, blesbok, gemsbok, etc. A royal game licence costs £3 to persons domiciled within, and £25 to persons domiciled without, the Union (£20 in the South-West Protectorate). Ordinary game licences cost £1. In the Bechuanaland Protectorate the elephant, rhinoceros, giraffe and eland are absolutely protected under penalty of £150 or 12 months' imprisonment, and within the Union, Swaziland and Rhodesia game reserves of large extent have been established, the penalties for killing game within which are very severe. A permit to kill royal game can only be obtained from the Administrator of the Province or Territory.

The Orange Free State, the Transvaal, Zululand and Swaziland provide the best opportunities for many varieties of wild game, notably stembok, hartbeest, wildebeeste, springbok, partridges, guinea fowl, and waterfowl in the two last-named provinces, and in Zululand and Swaziland the bigger varieties, such as the lion, buffalo, rhinoceros, hippopotamus, and myala. But the larger game of Africa—notably the lion, elephant and hippopotamus—are rarely if ever found south of Zululand, and exist in large numbers only in parts of Portuguese Africa and the vast jungles of Rhodesia, where excellent big game shooting is to be had. "On Safari" (in Rhodesia "ulendo") is the favourite method of carrying out a shooting expedition on a large scale. This lengthy and costly method of hunting is in use only in the more remote and wilder parts, within the Union many of the best shooting grounds can be reached by motor.

**YACHTING.**—Yachting along the South African coast has always been a favourite pastime of those who can afford it. The oldest yachting club is the Royal Natal Club, founded in 1858. The class of racing chiefly indulged in is carried on in sloop-rigged centre-board boats of the "scow" class, and with their highly skilled crews, composed of members of the Royal Natal, Point, and Canguilla Clubs, some very exciting contests may be witnessed during the Bay races. Other leading clubs are at Capetown, Simonstown, Port Elizabeth, and East London.

## PRESS

It is essential that the manufacturer seeking to enter the South African market should have some special knowledge of the Press of the country, as it is not merely an advertising medium, but in a business sense a reflex of the character of the market. In South Africa the advertiser is first faced with the language difficulty. While English is used in the big centres, a knowledge of Afrikaans is an asset. In most of the smaller towns the papers are bilingual, or are printed in the Taal, or Afrikaans, the latter a simplified form of Dutch. Another serious problem is the tremendous area of the country, 473,000 square miles prohibits any daily paper from enjoying a national circulation, and consequently the people in the smaller centres and country districts rely upon their local newspaper. There is throughout South Africa an extraordinary multiplicity of small papers with a limited circulation. Their value, nevertheless, is by no means negligible, they are often admirably conducted, and the whole of the Union may be said to be well served by newspapers and periodicals, some of which attain to a high standard.



### COMMENCEMENT OF NEWSPAPER ENTERPRISE.

The earliest record of newspaper enterprise in South Africa occurs in July 1823, when a Mr George Greig presented a memorial to His Excellency the Governor Lord Charles Somerset, "praying his approbation in attempting to commence in the Colony a periodical publication embracing the ordinary topics of a magazine." His petition was curtly refused. A little later, having discovered that there was no law to bar his projected publication, Greig resolved to proceed with the scheme, but in order to avoid danger as far as possible he decided to commence with a comparatively innocuous "Commercial Advertiser," the first number of which was issued in Capetown on January 7, 1824. Greig himself being the printer and John Fairbairn and Thomas Pringle, the poet, the editors. Within six months a censorship of the paper was ordered, and it ceased publication. Twice afterwards publication was resumed, to be followed by immediate suppression, but in October 1828 the embargo was removed, and the "Commercial Advertiser" enjoyed a considerable measure of success until newer and more enterprising publications ousted it from the field.

The year 1831 saw the first issue of two newspapers, one Dutch—"De Zuid Afrikaan," the forerunner of "Ons Land"—the other English. The latter was the "Grahamstown Journal," which, however, ceased publication in 1920. Following upon the inception of these journals the press became a powerful agent in the life of South Africa, being characterised by public spirit and literary ability. With the foundation of Natal as a separate colony came the issue of more newspapers, "Die Natalier," a Dutch journal of high rank, having been started in Pietermaritzburg by Cornelius Moll in 1843. It was two years before the first British newspaper made its appearance in Natal, this being the "Natal Witness," established in 1845 and still in vigorous existence.

### DAILY PAPERS:

**CAPETOWN.**—The leading daily papers in Capetown are "The Cape Argus" (evening) and the "Cape Times" (morning). The "Cape Argus" was first issued in 1857, when it consisted of an eight-page sheet published every morning. For a long time it has been the only daily afternoon and evening paper in Capetown. It has always been noted for its vigorous defence of Imperialist ideas. A special feature is the Saturday evening edition, devoted almost wholly to the sport of the week. The weekly edition has a wide circulation all over South Africa. The "Cape Times" first appeared on March 12, 1876, as a daily, and passed through varied experiences before attaining its present eminent position, which is largely due to the excellence of its exclusive and telegraphic news. It was the first newspaper in South Africa to print a picture paper by the intaglio process. These picture pages in tint appear on Tuesdays and Fridays, and add greatly to the journal's popularity. "Die Burger" is an Afrikaans daily of great ability.

The provincial papers of Cape Province are numerous, such as the "Diamond Fields

Advertiser" (Kimberley), the "East London Daily Despatch," the "Midland News and Karoo Farmer" (Cradock), the "Cape Mercury" (King Williamstown), the "Eastern Province Herald" (Port Elizabeth), the "Grahamstown Daily Mail," and the "Queenstown Reporter and Free Press," being in all respects equal to the daily newspapers of many large cities.

**NATAL.**—This Province is well served by two excellent morning and two evening papers. The "Natal Mercury" and the "Natal Witness" are published each morning, at Durban and Pietermaritzburg respectively, and the "Natal Advertiser" (Durban) and the "Times of Natal" (Pietermaritzburg) every evening. The "Witness" was established in 1845. The "Times" followed in 1851, the "Mercury" in 1880. The only Dutch language paper in the Province is "Die Afrikaner," published bi-weekly.

**ORANGI FREE STATE.**—One daily paper is published in Bloemfontein—"The Friend" which circulates throughout the Province.

**SOUTHERN RHODESIA.**—The oldest daily paper circulating in Southern Rhodesia is the "Rhodesia Herald," founded in 1891 as the "Mashonaland Herald" by Mr W. F. Fairbridge, who became later the first Mayor of Salisbury. The "Bulawayo Chronicle" was founded in 1894, and enjoys a large circulation.

**TRANSVAAL.**—The leading evening daily paper of the Transvaal—the "Johannesburg Star"—occupies an unique place among the newspapers of the Union. Founded in 1888, soon after the discovery of the Witwatersrand, it has now by far the largest circulation of any South African daily, and is noted for the excellence of its news and the advantages it enjoys as an advertising medium. The Johannesburg morning paper is the "Rand Daily Mail," founded after the Anglo-Boer War by Edgar Wallace, the noted war correspondent and novelist, and it has a large circulation along the Reef and in the country generally. In the capital, the "Pretoria News" serves English readers, while "Die Volkstem," which up to a few years ago was bi-weekly and is now a daily high-class newspaper, principally meets the requirements of the Dutch-speaking population.

### TRADE AND TECHNICAL JOURNALS.

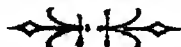
—In a land so sparsely populated as South Africa it has not always been found easy to run such journals, and many praiseworthy attempts have ended in failure. To-day, however, with improved means of communication circulation is easier, and, taking everything into consideration, the Union has reason to be proud of its trade and technical press. The most important are those connected with the farming and mining industries. The "Farmers' Weekly," published at Bloemfontein, is devoted to the interests of South African agriculture and has a national circulation. From Bloemfontein also come the "South African Farmers' Advocate" (monthly) and the "South African Poultry Magazine," while the "South African Fruit Grower" is issued monthly from Capetown and the "South African Dairyman" from Durban.

The leading papers devoted exclusively to mining are the "South African Mining and Engineering Journal" and the "South African Mining Review," both published monthly at Johannesburg. A very useful and informative monthly paper is the "South African Journal of Industries" (Johannesburg), while the "South African Trades Journal and Shipping Gazette" (Capetown, 1882) is the official organ of the Cape manufacturers and is devoted to overseas trade interests as well as to local trade and industries, its circulation being very large. Other noteworthy trade and technical journals are the "Architect, Builder and Engineer" (Capetown), the "South African Builder" (Johannesburg), "South African Engineering" (Johannesburg), "Insurance" (Capetown), "Motor Weekly" (Bloemfontein), "Natal Motorist" (Durban), and the "South African Railways and Harbours Magazine."

**WEEKLIES.**—Foremost among the many excellent and well got-up publications of South Africa are the weekly editions of the leading daily newspapers—the "Johannesburg Sunday Times," the "Week-end Argus," and the "Week-end Natal Advertiser," which cater for a great number of readers in town and country, and offer them an almost endless variety of news, stories, critical and literary essays, sporting intelligence, and pictorial attractions. Of these, the "Johannesburg Weekly Times" is the only Sunday newspaper published in the Union.

The "South African World" has a universal reputation. It was founded in 1902 by Mr Leo Weinthal, a South African born at Graaf Reinet, who wished to establish a journal which should embody in its scope and sphere of operations the whole of the African continent. There is hardly a weekly journal more often quoted, for its mining news cables sent every week from Johannesburg and Bulawayo set the markets going in the leading capitals of Europe and America. The "World" has also a large circulation throughout East and West Africa, the Sudan and Egypt. "South Africa" is an influential weekly devoted particularly to mining, the "South African Lady's Pictorial" is issued from the office of the "Cape Times," the "South African Review" is noted for its progressive imperialism and is sometimes called the South African "Truth," the "South African News" is a Liberal-Nationalist weekly of high standard, and "Ons Land" (Capetown) is an old-established weekly published in Afrikaans. Almost every town and "dorp" throughout the Union has its weekly, which is generally up-to-date and interesting, and in this connection the "Barkly East Reporter," "Beaufort West Courier," "Graaf Reinet Advertiser," "George and Knysna Herald," "Mossel Bay Advertiser," "Uitenhage Times," "Newcastle Advertiser," "Vryheid District Mail," "Benoni Herald," "Boksburg East Rand Express," "Heidelberg News," "Krugersdorp Standard," "Ons Vaderland," "Die Veldslad," the "Kroonstad Times," "Ladybrand Courant" may be especially noted.

The official publication, the "Union of South Africa Government Gazette," is published weekly at Pretoria.



## TOURIST RESORTS

**S**OUTH AFRICA is now one of the recognised places of sojourn for those residents of the Northern Hemisphere who winter abroad. It provides a change from Southern Europe, and is at its best when such change is most needed, October to March being the spring and summer months. The climate is sunny, enjoyable and invigorating, the scenery is varied, and in many parts extremely beautiful. Furthermore, throughout the Union and Southern Rhodesia, with the principal resorts of which countries this section briefly treats, travel facilities are certainly up-to-date. The hotels in the larger towns are luxurious, the railway trains (with restaurant cars attached for all long journeys) are as well appointed as those in Great Britain, and in most villages and every town there are garages, as also motor cars for hire. The sea voyage of 17 days from England is usually smooth and the principal liners are large and luxurious. Reduced fares are granted by the South African Railways and Harbours Administration to bona-fide tourists from overseas, either for circular tours exceeding 300 miles or for journeys between any of the ports of Capetown, Durban, Lourenço Marques and Beira, while for other journeys excursion fares are often available.

**CAPE PENINSULA.**—Not only is Cape Province the birthplace of South African history, but it is also the most favoured in the way of natural beauties and of an unvalued sea-front containing many charming and health giving resorts. Few countries, for instance, can show a finer summer seaside resort than Muizenberg, often called the "Bather's Paradise." Here the beach is magnificent, the long stretch of fine white sand is lapped by water so clear that one can see bottom at a depth of 20 feet, and nowhere else can more delightful bathing be enjoyed. There are no heights or billows on the shore, and no currents, and even a small child can paddle in perfect safety. False Bay, which belies its name, is as tranquil as it is blue, with no treacherous point of hidden dangers, a locality made by Nature for family holidays. Add to this that Muizenberg has a very mild climate (thanks to the warm Mozambique current and to the shelter of the mountains behind), also that it is less than an hour's run from Capetown, and it is not surprising that the place claims to be the most popular seaside resort in South Africa. Muizenberg, however, does not stand alone. Almost the same may be said of the beautiful districts of St. James, Kalk Bay, Sea Point and Camps Bay. The delights of the pine woods, the sea-bathing and the rock pools of Camps Bay have been written and re-written about times without number, and the excursion from Capetown and back through the mountain kloof has been called the most famous train ride in the world.

**CALEDON.**—Inland, from the district just described lies Caledon, one of the most picturesquely situated towns in the Union, with a surrounding country that reminds the visitor of the Scottish lowlands. For nearly 200 years the fame of the mineral water springs and the Caledon Baths has drawn visitors from countries far remote from South Africa, and their medicinal and health-giving properties have restored to active life many of the country's leading

men. For those who need no cure there are many interesting and lovely walks and drives, notably to the Bridal Veil Waterfall, and good shooting is to be had, snipe, duck, quail, partridge, hares and buck being numerous. A 20-miles motor run takes the visitor to Cape Agulhas, the dividing point between the Atlantic and Indian Oceans, and the most southerly spot on the South African coast. On its rocks the troopship "Bykenhead" foundered in February, 1852, when 357 men, heroes every one, stood to attention in ordered ranks, watching the only two boats available leave with the women and children, and then went down, leaving an imperishable example of death met with dignity. Another interesting trip from Caledon is that to Genadendal (valley of mercy), the place where in 1737 the first mission station was established in South Africa. To-day it affords an interesting example of what Moravian methods can accomplish. Some 3,500 coloured people live at the station. Extensive plantations of oaks and pines have been established, the water supplies have been utilised methodically, and over 1,000 plots of ground are irrigated and cultivated. Among the mission buildings are several creditable structures, some of considerable age. Set in a grove of majestic oaks is the little graveyard reserved by the brethren in the early days wherein to bury their dead. Some of the stones date back to 1801, and furnish silent testimony to the hardships endured at that period.

**DRAKENSBURG.**—The almost untouched range of the Drakensberg is within easy reach of all parts of South Africa and off is a splendid field to the tourist. Until comparatively recently it was almost a terra incognita, but the progressive changes which have taken place are so complete that there are few portions of the range which are not approachable on fairly good roads. In the Drakensberg visitors can obtain wonderful rock-climbing and many other delights, without the intense cold when traversing the snow and ice which is a feature of European peaks. For those, however, who enjoy wintry conditions, ice and snow may be found on these heights during a portion of the year, but at all seasons, however brown the veld may be, a few thousand feet below, there are green slopes and bushy dells and wonderful crags that delight the eye and test the skill of all mountaineers.

**NATIONAL PARK.**—Very nearly all of the Drakensberg is Crown land, with an occasional farm here and there, acquired in the early days when these holdings were to be obtained cheaply. The region of the finest mountain peaks, those gathered about that portion known as the Mont-aux-Sources group, has been divided off from the rest and entailed to the South African people in perpetuity, being known as the National Park. It is under the guardianship of the Natal Government. The area thus dealt with comprises some most superb mountain scenery, and included in it are caves containing the celebrated Bushman paintings. At the source of the River Tugela is a probably unique natural phenomenon in the shape of a water-cut tunnel, through which the stream flows from the loftiest single fall known in South Africa, actually measuring over 2,000 feet.

The summit of the Mont-aux-Sources, some 9,500 feet above sea-level, is best reached via the Orange Free State. Leaving Johannesburg, Pretoria, Bloemfontein, Durban or Pietermaritzburg by the evening trains, or joining these trains at any intermediate station, the tourist finds himself at Aberfeldy Station—on the Kroonstad-Ladysmith line—the following morning or afternoon, according to the direction from which he is travelling. Here, by giving previous information to the proprietor, he is met and driven to Rydal Mount Hostel, a distance of 24 miles, and situated on the slopes of the mountain from which it takes its name. The next morning an early start is made for Mont-aux-Sources to cover the eighteen miles to the Cave, which constitutes the first stop of the journey. Visitors can be fully fitted out at Rydal Mount for the trip, and the proprietor of the Hostel sees that travellers have nothing to worry about. Preparations are made for a stay of two nights in this cave, the climb from which to the summit is undertaken on the second day and is performed with a minimum of effort on active sure-footed Basuto ponies. Those who do not care to tackle the climb to the summit will be well repaid by a trip to the cave.

**GEORGE, KNYSNA AND THE WILDERNESS.**—The district which includes the charming old-world town of George, the restful haven of The Wilderness and the seaside resort of Knysna, is situated at the foot of the Outeniqua Mountains in south-eastern Cape Province. George is 32 miles from Mossel Bay, and Knysna is 53 miles by motor-car from George. Much of the scenery is reminiscent of Ireland, while the contour of the mountains recalls to some the Highlands of Scotland. George is a great centre for tourists, being the jumping off place for The Wilderness and Knysna, for the Plettenberg River and for the Keurbooms River. The roads are excellent for motoring, and the 14 mile journey to the Wilderness winds through the heart of the mountains. The Wilderness itself is as yet quite unspoiled, a little group of hotels and boarding houses set in a scene of forest clad hills and mountains, with the finest sea and river bathing and fishing close at hand. Knysna is also noted for its boating, bathing and fishing.

**MATOPH HILLS.** The Matopo Hills, on one comparatively low hill of which the remains of the late Hon. C. J. Rhodes are interred, is a collection of broken masses of granite interspersed with grassy valleys stretching for some 50 miles north-east and south-west, and within easy reach of Bulawayo, Southern Rhodesia, by motor-car or bicycle. They are also connected by railway. Many of these hills are associated with the traditions of the Karanga race, some being "venerated hills," and others "rain dance hills," whereon, about October in each year, nude Karanga maidens still dance and make offerings to the spirits of the departed, so as to ensure timely and favourable rains.

It was among the Matopos that Cecil Rhodes held the indaba which secured peace with the Matabele, and since his burial the Rhodes Estate and the vast Native Reserve beyond have become a great place of pilgrimage for both Rhodesians and other visitors. To meet the convenience

of visitors Mr Rhodes, during his lifetime, arranged for the establishment of two hotels, the one at the Matopos Dam, the other at the terminus of the branch railway, and these offer excellent accommodation.

**NORTHERN TRANSVAAL.**—The whole of the Northern Transvaal is a country of beautiful scenery and of vast landscapes planned on a large scale. The towns of Pietersburg, Potgietersrust and Louis Trichardt, reached easily from Pretoria and Johannesburg, are the best centres from which to explore the beauties of the Pietersburg and Zoutpansberg districts. These include the lovely waterfalls of Agatha and Vagobas Kloof, the interesting village of Leydsdorp, the scene of South Africa's first gold mine, the Sabie Game Reserve, with its abundance of lions, leopards and other carnivora. Wyllie's Poort, noted for its kloof and stream scenery and a favourite picnic resort, and the trout fishing and hunting resorts of Haenertsburg and Woodlush. Periodically during the winter special combined railway and motor excursions, including catering and sleeping accommodation, are arranged from Johannesburg and Pretoria to the principal places in the Northern and Eastern Transvaal. At Potgietersrust, Pietersburg and Louis Trichardt there are garages where touring motor-cars may be hired. The best months for touring are from May to August inclusive.

**VICTORIA FALLS.**—Over 70 years have passed since David Livingstone startled the world with the graphic story of his discovery of the Victoria Falls. At that time and for many years afterwards a journey to view them was attended with hardship, if not with danger. To-day the tourist can travel in comfort by train from Capetown or any Union centre on the most luxuriously-appointed trains, these connecting with the fine trains of the Rhodesian Railways, which also provide comfortable dining and sleeping accommodation.

These falls far surpass Niagara in size, grandeur and impressiveness, and one can quite understand the awe with which Livingstone and other travellers after him have gazed upon them. Although the great missionary under-estimated the

width of the cataract and the depth of the gorge into which the river plunges, he made it clear that they were the greatest in the world. The nature of the extraordinary volcanic fissure that created them can be easily realised without reference to a map, but at the point under consideration the mighty Zambezi flows roughly from north to south. About half a mile above the falls the river is a mile and a half in breadth, then it contracts, and the breadth at the falls themselves is 1,936 yards. Here, to the view of anyone looking over the edge of the falls, the great river seems suddenly to come to an end, no continuation of its channel being visible. For the entire extent of its breadth the Zambezi thunders down precipitously into a narrow, deep trench or cañon, which extends at right angles to the river's course from shore to shore. Beyond the falls one is faced by the perpendicular wall of the cañon. Below, the madly-whirling spray obscures the view of the bottom of the cañon, and it seems as if the whole mighty flood were falling into the centre of the earth through this awful chasm. From the cañon—called the Boiling Pot—the river rushes with unbridled fury for over 40 miles along a narrow and deep gorge of basaltic cliffs.

Some idea of the vastness of the Victoria Falls may be gained when it is stated that their height (420 ft.) is slightly greater than that of the cross surmounting St Paul's Cathedral, while their width is about equal to the distance of the British Museum from the Marble Arch (that is, twice the width of the Niagara Falls). The noise of the falling water is deafening anywhere in the vicinity, but in flood time it can be heard ten miles away. From the chasm rise immense and dense clouds of spray, which hang over the falls as a vapour. In the flood season this spray can be seen 70 miles distant.

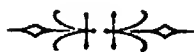
**HOTEL ACCOMMODATION.**—The best months for visiting the falls are July and August, when, being the winter season, the days are cooler and the nights more bracing. From January to May the river is in flood, it is at its lowest from October to December. The greatest volume of water falls in April, but the spray then hides some of the beauties of the cataract from the tourist's view.

On arrival at the falls the visitor will find a modern, palatial hotel, replete with electric lighting, perfect sanitation and possessing an unrivalled cuisine. It is within 10 minutes' walk of the falls, to which a light trolley line runs for the convenience of the hotel guests. The entire building is under the direct control of the Rhodesia Railways, which provide, on the broad Zambezi River, a splendid boating service, consisting of motor launches and Canadian canoes, to be hired at moderate charges.

**RAILWAY BRIDGE.**—The railway bridge over the Zambezi is the highest in the world. It spans the first arm of the Gorge at 200 yards below the Boiling Pot, is in one arched span of 500 ft., is 650 ft. long and 400 ft. above low-water level. Trains cross at five miles an hour, and in flood time the spray from the falls frequently washes the carriage windows. It was Mr Rhodes' desire that the bridge should be erected at a point which would permit of such a thing happening. Foot passengers use the bridge, the board walks provided being well clear of the rails. From the bridge magnificent views of the falls and gorge are obtained.

**ZIMBABWE RUINS.** The ruins known far and wide as Great Zimbabwe are only about 16 miles from Fort Victoria, Southern Rhodesia. There is railway connection with Gwelo on the main line of the Rhodesian railway, and from Victoria the ruins can be reached by motor car. Hotel accommodation is close at hand.

The ruins are all that is left of a vast stronghold, probably used in the late Middle Ages to over-awe the surrounding countryside, the overlordship of the African Chiefs Paramount, who bore the hereditary title of Monomotapa, extending through vast tracts to the south of the River Zambezi. They may be roughly divided into the "Temple," containing the royal apartments and hall of ceremonies, the "Acropolis," an ingeniously defended fortress, and the "Valley Ruins," which were probably the dwellings of the chief persons of the tribe. The whole Zimbabwe Valley abounds in ruins of all types and ages, and, even for the casual tourist, is well worth a visit.



# ADMINISTRATION AND COMMUNICATIONS

## CONSTITUTION AND LAW PUBLIC WORKS

## ARMY, NAVY AND AIR FORCE PUBLIC HEALTH POSTS, TELEGRAPHS AND TELEPHONES

### CONSTITUTION

**T**HE foundation and development of the different colonies forming British South Africa prior to the South African War and the years immediately succeeding it have been dealt with in the section of this volume devoted to "History." On May 31, 1910, the four self-governing territories of the Cape of Good Hope, Natal, Transvaal and Orange River Colony were united in a Legislative Union styled the Union of South Africa, and these colonies became original provinces of the Union under the titles of the Cape of Good Hope, Natal, the Transvaal and the Orange Free State respectively. The Government of the Union controls all property belonging to the State, Railways, Harbours and Customs being under the administration of Union Commissioners for the Consolidated Revenue Fund, the former debts of the various provinces having been taken over as a first charge upon Union funds.

**EXECUTIVE.**—In the Act promulgating the Constitution of the Union, Executive Power takes precedence over the Legislative Power. British precedent is followed throughout the Supreme Executive authority being vested in the King and administered by the Governor-General as his representative. The latter is also Commander-in-Chief of the Naval and Military Forces within the Union, and receives a salary of £10,000. The present Governor-General is Major General the Right Hon. the Lord of Athlone, G.C.B., G.C.M.G., G.C.V.O., D.S.O. who assumed office on January 21, 1924.

**EXECUTIVE COUNCIL.**—Nominally, this is a body of not more than ten officials appointed by the Governor-General to administer the Departments of State. These must all be members of either the Senate or House of Assembly, in fact, they compose the Ministry or Cabinet of the day, and are selected by the Prime Minister for the time being from among the members of the party or parties supporting him and having a majority in Parliament.

The Departments of State and their Ministers comprising General Hertzog's Cabinet, which assumed office on June 30, 1924, are as follow:—Prime Minister and Native Affairs—General the Hon. J. B. M. Hertzog, Justice—Hon. T. J. Roos, K.C., Interior, Public Health, and Education—Hon. Dr. D. F. Malan, Defence—Colonel the Hon. F. H. P. Cresswell, Finance—Hon. N. C. Havenga, Mines and Industries—Hon. F. W. Beyers, K.C., Railways and Harbours—Hon. C. W. Malan, Lands—Hon. P. G. W. Grobler, Agriculture—General the Hon. J. C. G. Kemp, Posts and Telegraphs and Public Works—Hon. T. H. Boydell.

In 1925 an eleventh Minister of the Cabinet, without portfolio, was appointed in order to give Labour a larger share in the Government.

**FINANCIAL RELATIONS.**—See general article on "Finance."

**LANGUAGES.**—Both the English and Dutch languages are official languages in the Union, are treated on a footing of equality, and enjoy equal freedom, rights, and privileges. All records, proceedings, and journals

of Parliament are kept in both languages, and all Bills, Acts, and Public Notices of the Union must be in both languages.

**LEGISLATURE.**—The Legislative Power of the Union is vested in the King, represented by the Governor-General, a Senate and a House of Assembly, the first Parliament having been opened by His Royal Highness the Duke of Connaught and Strathearn on November 4, 1910. The seat of the Legislature is at Capetown. (See below "Seats of Government.")

**HOUSE OF ASSEMBLY.**—The House of Assembly, or Lower House, now consists of 134 members, the number having been gradually raised from the 121 of which it was composed in the first Parliament. The constitution of the Assembly was at the outset framed on a provincial rather than on a national basis, a number of members being allocated to each Province on the basis of the total of European residents therein. No province was to have its representation reduced until the number of members reached 150, or until the expiration of ten years after the establishment of the Union, whichever was the longer. Up to the present both the Cape and the Transvaal have taken a smaller representation than they are strictly entitled to in order to allow a larger representation to the two smaller provinces of Natal and the Orange Free State. Of the members for the first Parliament (121), they were distributed as follows:—Cape Province, 51, Natal, 17, Transvaal, 36, and Orange Free State, 17. The quota of the Transvaal has been raised successively to 45 and 49, that of each other province remains the same.

**METHOD OF ELECTION.**—Members of the House of Assembly represent electoral divisions, one to each, and a re-division of the constituencies by a commission of three judges takes place after each quinquennial census. The principle of "equal rights" (that is, of equal voting power) for all sections of the community obtains, the idea of proportional representation as a method of election having been abandoned. There is not, however, a uniform franchise throughout the Union, the franchise laws of the different colonies prior to the formation of the Union having been preserved. In Cape Province no distinction was made between European and native, and large numbers of the latter have qualified in respect of property or salary, or educationally. In Natal, natives are only entitled to become parliamentary voters with the specific authority of the Governor-General, and the number so authorised is very small. In the Transvaal and Orange Free State manhood suffrage is the right of all persons of European descent, but there is no provision for the direct representation of natives.

**NATIVE FRANCHISE.**—An essential feature of the native policy of General Hertzog, the present (1926) Prime Minister, is an alteration of the franchise laws of the Union. It is proposed that the right to the Parliamentary vote now possessed by the natives in Cape Province, and the special provisions which enable natives in certain cases to obtain the vote in Natal, should be withdrawn. In its place it is proposed that

the natives of all the four Provinces of the Union shall elect Europeans to represent them in Parliament. This proposal is linked with other suggestions notably the creation of native councils, from which a native Parliament shall ultimately emerge. General Hertzog's scheme is based on the expressed belief that if the present system be allowed to continue the growth of the native vote will become a menace to white civilisation in South Africa. The problem is admittedly a difficult one and its attempted solution on these lines has provoked much bitter discussion.

**POWERS OF PARLIAMENT.**—Apart from being subject ultimately to the British Parliament, the Union Parliament is a sovereign body, the Provinces, unlike the States of Australia having no original authority and possessing only such powers as are delegated to them by the Parliament. Both Houses have authority to make rules of procedure, their powers and privileges being generally similar to those of the Imperial Parliament. In certain cases the Governor-General must reserve the Royal Assent to bills, e.g. to any bill abolishing the coloured vote in Cape Province. The King is given the power to disallow any law within a year of it having received the assent of the Governor-General.

**QUALIFICATIONS OF MEMBERS.**—Both Houses elect their presiding officer, a President in the case of the Senate, a Speaker for the Assembly, these officers have only a casting vote in case of equality of votes. The quorum for the Upper House is fixed at 12, for the Lower at 30. A member of either House cannot be a member of the other, and there are in both cases the usual disqualifications on conviction for certain crimes, bankruptcy, insolvency, and the tenure of office under the Crown other than Ministerial office, or the receipt of a pension, or the holding of certain military and naval offices. Members of both Houses receive pay at the rate of £400 a year, with a deduction of £3 for each day's absence. Since 1920 certain special temporary allowances have been voted.

**RELATIONS OF HOUSES.**—The relations of the two Houses are defined in the Constitution. The Senate cannot deal with any taxation or appropriation bill which has not originated in the Lower House, nor may it amend any bill which imposes taxation or appropriates revenue for the services of the Government, nor may it amend any bill so as to increase any proposed charge or burden on the people. On the other hand, the Assembly may not insert in the bill for the appropriation of monies for the ordinary annual services of the Government any other provision, disagreements continued for two sessions may be solved by the calling by the Governor-General in the second session of a joint sitting of the two Houses, when a majority of those present decides the fate of the measure. In the case of the rejection of a bill dealing with the appropriation of monies for the Public Service, the joint sitting can be summoned in the same session as that in which the rejection took place.

**SENATE.** The Senate, or Upper House, consists of 40 members. Of these, eight senators are nominated by the Governor-General in Council, four of them being selected on the strength of "their thorough acquaintance with the reasonable wants and wishes of the coloured races in South Africa." The remaining 32 senators are selected, eight by each Province, on the system of proportional representation with the single transferable vote. Unless dissolved simultaneously with the House of Assembly, the life of the Senate is for ten years, and

in such manner that a period of twelve months shall not elapse between the end of one session and the beginning of another. The Governor-General may prorogue Parliament, or may dissolve the House of Assembly alone or both Houses simultaneously.

**LOCAL GOVERNMENT.**—Local government in South Africa is administered primarily by municipal councils, divisional councils (in Cape Province) local boards, town councils (Transvaal), and village management boards, all these bodies being under the legislative control of the Provincial

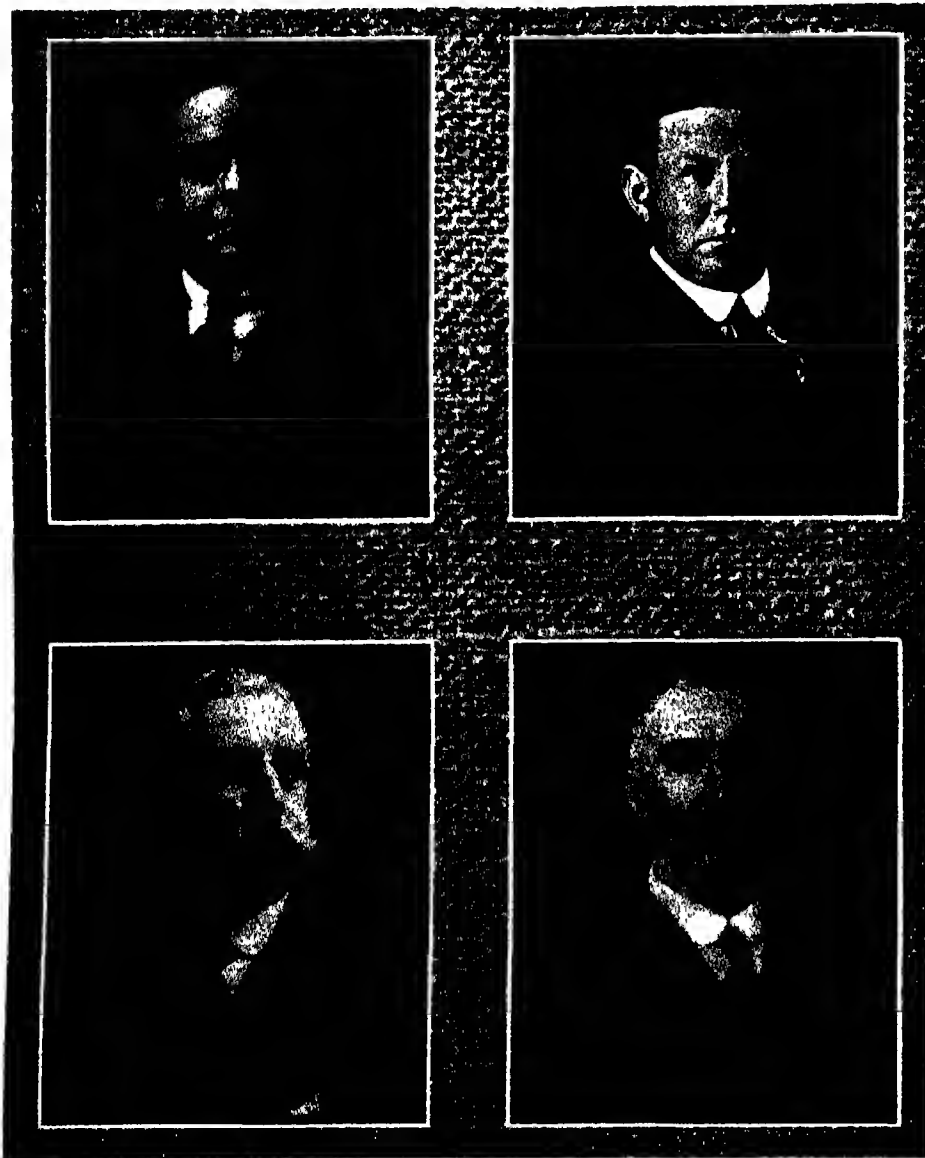
and local policy, and also keeping the Government and its officials in touch with native feeling. These district councils (in the Transkei and Pondoland) are the executive organs of a General Council which distributes among them the duties of road maintenance, dipping operations, and supervision of common lands, remaining financially responsible for their actions.

**PROVINCIAL ADMINISTRATION.**—In each of the four Provinces there is a chief executive officer who is appointed by the Governor-General in Council, and is styled the Administrator of the Province. He is assisted in the discharge of his executive duties by an Executive Committee of four, chosen by each Provincial Council from amongst its members or otherwise. The function of Executive Committees is to carry on the administration of provincial affairs on behalf of the Provincial Council. The principal matters in which the Provincial Administration is concerned are the control of primary and secondary education, of hospitals and charitable institutions, of municipal and other local governing bodies, and of roads and bridges.

**PROVINCIAL COUNCILS.**—The Provincial Council of each Province consists of the same number of elected members as there are electoral divisions of the House of Assembly, unless that number is under 25, as is the case in Natal and the Orange Free State, when the number of members of the Provincial Council is fixed at 25. Each Council has a duration of three years and cannot be dissolved before that period has elapsed, the times for sessions and their prorogation being fixed by the Administrator. Members of the Provincial Councils receive £120 a year, subject to deductions for absences.

**PUBLIC SERVICE.**—The organisation and discipline of the Public Service of the Union are provided for by the Public Service and Pensions Act of 1923. The Service consists of five classes—Administrative, Clerical, Professional, General, and the Services. A permanent Public Service Commission of three members has been appointed, as well as an Advisory Council of eight members nominated by the various Public Service Associations from among their members. The total strength of the Staff employed in the Government Service in 1923 was 34,899, of these, 29,569 were permanent and 5,330 temporary. The Executive Staff of the Defence Service (2,398) is excluded.

**SEATS OF GOVERNMENT.**—It is an outstanding feature of the Constitution of the Union as formulated in the South Africa Act of 1909 that a definite predominance is more than once given to the Executive over the Legislative Government. Particularly is this shown in section 18, where Pretoria is named as the Seat of Government of the Union, this being justified in section 23, which nominates Capetown as the seat of the Legislature. The choice of a Capital was as much a difficulty as had been the case ten years earlier in Australia, though there were no two cities with such age-long rivalries to be adjusted as those of Sydney and Melbourne. From the point of view of sentiment, historic associations, and beauty of situation, Capetown had an almost prescriptive right. From that of central and easily accessible position, as of proximity to the great industrial centre of the Rand, the claim of Pretoria carried even greater weight. Compromise was seen to be necessary, and so the somewhat curious arrangement was made by which the Executive Government functions in Pretoria, while Parliament sits in Capetown a thousand miles away—an arrangement, it may be added, which seems



**PROVINCIAL ADMINISTRATORS.**

1. The Hon. Jan H. Hofmeyr, Transvaal.
2. The Hon. A. P. J. Fourie, Cape Province.
3. The Hon. Sir G. T. Plowman, K.C.M.G., Natal.
4. The Hon. E. R. Grobler, Orange Free State.

nominated senators are irremovable for that period. Senators must be not less than 30 years of age, and must own unencumbered immovable property within the Union of not less value than £500. The legislative powers of the Senate are co-ordinate with those of the House of Assembly, except in regard to the origination and amendment of certain monetary provisions in bills.

**SESSIONS.**—A session of Parliament must be held once at least in every year, and

Councils. Native district councils, consisting of a Resident Magistrate and six members, administer the local government of the Transkeian Territories, Pondoland, and Glen Grey. The councils are advisory to the Native Administration, associating the people with the control of local funds, giving them a voice in the disposal of affairs intimately affecting their own interest, training them in constitutional methods of expressing their opinions in regard to general



to have presented no insuperable difficulties to the conduct of efficient government up to the present

**WOMEN'S FRANCHISE.**—The movement in South Africa for the political emancipation of women dates back to 1912, when a bill dealing with the question was defeated by 70 votes to 30. In May, 1920 the extension of the franchise to women was adopted by the Union House of Assembly by 64 votes to 39, but got no further. A similar bill was rejected in March, 1922, by 55 votes to 51 on the second reading, which was reached for the first time. The National party were nearly solid against the bill.

### LAW

The basis of the Common Law of South Africa is the Roman-Dutch law as it existed in Holland at the end of the 18th century. It was in part closely akin to the modern Roman law which is practised widely over the Continent of Europe, and even in Scotland, to the present day. Since the establishment of British rule at the Cape the law has been considerably modified and altered, both by legislation and by judicial decisions, so that to-day there exists hardly any material difference in principle over the greater part of the field of jurisprudence between the law of England and that of South Africa. The law of contracts, the law of torts, the mercantile law, the law relating to shipping and insurance, not to mention other subjects, are practically identical with those of England, and even the criminal law is virtually the same. Particularly in commercial law has the influence of English statutes and case law been very great.

### COMMERCIAL LAW:

**(COPYRIGHT.)**—The British Copyright Act, 1911, has effect in the Union subject to certain modifications, the Governor-General exercising the powers of the Board of Trade and any other reference to the Board of Trade is construed as a reference to the Minister. The Governor-General may by proclamation direct the extension of the British Copyright Act and the Union Act to literary, musical, dramatic, and artistic works first produced or published in any part of the British Dominions to which the British Act does not extend in like manner as if such works had first been produced or published in the Union. Copyrights are registered by the Registrar.

**INSOLVENCY.**—A serious exposure of insolvency scandals in 1924 led to a strong agitation to strengthen the law relating to insolvencies. Though, broadly speaking, the insolvency laws of the Union are framed on similar lines to those of England, there are important differences in procedure. The duties which devolve upon the English Official Receivers are performed in South Africa by the Masters of the Supreme Court and by the various magistrates who preside over the Insolvency Courts. The examination of the debtor by the Official Receiver, which is an important feature in England, is practically absent from the South African procedure. It was announced in 1925 that an amending Bill would be introduced in 1926 at the same time as a Bill to create the office of Public Trustee. Important features of the new Bill are: the power given to the Trustees to demand each month a statement, verified by affidavits, of all the debtor's assets and expenditure, the compulsory evidence which can be enforced from the debtor; the heavy penalties imposed for concealment of liabilities and for neglect to keep proper records of his transactions by an insolvent, or for the contraction of

debts without reasonable expectation of being able to discharge them.

**PATENTS.**—All patents, designs, trade marks, and copyrights are governed by Act 9 of 1916, which consolidated all previous Acts. The Administration of the Act is vested in the Minister of Justice and the Patent Office at Pretoria is under a Registrar. The following persons, whether British subjects or not, may apply for a patent: (1) the inventor, either alone or jointly with one or more other persons, or (2) the inventor jointly with the assignee of a part interest in the invention, or (3) the assignee of the inventor, either alone or jointly with one or more other persons. An application for a patent must be made in a prescribed form, and must contain a declaration as to the facts relied on to support the application. A provisional or complete specification in quadruplicate must be supplied. The fees payable are: On filing application for a patent, £1, on filing complete specification, £3, on sealing patent, £1. Fees of £4, £6 and £10 are payable on renewal before the expiration of the third, seventh and tenth years respectively from the date of the patent.

**TRADE MARKS.**—Registration of a trade mark in the Union is for 14 years, but may be renewed from time to time upon payment of the prescribed fee. A registrable trade mark must contain or consist of at least one of the following essential particulars:

- (a) The name of a company, individual or firm represented in a special or particular manner, or
- (b) the signature of the applicant for registration or of some predecessor in his business, or
- (c) an invented word or invented words, or
- (d) a distinctive word or words not reasonably required for use in the trade, or
- (e) any other distinctive mark.

The Registrar may refuse to register a trade mark which contains:

- (a) a representation of the King, the Queen, or any member of the Royal Family, or of the Royal Crown, or
- (b) the word "Royal" or any word, letter, or device indicating Royal or Government patronage, or
- (c) a representation of the Royal Arms, or of a national flag of the United Kingdom, or of the national arms of the United Kingdom, or of the Arms or Seal of the Union, or
- (d) a representation of any living person without his written consent.

**COURTS.**—The constitution of the Courts is based on the example of the English judiciary, and the rules of evidence and procedure are practically the same in both criminal and civil cases as in England. All serious cases of crime are tried before a judge and jury, with the same formalities and safeguards as in England, while minor offences are dealt with by stipendiary magistrates possessing a limited statutory jurisdiction. In criminal cases the jury must find a unanimous verdict. In civil cases either party may demand a jury, a privilege which is seldom exercised, but the verdict of the majority prevails.

**JUDICATURE.**—The supreme court of the Union is styled "The Supreme Court of South Africa," and consists of a Chief Justice, four Judges of Appeal, and the judges of the provincial and local divisions, which are 24 in number, as well as the Judge-President and three Judges of the Native High Court, Natal. The provincial divisions

include what were, before the establishment of the Union, the several supreme courts of the colonies, while the local divisions include the Court of the Eastern Districts, established in Grahamstown, the High Court of Witwatersrand, and the several circuit courts. The provincial and local divisions of the Supreme Court have all the original jurisdiction exercised by them prior to the establishment of the Union, and in addition thereto have jurisdiction on all matters in which the Government of the Union or a person suing or being sued on behalf of such Government is a party, and in which the validity of any provincial ordinance is challenged.

**Appellate Division.**—The Appellate Division of the Supreme Court consists of a Chief Justice, two ordinary Judges of Appeal and two additional Judges who are assigned by the Governor-General in Council to that division from any of the provincial or local divisions of the Supreme Court, but who perform their duties as judges of their respective divisions when their attendance is not required in the Appellate Division. The Appellate Division sits in Bloemfontein, the capital of the Orange Free State, but if it is considered that exceptional circumstances exist which make it more convenient to sittings than an appeal to it should be held at some other place, it may sit there for that purpose.

### ARMY, NAVY AND AIR FORCE

The defence of the Union and its vast dependent territories was severely tested during the Great War, in which South Africa was so conspicuously involved. Since 1921, when the last units of the former Imperial Military Command in South Africa left the country, the responsibility for the coast defences of Cape Province and Natal have been assumed by the Union Government. The defence system of the Union is laid down in the Defence Act of 1912 (amended 1922).

#### ARMY

**ADMINISTRATION.**—The administration of the military forces of the Union is in the hands of a Council of Defence, a Headquarters Staff and instructional and administrative staffs for the 15 military districts into which the Union has been divided. These in then order of enumeration, have their headquarters at Capetown, Port Elizabeth, East London, Pietermaritzburg, Durban, Standerton, Potchefstroom, Johannesburg, Pretoria, Kroonstad, Bloemfontein, Calcutta, Kimberley, Worcester, and Graaf Remet.

**CADET FORCE.**—In addition to the Permanent Citizen and Coast Defence Forces, boys between the ages of 13 and 17 in all parts of the Union where facilities for proper training can be arranged are required, unless then parents or guardians object, to become cadets. A cadet who has served efficiently for three years is entitled to a certificate which has the effect of securing a diminution of the subsequent training in the Citizen Force. All areas and equipment for cadet training are issued and the cost of training is provided at the public expense. On June 30, 1923, the total strength of the Cadet Force was 1,036 officers and 39,120 cadets. The following table shows the number in each of the four provinces:—

PROVINCE	OFFICERS	CADETS
Cape	472	17,671
Transvaal	418	14,401
Natal	70	4,055
Orange Free State	76	2,903
	1,036	39,120

**CITIZEN FORCE.**—This force consists of all persons liable to render personal service in time of war, other than members of the Permanent Force and the South African Naval Service. It comprises three divisions, viz., the Active Citizen Force, the Citizen Force Reserve, and the National Reserve.

**ACTIVE CITIZEN FORCE.**—This force consists of men who undergo peace training for four years between their 17th and 25th years. All youths between 17 and 21 may volunteer for peace training, but if sufficient volunteers are not forthcoming recourse may be had to the ballot to make up the required numbers. This has not so far been found necessary.

**CITIZEN FORCE RESERVE.** This force is divided into two classes. Class A consists of men who have undergone peace training in the Coast Garrison or Active Citizen Forces and are not over 45 years of age. Class B comprises members or past members of Defence Rifle Associations.

**NATIONAL RESERVE.**—All citizens between the ages of 19 and 60 years who are not serving otherwise are included in this force. After the whole of the Active Citizen Force and the Citizen Force Reserve have been mobilised in time of war, the National Reserve may be called out in three classes according to age.

**COAST GARRISON FORCES.**—This force consists of the South African Garrison Artillery and Coast Defence Corps. Divisions of the Garrison Artillery are established at Capetown and Durban; men below the age of 30 are eligible for enrolment, and receive liberal payment for attending drills. Citizens liable for peace training may serve their time in this force. The Coast Defence Corps consists of men specially trained in harbour work, engineering, signalling, and telegraphy.

**MILITARY COLLEGE.**—The South African Military College, established in 1912 for the training and instruction of officers and other ranks of the Permanent Force, Citizen Force, and Cadets, was originally stationed at Tempe, but has since been transferred to Roberts' Heights. It consists of three branches—General, Musketry, and Signalling.

**PERMANENT FORCE.**—The South African Permanent Force consists of: (1) The South African Staff Corps, (2) The South African Instructional Corps, (3) The South African Naval Service, (4) The South African Field Artillery, (5) The 1st Regiment, South African Mounted Riflemen, (6) The South African Permanent Garrison Artillery, (7) The South African Engineer Corps, (8) The South African Air Force, (9) The South African Service Corps, (10) The South African Medical Corps, (11) The South African Ordnance Corps, (12) The South African Veterinary Corps, (13) The South African Administrative, Pay, and Clerical Corps. Including the Naval Service and Air Force, which are described below, the above provide a small standing army, which, it may be noted, is specifically relieved of all police duties in time of peace.

**RIFLE ASSOCIATIONS.**—A feature of the defence system of the Union is the rifle or defence associations which are scattered throughout the four provinces. In 1922-23 there were 1,087 such associations, 433 in Cape Province, 61 in Natal, 362 in the Transvaal, and 231 in the Orange Free State, the total membership being 2,527 officers and 133,872 other ranks. Enrolment in a rifle association is compulsory for all citizens who are required to register but who do not undergo peace training, every such citizen being enrolled as a member on July 1 in his

21st year. Any other citizen liable to render personal service in time of war, not being a member of the Permanent Force, the Coast Garrison Force, or the Active Citizen Force, may become a member on prescribed conditions, also boys between the ages of 13 and 17 residing in areas where no facilities for cadet training exist.

#### NAVY

The South African coast defence is primarily undertaken by the Royal Navy, which maintains an African Command. The British Admiralty also controls the naval dockyard at Simonstown. The Union's part in the naval defence of her territories is at present confined to the maintenance of the South African Division of the Royal Naval Volunteer Reserve, in which those citizens serve who are liable for peace training and who elect to perform naval service. Companies are established as follows: A and B Companies based at Capetown (headquarters, The Castle), C Company at Durban (headquarters, Esplanade), D Company at Port Elizabeth, and E Company at East London. There are in commission two minesweeping trawlers, "Sonneblom" and "Immortelle," and one surveying sloop, "Protea." The headquarters of the South African Division are at Simonstown, the Commander acting under the orders of the Commander-in-Chief on the Africa Station.

#### AIR FORCE

The South African Air Force is a part of the South African Permanent Force, and is administered by the Air Services Section of Defence Headquarters. The Director of Air Services is also the executive commander of the Air Force. The organisation of the Force consists of: (1) headquarters, (2) aircraft depot, including stores section, workshops, and reserve aeroplane park, (3) flying training school, capable of training 15 to 20 pupils at the same time, (4) service squadrons, of which only one squadron is as yet fully established, (5) special reserve of pilot officers on a numerical establishment of 24 officers to each active aeroplane flight, and (6) general reserve of officers.

**DISTRIBUTION.**—The whole of the Permanent Air Force is concentrated at Pretoria, where accommodation is provided in the shape of steel hangars for approximately 80 aeroplanes. Nearly one hundred landing grounds have been prepared throughout South Africa, and any point in the Union can be reached by air from Pretoria within twenty-four hours.

Under the new scheme of national defence outlined by the Minister of Defence early in 1926, it is proposed to create an air force which shall be able to strike practically anywhere at any enemy gathering or force within the Union.

#### PUBLIC HEALTH

The Department of Public Health of the Government of the Union was created in 1919 under the Public Health Act of that year. In accordance with the provisions of the measure an Advisory Council of Public Health was also established, consisting of the Minister as Chairman, the Chief Health Officer ex-officio, four medical practitioners (of whom two must have special knowledge or experience of public health or medical research), and three non-medical members.

**DISEASES.**—Serious outbreaks of disease may be said to be rare in South Africa, though until a few years ago enteric or typhoid fever was very prevalent. The serious epidemic of influenza in 1918 was due to exceptional causes, and in less than three months a total of 2,616,803 cases

(454,053 European and 2,162,752 coloured and native) was reported, with 139,471 deaths (11,726 European and 127,745 coloured and native). Tuberculosis is prevalent amongst the coloured and native population, especially in Cape Peninsula and the South-western districts of Cape Province, also in the other coastal towns of the Union. Generally speaking, it is not common in places over 3,000 ft above sea-level. Outbreaks of a low fever commonly known as "Cape typhus" occur in parts of Cape Province and Transkei but are practically confined to the native population. Smallpox is rare, and yellow fever is unknown.

In 1923 there were notified by medical practitioners throughout the Union 13,401 cases of infectious disease, 8,254 being native or coloured. Of these 4,290 were of enteric or typhoid fever, 3,697 of tuberculosis, 1,787 of typhus, 1,036 of scarlatina or scarlet fever, and 946 of diphtheria.

**LEPROSY.**—Before the arrival of Europeans this disease is known to have existed among the Hottentots of the Cape and the Bantu tribes. The earliest leper hospital was established by the Cape Government at Hemelen-Aarde, in the Caledon District, in 1818 but this was closed in 1845 and the lepers were transferred to Robben Island, where an asylum for all races was established and has been maintained ever since. There is a large asylum for all races at Pretoria, and asylums for natives only at Umjanyana, Mkanibati (Pondoland), Amatukulu (Zululand), and Bochum. After 1913 the number of European lepers gradually decreased from 190 to 143 in 1923. The number of non-European lepers remained at about the same figure—roughly 2,200. Lepers are compulsorily segregated in every Province, all cases being reported to the Government. There is as yet however no uniform legislation on the subject for the Union.

**MALARIA.**—The incidence of malaria is far smaller throughout the Union than it used to be, though it is still endemic in the river valleys and coastal belt of Zululand, also in the river valleys and low veld of the northern and eastern Transvaal. Occasionally, owing to exceptionally heavy rainfall, malaria becomes epidemic over wider areas, involving the whole coastal belt of Natal, or the greater part of the Transvaal (the high veld always excepted), or the river valleys of the northern part of Cape Province. Increased settlement by Europeans and the extension of cultivation and drainage are doing much to reduce the areas in which this disease is endemic. Deaths from malaria among Europeans numbered 41 in 1922, as against 84 in 1921. This was the lowest total recorded.

**PLAGUE.**—Plague was unknown in South Africa prior to 1899, when infection was introduced from India. The Anglo-Boer War was responsible for several introductions of the disease. In 1917 there were 37 deaths (all coloured), in 1921 the number fell to 20 (four of these being whites), and in 1922 to 18 (ten whites), but in 1923 the total rose to 21, of which two were whites. At all the ports of the Union and in the larger centres rodents are systematically trapped and poisoned, and specimens are submitted each week for bacteriological examination.

**DISTRICT SURGEONS.**—For the carrying out of the health and medical work devolving on the Government in the various districts of the Union, medical officers known as district surgeons are employed, a few in large centres devoting the whole of their time to the task, but the large majority undertake the Government work concurrently with their private practice. At

the end of June, 1923, there were in all 278 district surgeons, of whom 6 were whole-time officers, 5 were whole-time but employed jointly with local authorities or public bodies, and 267 were part-time.

#### FOOD AND DRUGS ADULTERATION.

—Matters relating to diseased or unsonnd food are dealt with by the local authorities. Adulteration of food and drugs is handled by the Government Health Department in the Cape, Natal, and Orange Free State, and in the Transvaal by the municipalities. At the ports the adulteration laws are enforced by the Health Department, acting in co-operation with the Department of Customs and Excise. Many of the present laws are unsatisfactory and inadequate, and a consolidating and amending Food Drugs, and Disinfectants Bill has been prepared for submission to Parliament.

#### HEALTH ORGANIZATION AND INTELLIGENCE.

—The Union of South Africa is a party to the International Health Convention of Rome signed in 1912, and is represented on the committee of that organization by one of the health officers of the Ministry of Health who has had extensive experience of public health work in South Africa. That office has recently been linked up with the health organization established at Geneva under the League of Nations. Periodical reports and bulletins on matters of international health concern are furnished to the Health Department by these two organizations. Health cablegrams are exchanged fortnightly between the Health Department and the British Ministry of Health, and there is a reciprocal arrangement between the Union and Australia, New Zealand and India under which health information of urgent importance is cabled as occasion requires. By arrangement with the Imperial Government, British consuls in foreign countries cable the Union Government at its cost information regarding outbreaks of formidable epidemic disease, or other matters likely to be of use to South Africa.

Weekly bulletins, stating the incidence of formidable epidemic disease and particulars as to any undue prevalence of other infectious disease in the Union, together with the latest available data as to the occurrence or prevalence of formidable epidemic diseases in other countries, are published by the Health Department and widely distributed. Weekly abstracts of returns of notifications of infectious diseases throughout the Union are also distributed by the Department to the Medical Officers of Health of the larger municipalities in the Union and to others specially concerned.

**HOSPITALS.**—Such institutions are either wholly controlled as to establishment, maintenance, and management by the Provincial Administrations, being known as General Hospitals, or receive financial assistance from Provincial funds, but are controlled by other than Government authority. These are usually sanatoriums, memorial hospitals, maternity homes, convalescent homes for children, some native hospitals, and cottage hospitals. The above are exclusive of mental hospitals and institutions, also of hospitals for leprosy and venereal diseases. In Cape Province grants-in-aid of the various hospitals amounted in 1922-23 to £184,078, in Natal to £13,290, in the Transvaal to £9,351, and in the Orange Free State to £19,815. Some particulars of the General Hospitals in Capetown, Pretoria, Johannesburg, Pietermaritzburg and Durban will be found in the sections devoted to these cities. Government or municipal hospitals are provided in most of the larger towns, and

there are also a large number of hospitals and institutions established by religious organisations, mainly supported by voluntary contributions. Patients are almost invariably received free of expense if they cannot afford to pay, but should they have the means they are charged in accordance with their resources, the tariff being usually more or less that charged by hotels in the same town.

**MENTAL INSTITUTIONS.** There are eight mental hospitals in the Union, five in Cape Province, and one each in Natal, the Transvaal, and the Orange Free State. Those at Port Alfred and Port Beaufort are for coloured races only. There are also two institutions for feeble-minded persons at Capetown and Potchefstroom. On December 31, 1923, there was a total of 7,468 patients in these hospitals, for whom there was available a medical and nursing staff of 1,517 persons. The largest hospitals are those at Pretoria (1,734 patients), Valkenberg (1,399), and Bloemfontein (1,026).

**LEGISLATION.** The law in the Province of the Union affecting the registration of medical practitioners, dentists, nurses, and chemists has not yet been made uniform, and registration in each Province is effected under the measures in force prior to the constitution of the Union. A Medical Council exists in each Province concerned with the work of registering doctors, dentists, midwives and nurses, and Pharmacy Councils control the registration of chemists.

**PORT HEALTH WORK.**—At every port a port health officer is appointed to carry out the usual inspection and control of vessels arriving at and leaving the Union. These officers act in an advisory capacity with the immigration officers in determining the physical fitness of immigrants. (See also under "Immigration.")

**PUBLIC HEALTH AND SANITATION.** Of recent years much increased attention has been paid to matters of public health and sanitation throughout South Africa, especially in the cities and larger towns. All of these, practically the whole of smaller towns, and many villages, now have gravitation water supplies, purification works being provided where the supply is taken from streams or rivers liable to pollution. The majority of the large urban centres have water-carried sewerage systems, public slaughter-houses, isolation hospitals, and other essential requirements of up-to-date towns. An increasing amount of interest is being taken in infant and maternity welfare and in town planning.

**REGISTRATIONS.**—In 1923 there were registered in the Union 2,587 medical practitioners, 676 dentists, 1,348 chemists and druggists, 3,290 nurses, 2,477 midwives, and 198 nurses of the insane. Some of these are registered in more than one Province.

**VACCINATION.**—This is not compulsory throughout the Union, but is fairly general amongst the European population, and outbreaks of small-pox are now rare. There were no deaths in 1922 from this cause, and only two in 1921.

#### PUBLIC WORKS

The Department of Public Works is associated with that of Posts and Telegraphs under a Minister of the Union. The matters dealt with by the Department are the design, erection, and maintenance of public buildings for Union and Provincial purposes (exclusive of school buildings in Cape Province) and of provincial and inter-provincial bridges, the provision of accommodation and services in connection therewith (including the hiring

of all property required) for Union Government purposes, the letting of Government buildings, the provision and maintenance of mechanical and electrical equipment, and the miscellaneous agency and consulting services for Provincial Administrations and University authorities.

Under the Minister for Posts and Telegraphs (see separate article) and Public Works are a Secretary and Under-Secretary for Public Works, an Inspecting Engineer, an Architect, eight District Engineers, and an Electrical Engineer.

**ELECTRICITY SUPPLY.** The development of electric power in South Africa received its first great impetus in 1907, when the Victoria Falls and Transvaal Power Company and the Rand Mines Power Supply Company established their system to supply power to the gold mines of the Witwatersrand. But, generally speaking, electricity is not used for production purposes in South Africa as widely as it might be. A great step towards its increase and development was, however, taken in 1922 when, under the Electricity Act 42 of that year, a controlling body was established known as the Electricity Control Board with power to grant licences for the generation and supply of electricity, and to control such supply, both as regards prices and otherwise. An Electricity Supply Commission has since been established with very comprehensive powers. Though the Commissioners are appointed by the Union Government, the Commission itself is not a State Department, but may be best described as a public utility corporation with Government backing.

The Electricity Commission has been in existence since March 1923, its chief function being to deal with applications by urban local authorities to establish electricity undertakings. Whenever such an authority intends to establish an electricity installation or to enlarge its undertakings, it must apply to the Administrator of the Province for his approval and submit a report by its engineer on its technical and general proposals. Before giving his approval the Administrator must call upon the Commission to examine the application and advise him on what is considered by the Commission, in the interests of the ratepayers and consumers, to be the best course for the local authority to adopt. Up to 1924 only those applications had been considered which had a district connection with the possible establishment of regional systems of power supply, these being in relation to the industrial areas of Natal, Cape Peninsula, the Witwatersrand and Witbank districts and the Sabie gold mining area in the Eastern Transvaal.

**NEW STATIONS.**—In Natal, in which province there are immense industrial potentialities, electric power is gradually becoming available through the electrification of the railways, the first section of over 170 miles of which was completed in 1924. (See article on "Railways.") The power station on the Tugela River at Colenso, erected for this purpose, has a capacity of 60,000 kilowatts. A super-power station is to be erected by the Commission at Durban, which will be linked up with the Colenso Station, 180 miles away. Cape Peninsula, a region of tremendous industrial possibilities, is also to have its electricity supply developed by the erection of a super-power station, of which the estimated cost is £977,500, including £204,190 for sub-stations and £89,890 for the transmission system. The generating station will be situated near the mouth of the Salt River, and its close proximity to the sea will admit of unlimited quantities of water being available for the circulating

water system. The station will be linked to the municipal generating station at Capetown.

**RAND-WITBANK ARI 1.**—By far the most important power supply system in South Africa is that of the Victoria Falls and Transvaal Power Company and the Rand Mines Power Company, generally known as the "VFP". The system originated in 1906 with the idea of developing the water-power of the Victoria Falls in Rhodesia for supplying power to the gold mines on the Rand. This meant transmission over a distance of about 700 miles, and the plan was subsequently modified. All the power supplied from this system is generated in coal-fired stations. The power supplied by the VFP is generated at four stations, a significant feature of the system being that it supplies not only electrical energy, but also compressed air from three central stations through a system of underground pipes. The capacity of these compressors is 70,000 h.p. The total system, electricity and air, is capable of developing something like 350,000 h.p., and the energy sold in 1923 was 132,000,000 units—more than the whole of Sheffield consumed, and only a little less than Birmingham's supply. The capacity of the stations is as follows:—

STATION	ELECTRIC GENERATORS TOTAL	COMPRESSORS TOTAL
Rosherville	60,000 k.v.a.	50,000 h.p.
Vereeniging	60,000 k.v.a.	—
Simmer Pan	54,000 k.v.a.	—
Brakpan	44,000 k.v.a.	9,000 h.p.
Robinson	—	20,000 h.p. (Electrically driven)

The new scheme of the Electricity Commission is to erect a power station on the Witbank coal fields, 5½ miles from Olifants River, where a gravity dam is being built across the stream to impound a maximum of 211,000,000 cubic feet. From this station, which is to have an initial capacity of about 60,000 k.w., power will be supplied to the Victoria Falls and Transvaal Power Company for distribution in its area of supply and direct to consumers outside such area. It is expected that when this station is completed power will be available at exceptionally low rates in the Witbank area, low enough, in fact, to act as an inducement for the establishment of electro-chemical industries under favourable conditions. It is intended to burn "duff" coal from the collieries, which now goes to waste.

**EXPENDITURE.**—The following table gives particulars of the expenditure by the Union Government on Public Works for the two financial years named:—

SERVICE	1921-22 £	1922-23 £
Salaries, Wages, etc.	225,346	178,913
Transport	22,548	17,737
Plant and Stores	6,152	4,757
Rent, Rates, Insurance, etc.	270,424	270,829
New Works and Buildings	87,299	67,051
Maintenance of Works and Buildings	202,077	217,218
Bridges — Maintenance, etc.	350	482
Incidental	5,546	5,156
	£819,742	£762,137

These are principally under the control of the Provincial Administrations.

The following table gives some details of the Provincial ordinary expenditure on public works, roads and bridges for 1922-23.

PROVINCE	PUBLIC WORKS £	ROADS AND BRIDGES £	MISCELLANEOUS £	TOTAL £
Cape of Good Hope	2,800	35,684	242,548	281,032
Natal	5,811	161,404	25,064	192,312
Transvaal	1,360	132,507	67,088	200,955
Orange Free State	—	67,116	39,566	107,402
	£10,001	£397,111	£374,266	£781,701

**IRRIGATION WORKS.**—See general article on "Agriculture."

**ROADS AND BRIDGES.**—The control and maintenance of roads in the Union are in the hands of the Provincial Administrations. In Cape Province main roads are constructed out of Provincial revenue, but divisional roads are made by divisional councils. In Natal the maintenance of Government roads is under the control of an Engineer Superintendent and the system is purely departmental. Since the establishment of the Union some 800 miles of Government roads have been constructed, the total mileage in 1924 amounting to 6,200. The number of bridges erected on main roads in the Province was 237, of which 141 were built between the establishment of the Union and March, 1924, at an approximate cost of £532,000. In the Transvaal, owing to the large sum of money that would be necessary to undertake a comprehensive programme of road construction in the true sense of the word, it has not been possible to do much more than maintain existing roads in the veld. The various municipal authorities have control of their own roads, but the Provincial Administration is wholly responsible for the construction and maintenance of the Main Reef Road. The approximate mileage of main and branch roads in the Province in 1924 was 18,600. In the Orange Free State there were, at the same date, 4,300 miles of main roads and 6,000 miles of district roads. The following table shows the mileage of roads and the number of bridges in the Union under the control of the Provincial Administrations together with the expenditure on both in 1922-23:—

	ROADS MILES	BRIDGES No.	EXPEN- DITURE £
Cape Province	32,501	263	206,665
Natal	6,165	217	243,406
Transvaal	18,060	127	247,250
Orange Free State	9,502	55	189,031
Total Union	66,228	662	976,361

These figures exclude those for roads and bridges under the control of municipalities and village management boards. The total mileage of these roads in the Union in 1922-23 was 6,075, the number of bridges 483, and the expenditure on them £738,273.

## POSTS, TELEGRAPHS AND TELEPHONES POSTS

In the early days of the 17th century, when the adventurers of more than one nation were trying the newly-discovered route to the East, the masters of ships calling at Table Bay for water and provisions used to leave their letters under large boulders on the shore, to be in turn collected and conveyed to their destinations by vessels passing in the opposite direction. This was the origin of South Africa's present postal service, the real commencement of which as a Government institution dates from 1806, in which year the postal revenue amounted to 191 rix-dollars, or £38 4s od in modern currency. Penny postage was started at Capetown in 1860, being a year later extended to Port Elizabeth. In 1871 the first mail to the newly-discovered Diamond

Fields was despatched from Capetown, and the foundation of the South African Postal Union was laid in 1883 by means of separate conventions entered into between several of the South African Governments. During the same year travelling post offices were first attached to railway trains and the telegraphic money order system was adopted. In 1893 the administration of the Bechuanaland post and telegraph services was placed in the hands of the Postmaster General of Cape Colony, which province entered the Universal Postal Union in 1895. The first South African Postal Union Convention came into force in 1898. This secured uniformity of practice and rates of postage between the Cape, Natal, the Transvaal and the Orange Free State. The Portuguese Province of Mozambique became a party to the Union at a later date. In September 1899 the Imperial Penny Postage (introduced in 1898) was adopted by Cape Colony, and by the Union in 1911. Its rescission in 1917 was one of the results of the European War.

To-day South Africa offers every variety of postal facilities, mails being conveyed by rail, motor car, veld post cart, and, in the native territories, by aboriginal runners. Between the constitution of the Union and the end of the financial year 1924-25 the revenue earned by the Posts and Telegraphs Department increased from £1,109,000 to £3,420,000, and the total amount of money handled from 19½ millions to 26 millions per annum. Four hundred and eighty new post offices were opened during that period, 115 additional post-cart routes were established, and the number of mail articles handled rose from 191,000,000 to 287,000,000 per annum.

**ADMINISTRATION.** The Department of Posts and Telegraphs was created on May 31, 1910, when the Union was constituted, and on September 1, 1911, it took over the administration and control of the postal and telegraphic services of the whole country, such control being vested in the Postmaster-General, acting under the Minister of Posts and Telegraphs. The headquarters of the Department are at Pretoria.

**EMPLOYEES.**—In the year ended March 31, 1925, the total number of persons employed by the Department of Posts, Telegraphs, and Telephones was 11,200, as against 10,800 in the preceding year. Of these, 3,700 were in the Administrative and Clerical Division, 4,250 in the General Division, 50 were learners in training, and 3,200 were local officials and railway officials performing post office work.

**FACILITIES.**—There were 2,947 post offices open in the Union in 1925, the number of posting receptacles in use (excluding those at post offices) being 1,200, and the number of private bags 3,600. There was one post office to every 2,500 inhabitants. The private boxes installed at 384 post offices numbered 40,613, distributed as follows: Cape Province, 11,500; Natal, 4,656; Transvaal, 19,630; Orange Free State, 4,767.

Other facilities than the transmission of postal matter, etc., which the Post Office affords to the public are the issue of licences of all kinds, the payment of pension warrants, the collection of poll tax, the sale of patent medicine, cigarette, and entertainment tax labels, the sale of revenue stamps, and the collection of customs dues.

**EXPERIMENTAL AIR SERVICE.**—On the recommendation of the Civil Air Board, the Government inaugurated an experimental Air Mail Service between Capetown and Durban, which operated for three months in 1925, but was discontinued chiefly owing to the unsuitability for com-

mercial work of the military machines used, and to the fact that the pilots were being deprived of their military training. During the three months the service was in operation a grand total of 91,250 miles was flown, the total weight of mail matter carried being 3,456 lbs. The whole question of the encouragement and development of civil aviation is receiving the closest attention of the Posts and Telegraphs Department, and it is hoped that in the near future it may be possible to establish, by means of a Government subsidy, an up-to-date passenger and air-mail service in the Union.

**FINANCIAL.**—The following table shows the financial aspect of the working of the Department during the years named

	1922-23	1923-24
Cash receipts	2,997,973	3,179,410
Value of Govt traffic	281,056	268,372
Cash payments	2,785,701	2,730,804
Value of free services rendered	113,553	106,702
Total amount of money dealt with	25,757,000	26,000,000
Revenue collected for other depts	1,291,854	1,426,506

compared with 239,000,000 in 1923-24 and 175,456,000 in 1912. Of this total, some 128,000,000 were letters, 25,000,000 were newspapers, 720,000 were agricultural parcels, and there were 4,842,000 other parcels.

**PENNY POSTAGE.**—The Chambers of Commerce throughout the Union had long been insistent in their demand for the reintroduction of penny postage, which existed prior to the War. On January 1, 1926, it was announced that the return to it would be made, and that the new rates would come into force at once. (See "Postal Rates.")

**POSTAL RATES.**—The following are the principal postal charges:—

For the Union of South Africa, Bechuanaland Protectorate, South-West Africa, Rhodesia, and Province of Mozambique: Letters, 1d per 2 oz; postcards, ½d single; 1d reply paid; newspapers, ½d per 8 oz for those printed and published in the Union, ½d per 4 oz for others; printed papers, accounts and receipts, ½d per 2 oz.

For the United Kingdom, Egypt and British Possessions: Letters, 1d per 2 oz; postcards ½d and 1d; newspapers 2d per 8 oz or 1 oz (as above); printed papers, sample packets, etc., ½d per 2 oz.

being issued for payment within the Union.

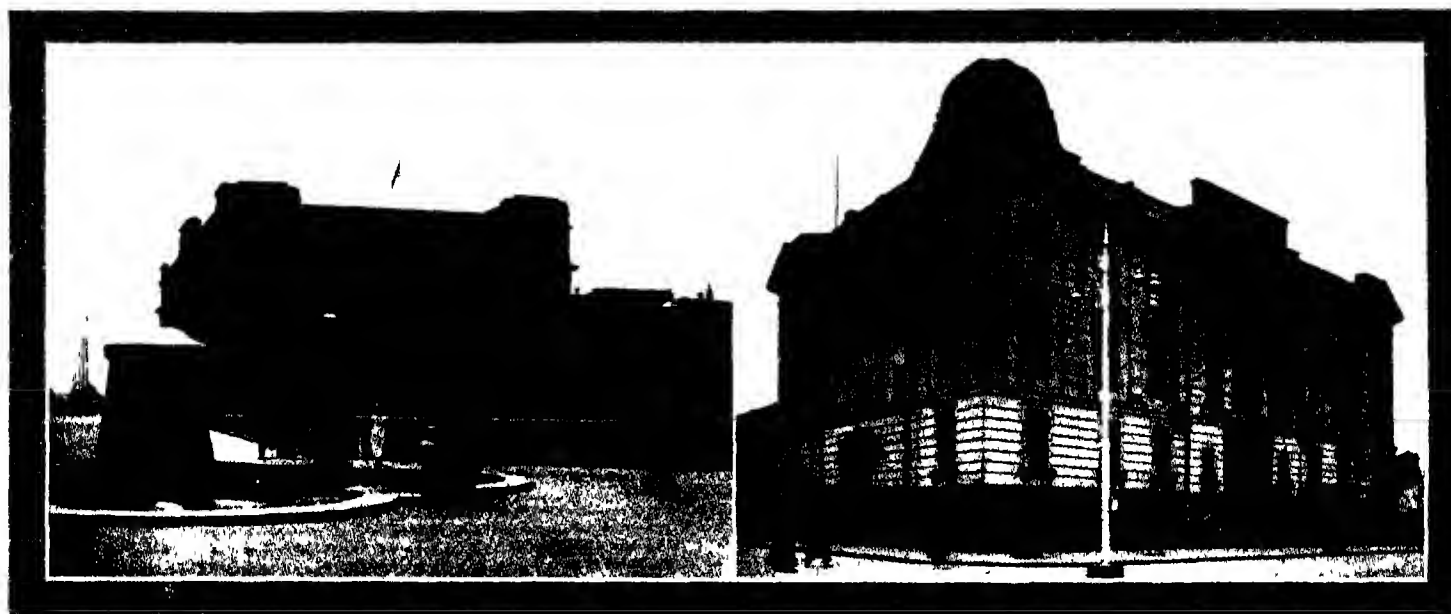
In 1924-25, money orders to the value of £2,399,000 were issued and £2,119,000 paid.

**CABLE MONEY ORDERS.**—A service exists between the Union of South Africa on the one hand and the United Kingdom and Mauritius on the other by which remittances may be cabled to or from money order offices in those countries. The maximum amount of a cable money order is £40 and the charges in the Union are:—

(a) The money order commission at overseas rates viz., 1s for every £4 or part thereof, and

(b) The cost of the telegram of advice at deferred rates (unless the remitter prefers to telegraph at full rates) for telegrams addressed to the country of destination.

**OCEAN MAILS.**—The first ocean mail contract entered into in 1870 provided for a regular weekly mail service between the United Kingdom and Capetown, the passage to be completed in 20 days. To-day the duration of the voyage is 16 days 15 hours in each direction, and for the maintenance of this service by the Union-Castle Mail Steamship Company a subsidy of £225,000 is paid, of which £27,000 is in consideration of the mail steamers commencing and terminating



POSTS AND TELEGRAPHS DEPARTMENT.  
1. Post Office Building, Pretoria. 2. Central Telephone Exchange Building, Johannesburg.

From postal services alone there was in 1923-24 a cash revenue of £1,853,078, compared with £1,741,370 in 1922-23.

Total expenditure in 1923-24 amounted to £2,734,621, a fall of £51,170 on the previous year, the surplus to the credit of the Department being £444,789, compared with one of £212,182 in 1922-23 and a deficit of £308,828 in 1921-22.

**COST OF MAIL CONVEYANCE.**—Excluding the ocean mail service the cost of the conveyance of mails to the Union Government increased from £183,774 in 1912 to £245,552 in 1923-24. The latter total was distributed as follows:—Main and branch posts, £104,125; conveyance over Union railways, £136,787; conveyance over private railways, £3,311; landing and shipping mails, £1,349.

**LETTERS, ETC.**—The total number of mail matter items posted in the Union (and Basutoland) in 1924-25 was 287,000,000,

for Foreign Countries, 3d first oz, each additional oz 1½d; postcards, ½d and 3d; newspapers, ½d per 2 oz, with a minimum charge of 3d for commercial papers. (See also under "Parcel Post.")

**MONEY ORDERS.**—Money order conventions are in force between the Union of South Africa and the Commonwealth of Australia, Dominion of Canada, Ceylon, Hongkong, India, Kenya Colony, Mauritius, Mozambique, New Zealand, Norway, Nyassaland Protectorate, Rhodesia, St. Helena, United States of America, and Zanzibar. There is also a direct money order exchange with the United Kingdom. In 1923-24 there were 419,006 money orders issued of a total value of £2,411,167, while 366,177, value £2,085,273, were paid. The commission collected from these amounted to £20,402. Of the 419,006 orders issued, 80,390 were for payment in other countries (United Kingdom, 58,627; India, 10,425; U.S.A., 7,447; and Australia, 5,301), 332,616

their voyages at Durban instead of at Cape town. The contracting parties on the basis of user are Great Britain, the Union, Southern Rhodesia, and the Bechuanaland Protectorate. In 1924 and 1925 protracted negotiations for a reduction of the subsidy took place between the Union Government and the Union-Castle Company, but broke down. Postal communication between South Africa and Australia, India, and the Far East is maintained by means of private ships as opportunity offers.

In 1923-24 the fastest voyage on record to South Africa from Southampton was accomplished, its duration being 16 days 3 hours 26 minutes. From South Africa to England the quickest passage on record (15 days 12 hours 37 minutes) was accomplished in 1921-22. During 1923-24 matter conveyed by ocean mail to South Africa totalled 110,312 bags, as against 105,271 in 1921-22, while mail bags conveyed from South Africa totalled 32,630, compared with



29,515 This was in addition to 5,739 bags of mail conveyed to South Africa by private ships, and 4,545 bags sent from South Africa by the same means

**PARCEL POST.**—A noticeable feature of the postal service of the Union is the provision of an agricultural parcel post, of the privileges of which very full advantage is taken. It is a cheap facility of especial benefit to the scattered communities of an extensive country, enabling parcels of South African produce, such as tea, sugar, flour, mealies, fruit, vegetables, plants, poultry, and foodstuffs to be transmitted between any points within the Union at reduced rates. A parcel of vegetables, for example, weighing 10 lb is charged only 1s, although it may travel not less than 1,200 miles by rail, postcart, and native runner. In 1924-25 the number of parcels posted in the Union for delivery thereon was 5,508,000, of which roughly 720,000 were agricultural packets.

**COD PARCEL POST.**—On June 1, 1925, a cash-on-delivery parcel post came into operation. Upon payment of the ordinary parcel post charges, plus the cash-on-delivery fee, the post office accepts parcels for delivery within the Union of South Africa, and undertakes to collect from the addressee the amount specified by the sender. Ordinarily, the value of any one parcel may not exceed £10 in the case of silver and gold articles, jewellery, and ostrich feathers, and £40 in all other cases. If these values are exceeded the parcel is accepted subject to the payment of the specified fees, but in the case of loss compensation is paid only on the £10 and £40 basis. The special fee for cash-on-delivery parcels is 1s for amounts up to and including £1, and 3d for every additional £1 or fraction thereof. The fee covers insurance against loss.

**PARCEL RATES.**—Agricultural parcels addressed to any place within the Union, up to 1½ lb, 3d; over 1½ lb but not exceeding 3 lb, 6d; over 3 lb but not exceeding 6 lb, 8d; over 6 lb but not exceeding 9 lb, 1s; over 9 lb but not exceeding 11 lb, 1s.

Ordinary parcels for places within the Union and for Mozambique and South-West Africa, not exceeding 4 oz, 2d; not exceeding 8 oz, 4d; not exceeding 1 lb, 6d; for every additional 1 lb, or portion thereof, 6d. For Bechuanaland Protectorate, 1s per lb; for Rhodesia (Southern), 1s 1d per lb; for Rhodesia (Northern), 1s 3d per lb; for United Kingdom, 9d per lb. For British Possessions and foreign countries, special rates have been fixed on an average traffic basis.

**POSTAL DRAFTS.**—These are really demand notes issued through the post office. Any member of the public can draw upon another at any point of the Union where there is a money order office for a sum up to £10. A demand, which has full legal force, is made by the postmaster on a date specified by the drawer of the draft to the person from whom the money is to be collected. If paid, the postmaster issues a receipt and remits the amount collected to the drawer by money order. The Department's fee is 6d for one demand and 9d for two. In 1923-24 the sum of £3,944 was collected by means of 3,134 postal drafts, the total number of demands made being 16,525.

**POSTAL ORDERS.**—British postal orders of all denominations from 6d to 21s are issued and paid throughout the Union. In 1923-24 postal orders issued totalled 3,032,674, value £1,635,796, while 2,611,703 were paid,

value £1,342,053. The sum of £19,493 accrued to the Department on the sale of these orders.

The value of postal orders issued during 1924-25 was £1,818,000, and of orders paid, £1,496,000.

**SAVINGS BANK.**—The Department of Posts and Telegraphs conducts savings banks in all the larger towns of the Union, and deposits can be made at any money order office from 1s up to £200 in one year, or £1,000 in all, excluding interest. Interest at the rate of 3½ per cent per annum is allowed. Any depositor may, in addition, invest in Savings Bank Certificates of £100 each up to £1,000. Interest on certificates at 4 per cent per annum is credited to the depositor's ordinary account.

During 1924-25 a net profit of £2,773 was earned by the Post Office Savings Bank, which increased its reserve to £146,672. This reserve is held against investments which cost £6,172,282 or £817,132 in excess of the market value at the end of the year. The Savings Bank balances are held by the Public Debt Commissioners for investment in Government securities. Owing to the depression that occurred during the War all over the world, the market value of these securities has depreciated, but they still earn enough interest to cover the cost of the administration of the Savings Bank.

At the end of 1925 the number of Savings Bank depositors totalled 304,000, the balances standing to their credit amounting to £5,320,000.

### TELEGRAPHS

Telegraph construction in South Africa dates from 1800, when the Cape of Good Hope Telegraphic Company (Ltd.) opened a line between Capetown and Simonstown. Four years later the line from Capetown to Grahamstown was completed. In 1873 the Government of the Cape took over the lines of the above company, and in 1876 the line north of the capital was extended to Kimberley, Natal and Cape Colony being connected telegraphically in 1870, in which year telegraph offices were first opened in the Transvaal, at Pretoria and Standerton. Communication between Durban and Pietermaritzburg had previously been established. In 1885 an office was established at Barberton in the Transvaal, and in 1886 and 1887 offices were opened all along the Witwatersrand.

The Union has now an extensive and comprehensive telegraph system the lines covering all but the most remote parts of the Provinces and extending northwards as far as the Belgian Congo, Uganda, and Kenya, westwards to South-West Africa, and eastwards to Mozambique.

The following table gives particulars regarding the mileage, number of offices, and number of telegrams dealt with in the Union during the years named—

	1922-23	1923-24
Mileage of line ..	9,335	9,347
Mileage of wire ..	41,932	40,696
Number of offices ..	1,931	2,103
Telegrams—		
Number dealt with ..	5,520,000	5,381,000
Revenue from telegrams ..	£457,007	£433,101
Value of Govt. traffic ..	£37,451	£39,141
Capital expenditure to end of year ..	£1,382,131	£1,448,763

The following were the rates in 1925 for the transmission of telegrams:—

For the Union of South Africa, South-West Africa, and the district of Lourenço Marques, 1s 3d for the first 12 words or portion thereof and 1d for every additional word.

For Bechuanaland and S. Rhodesia, 2s 3d for 12 words, 2d for every additional word.

For transmission from Capetown, Durban, and Port Elizabeth by wireless telegraphy to ships at sea, 11d per word.

The rate for night letter telegrams in the Union is 1s 3d for 24 words and 3d for each additional six words or portion thereof.

**CABLES.**—The cables connecting South Africa with Great Britain, Australia, South America, India, and the Far East are owned by the Eastern Telegraph and its Associated Companies. There are five principal routes, as follow: (1) To the United Kingdom via St. Helena and St. Vincent; (2) To Australia and the Far East via Cocos; (3) To the United Kingdom via the West Coast station serving the Gold Coast etc.; (4) To the United Kingdom and India via East Coast stations; (5) To South America via Ascension and St. Vincent.

A new agreement with the Eastern Telegraph Company to run for a period of 25 years from January 1, 1920, was recently completed. Cablegrams sent from the Union increased from 100,000 in 1918 to 207,000 in 1923-24.

**CABLE RATES.** To all parts of Europe, 2s per word, to the United States and Canada, 3s to 3s 6d per word. Deferred cablegrams addressed to the United Kingdom, British Possessions, and foreign countries are charged for at half rates.

**WIRELESS.**—The Department of Posts and Telegraphs has always been fully alive to the many advantages of wireless telegraphy and radio stations have been established at Capetown (Slangkop), Port Elizabeth, East London, Durban, Port Nolloth, and Walvis Bay. The normal range of the Durban station is 300 miles by day and 1,000 miles by night, whilst the higher power installation at Slangkop has a range of 450 miles by day and 1,500 miles by night. These are the guaranteed ranges, which are greatly exceeded at night by both stations. Continuous attendance is provided at the telegraph offices at Capetown and King Williamstown, and arrangements have been made at the principal ports for summoning an official in case of emergency. Meteorological reports, time signals, and weather forecasts are now broadcast through these stations, thus enabling vessels over a wide area to take timely protective measures. In 1923-24 the total number of wireless messages handled by the Union Stations was 14,103, of which 5,366 were outward messages and 8,737 inward, the value accruing to the Union Government therefrom being £4,146. Arrangements were in hand in 1925 for a wireless telegraph service between Pretoria and Bloemfontein. The service will be auxiliary to that provided by the ordinary telegraph lines, and will form an important link for emergency communications in the Union. Details of a wireless service between Pretoria and Salisbury, Southern Rhodesia, have been decided upon, but further action is dependent upon the decision of the Rhodesian Government.

**BROADCASTING.**—Broadcasting in South Africa is as yet in the early stages of development, but public interest in radio-transmission was greatly stimulated by the Prince of Wales' visit in 1925 and the broadcasting of his Capetown reception throughout the Union. There were in that year three stations operating, at Johannesburg, Capetown, and Durban, and the installation of a

fourth station is contemplated. The two last-named stations were installed by the Marconi Company, that at Johannesburg by the Western Electric Company.

**FEEES** -At present the fees for listening-in are high. Private installations pay 5s licence fee to the Postmaster-General and £2 to the Cape Peninsula Broadcasting Association, while receiving installations for public entertainment pay from £2 to £6. A payment by instalment system has been arranged, the user of a receiving set paying 15s as a first instalment, and providing the balance in three instalments of 10s a month. In 1925 over 12,000 wireless licences were issued. (See also under "Durban" and "Johannesburg").

**NEW HIGH-POWER STATION** - In September 1922 the Union Government entered into an agreement with the Marconi's Wireless Telegraph Company Limited (England) for the erection of a high-power wireless station capable of direct communication with the United Kingdom. The agreement was ratified by Parliament in 1923. The station since erected at Capetown is now (1926) being operated by the Wireless Telegraph Company of South Africa, and is connected with the station built by the Marconi Company at Bridgewater (England), the transmitting station to South Africa being at Bodmin. These two stations commenced testing in the early part of 1926 and are now in working order. It is planned to instal direct service as soon as possible with Australia and other British dominions.

### TELEPHONES

The first telephone exchange in South Africa was opened at Port Elizabeth in 1882, and was followed in 1884 by the inception of one at Capetown. Since the formation of the Union there has been a great extension of telephone facilities throughout South Africa, especially in the country districts. Telephone subscribers have increased by over 40,000 and calls from 24,000,000 to over 113,000,000 per annum. The trunk telephone has been largely extended, Capetown, Beaufort West, De Aar, Bloemfontein, and Kimberley having been linked up, while practically the whole of the Transvaal is in direct communication with the greater part of Natal and the Orange Free State. Until recently 500 miles was the limit up to which long distance communication had been established, "repeaters" having been introduced in order to render intercommunication possible over the whole of the Union, but on April 12, 1926, the first telephone conversation between Capetown and Johannesburg was held, the distance of 908 miles being the longest over which a telephonic message had ever been transmitted in the Southern Hemisphere.

The largest exchange system is situated in Johannesburg, where 10,691 subscribers' lines and 453 public call offices were in use in 1924. The first automatic exchange of any considerable size was established at Overport (Durban) in 1923.

**FARM TELEPHONE LINES.**—Farmers in South Africa have come to recognise the advantages of the telephone in rural areas, and in 1922 a scheme was adopted whereby they are enabled to have lines erected at their own expense, either by themselves with the assistance of departmental technical officers, or by the Department at cost price. The active co-operation of many farmers has led to substantial reduction in rental charges, and a sum of £300,000 was allotted by the Government for expenditure in farm



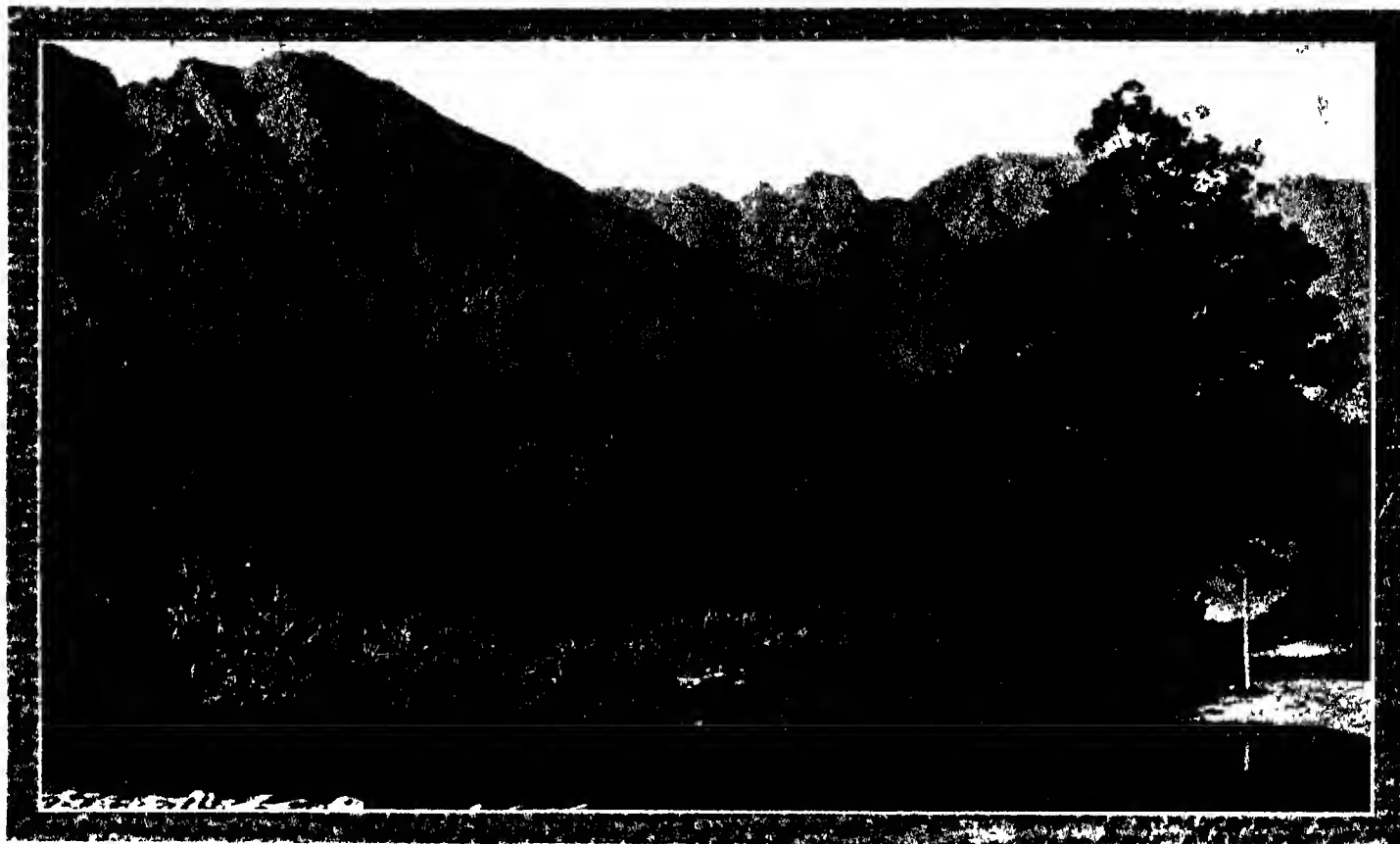
POSTS AND TELEGRAPHS DEPARTMENT.  
1. Central Telephone Exchange, Johannesburg.  
2. Automatic Telephone Exchange, Port Elizabeth.  
3. Capetown Telephone Exchange.

line development during 1924-25 and 1925-26. In the year 1923-24 no less than 116 new farm lines, totalling 818 miles in length, were provided for 677 farmers.

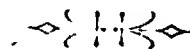
**SERVICES.**—On March 31, 1924, there were 207,538 miles of telephone wire in the

Union, the total number of exchanges being 787 and of public call offices 3,462. The number of instruments in use was 60,187. Subscribers totalled 44,682, and the calls during the preceding twelve months numbered 113,342,000, of which 6,595,000 were

trunk calls. The cash revenue for the year 1923-24 amounted to £893,231, the value of Government traffic being £68,042. The total capital expenditure on telephones up to March 31, 1924, was £4,422,080.



AN ATTRACTIVE MOUNTAIN AND RIVER SCENE IN SOUTH AFRICA









# FINANCE AND BANKING TRUSTEESHIP

## INSURANCE

### FINANCE

THE public finances of South Africa are in many respects better than those of the other self governing Dominions, partly because the Union's expenditure on the Great War was relatively small—£26,675,000—as against Australia's disbursement of £439,334,000 and New Zealand's £80,500,000. Without doubt the Public Debt has risen, and is still rising at a rate that may be considered excessive, having grown from 117 millions in 1912 to 199 millions in 1923 and to 208 millions in 1924, while the population grew from just under six millions in 1911 to only 7,150,000 in 1921. The four years immediately succeeding the conclusion of hostilities in Europe were undoubtedly trying for all who were concerned with the economic destinies of the Union, and a certain amount of political and industrial unrest no doubt had something to do with the slight mistrust with which South African credit was regarded. During the years 1923 and 1924 however the four Provinces of the Union made great strides in shaking off the ill effects of the War, a devastating drought and a succession of locust visitations. There were no far reaching financial departures with the change of Government in the last named year, but the altered trend of the Union's finances was clearly shown by the surplus of £225,000 achieved in 1924 for the first time in several years, this being followed twelve months later by a surplus of approximately £800,000.

Further proof of the improved position of South African finance is afforded by the fact that the accumulated deficit which had grown to over three millions had been reduced on March 31, 1925, to £1,918,000. It may be confidently asserted that at the beginning of 1926 South African credit stood as high as that of any other self governing Dominion. At the end of 1925 the Union placed in London a loan of £4,000,000 at 5 per cent and it met with a ready response.

**CONSOLIDATED REVENUE FUND.**—All revenues of the Union, except those of the Railway and Harbour Administration, are carried to the Consolidated Revenue Fund. This fund comprises the Revenue Account and the Loan Account, the former being credited with all sums received from revenue proper, the latter with moneys derived from the raising of loans, or from the alienation of fixed property and such other moneys as Parliament may direct to be paid to that account. Withdrawals from the Consolidated Fund are only possible under the annual Appropriation Acts, subject to the proviso that unforeseen and necessary expenditure may be met by a withdrawal under special warrants of the Governor-General up to an amount not exceeding in all £300,000.

**FINANCIAL RELATIONS OF PROVINCES.**—Under the South Africa Act and the Financial Relations Act of 1913, each Province receives from the Union funds a subsidy, which until 1922-23 was one-half of the ordinary annual expenditure of the

Province, but was then slightly reduced. All revenues derived from transfer duties, liquor licences and (in the Transvaal labour districts) native pass fees are assigned to the Province, as also are trading and professional licences, education fees, and hospital fees in regard to which the Provinces have power of legislation. A special subsidy of £100,000 per annum is paid to the Orange Free State and Natal (See "Provincial Revenue and Expenditure" following).

**PUBLIC DEBT.** During the year 1924-25 the Public Debt increased by loan flotations on a very favourable basis to the Union both in London and on the local market. It stood on March 31, 1925, at approximately £215,000,000—by no means an excessive burden when it is remembered that this sum includes the capital cost of the railways, which are reproductive in the best sense, as well as of telephones, telegraphs, irrigation works, and other public undertakings which are directly or indirectly reproductive. The following table gives particulars of the gross Public Debt of the Union, the amount of the sinking fund, and the net Public Debt at the end of each financial year (March 31) from 1911 to 1925.

YEAR	GROSS DEBT £	SINKING FUNDS £	NET DEBT £
1911	114,236,969	5,054,620	109,182,349
1912	117,260,534	5,780,246	111,480,288
1913	117,828,994	6,269,104	111,559,890
1914	126,296,250	6,930,611	119,365,639
1915	138,210,778	7,382,961	130,827,817
1916	150,832,734	7,981,861	142,850,873
1917	154,582,673	8,588,213	145,994,460
1918	160,436,840	9,322,065	151,114,775
1919	166,367,869	9,144,935	157,222,934
1920	173,904,818	9,850,106	164,054,712
1921	178,607,939	11,153,198	167,454,741
1922	191,784,936	11,575,502	180,209,434
1923	199,685,868	12,505,627	187,180,241
1924	208,232,528	11,389,624	196,842,904
1925	214,332,683	12,445,076	191,887,607

In 1924 the gross public indebtedness per head of the mean population amounted to £28 13s 3d.

**ANNUAL DEBT CHARGE.**—The annual debt charge of the Union stood at £8,529,930 in 1923-24, compared with £8,456,010 in 1922-23, and £7,786,542 in 1921-22. The charge includes interest payments, cost of administration, and contributions to the sinking fund. The charge per head of mean total population worked out at £1 3s 6d in 1923-24.

**EXTERNAL AND INTERNAL DEBT.**—The following table gives particulars of the external and internal debt of the Union during the years 1923-24.

	1923	1924
EXTERNAL DEBT—		
Amount	£131,650,404	£133,363,220
Per cent of total debt	65.93	64.05
INTERNAL DEBT—		
Amount	£68,029,464	£74,869,299
Per cent of total debt	34.07	35.95
Total debt	£199,685,868	£208,232,528

**REVENUE AND EXPENDITURE.**—The following table shows the ordinary Revenue and Expenditure of the Union (exclusive of Railway and Harbour Administration) for the five years 1920-1925 and (estimated) for 1925-26 and 1926-1927.

YEAR	REVENUE £	EXPENDITURE £
1920-21	29,676,186	25,597,718
1921-22	28,884,270	25,409,025
1922-23	27,234,515	24,065,556
1923-24	24,252,888	24,020,903
1924-25	25,335,543	24,522,753
1925-26	26,092,000	26,547,000
1926-27	26,862,000	27,000,000

The following tables show the principal heads of revenue and expenditure for the years 1922-24.

REVENUE	1922-23 £	1923-24 £
Customs and Excise	7,544,967	8,610,595
Posts, Telegraphs, etc.	2,997,974	3,179,410
Inland Revenue*	16,691,574	12,456,883
	£27,234,515	£24,252,888

\*Including Mining Revenue—£1,473,858 and £2,109,725 respectively.

For the year 1924-25 revenue exceeded that of the previous year by £1,082,655, being £25,335,543.

Of the estimated revenue of £26,092,000 for 1925-26, no less than £19,110,000 was derivable from taxation.

When presenting the 1926-27 Budget to Parliament, the Minister of Finance (Mr. Havenga) was able to announce that, thanks to a bumper mealie crop and a good wool and fruit season, the estimated deficit of £455,000 in the 1925-26 estimates had been turned into a surplus of £500,000. But for the seamen's strike of 1925 the surplus would have been still greater. The chief increases in the actual over the estimated revenue for 1925-26 were in the departments of customs, excise, posts, telegraphs and telephones, and in the diamond tax and stamp duties. For the year 1926-27 a small deficit of £138,000 was budgeted for.

EXPENDITURE	1922-23 £	1923-24 £
General Government	3,024,618	3,952,638
Law, Order and Protection	5,357,880	5,232,231
Higher Education	344,442	328,102
Public Health	760,686	785,932
Lands and Agriculture	1,548,794	1,649,017
Mines and Industries	317,187	371,280
Public Works	762,137	775,474
Posts, Telegraphs, etc.	2,786,758	2,734,621
Native Affairs	415,754	350,483
Miscellaneous	291,290	442,235
Public Debt	8,456,010	7,404,890
	£24,065,556	£24,020,903

In 1924-25 expenditure totalled £24,522,753, and in 1925-26 approximately £24,530,000.

It is to be noted that the figures in the preceding table cover only the audited ordinary expenditure for the two years, and are exclusive of provincial subsidies. Expenditure from loans amounted to £10,617,205 in 1923-24 as against £7,798,225 in 1922-23, railways and harbours being responsible for £5,294,015, local works and school loans for £1,349,621, and irrigation for £906,180.

**PROVINCIAL REVENUE AND EXPENDITURE**—The total provincial revenues from taxation and Union Government subsidies amounted in 1922-23 to £7,728,709 and in 1923-24 to £8,297,051, the subsidies totalling £4,167,266 and £4,378,638 respectively. During the same two years the total provincial expenditure aggregated £8,506,312 and £9,174,606 respectively. On each of these two years' working of the provincial administrations, therefore, there was a deficit. On March 31, 1924, the total indebtedness of the Provinces to the Union Government amounted to £1,064,570, which was increased by March 31, 1925, to £2,178,000, these sums being independent of their indebtedness on account of capital expenditure which on the last-named date reached the approximate figure of £7,500,000. The subsidies given by the Union Government are shortly to be put on a new basis, and in consideration of this the Provinces will surrender certain taxes. Under the new scheme they will be enabled to avoid recurring deficits.

**ROYAL MINT.**—The Pretoria Branch of the Royal Mint was established on January 1, 1923, and exists for the purpose of the manufacture of the British sovereign and half-sovereign. These bear a mint mark "SA" on the reverse. Union silver and bronze coins are also coined. During the year ended March 31, 1924 there were coined at the Mint gold to the value of £1,187 10s 0d, silver, £434,455 10s 0d, and bronze, £1,011 19s 11½d, or £436,554 10s 11½d in all.

**TAXATION.**—In the Union, taxation is chiefly carried out through the impost levied on all incomes exceeding £300 and the duties levied on estates of deceased persons. The native hut and poll taxes yield a yearly revenue of nearly £1,000,000. The following were the revenues by taxation in 1923-24: Income tax, £5,408,555; Excess Profits tax, £27,317; Death and Succession Duties, £441,618; Native taxes, £898,035.

The net total of inland revenue collected during 1924-25 was £12,714,357, of which £6,190,910 (48.7 per cent) was income tax, and £1,811,066 (10.6 per cent) mining.

**DEATH AND SUCCESSION DUTIES**—Since 1922 all estates of deceased persons have been liable to a duty ranging from ½ per cent on estates up to £2,000 to 17 per cent on estates of £1,000,000 and over. Act No. 29 of 1922 also provides for the levy, in the case of any person becoming entitled to property, of a succession duty ranging from 2 per cent on the dutiable amount in the case of a direct descendant or ascendant to 10 per cent in the case of a cousin or more distant relative, or of a stranger in blood or of an institution. Widows, charitable or educational institutions, institutions for the advancement of science or art, and provincial administrations and municipalities are exempt.

**INCOME TAX**—In the Union of South Africa the principle of a general income tax was adopted in 1914. At that time mining profits were separately taxed. Both methods were, however, merged under the Income

Tax (Consolidation) Act No. 41 of 1917, amended by Act 39 of 1919, Act 45 of 1920, and Act 29 of 1921. The tax is chargeable on income of married couples over £400 at the rate of 1s in the £, plus 1d for every £ in excess of £400. For example, an income of £1,750 is liable to tax on £1,350 (£400 allowed free) at the rate of 1s 11½d in the £. On those unmarried, the £300 abatement is reduced by £1 for every £1 the income exceeds £300, so that at £600 no abatement may be claimed.

**Abatements**—These are allowed for insurance premiums up to £50, for each child (½50) under 18, and for each dependant (£30), and for friendly or benefit society subscriptions up to £10, but these abatements are reduced by a sliding scale when the income exceeds £600.

**Companies**—Public companies pay 1s 6d in the £ on the taxable amount of their incomes. Private companies pay the same as individuals. No abatement is allowed in respect of companies. Companies do not pay super-tax.

**DIVIDEND TAX**—All dividends distributed by companies (other than private ones) operating in South Africa are taxed at the source. The tax payable by companies on dividends distributed is Gold or diamond mining—1s 6d for every £ of dividend, other companies—1s for every £ of dividend.

**EXCESS PROFITS DUTY**—This was formerly levied, but lapsed on June 30, 1920.

**LAND RENT**—The land revenue system varies in each Province, quit-rent being paid in Cape Province, Natal, and the Orange Free State, a direct land tax being levied on all farms (according to extent) in the Transvaal. The total amount collected in land revenue in 1924 was £173,578, as against £158,671 in 1923, and was derived as follows: Cape Province, £134,361; Natal, £2,900; Transvaal, £18,086; and Orange Free State, £17,271.

**MINING TAXES**—The gross amount of taxes collected from the gold mines in the year 1924-25 was £1,811,066. The total profit of the mines in which the Union Government has a share was £18,321,257, of which the State received £6,986,370. The export tax collected on diamonds was £727,954.

**NATIVE TAXES**—Hut tax is levied on natives in Cape Province at 10s per hut, in Natal at 14s per hut, and in a small area of the Orange Free State at £1 per hut. In the Transvaal there is a poll tax of £2 levied annually on each adult male native, with a further tax of £2 per wife on every native with more than one wife. Native farm labourers and natives in municipal locations are allowed a reduction of £1 each in respect of their tax liability. In the Orange Free State there is a poll tax of £1 levied annually on each adult coloured person. In a recent year hut taxes yielded £333,987 and poll taxes £524,832.

**SUPER-TAX**—In addition to the normal income tax, a super-tax is payable on incomes up to £5,000, but this abatement is diminished by £1 for every £ by which the income exceeds £2,500. Thus an income of £4,000 pays, in addition to income tax, super-tax on £3,000, and incomes of £5,000 and upwards pay super-tax on the whole amount at the following rates: On incomes not exceeding £24,000—for every £, one shilling, and as many five hundredths of a penny as there are pounds in the amount. On all incomes in excess of £24,000—five shillings for every £ of such incomes.

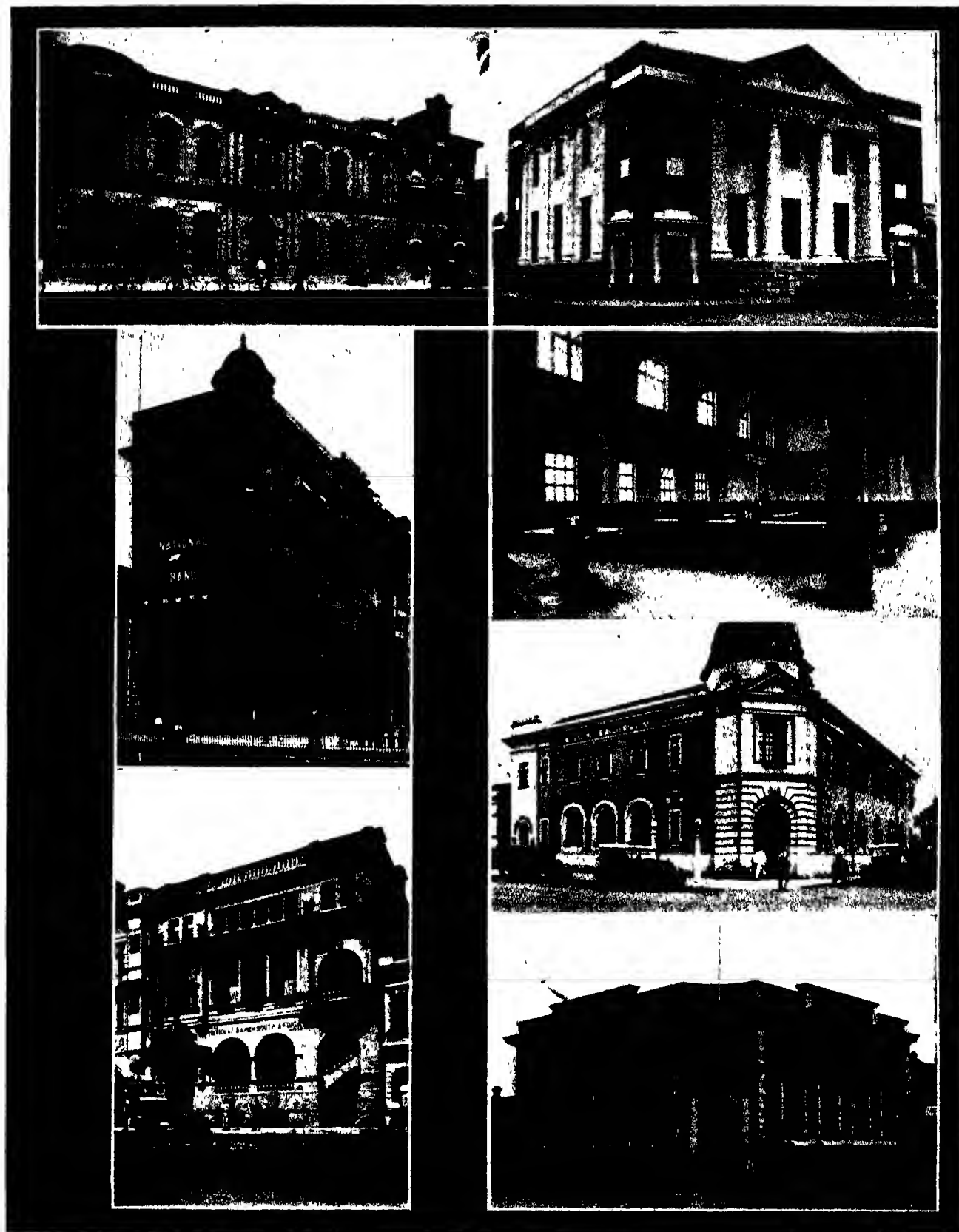
## BANKING

The history of banking in South Africa is one of a number of small private and district banks operating within limited spheres until the foundation of the London and South African Bank in 1861 and of the Standard Bank of South Africa in 1862 started a period during which the larger corporations gradually absorbed the small institutions. The year 1891 was marked by the passage of the Cape Bank Act which gave the Government of the Colony a greater control over banks, especially in regard to their note issue and the publication of returns. At different times the financial condition of the colonies was variously affected by speculative booms followed by severe crises, the most serious of these occurring in 1886-1890 (following the proclamation of the Witwatersrand goldfield and the foundation of Johannesburg) and later from 1902 to 1907, when a long period of acute depression succeeded the Anglo-Boer War and the collapse of the diamond market. After 1907 a rapid recovery occurred, and the Union was inaugurated. Later the European War led to an unprecedented inflation of credit and currency, the effects of which were felt in the country long after the restoration of peace.

Generally speaking, the outlook for the banks working in South Africa was brighter at the end of 1925 than for many years past, an event of far-reaching importance during that year having been the return to the gold standard and the disappearance of the premium on gold. This has brought about a complete alteration from the exchange conditions which prevailed in previous years, and one much to the advantage of both South African exporters and the banks. The former will no longer be faced with a substantial premium on South African pounds when remitting home the proceeds of their overseas sales, whilst excessive London bank balances should become a thing of the past. Further, the ability of South Africa to return to a complete gold standard makes for confidence in the country's economic stability, and will, it is hoped, encourage the investment of capital in its commercial development.

**BANKS ACT.**—Under the Banks Act of 1917 all banks are required to render to the Union Treasury detailed returns of their assets and liabilities within and without the Union as at March 31, June 30, September 30, and December 31 in each year, and such further returns as the Treasury may require to satisfy itself that the laws relating to bank note issues are being complied with. The position in regard to the bank note circulation in the Union is, accordingly, continuously under scrutiny by the Treasury.

**CURRENCY.**—The coinage in use throughout South Africa is the same as in Great Britain, except in the Portuguese Possessions. Two local terms are to be noted: a "tikkie," which represents 3d, and a "dollar," which is the equivalent of 1s 6d. Union Government notes for £1 have been on issue since 1915, and notes of authorised South African banks for 10s, £1, £5, £10, £20, and £50, issued to the Banks by the Government against the deposit of an equivalent amount in Government Stock, were for many years legal tender. Since 1922 these have been superseded by the issue of Reserve Bank Notes. The restriction on the exportation of gold was removed in 1922, but the currency from £1 upwards remained on a paper basis until July 1, 1925, when the Union returned to the gold standard, all notes henceforth being convertible.



THE NATIONAL BANK OF SOUTH AFRICA LTD., Pretoria

- |                                   |   |
|-----------------------------------|---|
| 1. Head Office, Pretoria.         | 4. Bank Premises, Pietersburg.                  |
| 2. Bank Premises, Johannesburg.   | 5. Type of Branch Banking Hall.                 |
| 3. Bank Premises, Port Elizabeth. | 6. Bank Premises, Pietermaritzburg.             |
|                                   | 7. Bank Premises, Salisbury, Southern Rhodesia. |

(See letterpress, page 40)

**DISCOUNT RATES.**—The South African Reserve Bank under the Currency and Banking Act is obliged to "fix and publish from time to time the rates at which it will discount the various classes of bills." The first announcement made on December 29, 1922, fixed the following rates—

6 per cent for first class commercial bills of not more than 90 days' currency.

6½ per cent for first class agricultural bills with a maturity exceeding 90 days but not exceeding six months.

These rates were lowered by ½ per cent in each case from November 21, 1924.

**EXCHANGE RATES.**—The premium on the South African pound virtually disappeared with the return to the gold standard in 1925. For some time previously it had been unprofitable to ship the gold of the Transvaal mines to London and India for sale, though the South African banks had reduced their charges from 3½ to 2 per cent. With the return to the gold standard a rapid adjustment of the exchange position resulted, the rate falling first to par and then to ¼ per cent discount in terms of sterling for cable transfers on the principal centres. In May 1925 the buying rate on London was 1½ per cent, as against 2½ per cent in May 1924, the selling rate on London being ¾ per cent compared with 1½ per cent.

Towards the end of 1925 an interesting situation arose in connection with the South Africa London exchange rates. Up to November 30 the Reserve Bank and the commercial banks voted the same rates for telegraphic transfers (T.T.), but on that date the commercial banks lowered their rate by ½th to ¼th per cent discount, whereas the Reserve Bank remained stationary at par. As the last-named bank time rates were already based on a lower interest rate than those of the other banks, this meant that an exporter discounting, for instance, a 90 days' bill with the Reserve Bank would receive ¼ per cent more than he would have obtained from the other banks. But on December 31, 1925, the commercial banks adopted the same rates as the Reserve Bank, both for T.T.'s and time bills.

It has been inferred from this that the Reserve Bank now exercises a predominant influence over the movement of the overseas exchange rate, and that its avowed policy of reducing the interest rates in South Africa is gradually becoming effective.

**LEADING BANKS.**—There are six joint stock banks trading in the Union. Of these, the Standard Bank of South Africa, Limited, has its head office in London, the National Bank of South Africa, Limited, in Pretoria, the Netherlands Bank of South Africa and the Transvaal Commercial Bank in Amsterdam, Holland, the Stellenbosch District Bank, Limited, in Stellenbosch, in the Cape Province, and the Colonial Banking and Trust Company, Limited, in Johannesburg. The first two banks carry on business in all the Provinces of the Union, the Netherlands Bank of South Africa confines its operations to the Cape of Good Hope, Transvaal, and Orange Free State, the Transvaal Commercial Bank has branches in Johannesburg and Capetown, the Stellenbosch District Bank is a purely local concern, having no branches, and the Colonial Banking and Trust Company has branches in Capetown, Pretoria, Durban, and East London. On November 30, 1925, the total liabilities to the public of all banks in the Union (including the South African Reserve Bank) were £67,363,903, cash reserves in the Union amounting to £10,955,745. The percentage of cash reserves to liabilities was 16.3 and of cash reserves to

demand liabilities 22.6. Advances and discount amounted to £45,481,930, and the percentage of these to liabilities to the public was 67.5 per cent.

**LAND BANK.**—See under "Agriculture."

**NATIONAL BANK OF SOUTH AFRICA, LIMITED.**—Established in 1891 after passing through a period of severe financial stress succeeding the War, the National Bank now shares with the Standard Bank the greater part of the commercial business of the Union, and possesses over 300 branches and sub-branches in South and East Africa. Towards the end of 1925 considerable interest was aroused by the announcement that the National Bank (together with the Anglo-Egyptian Bank) would shortly be acquired by the Colonial Bank, which in turn was to be known henceforth as Barclays Bank (Dominion Colonial and Overseas). (See also article following.)

**NETHERLANDS BANK OF SOUTH AFRICA.**—Having its origin in South Africa in 1891, this old-established Dutch bank, with headquarters at Amsterdam, has confined its operations to the Cape, Transvaal, and Orange Free State provinces, and in 1925 amalgamated with the Transvaal Commercial Bank (Transvaal Handelsbank), which is also controlled from Amsterdam, having two offices in South Africa to the Netherlands Bank's eighteen. The combined balance sheet presented in June 1925 showed that the new arrangement increased the total of the balance sheet of the Netherlands Bank by about £1,000,000 to £3,045,000.

**RESERVE BANK.**—The South African Reserve Bank was established by the Currency and Banking Act of 1920 to secure and organise the credit of the State. The head office is at Pretoria. The bank management consists of a board of eleven directors, of whom three are nominated by the stock-holding banks, three are elected by stockholders other than banks (one actively engaged in commerce, one in agriculture, and one in some other industry), three are Government representatives, while the Government also appoints the Governor and Deputy Governor of the bank. All the directors must be British subjects and must reside in the Union. The Reserve Bank has the sole right to issue notes, regulate discount rates and provide for the expansion or contraction of the currency as required. Private Joint Stock Banks must retain credit balances with the Reserve Bank equal to 10 per cent of their floating deposits and 5 per cent of their time liabilities. The Bank is debarred from engaging in trade, accepting money on fixed deposit or advancing money on mortgage. The capital is £1,000,000. With the establishment of the Reserve Bank the right of private banks to issue notes terminated as on June 30, 1922.

The following table shows the liabilities and assets of the Reserve Bank as at January 9, 1926—

LIABILITIES	£
Capital .. .. .	1,000,000
Reserve .. .. .	258,498
Notes in circulation ..	8,573,751
Deposits .. .. .	
Government .. .. .	—
Bankers' .. .. .	6,422,741
Other .. .. .	432,640
Bills payable .. .. .	—
Other liabilities .. .. .	612,833
<b>Total .. .. .</b>	<b>17,300,633</b>

ASSETS	
Gold coin and bullion in the Union .. .. .	6,734,662
Ditto outside Union .. .. .	500,000
Gold certificates .. .. .	1,173,423
Subsidiary coin .. .. .	49,655
Bills discounted .. .. .	
Domestic .. .. .	16,429
Foreign .. .. .	5,488,936
Union Govt. Treasury bills .. .. .	1,349,400
British ditto .. .. .	885,000
Investments .. .. .	520,540
Other assets .. .. .	880,162
<b>Total .. .. .</b>	<b>17,300,463</b>

**STANDARD BANK OF SOUTH AFRICA, LIMITED.**—This institution, the largest and most influential of the joint stock banks operating in the Union, dates its establishment from 1862 when it was known as the Standard Bank of British South Africa, Limited, its capital then standing at £1,000,000, from which it has gradually risen to the present figure of £10,000,000. The bank which affords every facility for the development of trade with all parts of South and East Africa, the United States of America, and the Continent of Europe acts as bankers to the Government of the Union, to the Imperial Government in South Africa, and to the Governments of Northern and Southern Rhodesia, the Nyassaland Protectorate and the Tanganyika Territory. The head offices are situated at 10, Clements Lane, Lombard Street, and 77, King William Street, London, and there were in 1925 over 320 branches, sub-branches, and agencies in South and East Africa also agencies at New York and Hamburg. (See article following.)

**TRANSVAAL COMMERCIAL BANK.**—See "Netherlands Bank of South Africa."

**SAVINGS BANK.**—In addition to the Post Office Savings Bank (see under "Posts, Telegraphs, and Telephones"), there were eight Savings Banks operating in the Union during 1924 exclusive of the Savings Bank departments of the joint-stock banks and building societies. In these eight savings banks 2,119 accounts were opened during the year, as against 1,378 accounts closed, there being at the end of December 17,340 current accounts open and 271 fixed deposit accounts, while the deposits totalled £1,182,629 current and £23,629 fixed.

**BUILDING SOCIETIES.**—The first building society in the Union was established in the Eastern Province in 1864, and in 1922-23 there were 54 such societies. These societies had a total of 28,965 shareholders, possessing 139,035 shares of the value of £3,835,286. During the year 1922-23 loans (5,485) to the amount of £2,582,134 were granted, and £1,798,166 was received in loan redemption. Loans outstanding at the end of the year amounted to £5,952,173, excluding unpaid interest. The savings banks accounts of these societies had total deposits to the value of £2,378,923, a sum of £3,037,029 having been deposited during the year.

**LOAN CERTIFICATES.**—Since 1919 the Union Government has raised money by means of Union Loan Certificates, which offer a suitable investment for small sums in a Government security bearing a high rate of interest, free of Union income and super tax. The currency of these certificates, which are of the nominal value of £1, £10, and £25, has been extended to 10 years from the date of purchase. The purchase price of a single certificate (originally 15s. 6d.) was raised to 10s. on April 8, 1923, and after the

expiration of 12 months from the date of issue the value thereof increases at the rate of one penny per month, with a bonus of 3d. and 6d. added at the end of the eighth, ninth, and tenth years respectively, so that at the end of five years the value is 20s. and at the end of 10 years, 26s.

The total number of individual holders of single and multiple certificates was estimated at November 30, 1925, at between 80,000 and 90,000. Up to that date 8,414,000 certificates (value £6,576,000) had been issued of which 3,046,000 (£2,370,000) were repaid, leaving a balance of 5,368,000 certificates, value £4,206,000.

**SAVINGS CLUBS.**—The Savings Clubs Scheme is a development of the certificate issue its object being to encourage co-operative saving among groups of employees and others. Savings clubs can be formed by any one group of from five persons upwards, the necessary books being supplied free of charge. Each club appoints its own treasurer, who accepts deposits from club members in the smallest amounts. The collective club savings are invested, as they come in, by the club treasurer in Union Loan Certificates, which are subsequently distributed among the members. The movement was launched experimentally in Capetown in March 1920, and since that date 930 Savings Clubs have been formed, the number on the register on March 31, 1924, being 913, of which 244 were school clubs. The certificates purchased amounted to 21,539 units, school clubs being responsible for 10,381. The repayments totalled 14,114 units.

## REPRESENTATIVE BANKING ENTERPRISES

### THE STANDARD BANK OF SOUTH AFRICA, LIMITED.

**Inception.** For some time prior to the actual formation of this Bank there had been general agreement with, and support for, the project among a group of Port Elizabeth merchants, the most prominent of whom was Mr. John Paterson, the first chairman of the institution, and this feeling was reflected generally in the country, as also among South African merchants in London. In the year 1862 the English Companies Act was passed, and a great impetus was given to the formation of corporations under its provisions. At that time Cape Colony possessed some thirty banks, all operating on the joint-stock principle. The Standard Bank was among the earliest institutions to register with limited liability under the new Imperial Act, and it was duly incorporated in 1862 with the title of "The Standard Bank of British South Africa, Limited."

**Development.**—Numerous articles had appeared in the Press of the day expressing doubts as to the advisability of extending the privilege of limitation of liability to banking institutions, and it is obvious that the promoters of the new Bank were to some extent influenced by such warnings, for the prospectus provided that, on the first issue of shares, which was limited to 5,000 (or half the total number), a deposit of £1 per share should be made on application and £1 on allotment, with further calls not exceeding £5 each at intervals of not less than three months, until £25 per share had been paid. This provision was clearly a compromise between the conflicting opinions then current concerning the principle of limited liability as distinguished from unlimited liability. The success of the issue

was never in doubt, and long before the share lists closed applications had been received for 43,000 shares. They were even bought on the Stock Exchange itself before allotment, at premiums ranging from 30s. to 40s. per share. In January 1863, only a few months later, the Bank commenced operations through its agents at Port Elizabeth, and shortly afterwards the Commercial Bank of Port Elizabeth amalgamated with it, while the Colesberg Bank and the British Kaffrarian Bank were taken over in the same year.

**Increased Capital.**—The absorption of these colonial banks necessitated the issue of further shares, and by July 1863 the capital had reached £2,000,000, which was the maximum permitted by the Articles of Association. A special general meeting was called for April 1864, and this meeting authorised the increase of the nominal capital to £3,000,000, thus making the total paid-up £750,000.

**Dividends.**—Dividends of 11 per cent., 8 per cent., and 2½ per cent. were paid for the years 1863, 1864, and 1865 respectively. The period following (up to 1871) was essentially one of lean years, distributions at the rate of 4 per cent. were, however, made and a few thousands added to Reserve, until in 1868 the amalgamation account was wiped out by the appropriation of the balance of the Reserve Fund. One result was that, for the first and only time, the balance sheet of June 1868 showed nothing standing to that account.

In 1872 the dividend was raised to 6½ per cent., and thereafter a steady increase was recorded until 1902, when 18 per cent. was paid, and this high level has been maintained since that date.

**Bank Premises.**—In 1867 the Bank acquired its own London premises in Clements Lane, and these have been several times enlarged, now extending back into Nicholas Lane. In Capetown during 1870 the institution purchased the premises it had been leasing since 1861 in Adderley Street, and continued to occupy these until 12 years later it moved into its present building on the opposite side of the street.

**Progress.**—The next decade opened with symptoms of improvement, and a tremendous stimulant was given to trade and business of all kinds by the discovery of the Diamond fields. At the close of 1875 the Standard Bank was appointed sole banker to the Government of Cape Colony under arrangements which were formally sanctioned by the Cape Parliament. It held this position until the incorporation of the colony into the Union of South Africa in 1910, when it became the Bank of the Union Government in Cape Province.

Several of the local banks were absorbed about this period, but the most important consolidation of banking interests occurred in 1877, when the assets and liabilities of the London and South African Bank were taken over by the Standard Bank. Early in the same year the Transvaal was annexed to Great Britain and branches of the Bank were at once opened in that Province. Business expanded rapidly, and the banking account of the new Government was entrusted to the Standard Bank, which played an important part in the development of the country, making large cash advances to the Imperial authorities. This was a prosperous period for trade, and by 1879 the Bank had forty-three branches open, besides holding about two-thirds of the specie of Cape Colony in its coffers. In 1880 the paid-up capital of the institution was increased to £1,000,000.

**Another Crisis.**—Following the war in 1880, however, as the result of which the Transvaal was restored to the Boers, speculation in diamond shares, overtrading, diminished production, and political unrest were responsible for another crisis, and the measure of the inflation may be judged from the fact that imports, which in 1882 reached the high level of £1,372,000, had contracted by 1886 to £3,800,000 while wool exports receded in the five years ending 1885 from £2,881,000 to £1,420,000. A great number of commercial failures resulted, and by the middle of 1883 the Standard Bank held overdue paper amounting to £350,000, equivalent to 5 per cent. of the total bills in its hands, while apart from direct appropriations from profits it was compelled to take £130,000 from its Reserve Fund to provide for heavy losses all round. Other banks, however, were in a worse position, having overdue bills equal to 15 per cent. of their total holdings. In 1883 the name of the Standard Bank was altered to its present title.

**Trade Revival.**—In 1884 the completion of railway communication between the Eastern and Western Provinces had an important bearing in one or two directions. The Cape Government concentrated its Departments, including the railway management at Capetown, and it was finally decided to transfer the whole of the Bank's headquarters' staff from Port Elizabeth to that city, the Cape Government being at that time the Bank's largest customer, such removal being made on December 31, 1885. Another result of distinct advantage to the Bank's internal organisation was the restriction of note issue to three or four of the larger centres of business, instead of allowing every branch to issue its own notes. At the close of this decade, which was marked by a great improvement in the prospects of South African trade, due partly to the discovery of the goldfields in the Transvaal, the position of the Standard Bank was as follows: Paid-up capital £1,000,000, Reserve Fund, £530,000, total deposits, £9,014,000, total advances, £7,353,000.

**South African War Period.**—The Bank maintained a strong position during the years from 1890 till the outbreak of the South African War, although during 1896-97 the country passed through a period of great anxiety owing to the revolt in Matabeleland and Mashonaland, combined with drought and milderpest in many districts. The outbreak of war in 1899 naturally brought about the complete disorganisation of ordinary business, and many of the Bank's branches were at first isolated. In spite, however, of the general situation an agreement was arrived at between the Chief Paymaster and the Standard Bank by which all Imperial Army Bills on London were to be purchased at a uniform rate of 1 per cent. discount, and twelve months later the Lords of the Treasury expressed themselves satisfied as to its terms, "more especially in view of the admirable manner in which the business had been conducted, of which they took the opportunity of placing on record their appreciation." It was only the Bank's widely extended branch system that enabled it to provide funds where needed and at short notice for the whole field of operations in South Africa. Immediately after the war, trade was greatly overdone, and the general inflation which culminated in 1903 was followed by a severe depression lasting for a number of years. The Standard Bank throughout that time maintained its sound position, and in 1910 extended its branch system to British East Africa. The development of the institution during that period



is shown by the following figures. Branches and agencies in 1898, 93, in 1909, 153, in 1913, 215, while the extension of business was on a scale never previously witnessed in its history. The paid-up capital in 1913 had reached the figure of £2,000,000.

The following year witnessed the outbreak of the Great War, in the course of which over 800 members of the staff of the Bank served with H.M. Forces, and 104 gave their lives. The strain on the staff in South Africa was aggravated owing to the anxieties caused by the rebellion in that country in 1915. Although certain towns where the Bank has branches were for a time in the possession of the rebels no loss of assets occurred, and the rebellion was speedily crushed.

On the completion of the conquest of German South West Africa and the German territories of East Africa branches of the Bank were established in those regions. In 1920 the African Banking Corporation was absorbed by the Standard Bank, and an interest acquired in the Bank of British West Africa.

**Balance Sheet.** As was inevitable, the War was followed by financial stress and stagnant trade, with the result that, in common with other countries, South Africa experienced a period of acute industrial unrest. Notwithstanding these adverse circumstances, the Bank continued to progress, and it has reached the favourable financial position disclosed by the following balance sheet, published on March 31, 1925—

LIABILITIES	£	s	d.	£	s	d.
Authorised capital	10,000,000	0	0			
Capital subscribed, 445,833 shares of £20 each	8,916,660	0	0			
Called up £5 per share		2,229,165	0	0		
Reserve fund		2,893,335	0	0		
Notes in circulation		474,593	0	0		
Deposit, current and other accounts, including provision for contingencies		47,031,133	2	2		
Drafts outstanding and acceptances under credits		1,879,755	10	3		
Customers' bills for collection, per contra		6,483,566	5	3		
Profit and loss Balance as per account below		390,191	2	4		
		£61,381,739	6	0		
ASSETS	£	s	d.	£	s	d.
Cash in hand and with Bankers (including deposit of £2,386,968 with South African Reserve Bank in terms of the Union of South Africa "Currency and Banking Act, 1920")	6,518,976	13	4			
Cash at call, and short notice	2,830,000	0	0			
Native gold in hand and in transit		9,348,976	13	4		
		142,776	3	4		
*Investments— British Government Securities, Colonial Government, Municipal and other Securities (including deposits of Stock with the Union Government)	4,977,392	14	4			
Bank of British West Africa Ltd., 33,334 £10 Shares, £4 paid	125,002	10	0			
*These investments appear at, or under cost, and below market values, as at 31st March, 1925		5,102,195	4	4		
Bills of exchange purchased and current at this date		7,281,310	11	10		
Bills discounted, advances to custo- mers and other accounts		29,835,012	12	11		
Remittances in transit		2,880,280	11	8		
Customers' bills for collection, per contra		6,483,566	5	3		
Bank property and premises (includ- ing furniture and fittings) at cost, less amounts written off		1,273,516	14	5		
Stamps, stationery, and open policies		33,895	8	11		
		£61,381,739	6	0		

PROFIT AND LOSS ACCOUNT			
Dr	£	s	d.
To Interim dividend at rate of 14 per cent per annum, paid 23rd January, 1925	156,011	11	0
„ Bank premises account	75,000	0	0
„ Balance carried to balance sheet	390,191	2	4
	£621,212	13	4
Cr	£	s	d.
By balance unbalanced, March 31, 1924	112,281	2	3
„ net profits for the year ended 31st March, 1925 (after making full provision for bad and doubtful debts and contingen- cies)	508,951	11	1
	£621,212	13	4

A dividend of 7s per share on 445,833 shares (being at the rate of 14 per cent per annum) was paid absorbing £312,083 2s, leaving to be carried forward to next account the sum of 100,149 11s 4d.

At September 30, 1925, on the liability side of the issued statement of accounts for the half year the notes in circulation were placed at £505,765, deposit, current and other accounts, including profit and loss and provision for contingencies, £49,202,053, drafts outstanding and acceptances under credits, £2,068,344, and customers' bills for collection, £7,600,346. On the assets side, cash in hand and with bankers (including deposit of £2,457,908 with the South African Reserve Bank) was given as £6,982,463, cash at call and short notice, £3,105,000, native gold in hand and transit, £227,372, investments, £5,106,204, bills of exchange, £6,518,709, bills discounted, advances and other accounts, £31,598,109, remittances in transit, £2,010,300, customers' bills for collection, £7,600,346, bank property and premises, £1,314,795, stamps, stationery and open policies, £29,580. An interim dividend was declared of 7s per share (being at the rate of 14 per cent per annum), subject to income tax, out of the profits for the half year.

**Activities.** Every description of banking business is undertaken by the Standard Bank, including negotiation and collection of bills, foreign exchange drafts and letters of credit, purchase and sale of stocks, trustee and executor business, etc., while strongrooms are provided for the use of customers, and special departments undertake the assay and realisation of gold and all mineral ores.

**Branches and Agencies.**—The Bank has to-day more than 300 branches and agencies in Cape Province, Natal, Orange Free State, Transvaal, Basutoland, Rhodesia, South West Africa, Portuguese East Africa, Belgian Congo, Nyassaland, Kenya Colony, Tanganyika Territory, Uganda and Zanzibar, with agents and correspondents in all the principal cities of the world.

**Directorate.**—Mr William Reiersen Arbuthnot, Sir David Miller Barbour, K.C.S.I., K.C.M.G., Mr Edward Clifton Brown, Mr Stanley Christopherson, Mr Robert Edmund Dickinson, Mr James Fairbairn Finlay, C.S.I., Mr Solomon Barnato Joel, J.P., Mr Horace Peel, The Right Honourable the Earl of Selborne, K.G., G.C.M.G., Mr William Smart, and the Right Honourable Lord Sydenham, G.C.S.I., G.C.M.G., G.C.I.E., G.B.E., F.R.S.

**Offices.**—Head office 10, Clements Lane, Lombard Street, E.C. in South Africa. Adderley Street, Capetown.

**Cables.**—Capetown, Johannesburg, Durban and Mombasa—"Derby"  
(See illustration following page 34.)

## THE NATIONAL BANK OF SOUTH AFRICA, LTD.

**Inception.**—This important institution was established in the year 1890 as "The National Bank of the South African Republic," but in 1902 it was incorporated by Order in Council under its present title.

**Activities.**—Banking business of every description is transacted at all branches, and the institution acts as bankers to the Government of the Union of South Africa in the Transvaal, Orange Free State, and Natal.

**Development.**—The growth of the Bank has been aided by the absorption of other institutions, including in 1910 the National Bank of the Orange River Colony, in 1912 the Bank of Africa, and in 1915 the Natal Bank. Several branches were opened at this period, but were later abandoned, having proved unprofitable. The conditions resulting from the world wide trade depression subsequently caused many failures in South Africa, and reacted unfavourably on the volume of business done by the institution under notice. In spite of this, however, and notwithstanding the restricting influence of the War, the progress of the Bank has been steady. A scheme for the reduction of capital was put into effect in 1923, and the directors adopted a policy of caution. Bad and doubtful debts having been provided for, a reserve created and ample provision made for property depreciation, the Bank is now in a stronger position than ever. On December 25, 1925, the institution entered into an amalgamation agreement with Barclay's Bank Ltd., The Colonial Bank Ltd., and the Anglo-Egyptian Bank Ltd., thereby still further assuring its status.

**Financial Position.** Authorised capital, £2,800,000 (400,000 shares of £7 each, fully paid), subscribed capital, £2,075,500 (296,500 shares of £7 each fully paid). The Bank has purchased and holds 645 ex-empire shares. For the year ending March 31, 1925, the profits, including £28,127 10s, brought forward from last year, amounted to £244,411 0s 8d, after deducting bad and doubtful debts, and allowing for property depreciation. The directors, however, did not consider that it was yet advisable to modify their declared policy of establishing adequate reserves before resuming dividend distributions, and accordingly no dividend was paid for the year, the profits being allocated as follows: To Reserve Fund (raising it to £300,000) £150,000, to Pension Fund, £50,000, to balance to be carried forward, £44,411 0s 8d, total, £244,411 0s 8d.

**Directorate.**—Messrs James R. Leisk, C.M.G. (chairman and managing director), J. Emrys Evans, C.M.G. (vice-chairman), Alexander Aiken, Sir Drummond Chaplin, B.G.E., K.C.M.G., M.I.A., Mr Charles Maggs, Sir Ernest Oppenheimer, M.I.A., Messrs James B. Taylor, Henry O.K. Webber, Walter S. Webber, William Dunlop and Leonard Line, J.P.

**Head Office, Pretoria.**—General Manager, Mr George R. Paterson, assistant general managers, Messrs Harry Judson, Ernest L. Jackson, Alexander Sutherland, (Witwatersrand), and John H. Pagan (Natal) Secretary, Mr C. P. Mathews.

**London Committee of Management.**—Messrs Herman B. Sim (chairman), Arthur B. Gillett, George H. Raw, Richard B. Edwards and Morgan W. J. Bull.

**London Offices.**—Circus Place, London Wall, E.C.2, and 111, St. Martin's Lane, Trafalgar Square, W.C.2.

**New York Agency.**—44, Beaver Street, Wall Street District.

**Branches.** There are now over 350 branches, sub-branches and agencies in South Africa, and offices in London, New York, Antwerp, Bombay, and Mauritius, with agents and correspondents in all parts of the world.

(See illustration, page 37.)

### INSURANCE

The Insurance Act of 1923 placed all insurance matters in the Union on a common basis, and repealed the old colonial laws either wholly or in part. Its provisions had been previously discussed with insurance companies and others concerned. At the end of 1925 the returns which have to be made under this Act had not yet been circulated, those up to December 31, 1923, published by the Union Treasury Department, being of the Life Assurance Companies transacting business in Cape Province in accordance with the provisions of the Life Assurance Act, 1891 (Cape of Good Hope). The various figures quoted below are, consequently, in respect of life assurance only, having no bearing upon the large volume of accident, fire, motor car, workmen's compensation, burglary, plate glass, sickness, employers' liability, marine, livestock, and fidelity guarantee insurance business carried on by the leading general insurance companies, which operate either from their own offices in the principal cities or through agencies.

**COMPANIES.**—Following are the South African Assurance Companies which made returns for 1923 under the Cape of Good Hope Act, 1891: African Homes Trust, Ltd.; African Motherhood Endowment; Southern Life Association of Africa (see article, page 42); South African Mutual Life Assurance Society; South African National Life Assurance Company, Ltd.; Federal Assurance Society; United Provident Assurance Society; South African Liberal Life Insurance Company, Limited.

Among other life companies with offices in the Union are: The African Life Assurance Society, Ltd.; National Mutual Life Association of Australasia, Ltd.; Colonial Mutual Life Assurance Society; Norwich Union Mutual Life Office; Sun Life Assurance Company of Canada; Law Union and Rock Insurance Company, Ltd.

**OTHER COMPANIES.** In addition to the above-mentioned companies, the following important institutions do a large general business within their several spheres: African Guarantee and Indemnity Company, Limited; Alliance Assurance Company, Limited (London); Atlas Assurance Company, Limited (London) (see article and illustration, page 43); Board of Executors (Capetown); Caledonian Insurance Company (Edinburgh); Central Insurance Company, Limited (Capetown); Commercial Union Assurance Company, Limited (London); Employers' Liability Assurance Corporation, Limited (London); General Accident, Fire and Life Assurance Corporation, Limited (London); Gresham Life Assurance Society, Limited (London); Guardian Assurance Company, Limited (London); Liverpool and London and Globe Insurance Company, Limited (London); London and Lancashire Insurance Company, Ltd.; London Assurance, London and Scottish Assurance Corporation, Limited (London); Maritime Insurance Company, Limited (Liverpool); Merchants' Marine Insurance Company, Limited (Capetown); Netherlands Insurance Company of 1845, Limited (Amsterdam) (see article, page 45 and illustration, page 46); New Zealand



SOUTHERN LIFE ASSOCIATION, Capetown

1. General Office, Ground Floor.
2. Detail of Beautiful Vestibule.
3. Corner of Board Room.

(See letterpress, page 42.)

Insurance Company, Limited (Wellington, N.Z.) (see article and illustration, page 44), North British and Mercantile Insurance Company, Limited (London), Northern Assurance Company, Limited, Ocean Accident and Guarantee Corporation, Limited (London), Railway Passengers' Assurance Company (London), Royal Exchange Assurance Corporation (London), Scottish Union and National Insurance Company (Edinburgh), South African National Trust and Assurance Company, Limited (Capetown), Southern Cross Assurance Company, Limited (Melbourne), Standard Life Assurance Company (Edinburgh), Triton Insurance Company, Limited (Calcutta), Union and National and General Assurance Company of South Africa, Limited (Capetown), Union Insurance Society of Canton, Limited (Canton), Yorkshire Insurance Company, Limited (York) (see article following)

**GROWTH OF LIFE ASSURANCE BUSINESS.**—The progress of life assurance business in Cape Province may be observed from the following figures showing the policies in force and the sums assured in five year periods 1908, 78,606 and £21,050,312, 1913, 139,101 and £28,001,711, 1918, 232,387 and £36,091,380, 1923, 281,183 and £48,761,611. The average sum assured in the last-named year was approximately £75 per head of the European population, and of all races in Cape Province £18 per head.

**INSURANCE ACT, 1923.**—The Act applies to all persons or bodies of persons (other than local authorities, friendly societies, burial societies, and trade unions) carrying on insurance business in the Union. Provision is made for the registration of

insurance companies and for the lodging of security, which may in certain circumstances be increased or decreased, with the Treasury. Every company registered must have a chief office and a principal officer in the Union, and is required to render to the Treasury annually a duly certified revenue account, profit and loss account, and balance sheet. The classes of business subject to the provisions of the Act are accident, bond, investment, burglary, employers' liability, fire, industrial, life, livestock, marine, motor, and plate glass insurance. An actuarial investigation into the financial position of life insurance companies at intervals is provided for. Minors of eighteen years and over may insure their lives. Persons insured may, without consent of the insurance companies involved, engage in military or naval service in defence of the Union. Certain protection against life insurance policies being taken in execution by creditors of the insured is given. The contingency of life insurance companies amalgamating or life insurance business being transferred from one company to another is regarded. Companies having their head offices in the Union may be wound up under specific conditions in the event of their being proved insolvent. Certain requirements must be complied with by persons initiating insurance business in the Union or dealing with insurance in various other ways. There are penalties for infringements of the Act.

**POLICIES AND SUMS ASSURED.**—According to the returns for the year ended December 31, 1923 under the Act of 1891, the number of policies held by foreign companies was 94,699, as against 95,105 in 1922, and the sums assured totalled £18,547,890 in 1923, compared with

£17,790,189 in the previous year. The eight South African companies held 186,484 policies in 1923, compared with 190,047 in 1922, the total amount of sums assured being £30,213,715, compared with £30,171,967. The grand totals for 1923 were, therefore, 281,183 policies and £48,761,611 assured, the latter figure being £793,455 over the total recorded for 1922.

**TOTAL ASSETS.**—The total assets of South African and foreign insurance companies making returns for that year stood at December 31, 1923, at £14,062,690, compared with £13,260,446 on the corresponding date of 1922.

## REPRESENTATIVE INSURANCE COMPANIES

### THE SOUTHERN LIFE ASSOCIATION.

**Inception.**—This Association was founded in January 1891 by the late Mr William Elliott, who was its first manager, the original chairman of the board having been the late Dr Thomas Douglas, of Capetown.

**Development.**—Started as a Mutual Association without share capital or other financial backing, from the commencement its policy has been one of cautious and steady progress. In its first year a life assurance fund of £2,020, after debiting all expenses and revenue accounts for that year, was accumulated, and this amount was reserved out of a premium revenue of £4,363. By the end of its third year it had total funds (life and accident) amounting to £10,000 odd, and at the end of 1900 this had increased to £145,487. The first million was reached in 1913, just 22 years after the inception of the Association, the second in 1919 and the third in 1923. The valuation



YORKSHIRE INSURANCE CO. LTD., Capetown.  
Head Office for Africa, on Valuable Site, Corner of Strand and St. George's Streets.



1 Head Office, Capetown.

ATLAS ASSURANCE CO. LTD

2. Branch at Johannesburg.

basis and the distribution of bonus have shown similar consistent progress. At almost every valuation the basis has been strengthened and the bonus increased. Throughout its existence the institution has never looked back, but has annually shown continuous expansion.

**Statistical.**—The last valuation was made on a  $\frac{3}{4}$  per cent net basis, the rate of interest being  $\frac{1}{2}$  per cent less than that for the previous valuation, by which alteration the basis of reserves was strengthened by £64,831. The result was that a compound reversionary bonus of 32s per cent per annum was declared. The rates of premium are remarkably low, and the chairman in his speech at the annual meeting in March 1924 stated that on a comparison with 77 offices the bonus, allowing for the lower premiums of the "Southern," was equivalent to a simple reversionary bonus of 45s per cent per annum on the basis of the average premiums of the said offices. Other figures for 1924 are: Total life policies in force, 20,909; total life sums assured, £12,535,989; total annual income, £632,634; total claims paid, £1,930,000; total funds, £3,396,600. At the time of writing (1925) the total funds amount to over £3,500,000, with a similar increase in all departments.

**London Branch.**—Bush House, Aldwych  
**Offices.**—Southern Life Buildings, St George's Street, Capetown  
(See illustration, page 41.)

#### THE YORKSHIRE INSURANCE CO. LTD.

**Inception.**—This company, established at York, England, in 1824, commenced operations in South Africa in 1905 under the control of Mr. Don McPhail, who two years

later resigned his position for health reasons. The Transvaal branch, under the management of Messrs Hemphill, Russell & Co (now Hemphill, Quinton & Co), and the Natal branch in charge of Messrs Champion & Co Ltd, were established shortly after the office at Capetown.

**Development.**—The growth of the company's business in South Africa has been most satisfactory, while the efficiency of its office staff and outside service give every reason to expect continued expansion in the future. In 1924 a new building was erected for the company in Capetown, while a site for a building has recently been purchased at the corner of Smith and Field Streets in Durban.

**Financial Position.**—The directors' report for the year ended December 31, 1924 showed that in the life department the number of policies issued was 1,878, against 1,980 in 1923. The gross new sums assured totalled £1,254,130, and reinsurance with other companies £86,432, leaving the net new sums assured at £1,167,698, additional single payments amounting to £20,406 net. The total net premium income of the department was £445,779. Claims by death and maturity, including bonuses, were £185,151, consideration received for annuities was £89,710, and the life and annuity fund was increased by £343,381 to £4,609,981.

The net premium income of the fire department amounted to £881,124 as against £872,957 in the previous year, and the losses were £439,812, a ratio of 49.9 as against 53.0 for 1923. From the balance, £95,000 was carried to profit and loss, the reserve for unexpired risks was increased to £352,450

and the balance carried forward, making the total fire funds £628,585.

In the accident and general account the net premiums amounted to £922,815, as against £866,740 for the previous year, the claims being £460,864. A sum of £80,000 was transferred to profit and loss, the reserve was increased to £377,883, while the amount of total accident and general funds stood at £572,714.

In the marine department premiums amounted to £491,823, compared with £442,905 in 1923, £15,000 was carried to profit and loss, and the fund brought forward was increased to £542,049.

**Capital.**—Authorized capital of the Company stands at £1,000,000, of which £132,410 is paid up, and the assets amount to £8,040,462.

**Head Office.**—St Helen's Square, York  
London office, Bank Buildings, Princes Street, E.C.2  
South African office, 40, St George's Street, Capetown

**Cables.** "Yorkshire," Capetown

#### ATLAS ASSURANCE CO. LTD.

**Inception.**—The Atlas, one of the leading assurance companies in the British Isles for 117 years, decided in 1885 to widen its activities by transacting business in overseas fields, and a few years later it commenced operations in South Africa by appointing an agent in Port Elizabeth.

**Development.**—In 1895 the institution purchased the fire branch of the Aegis Assurance and Trust Co of Port Elizabeth, under which company agencies were established in the principal towns of Cape Colony, Transvaal and the Orange Free State. In 1902 an independent branch was opened in

Capetown, and in 1905 the South African organisations of the Atlas and the Manchester Fire Office were amalgamated, the latter having already absorbed the business of the Commercial Assurance Co Ltd, of Capetown. In 1913 an accident department was opened, and in 1921 marine business was commenced. In 1918 the site and building now occupied by the company in Capetown were purchased, and shortly afterwards the ground in Johannesburg was acquired on which has been erected the fine offices of the branch in that city. From the first the Atlas has placed the security of policy holders before the distribution of dividends, with the result that the total security now exceeds £9,000,000, while the total annual income approaches the sum of £4,000,000.

**Activities.** The company in South Africa transacts a "composite" business, including

#### NEW ZEALAND INSURANCE COMPANY LTD.

**Inception.**—This important and progressive insurance company started South African operations in 1879 with an agency at Capetown conducted by the South African Loan Mortgage and Mercantile Co (since liquidated), the offices being in St George's Street, on the site of what is now the Southern Life Buildings.

**Development.**—Mr Malcolm Smith was the first manager in South Africa. He resigned in 1900, and was succeeded by Mr Frank W Wilson, who four years later returned to Australia. Mr Eric P Hudson followed, and retained the post until 1910, when he was appointed manager of the London branch. His successor was the present occupant of the position, Mr Sydney Smith Bell. Mr Bell came from the East

head office—55, St George's Street, Capetown.

**Branches.** There are branches in Johannesburg and Durban, which are managed by Mr B H Impey and Mr R B Somerset respectively.

Agencies have been established in all important towns throughout the country.

#### MESSRS. JOSEPH LIDDLE.

**Inception.**—This business was established by Mr Joseph Liddle in 1890 four years after the discovery of the goldfields, when he became chief agent for the Norwich Union Fire Insurance Society Ltd. In 1894 he was also appointed chief agent for the Employers' Liability Assurance Corporation. The enterprise has since that date rapidly progressed and to day ranks as one of the largest concerns in the country, transacting



#### NEW ZEALAND INSURANCE CO. LTD.

Company's South African Head Office Premises, St. George's Street, Capetown.

Head Office in Queen Street, Auckland, New Zealand.

fire, accident and marine insurance, and its activities extend over the whole of the southern portion of the continent.

**Branches.**—There are branches at Port Elizabeth, Johannesburg, Durban, Bloemfontein, and agents in East and West Africa, as well as in all the principal towns in the various territories controlled by the branches.

**Administration.**—Local board in Capetown Messrs J D Cartwright, M P C (chairman), J W Herbert, J P, W J Thorne and Sir Frederick Smith. Manager for South Africa: Mr Percy Wenban.

**Offices.**—Head office in South Africa: Atlas Building, corner of St George's and Castle Streets, Capetown. Other offices: Port Elizabeth, Main street, Johannesburg, 102 Commissioner Street, Durban, 21, Club Arcade, Bloemfontein, Baumann Square.

London branch, and is a well known and popular figure in Capetown insurance circles.

**Activities.**—The company undertakes all classes of fire, marine and accident insurance, and the sound conservative lines upon which its affairs are conducted are reflected in its continued and steady expansion.

**Financial.**—The strength of the institution's position may be gauged by its balance sheet as at May 31, 1925. The subscribed capital was £1,500,000, of which £900,000 was paid up, reserve fund, £525,000, and reserve for unexpired risks, £513,000. Investments stood at £2,185,838 2s 8d.; and cash in banks and in hand, £184,110 12s 7d. The balance sheet showed a profit on the year of £187,085 5s. 2d.

**Offices.**—The head office of the company is in Auckland, New Zealand. South African

every class of business and having branch offices in Capetown and Durban.

**Development.**—Realising the advantages of centralised control in South Africa, the Norwich Union in 1918 appointed the firm as general managers for the whole territory south of the Equator. Some time after the commencement of business Mr Horace Liddle became associated as a partner, and in 1908 Mr A H Liddle also joined the firm. Mr Horace Liddle retired in 1913, and in 1916 Mr Joseph Liddle ceased to take an active interest in the business. Since that date the entire management has devolved on Mr A. H. Liddle.

**Progress.**—The great advancement in insurance during the last 30 years is reflected in the progress of the firm, not only in fire, but also in accident business. This increasing



volume of operations was due to the enactment of the various Workmen's Compensation Acts, and was further augmented by the advent of the motor car.

**Policies.**—Where legislative and industrial changes have taken place the firm has always been prepared with policies suited to the altered requirements and conditions. It was the first to issue policies insuring motor cars in South Africa, and since then the companies represented by it have been appointed official insurers for that class of business to the Union Government of South Africa, as well as to many of the large mining groups. Naturally in South Africa mining insurance is one of the most important branches of business, and its varied requirements are capably handled by the firm.

**Agencies.** Messrs. Liddle are agents for the Union Marine Insurance Company Ltd. and the Merchants Marine Insurance Co. Ltd., and are also agents for brokers at Lloyds.

**Head Office.**—Corner House, Johannesburg, where practically the whole ground floor is occupied by a large staff.

#### THE NETHERLANDS INSURANCE COMPANY OF 1845 LTD.

**Inception.**—This company, which was established in the Netherlands in 1845, found it necessary to embody the year of establishment in its name as many smaller offices use the word "Netherlands" in their respective titles. In Holland the institution is known generally as the "45." Long represented in the Far East and the Americas, it has only recently opened branches in Cape Colony and Natal, though an agency in Johannesburg was started many years ago by Mr. P. C. BaerVELDT, the Netherlands Consul and still operates. The Capetown office (the headquarters of the company in South Africa) is under the management of Mr. G. A. Leyds, while Mr. A. C. van Massdyk is in charge in Natal.

**Financial Status.** The company is one whose financial soundness has always attracted foreign insurances and re-insurances. It was in the field of re-insurance that the institution first achieved an international reputation, and many foreign companies have utilised the re-insurance assistance of the company for the last forty or fifty years.

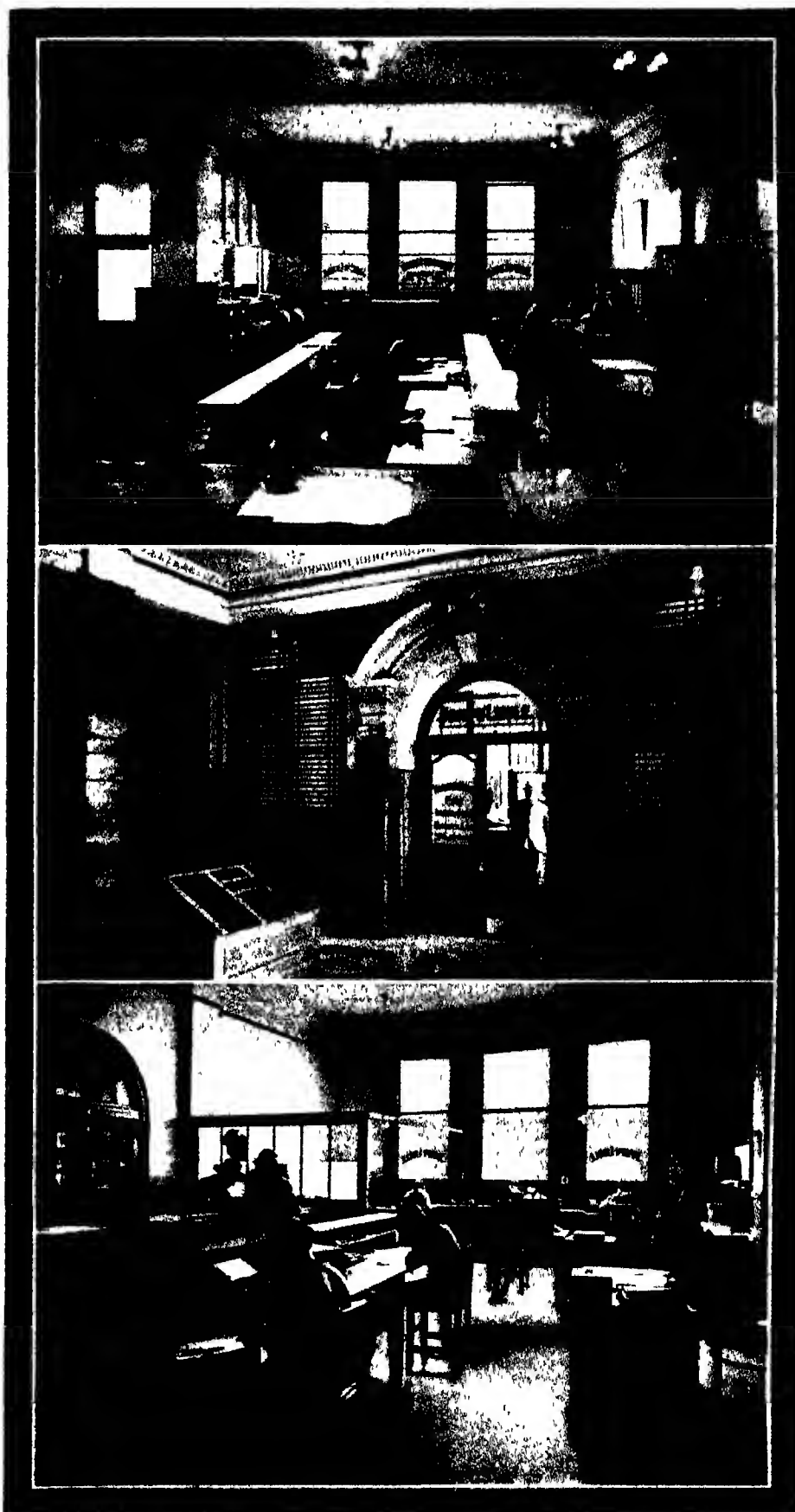
**Operations.**—In South Africa the company transacts every type of insurance, such as fire, burglary, automobile, third party, fidelity, workmen's compensation, sickness, etc.

**Financial.**—The total assets of the company amount to nearly £1,700,000. Fire and burglary premium income in 1924 was £493,353 (of which losses took £237,077), while expenses absorbed £206,724. Slight increases were shown in all departments over those for 1923. The expenses in the accident department gave the remarkably low figure of 24 per cent. A dividend of 22 per cent on the paid-up capital was declared, and assets were increased to £1,095,667.

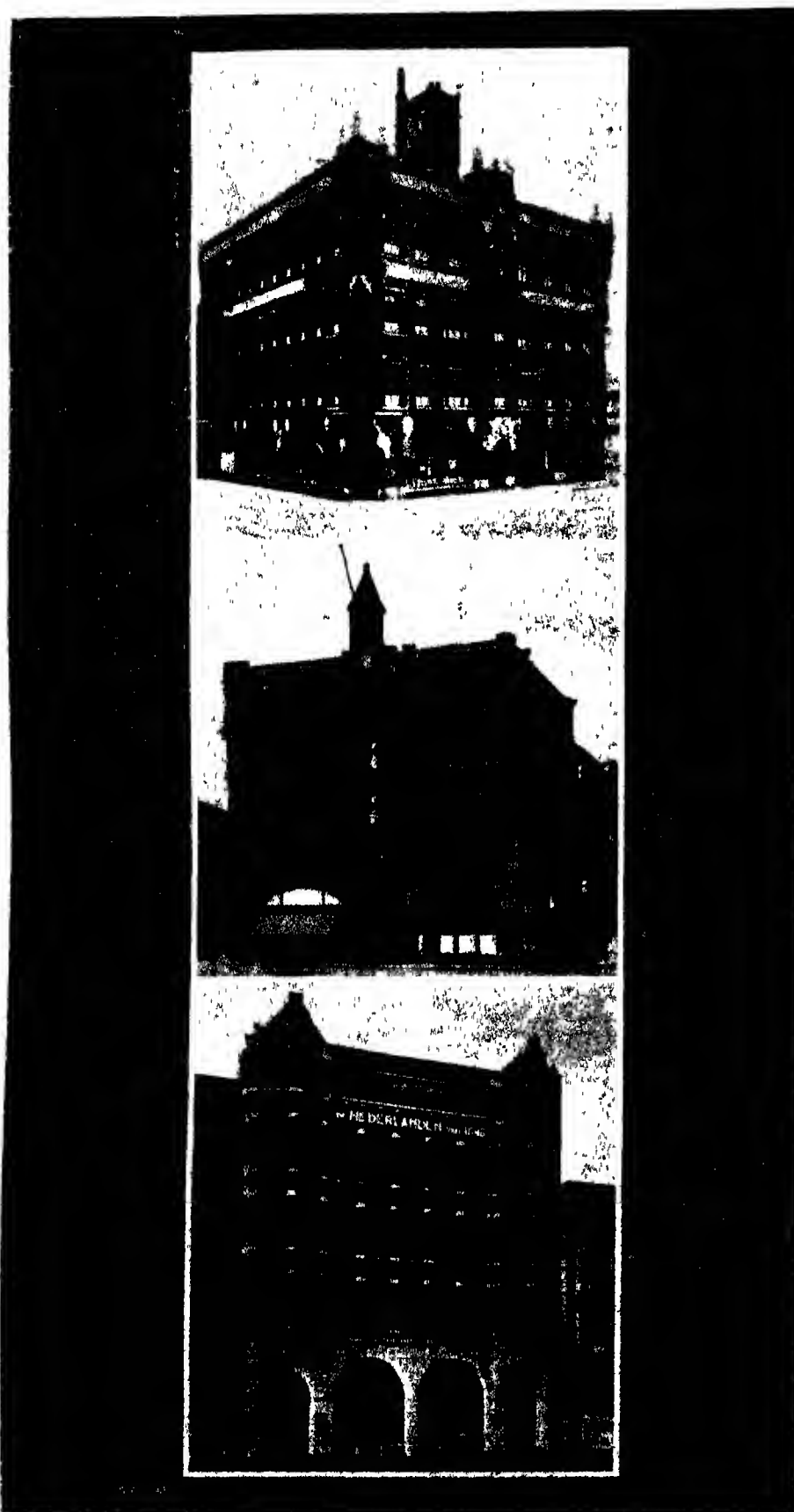
**Head Office.**—The Hague, Holland.

Branches are maintained at Rotterdam, Amsterdam, Chicago and Batavia, while representatives are to be found throughout the world.

**Head Office in South Africa.**—South West House, Greenmarket Square, Capetown (See illustration, page 46.)



MESSRS. JOSEPH LIDDLE, Johannesburg.  
Representing:—Norwich Union Fire Insurance Society Ltd.  
Employers' Liability Assurance Corporation Ltd.  
Union Marine Insurance Company Ltd., and  
Merchants' Marine Insurance Company Ltd.



THE NETHERLANDS INSURANCE CO. of 1845 LTD., Capetown.

1. Head Office at The Hague.
2. Branch at Amsterdam.
3. Branch Office at Rotterdam.

(See letterpress, page 45.)

#### THE ROYAL EXCHANGE ASSURANCE.

**Inception.**—This well-known corporation was granted a Royal Charter on June 10, 1720, and started operations with marine assurance business at the Royal Exchange, London. In the following year fire and life risks were undertaken, the corporation thus being the oldest life office in the world.

The South African branch commenced operations in the Transvaal some 28 years ago.

**Development.**—Many South African insurance offices have been absorbed since the corporation commenced activities, its history has been one of steady progress, and it is to-day among the premier companies in the Union, owning buildings and property in all the principal towns of South Africa.

**Activities.**—Every type of insurance is undertaken by the corporation, including fire, life, sea, accident, plate glass, burglary, employers' liability, fidelity guarantees, motor car, annuities, third party, live stock, lift, boiler, and machinery, while it also acts as trustee and executor. Operations extend from Capetown to the Belgian Congo and Northern Rhodesia. The corporation has built up its assets to over £13,000,000 by sound judgment and care and the avoidance of all hazardous forms of speculation and investments.

**Directors.**—The directors of the South African branch are Messrs. George W. Beckett and Meyrick Bennett, the general manager being Mr. F. R. Clayton, who joined the company in July 1924.

**Offices and Branches.**—Head office, Royal Exchange, London, E.C. 3. Head office in South Africa, Royal Exchange Buildings, 68, Market Street, Johannesburg. (This building was formerly the home of the Transvaal Chamber of Mines, and the interior of the main office was formerly the Board Room.) The corporation also has branches at Durban, Royal Exchange Building, Smith Street, Capetown, Royal Exchange Building, 6, George's Street, Port Elizabeth, Lombard Chambers, Main Street, Bulawayo, Exchange Buildings, Selborne Avenue, and Nairobi, Ciccha Buildings, Government Road.

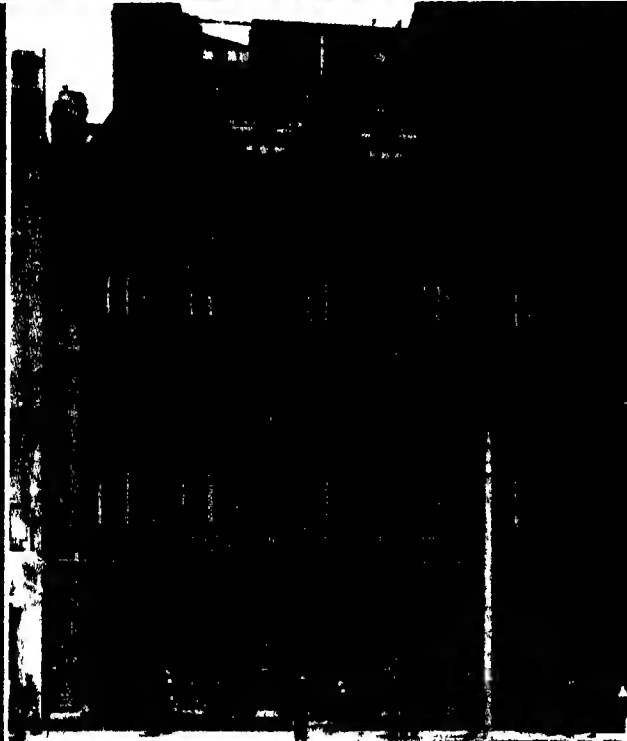
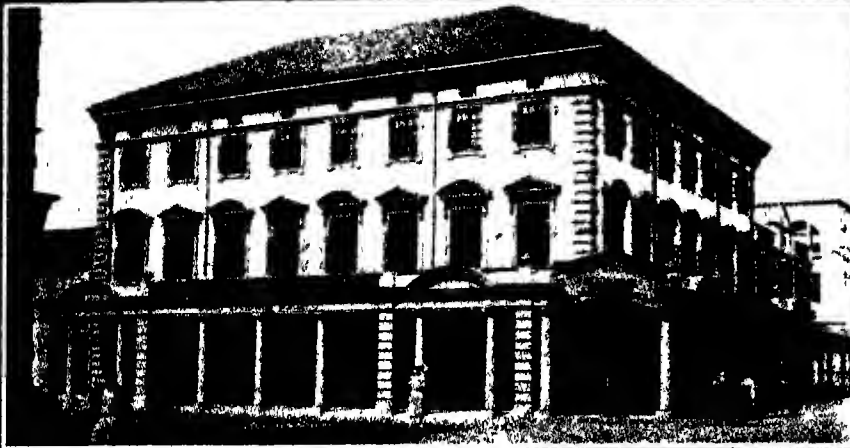
**Cables.**—"Foxhound."

**Bankers.**—The National Bank of South Africa, Ltd.

#### TRUSTEESHIP

A matter which, during 1925, excited general interest throughout South African commercial circles was the projected creation of the office of Public Trustee, a Bill concerning which was to be introduced during the 1926 session of Parliament by the Minister of Justice. As outlined, this office will not be a department of the Public Service, as in England, Australia or New Zealand, but any person from the public service appointed to the office is to retain his rights. It is laid down that the Public Trustee shall be a body corporate, and may, in his official name, sue and be sued, and hold and transfer property, movable and immovable. The general powers, duties, and functions of the trustee are to be specifically provided for in the Insolvency Act (see under "Commerce") or assigned by the Minister.

**ADMINISTRATION.**—At present there are a number of trust funds which are administered by the Public Debt Commissioners (e.g., the Post Office Savings Bank, Pension Funds, Sinking Funds, etc.), such funds having a total amount standing to their credit at March 31, 1924, of £40,484,625.



#### ROYAL EXCHANGE ASSURANCE.

1. Fine Premises at Durban.
2. Head Office Premises for South Africa in Johannesburg.
3. Spacious General Office at Johannesburg.

Further, the administration of the estates of deceased persons is vested in the Masters of the Supreme Court at Capetown, Pietermaritzburg, Pretoria, and Bloemfontein, having jurisdiction within the several provinces, and the Assistant Master at Kimberley, who has jurisdiction in the Griqualand Local Division of the Supreme Court.

**COMPANIES.**—For general trust purposes there are many companies and corporations carrying on business in the Union, and they undertake the administration of estates and properties either as executors or administrators in the case of absentee owners. While some of these companies act as real estate concerns only, others have acquired far-reaching powers to advance and borrow money, to liquidate joint stock companies and firms, and to act as trustees of insolvent estates. In general it may be said that the standing of these companies is a high one as indeed is essential in a country where long distances and imperfect communications entail very often the entrusting of important business affairs to other hands. Furthermore many estates and properties in South Africa are of so vast and complicated a nature that as in the well-known case of the late C. J. Rhodes, carefully formed Trust companies with wide powers are found to be necessary to deal with their administration.

#### REPRESENTATIVE TRUST COMPANIES

##### SYFRET'S TRUST COMPANY LTD.

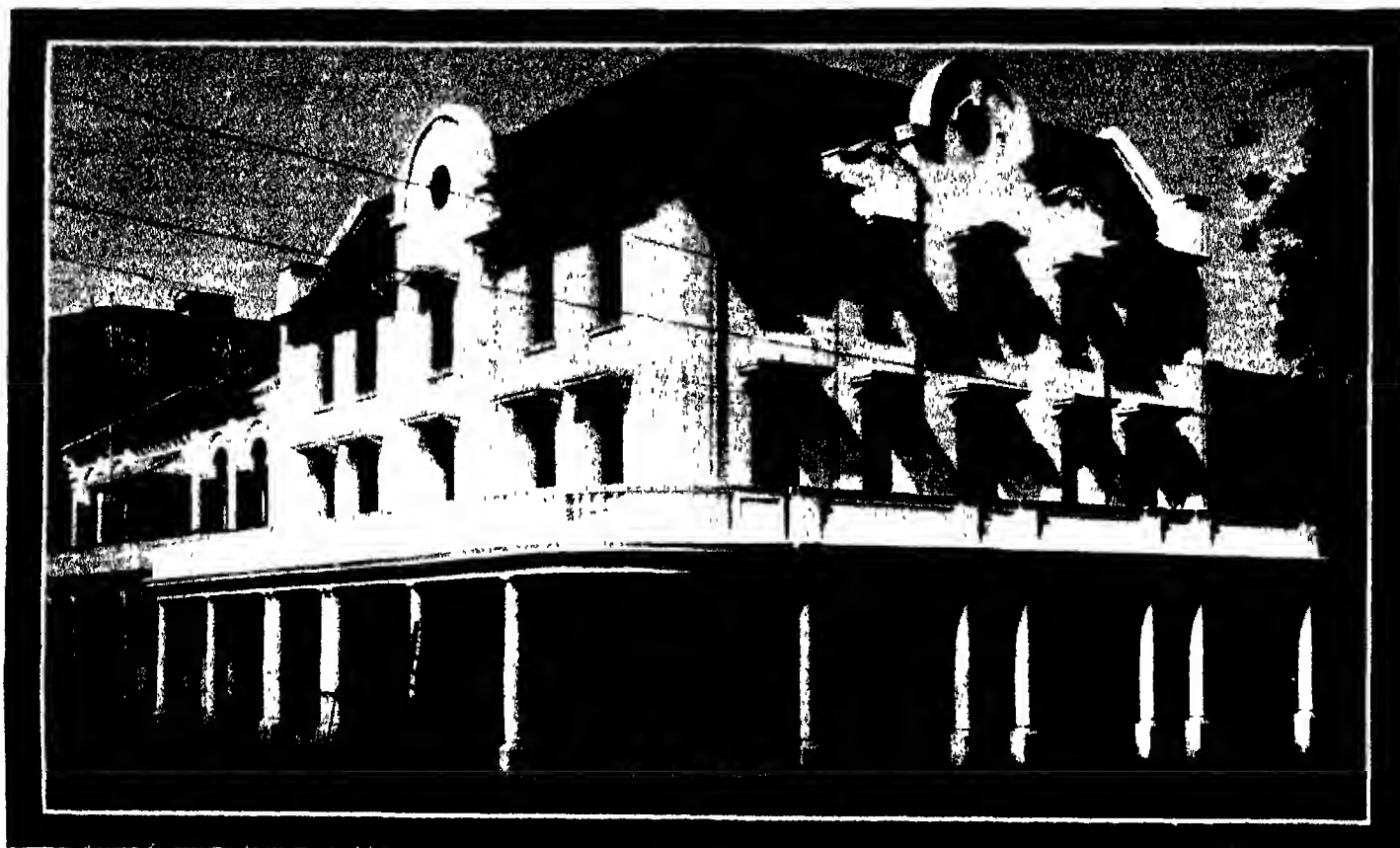
**Inception.**—This enterprise was originally established by Mr. F. J. M. Syfret about 1850 and was continued by Mr. F. R. Syfret and Messrs. F. R. Syfret & Co. The present company was incorporated early in 1919 to take over the trust and agency business with the object of ensuring continuity.

**Capital.**—The subscribed capital is £100,000, in 1,000 shares of £100 each, of which £50 has been paid up on each share leaving uncalled capital of £50,000 as security for clients. In the six years following its formation the company established reserve funds to the extent of £53,000, in addition to which it carried forward to profit and loss account over £5,000 from its 1924 accounts. The company has lately had new offices built to its requirements in Capetown, and its importance is shown by the fact that it now administers, on behalf of clients, funds amounting to over £2,300,000.

**Activities.**—The company undertakes the investment of capital on mortgage or otherwise, executorships in deceased estates, administration of properties for residents and absentees, trusteeships of insolvent estates, liquidatorships of mercantile and other businesses, purchase and sale of landed property, and agency work of every description. It has a large connection, and amongst other important interests it acts for the trustees of the estate of the late Cecil John Rhodes.

**Directors.**—Messrs. Edward Ridge Syfret (chairman), G. L. D. Orpen (managing director), C. L. Short and H. A. Jesse (directors and joint secretaries). Mr. Syfret is the chairman of "The Cape Times" Ltd. and of the Local Board of the Capetown Tramways, also a director of the Rhodes Fruit Farms, Ltd., and the South African Mutual Life Assurance Society.

**Offices.**—Syfret's Trust Co. Ltd., corner of Wale and Burg Streets, Capetown (See illustration, page 48.)



SYFRET'S TRUST COMPANY LIMITED, Capetown  
View of the Company's Premises  
(See *letterpress*, page 47)

**THE GRIQUALAND WEST BOARD OF EXECUTORS TRUST & AGENCY CO. LTD.**

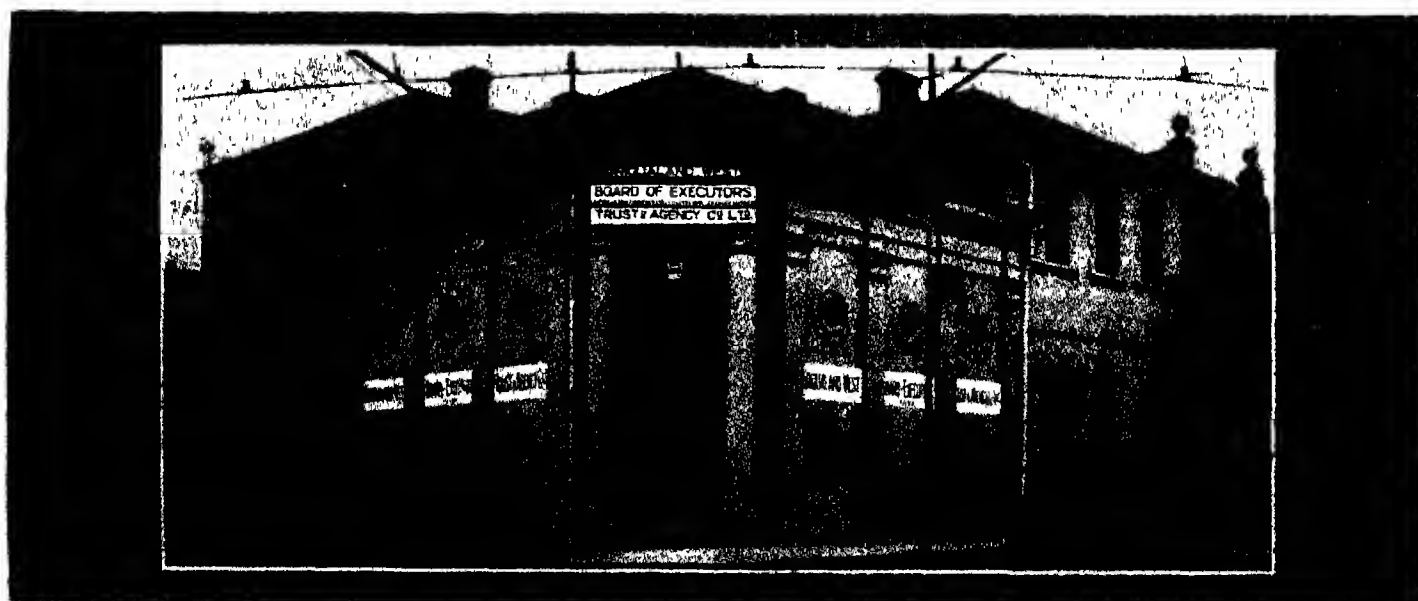
**Inception.**—This board, established in 1876, was founded in the early days of the diamond fields, when diggers required an institution in which they could place absolute

trust for the conduct of their affairs, the supervision of their interests and the management of their estates, including very often the guardianship of their children under age.

**Development.** Business growing rapidly, it was found necessary in 1902 to extend operations in order that the investment of

clients' funds should be absolutely assured. The Johannesburg office was therefore opened.

**Activities.** — The board undertakes executorship and guardianship, managership of estates, liquidation of companies, collection of rents and dividends, purchase and sale of



GRIQUALAND WEST BOARD OF EXECUTORS TRUST & AGENCY CO. LTD.  
Head Office of the Company, Kimberley.

properties investment of funds on mortgage, fire, life and accident insurance, shipping agency, advances to clients, keeping clients' accounts, compilation of income tax returns, secretarial duties, and management of companies

**Capital.**—Nominal, £50,000, subscribed, £10,000, reserve fund, £11,000. Trust monies held by the board for clients' account amount to over £300,000

**Directorate.**—Messrs Louis F. Lezard chairman (alternate, Arthur Pett), James T. Vigne (alternate, H. L. du Toit), James Moir (alternate, W. H. Adams), Alpheus F. Williams, and W. H. Carter (alternate, M. E. Doherty). Secretary Mr J. J. T. King, J.P.

**Offices.**—Head office—Main & Stockdale Streets, Kimberley. Johannesburg office—95/100, Exploration Buildings, P.O. Box 334. Cables—"Executors" Kimberley.

**Bankers.**—The Standard Bank of South Africa, Ltd.

#### THE COLONIAL ORPHAN CHAMBER AND TRUST CO.

**Inception.**—This company was established in 1856, nearly 24 years after the abolition of the old State Orphan Chamber by Royal Charter in 1832.

**Development.**—The company is a private partnership constituted under deed of settlement and during 60 years has grown steadily both in extent and in the confidence of the public until to-day it is one of the largest of its kind in the Union of South Africa or Rhodesia.

**Capital.**—The capital of the company is £10,000, and the reserve funds now stand at £370,000, while the total amount of funds at present under its administration and control inclusive of landed property exceeds £4,500,000, a notable index of the success which has attended its operations.

**Activities.**—The company undertakes the administration of estates and properties as executors, administrators, tutors, curators, trustees of insolvent estates and under ante-nuptial contracts, inspectors, assignees, receivers, agents for residents and absentees, and liquidators of joint stock companies and firms. It also advances money on first mortgage of landed property and pledge of mortgage bonds, invests capital, buys and sells landed and other property and collects house rents, interest on bonds and other securities, besides transacting every description of trust and agency business. In addition, the company has a Fidelity Guarantee Branch, which issues policies as securities for the honesty, integrity and fidelity of all classes of officials and employees on advantageous terms. These policies are accepted by the Imperial and Union Governments and by all employers throughout the country.

**Fund Investments.**—No element of speculation is allowed to enter into the management of the company's affairs or of those of its clients, and the investment of funds is effected only after receiving the careful consideration of the directors, who have all had practical experience in financial, commercial and legal circles.

**Administration.**—The company is under the management of its secretary, supervised by a Board of Directors, constituted as follows: Messrs. C. Christian Silberbauer (chairman), H. J. Dempers (deputy chairman), H. R. Arderne, W. Runciman, C. Marais, R. H. Parker and Dr. A. Marius Wilson.

**Offices.**—4, Church Square, Capetown. Cables—"Fidelity."

**Bankers.**—The Standard Bank of South Africa, Ltd.

#### THE BOARD OF EXECUTORS.

**Inception.**—This Board was established as the result of a meeting of citizens of Capetown held on August 22, 1838, and the first

the estates of deceased persons can be expeditiously administered in accordance with the wishes of the deceased and the laws of the country, to act as guardians for minors, to administer trust funds, to act as agents for individuals, and to enable the public to invest money on deposit at the highest current rate of interest consistent with absolute security.



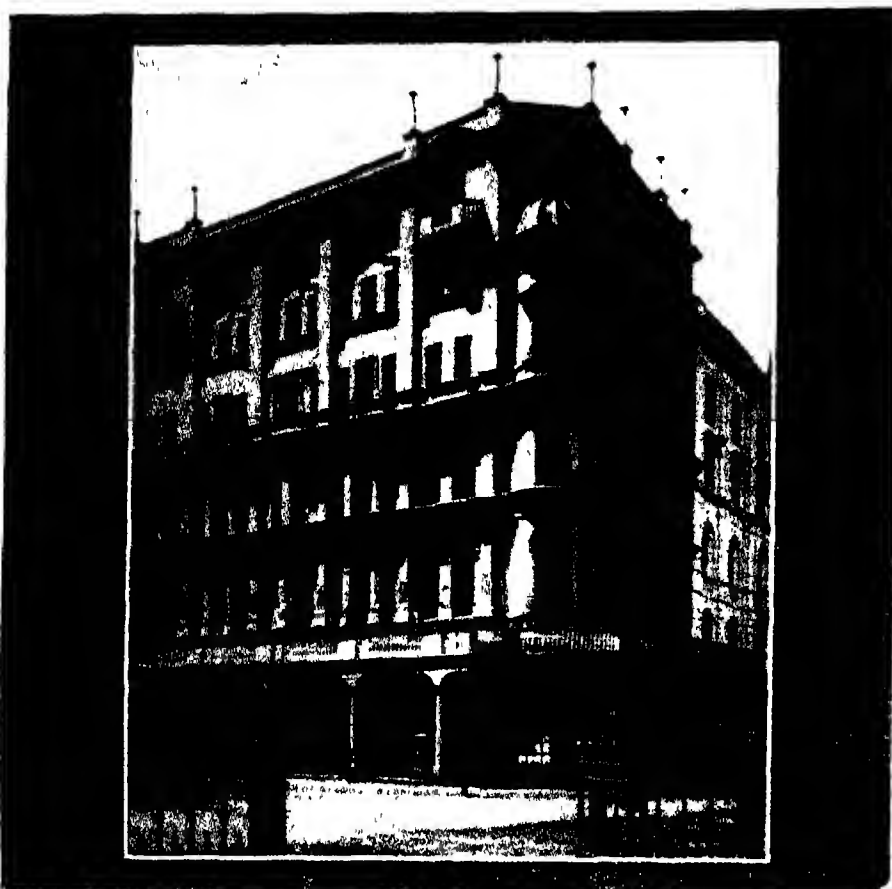
THE COLONIAL ORPHAN CHAMBER & TRUST CO., Capetown  
View of Head Office.

public business was transacted on September 4 of the same year, while an Act of Parliament for the regulation of its affairs was published in the Government Gazette of July 12, 1859.

**Objects.**—The chief objects of the organisation are to provide a means whereby

**Other Activities.**—The Board acts for purchasers and sellers in buying farms etc., and emphasises the necessity of consultations regarding their requirements before actual dealings take place. It is also chief agent for the Law Union & Rock Insurance Company in the Western Province.





BOARD OF EXECUTORS: Fine Premises, Capetown.

**Capital and Funds.**—The original capital of the Board of Executors was £27,000 and the reserve fund amounts to £170,000, while funds under administration exceed £3,000,000. The shares, with an original face value of £30, now stand at £337, an indication of the confidence which the public places in the soundness and efficiency of the Board's management.

**Directors.**—Dr A. H. Petersen, chairman; Messrs. Frank Molteno, J. J. Michau, Dr G. B. S. Darter and Mr J. B. Kayser, Secretary, Mr H. W. Baumgarten.

**Offices.**—Corner of Adderley and Wake Streets, Capetown. Cables: "Board," Capetown.

#### THE BLOEMFONTEIN BOARD OF EXECUTORS & TRUST CO. LTD.

**Inception.**—This Board was established at Bloemfontein in 1868. South Africans having long since recognised the advantages of appointing old established boards of directors and trust companies as executors and administrators of their estates, the company under notice has enjoyed the confidence of the public for over half a century.

**Activities.**—The business of the institution embraces the liquidation and administration of estates of deceased persons, trusteeships and guardianships, trusteeships in insolvent and assigned estates, liquidation of companies, land and house agency, sale and purchase of landed property, auditing, accountancy, fire insurance, workmen's compensation insurance, fidelity guarantee, income tax returns, investment of capital, savings bank, fixed deposits, special investments, and loans.

**Financial.**—Authorised Capital—£10,250; uncalled capital, £7,175; reserve fund, £17,000.

BLOEMFONTEIN BOARD OF EXECUTORS & TRUST CO. LTD.  
Attractive Premises, Bloemfontein.

Net profit for year 1924, £6,006 3s 11d. Special investments for clients, trusts and estates amounted to £790,172 12s 11d.

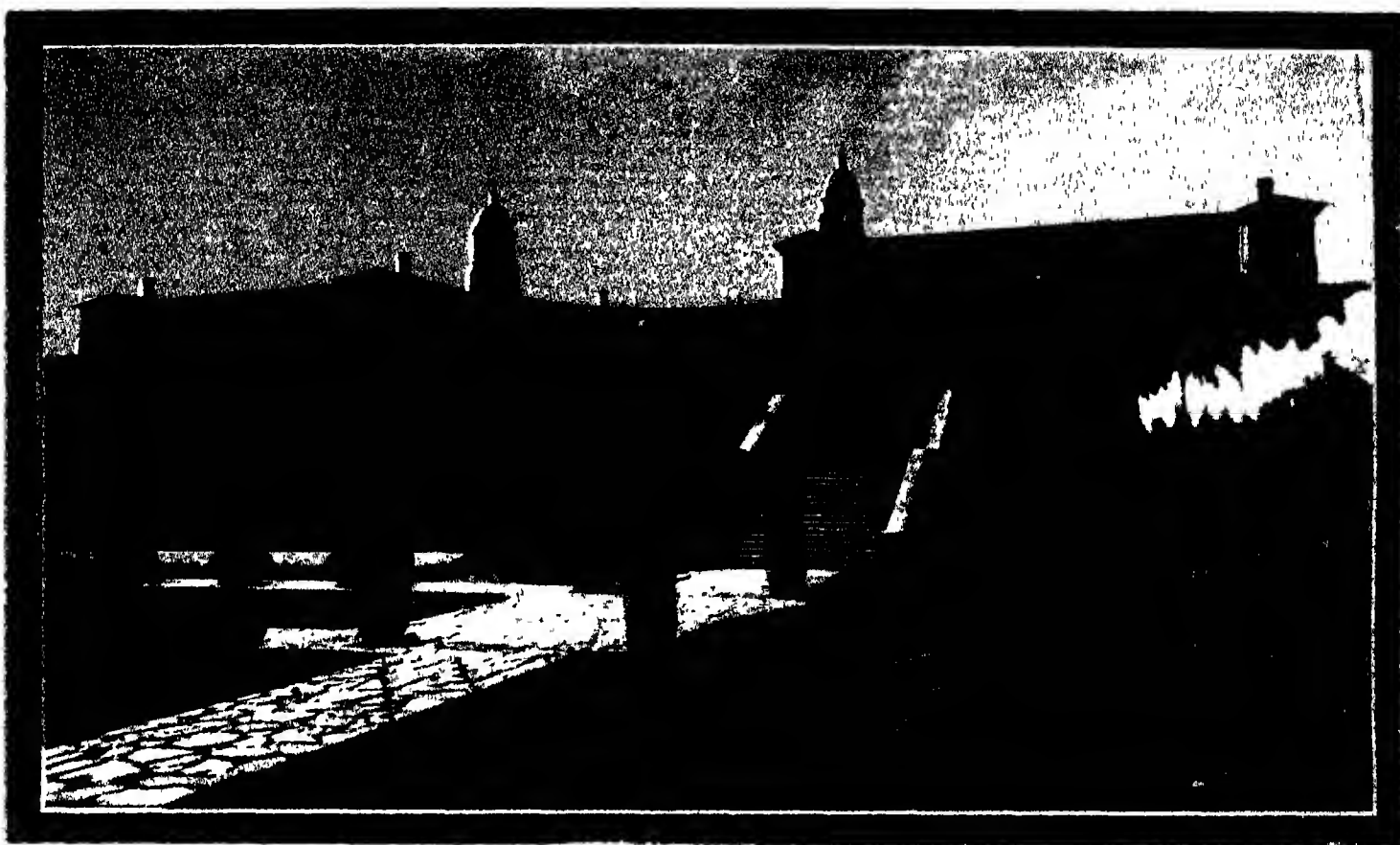
**Branch.**—One has recently been opened at Maseru.

**Directorate.**—Messrs. Ivan H. Haarburger (chairman), A. G. Barlow, M.L.A., John Reid, and C. A. Beck (adv.) Secretary, Mr H. Scrivenor.

Maseru Branch, Advisory Board Mr G. R. Hobson, local secretary, Mr C. P. Heney.

**AFRICAN BOARD OF EXECUTORS AND TRUST COMPANY LIMITED.** Head office, Law Chambers, Church Square, Pretoria. Founded in 1893. Paid-up capital, £10,000; uncalled capital, £40,000. Funds administered in 1925 were: negotiable securities, £800,000; landed properties, £200,000. Business: administration of estates, investment of capital and general estate operations. Bankers: Standard Bank of South Africa, National Bank of South Africa and Netherlands Bank of South Africa. Cables: "Board," both for Pretoria and Johannesburg.

**BOURKE TRUST AND ESTATE COMPANY LIMITED.** Bourke Trust Buildings, St. Andries Street. Undertakes management, liquidation, and administration of estates, the raising of loans, the collection of rents and insurance and other general agency business. Bankers: Standard Bank of South Africa Limited. Telephone No. 67. P.O. Box 321, Pretoria. Cables: "Finance". Codes: A.B.C. 6th Edition Broomhall, and Western Union Telegraphic.



UNION BUILDINGS, PRETORIA.

## PROVINCE OF THE TRANSVAAL

**T**HE boundaries of the Transvaal, which is one of the two inland provinces of the Union, are in the main those of the old South African Republic, as settled by a series of conventions between the British Crown and the Boers of the Transvaal. They differ however, in that the two districts of Utrecht and Vryheid were transferred to Natal after the war of 1899-1902. The area of the Province is 110,450 square miles, or rather less than that of the United Kingdom. Geographically a sub-tropical country, it has, in fact, a continental temperate climate owing to its high level above the sea. On the elevated veld the winters are very cold and dry, the average rainfall being about 21 inches. Only parts of the bush or lower veld are unsuitable for Europeans. The principal ranges are the Lebombo Mountains, which border Zululand and Portuguese East Africa, and the continuation of the great Drakensberg Range, which culminates in the Mauchberg (near Lydenburg), the highest point in the Province. The chief rivers are the Limpopo and the Vaal, separating the Transvaal from Southern Rhodesia and the Orange Free State respectively.

**ADMINISTRATION.**—The Provincial Council of the Transvaal, which sits at Pretoria, consists of 25 members, one for each of the electoral divisions into which the Province is divided. The electorate includes all adult males, native born or naturalised British subjects, who have resided six months

in the Province, there being neither property nor education qualification. The Transvaal has always set its face resolutely against granting a coloured franchise. As in the other provinces of the Union, the law in force is Roman Dutch, with later modifications. Justice is administered by the Provincial Division of the Supreme Court of the Union, consisting of a Judge President and six judges, and there is a Local Divisional Court for the Witwatersrand consisting of a Judge of the Supreme Court. That court has unlimited criminal jurisdiction and a wide civil jurisdiction within the Witwatersrand area, appeals from it lie in most cases to the Appellate Division.

The present Administrator of the Province is the Hon. Jan H. Hofmeier, M.A.

**DISTRICTS.**—For purposes of administration the Transvaal is divided into 23 districts, the most important of which are Johannesburg, Germiston, Boksburg, and Krugersdorp, making up the Rand. "The Rand" is a narrow strip extending for about 40 miles from Krugersdorp in the west to Springs in the east, Johannesburg being in the centre. It is situated on nearly the highest elevation in South Africa, and the whole strip is covered with mining towns and villages. The 19 country districts, starting from the south and from east to west, are Wolmaransstad, Lichtenburg, Bloemhof, Potchefstroom, Heidelberg, Standerton, Wakkerstroom, Piet Retief, Ermelo, Bethal, Marico, Rustenburg, Pretoria,

Middelburg, Barberton, Carolina, Lydenburg, Waterberg and Zoutpansberg.

**LOCAL GOVERNMENT.**—Municipal government in the Transvaal hardly existed before the war of 1899-1902, but has since been definitely established. In 1923 there were 22 town councils, the municipal franchise for which lies in the ownership of rateable property of the assessed value of £300, or residence for a period of 12 months, but that franchise is like the parliamentary franchise, restricted to white adults, being denied both to aliens and to coloured British subjects. There were also 30 village boards.

**AGRICULTURE.**—The Transvaal is one of the greatest, if not the greatest of all mining centres, but rich as it is in minerals, it is even richer in farming resources. The enormous wealth which in little more than a generation has been taken from the mines constitutes a toll few countries have yielded in a century, yet it is less than what the farms may be made to furnish. In fact, the Transvaal is essentially a farming country, though a large number of its population is not a farming one, the agricultural industry having to a great extent fallen into dis-favour with the extraordinary development of the mineral riches of the Province.

In an area containing such varieties of altitude, soil, and climate, and on the whole such a sufficiency of water, production is naturally good. Practically every agricultural product of South Africa can be grown in the Transvaal, from cereals to the

coffee, sugar, and even rubber of the Tropics. To begin with, the Transvaal is one of the great maize-growing districts of the Union, the average production of the province being approximately 3,620,000 bags per annum. In the warmer valleys apples, peaches, and oranges flourish, gardens produce luxuriantly, sisal hemp grows well, maple peas yield heavily in winter and can be grown as a rotation crop between plantings of maize, wheat is raised successfully on the irrigable lands north of the Magaliesberg, linseed thrives on the high veld. In particular, the Transvaal is the natural home of two of the great industries from the development of which the Union expects so much—tobacco and cotton. The figures of production of the leading crops cultivated in the year ended August 31, 1924, were as follow—

Maize	639,453,000
Kaffir Corn	27,719,000
Wheat	33,405,000
Oats	4,980,000
Barley	1,683,000
Rye	585,000
Potatoes	78,230,000
Ground Nuts	8,308,000
Cotton	3,897,000
Tobacco	5,609,000

The total area under cultivation as at August 31, 1924, was 1,442,874 morgen (about 21 acres).

(See also general article on "Agriculture," and special articles on "Cotton," "Maize," "Tobacco" etc.)

**COMMERCE.**—See general article

**FINANCE.**—The ordinary revenue of the Transvaal Province for a recent year was £1,523,167 (compared with £1,873,625 in 1921-22), to which must be added the Union Government subsidy of £1,456,936, making a total revenue of £2,980,103. The leading items of revenue were Poll tax £304,840, native pass fees, £338,660, licences, £232,491, and employers' tax, £172,185. The total ordinary expenditure amounted to £3,272,862, as against £3,430,638 in 1921-22, the principal items being, Education, £2,598,663, hospitals and poor relief, £366,968, and roads, bridges and works, £200,955.

**INDUSTRIAL PRODUCTION.**—The number of factories in the Transvaal increased from 1,157 in 1915-16 to 2,475 in 1923-24, of which the gross output in the last named 12 months was valued at £28,793,210. Of the total, over £25,000,000 was the value of the output of factories in the Witwatersrand area. In this comparatively restricted area industries of all kinds have sprung up to meet the requirements of a large population, the chief class of industry being that connected with engineering (including cement works), but generally speaking there are factories and workshops dealing with every kind of product. The last industrial census showed that there were on the Witwatersrand 179 establishments for the manufacture of vehicles against 76 in Capetown, and 310 connected with food and drink against 253 in Cape Province and 65 in Durban. The growing of "Transvaal tobacco" has resulted in the erection of many extensive factories, at which large numbers of workers are employed. Coincident with the development of the cotton industry, cotton "gins" have been erected in various parts of the district, and a large factory is successfully operating in the making of starch and other maize products.

**MINERAL PRODUCTION.** The mineral production of the Transvaal in 1925 was valued at some £50,000,000 out of an aggregate for the Union of £60,000,000. This output compares with a total of £48,000,000 for 1924. Of the 1925 figure the gold output alone was placed at £40,767,982, the total value of this product from the earliest dates of existing records up to December 31, 1925 being the enormous one of £845,000,000. Apart from gold, the Transvaal in 1925 produced 7,399,378 tons of coal, valued at £1,863,382, and diamonds to the value of £2,214,122. The 1925 output of the Transvaal gold mines was the highest yet recorded 9,599,702 fine oz., against 9,574,918 oz. in 1924. (See also general articles on "Mining and Minerals," "Diamonds," and "Gold.")

**PASTORAL INDUSTRY.**—Some of the best ranching areas of the Union are situated

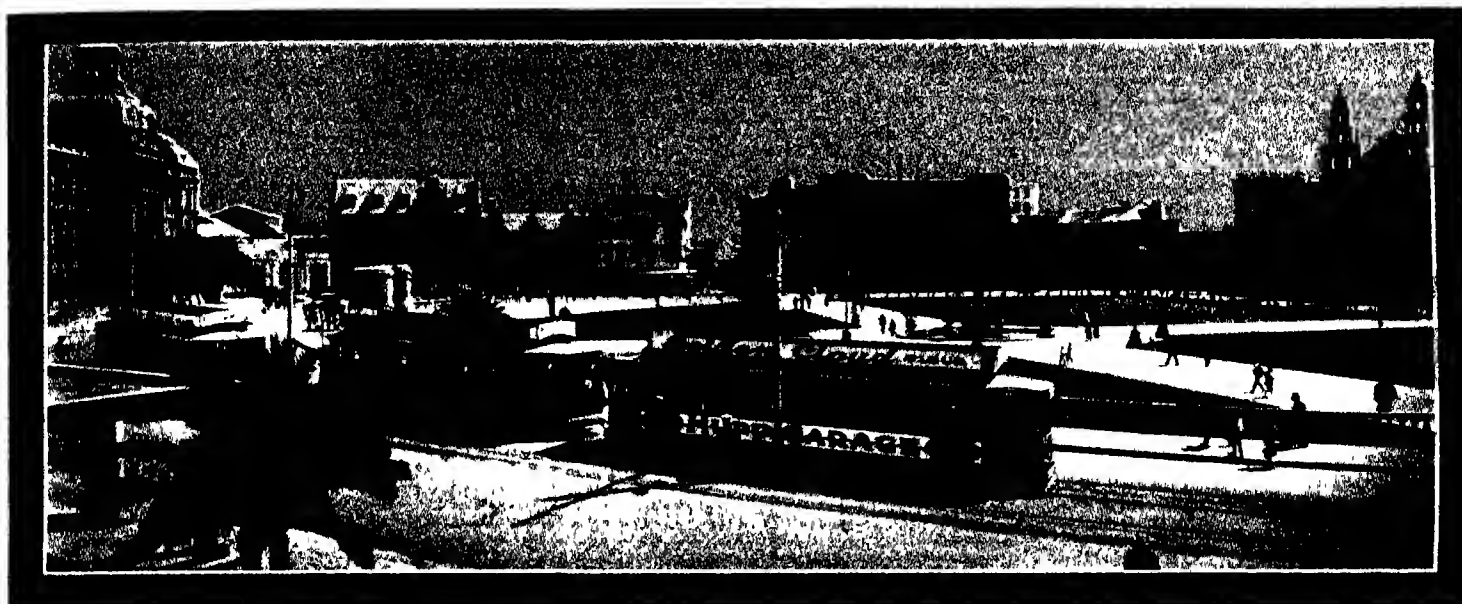
in the Northern Transvaal, particularly in the districts of Waterberg, Zoutpansberg, Pietersburg, and Lydenburg, and near Rustenburg, Marico, and Barberton. In 1924 there were 2,111,837 cattle in the Province out of a total of 9,906,274 for the Union. The breeds most favoured are the Afrikaner and the Friesland Sheep in 1924 numbered 3,473,394, and the production of wool therefrom was 15,888,992 lb. Goats totalled 456,311, pigs 163,972, and ostriches 850. The last poultry census in 1922 returned 2,649,654 fowls, 124,516 ducks, 52,250 geese, and 71,223 turkeys.

**POPULATION.**—The population of the Transvaal at the census of 1921 was 2,087,636 of all races, 1,159,430 of these being males and 928,206 females. The racial proportions were 543,485 Europeans and 1,544,151 non-Europeans, the latter being sub-divided as follows: Bantu, 1,495,869, Asiatic, 15,991, Mixed and other, 32,291. The European population of the Province rose from 113,713 in 1890 to 297,277 in 1904, to 420,562 in 1911, and to 543,485 in 1921. The Witwatersrand gold mining area, comprising the Districts of Springs, Benoni, Boksburg, Germiston, Johannesburg, and Krugersdorp, contains approximately one-sixth of the total population of the Union, and nearly one-half of the European population of the Transvaal Province.

**VITAL STATISTICS.**—In 1923 there were 15,539 European births registered in the Transvaal, compared with 16,370 in 1922, and 5,128 non-European, compared with 5,073 in 1922. The figures of non-European births are however, only partial. For Europeans the birth-rate has shown a declining tendency, being 27.26 in 1923, as against 29.27 in 1922 and 30.43 in 1921. The European death-rate for 1923 was 10.12, the number of deaths registered being 5,771, compared with 5,164 in 1922. Deaths of non-Europeans totalled 9,682. The infant mortality rate for Europeans was 85.14 compared with one of 82.11 for the whole Union.

**RAILWAYS.**—(See general article on "Railways.")





CHURCH SQUARE, PRETORIA.

## CITY OF PRETORIA

**P**RETORIA, the Administrative Capital of the Union of South Africa and the headquarters of the Provincial Administration of the Transvaal, was founded in 1855 and named after Andries Pretorius, the last of the famous leaders of the Great Trek, whose son, M. W. Pretorius, was the first President of the Republic. It was the younger Pretorius who bought from two farmers a piece of land which lay near the foot of the Magaliesberg, on the banks of a small stream called the Aapies, or "river of little apes." When, in 1860, union with the Republic of Lydenburg was established, Pretoria became the seat of Government, and such, with varying fortunes, it has since remained. Years of peaceful progress were followed by the gold discoveries on the Witwatersrand, which brought an alien population in their train, grievances, and the War of 1899-1902. Of that war, the circle of forts, built at intervals on the hills round the city, is an interesting relic. Since becoming the Administrative Capital of the Union, Pretoria has been architecturally embellished and the city has grown most appreciably. To-day, with a population of nearly 75,000, it is perhaps the most beautiful inland city in South Africa, being admirably planted and laid out with trees and gardens, and boasting a pleasant climate.

**BACTERIOLOGICAL STATION.**—A few miles outside Pretoria is situated the world-famed institution for the study of animal diseases—the South African Bacteriological Station. It is a branch of the Union Agricultural Department, and was erected at a cost of £60,000, which, in an extensive stock-breeding country, where without adequate protection the ravages from disease might entail the loss of millions of pounds, is probably one of the best investments ever made. The station is the headquarters for continuously investigating and administering measures to check stock diseases of all

kinds, and under the care of some of the most accomplished veterinarians of the age has done most useful work.

**BUILDINGS.**—Among Pretoria's many handsome public structures, the Union Building, the headquarters of the Administrative Government, ranks first, being perhaps one of the finest architectural conceptions south of the Equator. It consists of three main sections grouped together, the eastern and western rectangular portions being connected by a large semi-circular colonnade block, while from the points of contact rise two dome-capped towers, each surmounted by a figure of Atlas. The design throughout is marked by extreme simplicity. The building is of South African freestone, obtained from the Orange Free State and Transvaal, set on a base of rough Transvaal granite. As far as possible only materials in South Africa were used in the construction, Rhodesian and South African hardwoods having been utilised for most of the interior fittings and furniture.

Overlooking Church Square, in the centre of the city, is the simple yet dignified Palace of Justice, the corner stone of which, as also that of the Provincial Council Offices opposite (formerly the South African Republic Government Buildings), was laid by President Kruger. The Provincial Government building occupies one of the finest sites in Pretoria, and the figure of Liberty upon its central turret is a conspicuous landmark.

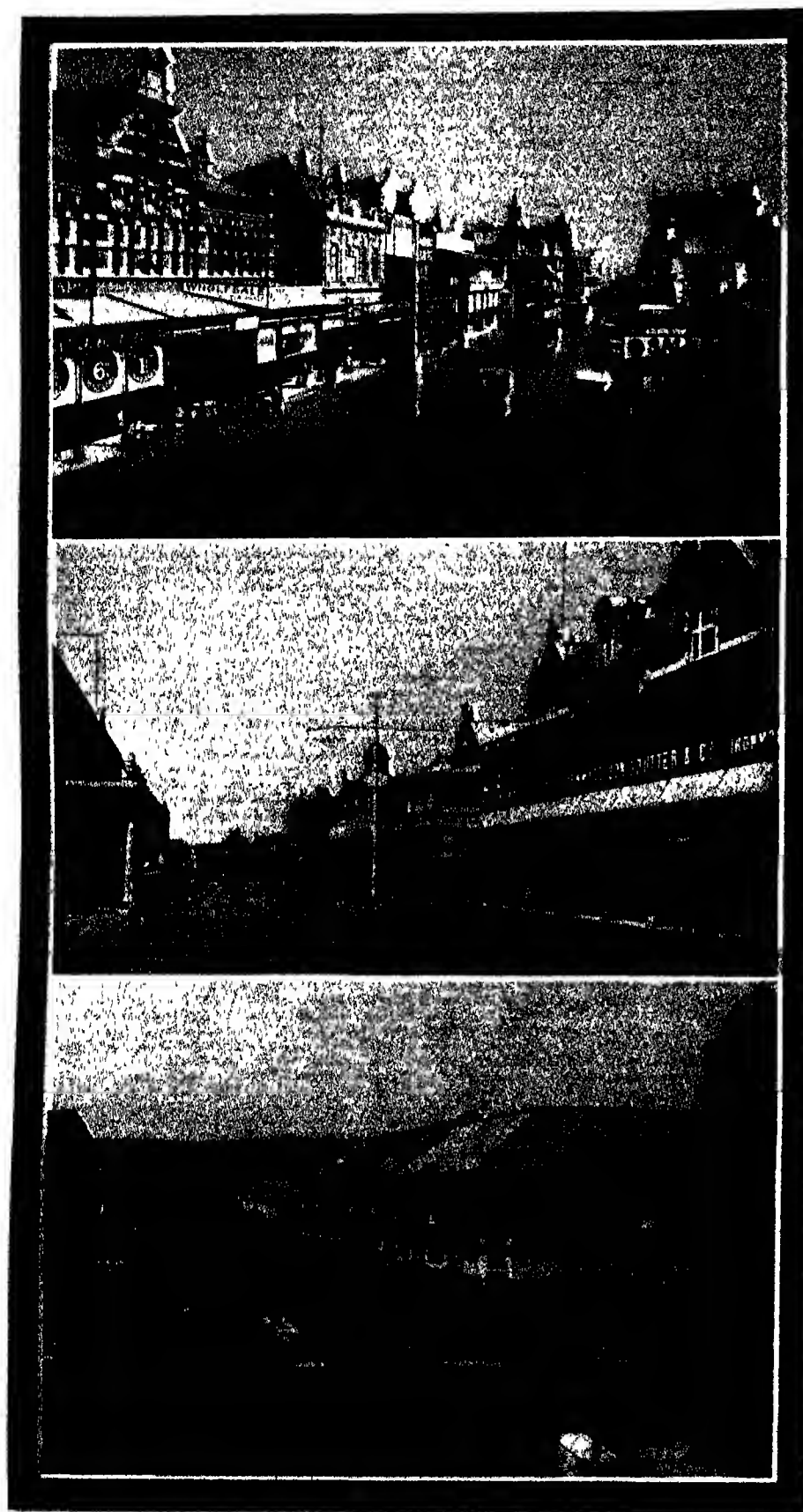
The Railway Station is another of Pretoria's imposing buildings, with a most attractive approach. The Municipal Offices are at present inconveniently housed in Pretorius Street, but a new and artistic Town Hall is already planned, to cost about a quarter of a million. Other fine buildings are those of the General Post Office, the new Geological Museum, and the University.

**CHURCHES.**—Pretoria is a cathedral city and the seat of a bishop, the fine Angli-

can Cathedral dedicated to St. Alban being in Schoeman Street. The Roman Catholic Church, with extensive school and convent buildings attached, stands in spacious grounds in Koch Street (South). Other edifices are the Dutch Reformed Church in Koch Street (North), off Church Street West, the Gereformeerde Kerk and Hervormde Kerk in Church Street, the Presbyterian Church in St. Andries Street, the Lutheran Church in Skinner Street, the Christian Science Church in Schoeman Street, and many suburban and native churches of various denominations. The Jewish Synagogue, in Market Street (North), was built in 1898 at a cost of about £6,000.

**CLIMATE.**—Pretoria lies in latitude 25° 45' south and longitude 28° 12' east, at an altitude of 4,471 feet. It occupies a long, narrow, shallow valley situated between two low ranges of hills, which run roughly from east to west, and thus protect it from the prevailing winds. Taken all the year round, the climate is almost perfect, being apart from a few hot days in the middle of summer, mild and equable. The mean temperature for the year is 62.5 F., ranging from 71.8 F. in January to 51.7 in July. The average annual rainfall is 29 inches, occurring on about 90 days.

**EDUCATIONAL FACILITIES.**—Apart from the Transvaal University (see "University"), Pretoria offers very many educational facilities. The two institutions making special provision for secondary education are the High School for Boys and the High School for Girls. The former is beautifully situated on the side of the Kopje to the south-west of the town, it is fully equipped and staffed for educational purposes, and has accommodation for about 250 pupils. The Girl's High School, between Visagie and Skinner Streets, has an average enrolment of 320 pupils. The Normal College in Rissik Street, is the principal training



1. CHURCH STREET, PRETORIA, looking towards the Square.
2. CHURCH STREET, PRETORIA, looking East, Henwood's Fine Store on Right.
3. MARKET STREET, PRETORIA, looking towards the Railway Station.

college of the Transvaal. Another leading educational institution is the Pretoria Trades School and Polytechnic, whose evening classes are very popular.

**FIRE BRIGADE.** The Fire Department of the city is housed in a fine building at the corner of Koch and Minaar Streets, and cost £30,000 to erect. The brigade was established in 1902, and the fire losses in that year amounted to £30,843. They have steadily decreased year by year, and now total a comparatively low figure. There is an efficient Ambulance Department under the control of the brigade, and about 400 cases are attended to annually.

**HOSPITALS.** The fine Public Hospital, erected close to the old Republican Hospital, stands about a mile from the city. It is supported by the Provincial Government. To the west of the town, beyond the Cemetery and Racecourse, is the Pretoria Mental Hospital, the largest in South Africa. There is a Leprosy Hospital some seven miles west of the town.

**KRUGER MEMORIAL.** On Oct. 10, 1925, the statue of President Kruger, which formerly stood unfinished in Prince's Park but had been removed for completion to Station Square, was unveiled by Mrs. Steyn, widow of President Steyn of the old Orange Free State, in the presence of the Earl of Athlone, Governor-General, the Prime Minister, General Hertzog, and the Ministry. The statue, which is by Anton Van Wouw, South Africa's leading sculptor, represents the President in the conventional frock-coat and top hat in which he always dressed. The four massive supporting figures, which were, during the Anglo-Boer War, stranded at Delagoa Bay and then conveyed to England by order of Lord Kitchener, were in 1923 restored to the Union as the result of a direct appeal to His Majesty the King by General Smuts. Near the memorial the President's old house, with its famous stoep, is to be converted into a museum.

**LIBRARIES.**—The State Library in Market Street is the old "Staats Bibliotheek" of the Transvaal Republic, and very successfully fulfils its functions. It is also a depository for official publications, and contains among the 60,000 odd books and documents many valuable collections dealing with the history of South Africa, and particularly of the Transvaal, from the earliest times. Leading departmental libraries are those of the Agricultural Department, the Supreme Court, and the Legislative Council.

**MINT.**—Since January 1, 1923, the Pretoria Mint (formerly, under the South African Republic, the Transvaal Mint) has been a branch of the Royal Mint, for the purpose of the manufacture of the British sovereign and half-sovereign. The new Mint stands on the site of the old gaol in Visagie Street, and its erection cost about £200,000.

**MUNICIPAL HISTORY.**—Responsible municipal government in Pretoria was first contemplated in 1880, when a municipal election was actually held and a Dorp Raad was formed. The first Transvaal War, however, stopped any further activities, and from then onwards the municipal affairs of the town were controlled chiefly by the Landdrost, or Magistrate, assisted by Commissioners, until in 1897 the late President Kruger appointed a temporary Town Council. The outbreak of the Second Transvaal War and its result brought a Military Government into the city, but in 1902 a nominated Town Council was created, and in 1903 a Municipal Elections Ordinance conferred responsible municipal government upon Pretoria. Until 1912 the municipality re-



mained without the powers possessed by every other municipality in the Transvaal because of its refusal to come under a new ordinance which automatically repealed the old *Stads Regulations*. By these (which still remain in force) the use of the foot-paths is forbidden to natives and coloured persons. In spite, however, of these earlier disabilities the city progressed rapidly, and the Council has ever been active in devoting itself to the needs of a growing population.

**MUSEUMS.**—The Transvaal Museum occupies a site in the grounds of the Zoological Gardens, and is noted for its many collections of South African curios and relics, the historic memorials of the South African Republic being especially interesting. Native relics include many remnants of prehistoric man, Bantu assegais, and medicine-man charms, and there is a good collection of stuffed animals and birds.

The new Geological Museum is housed in the fine granite building facing westward which stands on the right side of the road leading from the Station to Church Square. The geological and other exhibits are extremely interesting and instructive. There is also the nucleus of an Art Gallery in this building which will no doubt soon be considerably developed.

**PARKS AND GARDENS.** The principal parks of Pretoria are Burger's Park and Prince's Park. Burger's Park, near the Railway Station, is only small, but is delightfully laid out, having been originally planned in 1880 as a botanical garden. Prince's Park, which was named by Princess Christian in memory of her son who fell in the Anglo-Boer War of 1899, lies to the west of Church Square and adjoins the tramway. Part of it is used by the Agricultural Show authorities, and it also contains football grounds, tennis courts, and a bowling green. The Berea Park belongs to the Railway. Three miles from Church Square lies Fountains, whence the city obtains its supply of water, and which the municipality is gradually converting into a very beautiful and extensive natural park. The scheme includes the erection of a number of small bungalows, which are to be let to those who wish for a healthful and quiet holiday not too far removed from the Capital.

**POPULATION.**—The population of Pretoria was returned at 74,052 by the census of 1921. Of this number, 45,361 were Europeans, 24,794 Natives, 1,757 Asiatics, and 12,643 mixed and coloured. In point of population Pretoria is now the fourth city of the Union.

**SPORTS AND AMUSEMENTS.**—From racing to croquet, every kind of sport is patronised in Pretoria. The Racecourse adjoins the Prince's Park. In the winter Rugby football, and in the summer cricket, are the favourite games, and votaries of these are amply catered for on the Eastern sports-ground. Here are four large Rugby grounds, which have been planted with kikuyu grass from East Africa in order to give a satisfactory turf. Here also are decided the South African tennis championships. The Berea, Caledonian, and other parks provide generous facilities for cricket, Rugby football, tennis, bowls, and Association football. Three miles west of the city is the Municipal Golf Course, one of the best in the Union, where a fine club house makes provision for the needs and pleasure of its members.

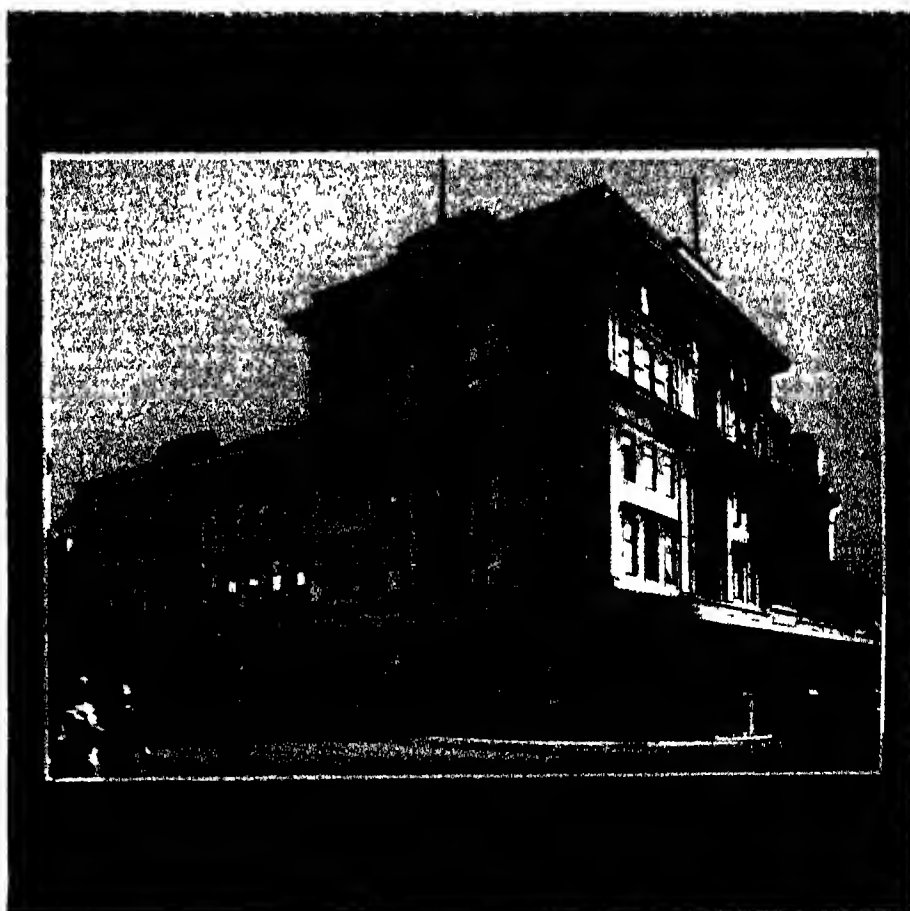
**STREETS.**—Most of the streets of Pretoria are laid out in regular parallelograms, and many of them have been planted with fine

avenues of oaks, willows, jacarandas, palm and plane trees. Consequently the city thoroughfares are in summer always cool and shady.

From the Railway Station the broad Market Street leads directly to Church Square, which is the heart of Pretoria. Here it is crossed at right angles by Church Street, which, running east and west, is the main thoroughfare of the city and contains most of the leading business houses and shops. In Church Street West is the house of the late President Kruger and also the Dopper Kerk where he used to preach, and in sight of which his body was laid to rest after being brought from Holland.

**TRAMWAYS.** Established in 1910, the Pretoria electric tramways are owned and controlled by the Municipality. There are 15.75 miles of track, and the total capital

The College Buildings, surrounded by ample recreation fields, are situated near Rissik Station. They consist of two detached blocks, which, however, are only a portion of a larger design to be completed when the growth of the University warrants it. The front block is Byzantine in style—two storeys in height, and contains classrooms, biological and geological laboratories, lecture rooms, library, a large lecture hall, professors' rooms, and offices. The back block is a single storey building, and is occupied by the departments of chemistry and physics; it contains also two lecture rooms. The institution is an autonomous body, with an independent council and constitution. The staff consists of professors in Latin, Greek, English, Dutch, philosophy, economics, history, mathematics, physics, and chemistry, and a competent body of lecturers in other subjects.



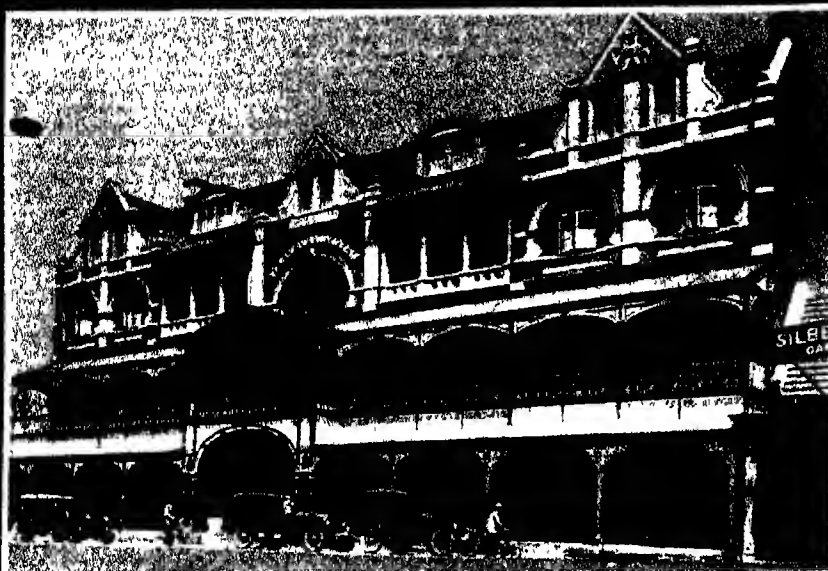
F. DEY, Pretoria  
A recent Contract. (Southern Life and Bourke Trust Buildings.)  
(See *letterpress*, page 56)

expenditure to a recent year was £209,263. The number of passengers carried was 6,882,662, but there was a deficit on that year's working of £2,000, revenue amounting to £87,565 and expenditure to £90,174.

**UNIVERSITY.**—This institution is the chief centre of higher education in the Transvaal, and is fully equipped to prepare pupils for all university examinations above the matriculation, and up to and including the degree of Master of Arts. Although the University was only founded in 1908, many of its students have won their way (largely by means of the Rhodes Scholarships) to Oxford and the principal Universities of Europe and America.

**VALUES.**—The valuation of property within municipal limits in 1924 was about £11,000,000. The number of properties was 7,950, and the municipal revenue was £523,000. The assessment rates on land and buildings amounted to £136,000.

**WATER SUPPLY.**—The water supply of Pretoria is derived from a series of dolomite springs having their outlet on the portion of the farm Groenkloof locally known as the "Fountains Valley," at an altitude of some 150 ft. above Church Square, and three miles distant. At present the approximate discharge of the combined fountains is 6,000,000 gallons per diem. During the period covered from August to December



POLLEY'S TRANSVAAL HOTEL, Pretoria.

1. View of Building.
2. Beautifully appointed Lounge.
3. New Dining Room recently completed.

the daily consumption of the community is roughly 4,000,000 to 5,000,000 gallons. There is practically no restriction placed upon the domestic consumption of water by the inhabitants of Pretoria. Meters are only used on government institutions, hotels and large business premises. Before any meter charge is made against the Government such users are entitled to 100,000 gallons of water per diem free of charge. The South African Railways are permitted to draw 600,000 gallons of water per day free of charge, but their consumption at present is far below this figure. Water is now delivered to the city by means of three mains, varying in diameter from 18 inches to 30 inches, but the total flow of the springs will at an early date be delivered by means of a 3-foot diameter reinforced concrete aqueduct, and the water will be stored in a service reservoir having a capacity of 6,000,000 gallons. From this point water will be distributed throughout the whole municipal estate by means of steel and cast iron pipes to reservoirs in Arcadia, Sunnyside, and the western town lands. Pumping is necessary to the higher areas of Arcadia and Sunnyside, particularly to that occupied by the Union Government Buildings. The water is perfectly clear and absolutely pure, no filtering having at any time been found necessary.

**ZOOLOGICAL GARDENS.**—The National Zoological Gardens of South Africa were established in 1899 under the Government of the then South African Republic, and are controlled by a Director, who is responsible to a Committee of Management. The collection of animals is the best of its kind in South Africa, and the gardens rank with some of the oldest in the world for beauty, size, and general arrangement. During a recent year there were 108,592 visitors to the Gardens, the expenditure on which amounted to £11,975, while receipts (including the Government grant of £6,000) totalled £11,978.

#### VISITORS' GUIDE

**CLUBS.**—County—Waterkloof, National—238, Vermeulen Street, Pretoria—Church Square.

**CONSULATES.**—Belgium—211, Pretorius Street, Germany—337, Van der Walt Street, Netherlands—396, De Kock Street, Norway—79, Railway Street, Spain—211, Pretorius Street.

**HOTELS.**—Grand—Church Square, Imperial—Pretorius Street, Langham—Pretorius Street, Nigel House—Market Square, Polley's Transvaal—Pretorius Street.

**THEATRES.**—Grand—corner of St Andrew's and Pretorius Streets, His Majesty's—Church Square, Opera House—Pretorius Street. The A B C Cinema and Maxim's Bioscope are in Church Street.

#### REPRESENTATIVE COMMERCIAL ENTERPRISES

##### F. DEY.

**Early Activities.**—Although Mr Dey arrived in South Africa from Banffshire, Scotland, in July 1903, he did not commence business on his own account as a builder and contractor until 1915, having spent the intervening period as a carpenter and joiner, mostly on Government work. Whilst employed as a foreman he superintended the building of the Government Bacteriological Laboratory, Pietersburg School, the Normal College, University College, South African Mutual Buildings, and the erection of the Land and Agricultural Bank of South Africa.

**Development.**—Mr Dey has carried out some very important contracts, both for the Transvaal Provincial Council and the Union Government, amongst which were the Dutch Medium High School and a number of other school buildings, a furniture contract for the Provincial Council, and the Southern Life and Bourke Trust Buildings. An illustration of this building on page 55 shows the type of concrete construction in which Mr Dey has specially interested himself. All these contracts have been in connection with undertakings in the vicinity of Pretoria, and the material and workmanship are of the highest standard.

**Employees.**—These average approximately 40 whites and 60 natives.

**Partners.**—Messrs F. Dey and D. McD. Dey.

**Pretoria Address.**—123 Schoeman Street.

**London Agents.**—Julian Stephens, Limited, 19a, Coleman Street E.C. 2.

**Bankers.**—The National Bank of South Africa, Limited.

(See illustration, page 55.)

#### **POLLEY'S TRANSVAAL HOTEL.**

**Situation.**—This hotel has many advantages as to position, for, being in Pretorius Street, it is in close proximity to the banks, public buildings, and main business centres of the city generally, yet is free from the noise of the trams and heavy traffic.

**Premises.**—The construction of the premises is such as to ensure that visitors will find therein every possible comfort and convenience. A new dining room has recently been added, and this bright and airy room, with its excellent dance floor, is much patronised for cabaret shows, dinner-dances, etc. The beautifully appointed lounge, with the cool restfulness of its centre fountain, is a welcome addition to the many amenities of the hotel.

**Accommodation.**—This consists of 127 bedrooms and 12 private suites, each replete with every comfort, and maintaining the general high standard of excellence visible throughout the hotel. The usual writing-rooms, sitting-rooms, billiard-room and drawing-room are also available for the convenience of visitors.

**General.**—The hotel is the meeting place for the Pretoria Rotary Club, the Hollanders' Society, the British Empire Service League, and of the Tennis, Football, Hockey, and Referees' Clubs, also other societies and institutions.

The hotel bus and porters meet all trains.

**Management.**—The "Transvaal" is under the management of Mr A. E. Polley, late of Bloemfontein, who is well known for his great experience and excellence in handling hotels in general. His aim has always been to make the hotel so attractive to its patrons that they will become its advertisers, and recommend it to their friends.

**Telegraphic Address.**—"Polleys," Pretoria.

#### **WM. MILLAR & COMPANY.**

**Inception.**—This old established business was founded at the beginning of 1887 by Mr Wm. Millar, who retired in 1921, when the present company took over the enterprise.

**Business.**—The firm, which is noted throughout South Africa for the high quality of its goods, has the largest drapery establishment in Pretoria, stocks being always such as to meet the most modern requirements. There is a large mail order department, which is under a separate manager, whose long experience in this class of work has had much to do with the success the depart-



**WM. MILLAR & CO., Pretoria.**  
Company's Fine Premises in Church Street.

ment has attained. It is among the largest of its kind in the Transvaal.

**Resident Partners.**—Messrs. Hatton Duff, A. Lane and A. F. Reich.

**London Representatives.**—Messrs. Hollingsworth & Matthews, 8/9 Barbican,

E.C. 1, who also act as general buyers and shippers.

**Bankers.**—The Standard Bank of South Africa, Ltd.

**Cables.**—"Wilmill," Pretoria.



**JOHNSTONS LTD., Pretoria.**  
Firm's Premises in Church Street.  
(See *Illustration*, page 58.)

**JOHNSTONS LIMITED.**

**Inception.**—This firm was founded in 1887 by Mr Andrew Johnston, and occupied a building on the same site as the present company's own premises at 261/5, Church Street. In 1913 the concern was converted into a limited company, Mr Johnston becoming the Managing Director, a position he held until his death in 1919.

**Development.**—Commencing as a general store, the business has gradually expanded until to-day Johnstons Limited controls one of the leading departmental stores in the city, with connections covering practically the whole of South Africa.

**Business.**—This is confined to that of general retail merchants, with the following departments: groceries and provisions, drapery ladies', gentlemen's and juvenile outfitters, footwear, hardware, crockery, stationery and sporting requisites.

**Directors.**—Messrs E H Johnston, P V Pocock, J A Morgan, N F Johnston.

**London Representatives.**—Messrs Stuttafords Ltd., 11, New Union Street, E.C. 2, who act as buyers and answer all enquiries.

**Bankers.**—The Standard Bank of South Africa, Ltd.

**Cables.**—"Ajay."

(See also illustration, page 57.)

**ANDERSEN & COMPANY LIMITED**—Corner St Andries and Schoeman Streets. Established Bloemfontein 1902, removed to Pretoria 1915. Sole director, A Andersen. Builders and contractors, hot and cold water engineers, plumbers, zinc and iron workers. Shippers. Keep Bios, Birmingham. Bankers: National Bank. P.O. Box 837.

**DE VOLKSTEM.**—Pretoria.—This news paper was established in 1873. Produces, besides "De Volkstem" (daily edition), circulating in the Reef towns in general, "The Farmers' Gazette," the only bi-lingual agricultural publication in South Africa. Also publishes a bi-weekly edition of "De Volkstem" on Tuesdays and Fridays. This issue of 16 pages circulates all over South Africa, Rhodesia, and Belgian Congo.

**GRAND HOTEL**—Pretoria. Situated in the centre of the town, overlooking lawns

and fountains of Church Square. Equipped with every modern comfort, including hot and cold baths, and has perfect sanitation. Possesses the usual public rooms, which are finely decorated throughout. Terms range from 17s 6d per day to £5 5s per week, inclusive. Baggage master and uniformed porters meet all trains. Free motor-car conveyance to and from railway station is provided. Telegrams: "Grand Hotel." Pretoria. Telephone Nos. 0016 and 81. Manager, Mr Wm E Pritchard.

**GUNDELFINGER, B.**—Pretoria. Established 1887. Wholesale merchant, dealing in groceries, roughs, storekeepers' and hardware sundries. Bond stores. Durban and Delagoa Bay. London office: 49, London Wall, E.C. 2. Bankers: National Bank of South Africa, Ltd.

**HOCHSTETTER, H.**—Pretoria.—Established 1898. Agent for the German-African line, also financial, estate, insurance, house, and general agent. Telephone No. 98. P.O. Box No. 1042.

**HUPP GARAGE.**—236 242. Pretorius Street, Pretoria. Conducted by Mr Gerard H. Braak. Supplies a day and night service, is a direct importer of motor cycles, cycles, cars and accessories, undertakes repairs, painting, and vulcanising. P.O. Box, 604, telephone No. 765.

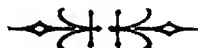
**NETHERLANDS BANK OF SOUTH AFRICA** (*Nederlandsche Bank voor Zuid-Afrika*). Established in 1888, has authorised capital of £750,000, with subscribed and paid up capital of £240,000. Head offices are at Keizersgracht 389, Amsterdam. London Agency is at Salisbury House, Finsbury Circus E.C. 2, the London bankers being the National Provincial Bank, Limited, and Messrs B W Blydenstein and Company. Has branches throughout the Union of South Africa, at Bethlehem, Bloemfontein, Britz, Bronkhorstspuit, Capetown, Dullstroom, Durban, East London, Ermelo, Hartbeestfontein, Johannesburg, Pietersburg, Port Elizabeth, Potchefstroom, Premier Mine, Pretoria and at Witbank. Bank acts as South African agent for the Pretoria Hypotheek Maatschappij (the Pretoria Mortgage Company). Is prepared to issue drafts and letters of credit, and also

to make telegraphic transfers upon its branches and agencies in Cape Province, Natal, Orange Free State, and the Transvaal. It negotiates and collects bills, and transacts every description of banking business in connection with South Africa. Current accounts are kept, and deposits are received for fixed periods. In addition to the London office, the bank maintains a branch at Hamburg (Schauenburgerstrasse, 14). Head offices in South Africa are at Pretoria, the General Manager for the Union being Mr Johannes Postmus. Board of Directors: Messrs C E Ter Muelen (chairman), A G A Van Eelde, W J Leyds, J Ier Muelen, A Roelvink, L C J Nieuwenhuys, and D P Scheurleer, with Messrs J D Pruisen and P Auyk as managing directors. Bank absorbed the Transvaal Commercial Bank in May, 1925, the combined balance sheet for that year showing reserve funds at £146,833 6s 8d, current accounts, deposits, and other liabilities £1,712,839 1s 9d, and, on the credit side, cash in hand and at bankers at £419,137 14s 1d, bills discounted, £1,131,803 10s 10d, and loans and advances to customers £911,118 1s 0d, leaving a balance to be carried forward of £617 5s 2d.

**PRETORIA MASTER BUILDERS' AND ALLIED TRADES ASSOCIATION.**—Fransrus Buildings, Pretoria. Established 1903. Chief objects are to make equitable arrangements between workmen and employees and to obtain recognition by architects and others of an equitable form of contract between builders and owners. Affiliated with the National Federation of Building Trade Employers. Secretary, G M Shiels.

**PRETORIA WEST FLOUR MILLING COMPANY, LIMITED.**—Founded in 1908. Is a buyer of wheat and mealies, and a manufacturer of the Acto and other brands of flour. Telephones, 465, 190, P.O. Box 348, Cables "Harvest."

**UNITED AFRICAN DIAMONDS LTD.**—Queen's Buildings, 280, Vermeulen Street, Pretoria. Capital authorised, £20,000, paid up £15,000. Diamond merchants, sawyers, cutters, and polishers. Exporters of polished diamonds to U.S.A., India and Japan. P.O. Box 861, telephones, 1593/4. Cables "Pyramids."





WITWATERSRAND UNIVERSITY, JOHANNESBURG

## CITY OF JOHANNESBURG

**J**OHANNESBURG, though the youngest of South Africa's leading cities, is the largest from the point of view of population, and is by far the most important industrial centre in the Union. Its rise to the position it now occupies has been phenomenal, and is almost entirely due to the gold mining industry of which it is the focus. It was on September 8, 1886, that the President of the South African Republic, S. P. J. Kruger, proclaimed as a public digging portions of farms on which the city of Johannesburg has since been established. At that time there were only a few tents and wattle and daub huts on the open veldt, but in December, 1886, the place was proclaimed a township and was given its present name by the surveyor, Johann Kiskik, out of compliment to President Kruger and General Joubert, both of whom bore the name Johannes. When the township was proclaimed the population numbered only 80, but it increased to 3,000 within twelve months, and after that its progress was rapid. The Stadsraad, or Town Council, was constituted in 1897, but soon afterwards the Anglo-Boer War intervened, and on May 31, 1900, British troops entered the city, the military and civil administration of the town being placed under a military Governor. The present Municipality dates from 1903.

Although Johannesburg owes its original and rapid development to gold mining its sole dependence upon that industry no longer exists. Concurrently with mining and in response to its needs and demands, there has been a great development in agricultural and pastoral pursuits throughout the surrounding district. Large tracts of land have been taken up in the northern areas of the Transvaal, and ranching and general agriculture have made rapid strides. Northward, within one hundred miles, an extensive coal-field provides cheap fuel for the needs of the people and non and steel works are being developed. Progress has been so rapid that Johannesburg now covers an area of 82 square miles, and has taken its place among the great cities of the world. In a word, it is the business centre of South Africa.

**ART GALLERY.**—The Municipal Art Gallery, established in 1910, is situated in Joubert Park, and the value of its pictures and other contents is estimated at about £100,000. This superb collection of works of art is very largely due to the efforts of Lady Lionel Phillips and the liberality of prominent South Africans in London.

**BATHS.**—The Municipal Council controls three sets of baths, the largest of which is the Ellis Park Open Air Swimming Bath,

conveniently placed in the centre of some of the most extensively populated districts of the town, and situated in the Ellis Park Sports Ground. The bath is 150 ft. in length and 100 ft. wide, its depth being from 3 ft. 4 in. to 7 ft. 4 in. It is brilliantly lit at night by 100,000 candle power electric lights. Covered seating accommodation is provided for 3,000 persons, and galas are held periodically. The Wenmer Park Bath in Pioneer Park is also open air, 100 ft. by 75 ft., and mixed bathing is allowed at all times. A third up to date swimming bath has been erected in the Show Ground at Milner Park.

**BROADCASTING.**—The first broadcasting station to be established in South Africa was opened in Johannesburg in 1924. A Western Electric Company's 500-watt equipment is installed in one of the largest department stores of the city, and broadcast programmes have been heard as far as a thousand miles away.

An interesting experiment was carried out by some wireless enthusiasts who took an ordinary 4-valve receiving set down a gold mine nine miles distant from the broadcasting station. It was found that in the upper levels of the mine the transmission was fairly successful, despite the interference caused by metal structures and electric cables.



**BUILDINGS.**—See article following

**CHARITABLE INSTITUTIONS.**—There are 19 charitable institutions in Johannesburg, seven of these being orphanages, two children's houses, two rescue homes, two homes for aged persons, and the remaining six of a miscellaneous character. A recent return gave the total number of inmates as 1,933, the revenue of all for the year amounting to £107,277 and the expenditure to £114,858.

**CHURCHES.** The churches of Johannesburg, numbering over 100, are in the main without remarkable architectural features. The Jewish Synagogue, with its striking dome, is the most prominent in size. St. Mary's Hall is the Anglican Church, and seats about 1,400 persons. Johannesburg

cloudless skies, and a moderate temperature, the mean for the year being 59.6 and the mean maximum in January (the hottest month) only 76.4 Fahr. The average rainfall is 30.65 inches, and the annual sunshine 74 per cent of the total possible hours of sunshine, in London the figure is 20 per cent. Subject to the qualification that the altitude is not suitable for people with weak hearts, the climate of Johannesburg may be said to rank with the best in the world.

**CLUBS.** The premier club of Johannesburg is the Rand Club, whose luxurious premises, built at a cost of £112,000, occupy a fine site at the corner of Commissioner and Loveday Streets. The New Club, in Loveday Street, is a favourite resort of business men. The South African Party Club is housed in magnificent new premises

**EDUCATIONAL FACILITIES.**—Johannesburg is a well-recognised educational centre. The schools of the Witwatersrand range from the 87 primary and intermediate schools to the University. Notable free institutions providing education to matriculation standard are the King Edward VII. School for boys, the Johannesburg Girls' High School, and the Jeppe High School with departments for both boys and girls. The Government Commercial High School averages about 300 pupils. A very valuable Trades School has been in existence since 1912. The excellent private schools with which Johannesburg is so well supplied include St. John's School, the Roedean High School, St. Andrew's School, the School of the Marist Brothers, and several Convent Schools. (See also "University.")



1. Commissioner Street and 2 Fox Street, Johannesburg, showing offices of three great enterprises. Left (Corner House): Rand Mines Ltd. Centre. Johannesburg Consolidated Investment Co. Ltd. Right. Branch of Standard Bank of South Africa, Ltd.

is now the cathedral city for the southern portion of the old Pretoria Diocese, which has been divided, and a Cathedral, Romanesque in style, is building close to the present church. Of this, only the Lady Chapel has been commenced. There is a large Roman Catholic Church in Kerk Street, the Presbyterian Church stands at the corner of Noord and Claim Streets, and the Congregational Church is in Bree Street. A new Wesleyan Church was completed in 1919 at the corner of Pritchard and Kruis Streets.

**CLIMATE.**—The city of Johannesburg lies 5,735 feet above sea-level at the Railway Station, and the main features of its climate are a pure and exhilarating air, almost

on the corner of Eloff and de Villiers Streets. This club, the Union Club in Bree Street, and the United Party Club in Noord Street, near the Railway Station, have all large membership rolls. The National Party Club will shortly be accommodated in new buildings in Bree Street. At Killarney are the house and grounds of the Transvaal Automobile Club, and the Country Club is situated near Auckland Park, where the club-house, with its surrounding gardens and plantations, its 18-hole golf course, tennis courts, and swimming pool, is a most attractive centre. The French Club, the rendezvous of the French colony on the Rand, has attractive premises in King George Street.

#### **ELECTRIC LIGHT AND POWER.**—

The principal electrical supply is that furnished by the Municipal Electric Light and Power Station, which was established in 1889, being the first undertaking of its kind in South Africa. It has also by far the largest plant in South Africa, the total capacity being 22,300 kilowatts. An additional 10 kilowatt set was installed in 1926.

A second source of electrical supply is provided through the great generating stations of the Victoria Falls and Transvaal Power Company, Limited, whose power lines radiate all over the Reef. Direct supplies from this company can only be obtained outside the municipal area.

**FINANCES.** According to the abstract of accounts for the year ended June 30, 1925, published by the Johannesburg Municipality, the total loan debt of the city was £8,195,000, against which the redemption funds amounted to £4,057,679. It is anticipated that, of the debt, £6,667,000 will be repaid by 1934. The reserve funds totalled £822,641, which sum was made up from the following: Renewals fund, £766,851, tramways special reserve fund, £27,120, employees' accident insurance fund, £27,118, and abattoir and livestock indemnity fund, £1,501. The balance to the credit of the renewals fund was £802,400. The withdrawals for the year amounted to £117,546, while the revenue was £81,067.

The total net expenditure for 1924-25 was £714,152, against £600,048 in 1923-24 and £580,081 in 1922-23. The receipts from the assessment rate brought in £481,794, a sum practically the same as the receipts for the two previous years. The deficit for the year 1924-25 on general ex-

penditure was £232,358, while the deficit for the year 1923-24 was £134,040, and for 1922-23 £158,287.

**HOSPITALS.**—The Johannesburg Hospital is one of the largest institutions of its kind within the British Empire. It stands in extensive and well cared for grounds to the north-west of Jonbert Park, and has grown to its present importance from a very small beginning, having been at the first (1888) under the charge of a Rev. Mother Superior and three nursing sisters belonging to the Order of the Holy Family. To-day it is controlled by a Medical Superintendent, a chief executive officer, a large medical staff, and over 350 nurses. There are 930 beds, of which over 150 are for the use of Asiatics and Natives. The theatres are finely equipped, and the X-ray department possesses the most improved scientific apparatus. The annual cost of maintenance is about £200,000, most of which is provided by the Provincial Government. About £40,000 is contributed in fees. In-patients for the year ended March 31, 1925, numbered

works of reference. There is a special African collection of over 3,500 volumes. Formed in 1900, in memory of the late Major Louis Irving Seymour, who raised the Pioneer Regiment and was killed at Sand River, Orange Free State, in the Anglo-Boer War, the Seymour Memorial Library consists of a valuable collection of technical and scientific works, which is continually being added to. The Library is housed in University College Buildings, 11011 Street.

**MARKETS.** Johannesburg has long been established as the centre of the South African live stock and meat trade. Working in close co-operation with the South African Railway Administration, the Municipal Council has erected the largest live-stock market in Africa, where annually a million and a quarter animals are handled, aggregating in value to 16,000,000. As many as 350 truck loads of live stock are dealt with daily in these yards, which are constructed on scientific lines, so that they are always clean and stock may be handled with the



SOUTH AFRICAN PARTY CLUB, JOHANNESBURG

penditure was £69,514, a considerable sum when contrasted with the surplus of £6,003 in 1923-24 and £52,192 in 1922-23. This deficit is, however, to some extent accounted for by the large sum of £26,235 paid out in white labour relief contributions and the cost of the Prince of Wales' visit, which amounted to £13,383. The net profit on the Council's trading departments for 1924-25 was £91,114.

**RATEABLE VALUE.**—The rateable value of the city of Johannesburg (municipal area) at the end of 1925 was £50,840,595, of which £17,475,116 was on land and £33,371,479 on buildings.

(See article following on "Architecture and Building Development in Johannesburg.")

**FIRE PREVENTION.**—The Municipal Fire Department consisted in 1924 of 77 officers and men, distributed at five stations. The area coming under the protection of the Department covers about 82 square miles, and includes all townships within a radius of nearly six miles from the Central Fire Station. The annual maintenance charges exceed £50,000. Eleven engines

15,186 and out patients 42,068, while 6,423 operations were performed. The hospital is now an integral part of the Medical School of the University of the Witwatersrand.

The Transvaal Memorial Hospital for Children was recently erected at a cost of £113,000, the site in Milner Park having being given by the Municipality. The King Edward VII Convalescent Home was inaugurated in 1903. Other institutions are the Queen Victoria Maternity Home, the Fever Hospital, which overlooks Milner Park, the Alexandra Convalescent Home, and the Hope Home for Children.

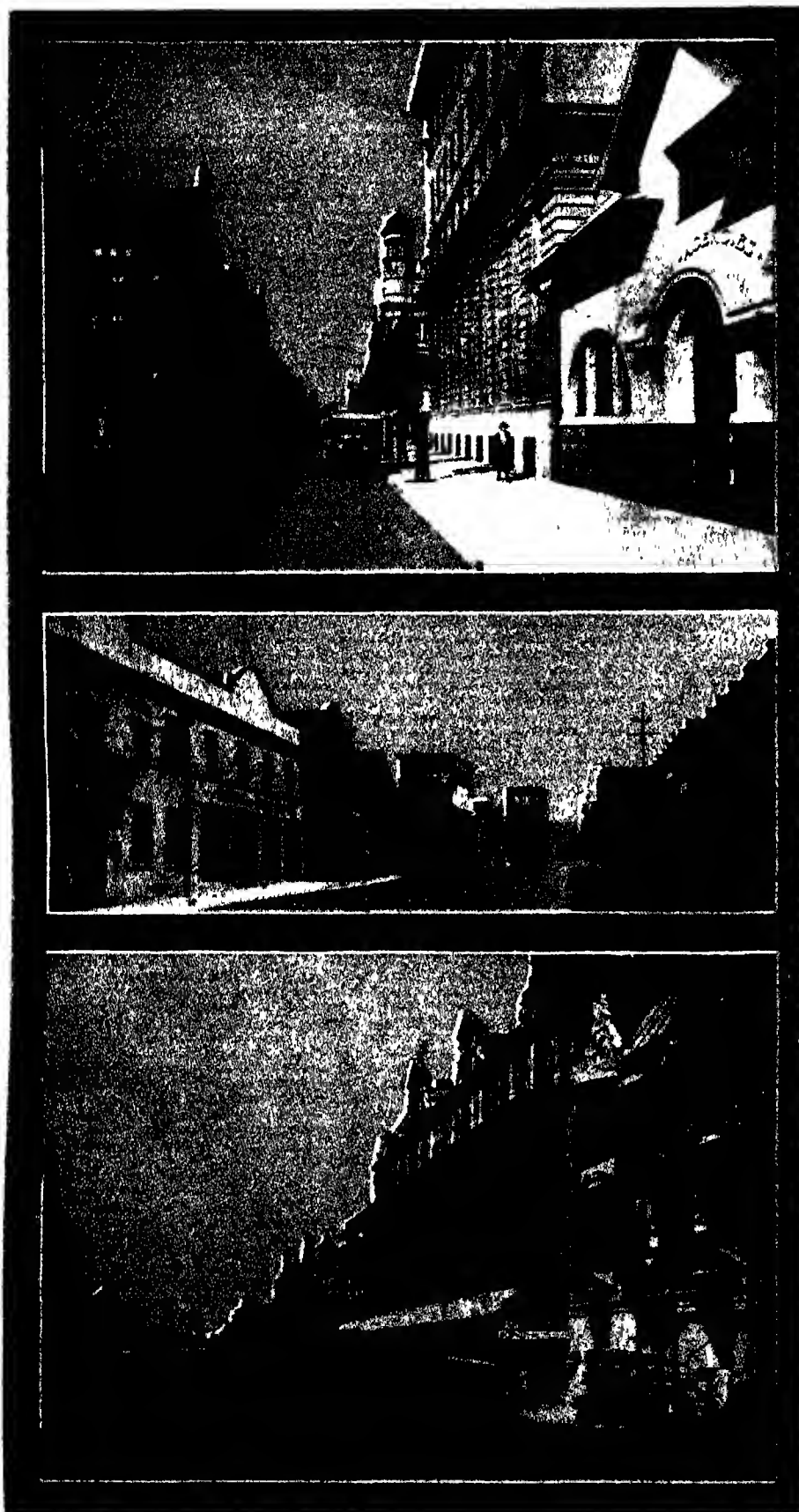
**INDUSTRIES.**—See article following.

**LIBRARY.**—The Public Library, under the control of the Municipality in Kerk Street, has lending and reference departments, subscribers' and free reading rooms, and a children's department which contains a special lending library with accommodation for reading and reference. The number of registered readers now exceeds 5,500, of whom a good proportion are juveniles, and over 400,000 volumes are issued annually. The total stock of the library consists of over 65,000 volumes, of which 12,000 are

at most convenience and dispatch. The municipal abattoir for the slaughter of animals averaging over 500,000 annually, adjoins the stock market. It is equipped throughout with the latest type of apparatus, labour and time saving devices, which permit of the expeditious handling of any quantity of carcasses, while the arrangements with regard to meat inspection are also most efficient. At the abattoir are the municipal cold storage chambers, among the most extensive and modern in South Africa. Large quantities of meat and other perishables may be stored here at low cost for an indefinite period and at any required temperature, and consignments of meat can be sent in refrigerating vans by rail to the coast for exportation overseas.

Near the abattoir, and connected by rail with the goods yards of the South African Railways, is the Johannesburg wholesale and retail produce market, covering an area of approximately eleven acres. The value of produce sold here in a year exceeds £1,000,000.

**MUNICIPALITY.**—Johannesburg first acquired full municipal rights in 1897 by the



1. Main Street, Johannesburg. Transvaal Chamber of Mines on right, facing Stock Exchange on left.
2. Main Street, Johannesburg. Showing premises of Stewart & Lloyd (S.A.) Ltd. on left and Hansford & Hansford on right.
3. Loveday Street, Johannesburg. Showing Hubert Davies & Co.'s premises on right.

foundation, under a law enacted in that year of a Stadsraad of 12 members with a Burgomaster appointed by the Government. This body virtually ceased to exist on the outbreak of war in 1899 but was reconstructed as a Nominated Council after the occupation of the town by the British. An ordinance passed two years later gave authority for the election of a Town Council, which met for the first time in 1903. Since that date the progress recorded in all directions, particularly in the development of municipal enterprises, has been very great. The area controlled by the municipality covers 82 square miles with about 800 miles of streets and roads, and includes 118 townships.

**OBSERVATORY.**—The Observatory of the Union of South Africa, situated on the north eastern border of Johannesburg was instituted in 1903, when, as the result of a petition presented by the South African Association for the Advancement of Science, the Governor of the Transvaal decided to form a Meteorological Department for that colony. The Transvaal Observatory, as it then was, was officially opened in 1905 by Lord Milner and became the Union Observatory, with a strongly developed astronomical side, in 1911. It still, however, maintains its own meteorological observations, and as such it is the only official meteorological station of the first order in the Union.

The Observatory is open to visitors, who must obtain a card of admission from the Union Astronomer. On Wednesday afternoons the instrumental equipment is exhibited and on Wednesday evenings an astronomer shows visitors a few wonders of the heavens through one of the large telescopes. The astronomical equipment consists of several fully fitted visual and photographic telescopes, and a 26 inch visual telescope, now in course of erection, will be the largest of its class in the Southern Hemisphere.

**PARKS AND GARDENS.**—The largest open space in Johannesburg is Joubert Park, which is not far from the centre of the city, and is very tastefully laid out with gorgeous flower-beds, a large conservatory of exotic plants and a picturesque lily pond. At the south end of the park is the Art Gallery, and at the opposite end a tea-kiosk. Just beyond Joubert Park are the Hospital Gardens. Eckstein Park, presented to the city by Messrs Wernher, Beit and Company in memory of the late Mr Herman Eckstein, contains the Zoological Gardens. Pioneer Park, dedicated in 1924 by His Excellency the Earl of Athlone to the memory of the Rand Pioneers, is planted with trees named after individuals associated with the early days. Parks have also been laid out in Doornfontein (Ellis Park, the centre of South African Tennis), Jeppe's Town, Kensington, Turfontein, and La Rochelle.

**POPULATION.**—Few cities in the British Empire can boast of a more rapid expansion than the Golden City. Johannesburg was proclaimed a township in 1886, when it had an estimated population of fifty whites. In 1889 the total had increased to 3,000, and in 1911 to 237,000, while in 1924 there was an estimated population of 160,000 Europeans and 130,612 non-Europeans, making a total of 290,612.

**RACING.**—Racing, which is exceedingly popular in Johannesburg, takes place within the Rand-Pretoria area twice a week—on Wednesdays and Saturdays,—in addition to public holidays. There are two courses at Johannesburg, the leading one being that of the Johannesburg Turf Club at

Turffontein, and the other at Auckland Park. The Turffontein course is used by the Johannesburg Pony and Galloway Club, and is one of the best appointed in South Africa. Big meetings are held by the Turf Club every quarter.

**SPORT AND RECREATION.**—Every kind of sport has its votaries in Johannesburg, where numerous facilities are offered. The admirable racecourses have already been mentioned. The Rand Hunt Club holds runs on Sunday mornings. Owing to the absence of foxes and the prevalence of wire, hounds follow a drag. Horsemen can be assured of a good gallop over fences, and strangers are always welcome to attend the runs.

The largest and most popular sporting grounds in Johannesburg are the Wanderers, near the Railway Station, and here are played many of the big cricket and football matches for which the city is famous. Golf has taken a firm hold upon the residents of the Rand, and in or near Johannesburg itself are three 18-hole courses: those of the Johannesburg Golf Club beyond Orange Grove, the Turffontein Golf Club on the Eloff Street extension, and the Parkview Golf Club on the way to Rosebank, and one 9-hole course that of the Kensington Golf Club. Lawn Tennis is played largely on the Wanderers' Club grounds, and those of the Berea and Yeoville Clubs. Yacht sailing and racing take place on the Pan, the large sheet of water south of the town.

**STREETS.** Johannesburg is laid out to a strictly rectangular design, the two main arteries which bisect the city from east to west and south to north respectively being Market Street and Eloff Street. Adjoining the former are the fine buildings of the Town Hall and the Post Office, and this is practically the centre of the city, the bulk of the business and shopping facilities being confined within a quarter of a mile radius of this point. Eloff Street and Pritchard Street are the principal shopping centres. Commissioner Street, one of the first to be laid down, contains some of the finest buildings in the city, notably the palatial Rand Club, His Majesty's Theatre, the Carlton Hotel, the Palladium, the Empire Palace of Varieties, and Messrs H. Eckstein and Co's Corner House. (See also article following.)

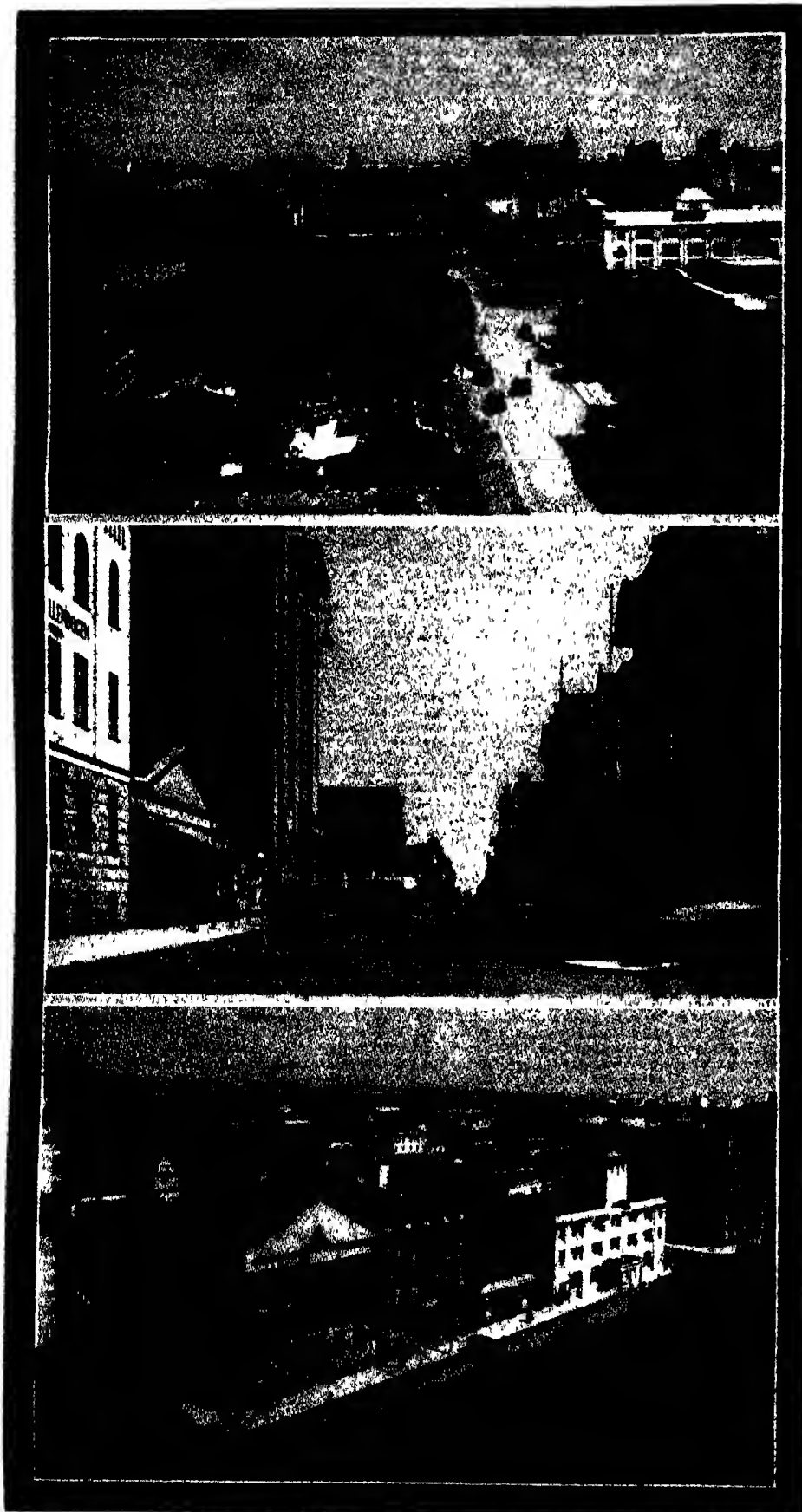
**THEATRES.**—Johannesburg is particularly well catered for in connection with theatrical entertainments, the leading "legitimate" theatre, at which the best English companies play, being His Majesty's in Commissioner Street. The Standard, in Market Place, the Palladium, in Simmonds Street, and the Empire Theatre of Varieties in Commissioner Street, are also fine theatres. Actually the largest house of entertainment is the Orpheum in Jeppe Street, a bio-vaudeville house with prices ranging from 6d to 2s 6d. The new Bijou, also in Jeppe Street, is noted for its music as well as for its pictures. Other Cinema theatres are the Carlton, in Market Street, the Ivoli, in President Street, the Lyric, at Braamfontein, the Jeppes at Jeppetown, and the Alhambra, at Doornfontein.

**TOWN HALL.**—The Johannesburg Town Hall occupies a central position, on what was formerly an open market place, but is now the junction of President, Rissik, Market and Harrison Streets. The structure, which consists of two buildings, covers an area of over 82,500 square feet and cost (exclusive of site) £400,000. It was opened in 1915 by the then Governor-General, Earl Buxton. The main hall, which contains a magnificent grand organ, the particular pride of Johannesburg, has seating accom-



1. ELOFF STREET, JOHANNESBURG, CARLTON HOTEL ON LEFT.
2. TOWN HALL, JOHANNESBURG.
3. ANOTHER VIEW OF ELOFF STREET.





1. Johannesburg from the top of Nunnerley's Building, President Street running through.
2. President Street, showing Nunnerley's premises on left.
3. Another view of Johannesburg from the top of Nunnerley's Building.

modation for about 3,500, and the smaller Selborne Hall for 950 persons. The organ itself cost £13,154, and is used for recitals on Sunday evenings and for the famous lunch-hour recitals which are so popular.

**TRAMWAYS.**—The very efficient electric tramway system of Johannesburg dates from 1906, the Municipal Council having in 1904 taken over the working of the old private tramways company, which had been in existence since 1891. By 1923 the system covered 73 miles of track, and carried 54,032,459 passengers. The total capital expenditure then amounted to £1,120,222, and the revenue for the preceding 12 months to £528,684, against an expenditure of £551,510. There were 718 employees, all Europeans.

**UNIVERSITY.**—The incorporation of the University of Witwatersrand developed out of the Transvaal Technical Institute, which afterwards became the South African School of Mines and Technology, and was accomplished in 1922. His Royal Highness Prince Arthur of Connaught having been elected the first Chancellor. Largely owing to the generous support of the Municipality, which gave the site in Milner Park, and to that of the public the University Buildings are remarkable for their beauty and efficiency, being situated on one of the most attractive sites in the midst of impressive scenery. The University has faculties of arts, science, medicine (including dentistry), commerce, engineering (including mining and metallurgy, mechanical and electrical engineering, civil engineering, chemical technology, and architecture), and law. There are also departments of education, veterinary science, music and Bantu Studies.

By means of its evening classes and the close co-operation kept up with Rand workers' educational organisations, the University of the Witwatersrand, if the youngest of South African Universities, has quickly become the second largest with a very wide-spreading sphere of influence. The medical faculty of the University is housed in new and modern buildings, situated between the Institute of Medical Research and the General Hospital. The number of students enrolled at the end of 1923 was 1,008.

**WATER SUPPLY.**—This is controlled by the Rand Water Board, which was constituted in 1903 to carry out a scheme for the adequate supply of water to the local authorities and mines on the Witwatersrand. The limits of supply include the magisterial districts of Johannesburg, Boksburg, Germiston, Krugersdorp, Benoni, and Springs. The Board consists of 26 members, including the chairman, who is appointed by the Union Government, the Johannesburg Municipality being represented by 5 members. Most of the supply is drawn from boreholes and shafts sunk on the farm Zuurbeekom, about 17 miles south of Johannesburg. This source of supply was purchased by the Board from the Johannesburg Waterworks Estate and Exploration Company Limited. The cost of installation of the Johannesburg Waterworks totalled £544,948 in 1923, the annual consumption being 1,658,834 gallons.

**ZOOLOGICAL GARDENS.**—These are situated at less than half an hour's run by tram from the Town Hall, and cover 200 acres of fine park, lake and forest land. They were opened in 1905, and more than 200,000 visitors annually pass through the gates. A large natural den for some of the lions has been carefully constructed, and there is also a rocky retreat for the use of the Barbary goats. The aviary, full of beautiful African birds of gorgeous plumage, the bear den, and the cages of the leopard and other wild animals are other leading features.





MARKET STREET, JOHANNESBURG.

### VISITORS' GUIDE

**CLUBS.**—Automobile Killarney, Country Club—Auckland Park, French Club—King George Street, National Party—Bree Street, New—corner of Loveday, Main and Fox Streets, Rand—corner of Commissioner and Loveday Streets, South African Party—Eloff and de Villiers Streets, Union—Bree Street, United Party—Noord Street, Wanderers—Kruger's Park

**CONSULATES.** Belgium—“Collingwood,” corner of Jan Smuts Avenue and Sherborne Road, Parktown, Chile—Jeppe Arcade, China—64 St. Patrick's Road, Denmark—General Mining Buildings, Italy—Rand Provident Buildings, Loveday Street, Portugal—Clonmel Chambers, Sweden—Consolidated Buildings, Switzerland—31 National Bank Buildings

**HOTELS.**—Carlton—Eloff Street, Central—62 Commissioner Street, Gladstone—152, Commissioner Street, Grand—42 Plein Street, Grand National—Rissik Street, Heath's—Pritchard Street, Langham—Kerk Street, Long's—Rissik Street, Midland—Pritchard Street, Pioneer—Plein and Loveday Streets, South African—Smit and Wessels Streets, Braamfontein, Savoy—Jeppe Street.

**NEWSPAPERS AND PERIODICALS.**—“The Rand Daily Mail” (morning); “The Star” (evening), three editions, “Sporting Star” (weekly); “Sunday Times”; “South African Mining Journal” (weekly); “South African Mining Review” (monthly); “South African Pictorial” (weekly); “South African Jewish Chronicle” (weekly); “Railway

Magazine” (monthly), “British South Africa Annual”

**POST OFFICE.**—The General Post and Telegraph Office is at the corner of Market and Rissik Streets, facing the Town Hall. Telephone call offices are in all the principal streets and suburbs

**PUBLIC LIBRARY.**—Kerk Street

**THEATRES.**—Bijou—Jeppe Street, Empire—Commissioner Street, His Majesty's—corner of Commissioner and Eloff Streets, Orpheum—Jeppe Street, Palladium—corner of Commissioner and Simmonds Streets, Standard—Standard Arcade, Market Street.

**SWIMMING BATHS.**—Ellis Park, New Doornfontein, and Pioneer Park

### REPRESENTATIVE COMMERCIAL ENTERPRISES

#### STUCKE & HARRISON.

**Inception.**—This firm of architects was founded in Johannesburg by Mr W H Stucke, who arrived in South Africa in the year 1889

**Development.**—In 1896 Mr Stucke was joined by Mr J E Harrison, who took over the Orange Free State section of the business, five years later Mr W E Bannister entered the firm and assisted Mr Stucke in the Transvaal until he left in 1908. Mr Harrison became associated with the firm in the Transvaal as a full partner in 1911

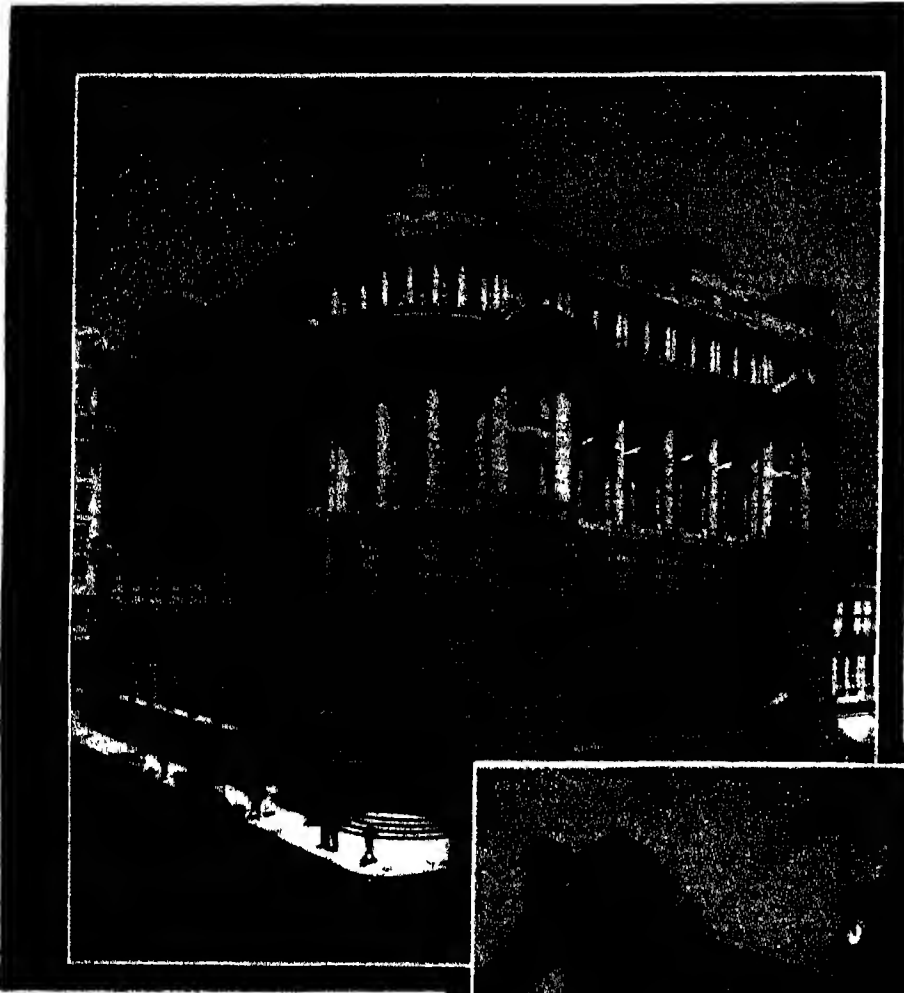
**Activities.**—Some of the principal contracts which have been carried out by the firm are W. M. Cuthbert & Co Ltd, two buildings

one in Von Brandis Square and the other at the corner of Eloff and Pritchard Streets, Johannesburg, new warehouse for J. Nunnerley & Co Ltd, Standard and National Bank Buildings in Commissioner Street, Johannesburg, buildings for the South African Mutual Life Assurance Society at Johannesburg, Capetown, Durban, Port Elizabeth, Bloemfontein and Grahamstown, the Board of Executors' Building at Bloemfontein, Permanent Buildings, Johannesburg, Luthje's Langham Hotel, Beumer & Co's warehouse, Johannesburg, Steytler's Buildings, Johannesburg, two new wings to the General Hospital, Johannesburg, Presbyterian Church, Yeoville, Original Grey College, Bloemfontein, Prehardt Library, Bloemfontein, Girl's Collegiate School, Port Elizabeth, Bloemfontein Club, etc. At Johannesburg a particularly comprehensive idea of the work of these architects can be seen at the corner of Commissioner and Harrison Streets, all the four buildings on this site having been erected by Mr Stucke. One of the more recent contracts which is of particular note is the South African Mutual Building at Port Elizabeth, which has a marble staircase 250 feet long, 50 feet high and 25 feet wide

**Partners.**—Mr W H Stucke, F.R.I.B.A., P.A.S.I., M.S.I. and Mr J E Harrison, J.A.R.I.B.A.

**Offices.**—31, S.A. Mutual Buildings, Harrison Street, Johannesburg.

**Cables.**—“Arch,” Johannesburg.  
(See illustrations, page 66)



#### THE CARLTON HOTEL (SOUTH AFRICA) LTD.

**Situation.**—This hotel, which occupies an excellent site in the best part of Johannesburg, fronts four streets—Commissioner, Eloff, Market, and Joubert Streets—and is thus in the centre of the shopping district, being also very convenient for the theatres, garages and principal clubs. It was erected at a cost of £750,000, and in design, construction, and equipment is as perfect as the most up-to-date London, Paris, or New York hotel.

**Premises.**—The building is six storeys high, besides having two mezzanines, and two sub-floors below the street level. The main entrance is Jacobean in style, and the internal decorations strike a note of correct and harmonious beauty which is characteristic of the whole structure.

**Offices.**—The reception office, cashier's office, enquiry office, luggage, parcels, and telephone exchange, call offices are on the ground floor, where also a post office has been provided for the convenience of visitors. The theatre ticket booking office will be found in the vestibule of the Commissioner Street entrance.

**Public Rooms.**—There is a spacious billiard room on the first sub-floor, with six tables by Burroughes and Watts. On the first floor there is a Louis XVI Palm Court, a very cool and restful place, which is the centre of the social life of the hotel, as also of the City. From this court are reached the ball-room, banquetting room, drawing, reading, and

writing rooms, and the Adams' restaurant. The comfort and refinement of these rooms will be readily apparent by a glance at the illustrations on page 67.

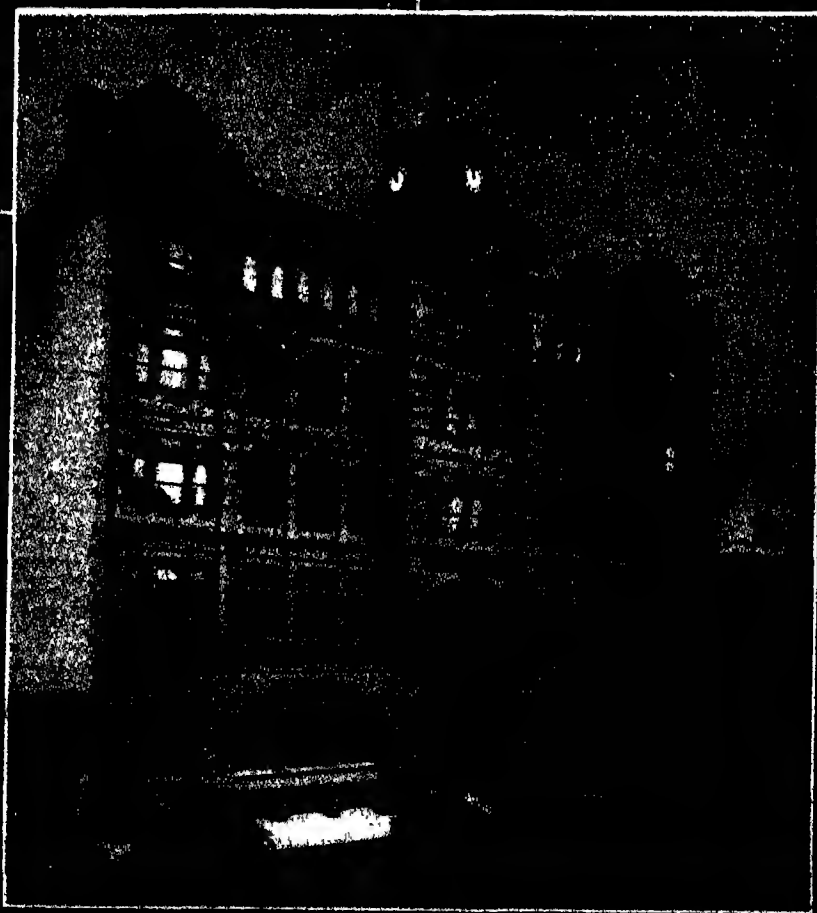
**Upper Floors.**—These are reserved for sleeping apartments, and although they mostly consist of single rooms, yet there are many suites, with bathrooms attached. On each floor there are sixty bedrooms, which will give some idea of the accommodation the hotel can offer. Telephones are installed in every room.

**Other Features.**—The hotel possesses excellent Turkish and electric baths. These are situated on the first sub-floor, quite close to the billiard room, and are under the supervision of Professor Carey. The lighting of the hotel leaves nothing to be desired, and it is throughout decorated in a quiet and harmonious style. The furniture and fittings are of a suitably artistic character.

**Ventilation.**—The Plenum system, which extracts the vitiated and supplies fresh air, is in use, thus ensuring the thorough ventilation of all rooms.

**Water Supply and Laundry.**—The hotel has its own artesian well-water supply, as also a special laundry and cleaning establishment.

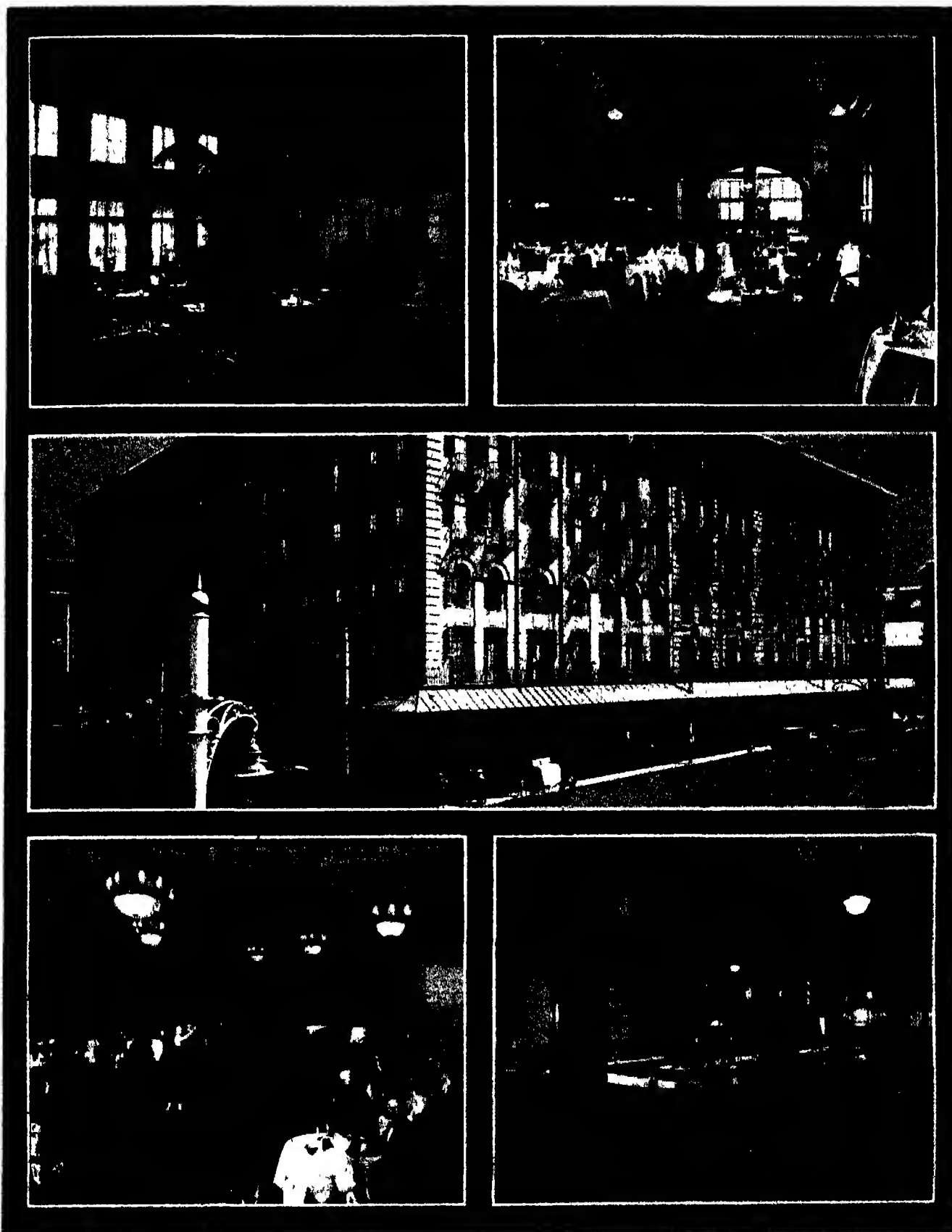
**Wine Cellars.**—These, the finest in South Africa, contain a variety of rare and costly vintages, valued at over £25,000.



STUCKE & HARRISON, Johannesburg.

1. Standard Bank, Commissioner Street, Johannesburg (Architects—Stucke & Harrison).
2. Exploration Buildings, Commissioner Street (Architects—Stucke & Harrison).

(See letterpress, page 65.)



THE CARLTON HOTEL (SOUTH AFRICA) LTD., Johannesburg.

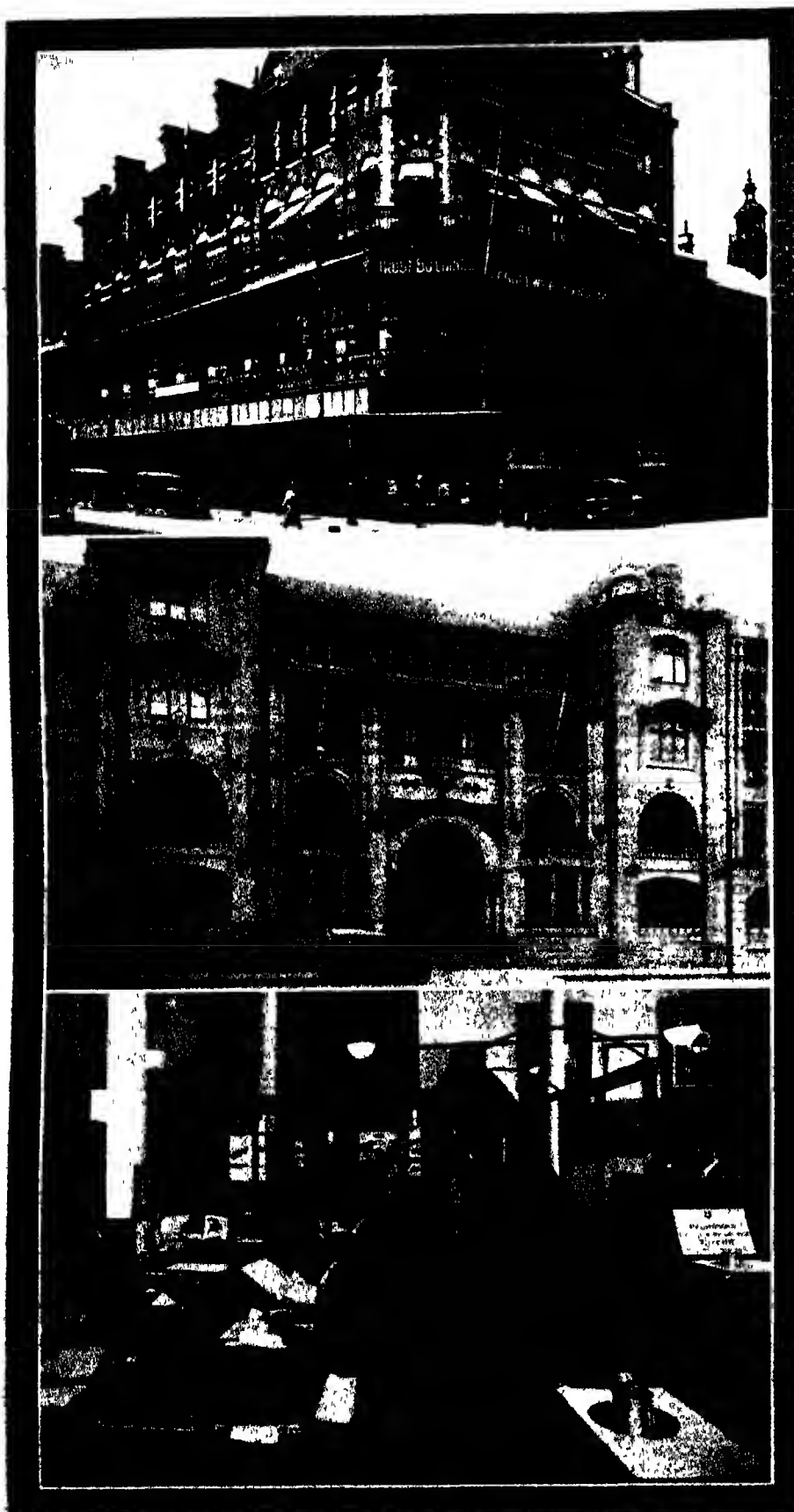
1. The Palm Court.

2. The Grill Room

4. Dinner Dance

Centre: The Hotel.

5. Bar and Smoking Room



THE SOUTH AFRICAN & GENERAL INVESTMENT & TRUST CO. LTD., Johannesburg.

1. Trust Buildings, Johannesburg, the Company's Head Office for Africa.
2. The Durban Office.
3. Portion of the General Office at Johannesburg.

**Management.**—The management is in the hands of Mr H Gauthier, who has had wide experience in London and on the Continent, while Mr Jansonius is the assistant-manager.

**Staff.**—The members of the large and efficient staff, many of whom have been engaged from leading European hotels, are extremely well trained, and are conversant with all modern languages.

#### THE SOUTH AFRICAN AND GENERAL INVESTMENT AND TRUST CO. LTD.

**Inception.**—This company was formed in 1895 by Mr H B Marshall, the founder of "Marshall's Township," situated in the heart of Johannesburg, in the centre of the Witwatersrand, which extends about thirty miles east and west of the city, and is noteworthy as being the source of the world's production of gold.

**Development.**—In 1912 business was extended to Natal and to Rhodesia, where connections have been established among the farmers and planters of those regions, and further expansion is expected in the near future.

**Capital.**—The original capital of the company was only £30,000, but it has increased proportionately to the development of the Union of South Africa and the expansion of Rhodesia. In September, 1925, the issued capital was £680,000, equally divided into fully-paid shares and five per cent debenture stock. Arrangements were being made to issue the balance of the authorised capital, and so bring the resources of the company up to £1,000,000.

**Financial Operations.** In so far as the investment of its own funds is concerned, the company chiefly advances monies by way of first mortgage on town and suburban properties and farms. It has a large connection in Johannesburg and on the Witwatersrand, and has actively developed its interests in Natal and Rhodesia, more particularly with the sugar and cotton planters in Natal and Zululand, and with the maize, tobacco, and cotton growers in Southern Rhodesia.

**Other Activities.**—One of the principal activities of the company is the conduct of trusteeships and executorships, and the investment and administration of funds on behalf of resident or absentee clients, the monies so administered now amounting to nearly £1,000,000.

**Secretariats and Administrations.**—The company's various branches also undertake the duties of secretary for a number of mining, land, industrial, and agricultural concerns. At Johannesburg the institution administers the Clydesdale (Transvaal) Collieries, Ltd., operating two pits, one in the Witbank district of the Transvaal and the other in the Orange Free State. The output from these mines exceeds half a million tons per annum, the principal customers being the mines, railways, and local industries, while export and bunkering at Delagoa Bay and Capetown also take their quota. Another local industry administered by the company is the Brick and Potteries Company Ltd., whose yard is centrally situated in Johannesburg. This concern has an output of twelve to fifteen million bricks a year, besides various other special lines.

On the Far East Rand the South African and General Investment and Trust Company controls the Witbok Proprietary Company Ltd., whose property adjoins many of the modern deep-level gold mines, and offers agricultural holdings in areas to suit individual buyers. These plots are much sought after by mine employees and miners who have become incapacitated for their ordinary

employment through contracting miner's pthisis, and also by small farmers looking for farms in close proximity to markets. The management of an alluvial diamond digging on the Vaal River, the administration of "Marshall's Township," where the premises of the company are situated, and the collection of ground rents are also in the hands of the S A & G I & T C.

**Representations.**—The company represents the London and Lancashire Insurance Company and the Aberdeen and White Star Steamship Companies, which convey freight and passengers between South Africa and the United Kingdom, and South Africa and Australia.

**Head Office.** The company's head office, at Pinners Hall, Austin Friars, London, E C 2, is in close touch with the Overseas Settlement Board, and administers the Heibert Amsworth Settlers' Bequest.

**Branches.**—Johannesburg Trust Buildings, corner of Fox and Loveday Streets. P.O. Box 155. Cables, "Sphinx." Durban Club Arcade, Smith Street. Rhodesia Union Buildings, Manica Road, Salisbury.

**Directorate.**—Messrs James W. Bowhill (chairman), John Abernethy (deputy-chairman), Henry B. Marshall, J. P., D. L., Clement Davies, F. J. Carlyle Gifford, and James Russik Marshall.

**Management.**—Managing-director Mr. Clement Davies. General manager in South Africa Mr. Raymond des Claves.  
(See also Shipping Section)

#### BLINMAN, HOLWILL & ISLIP.

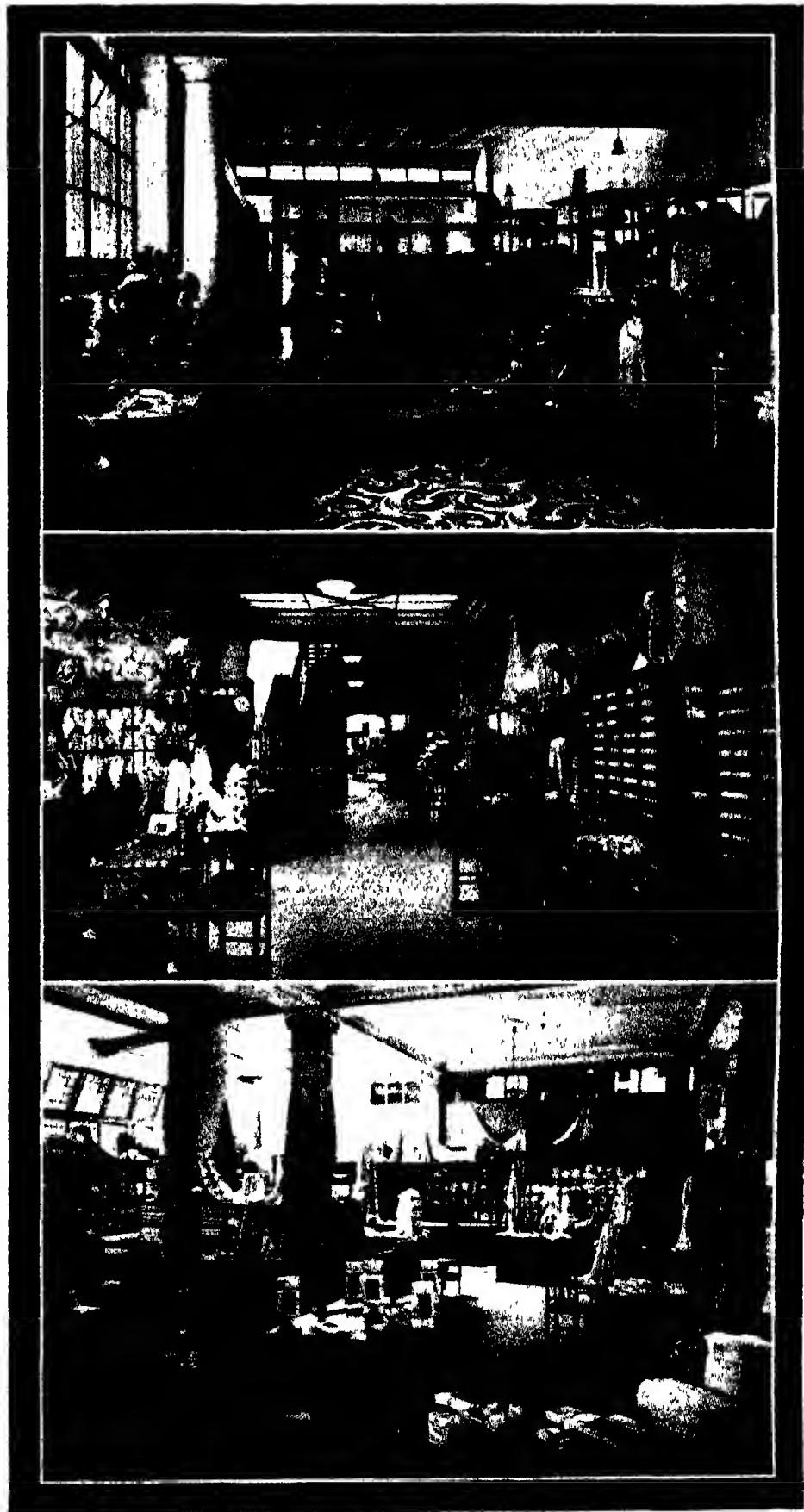
**Inception.**—This extensive business had its origin in Johannesburg about the year 1902. At that period there were only two assistants, while to-day the staff numbers over 150, and the buildings of the firm are amongst the most palatial of their kind in the city. The fittings throughout the various departments are all of oak, and these considerably add to the attractions of the interior.

**Activities.**—The name "Blinman" is a household word in South Africa, every requirement connected with ladies' apparel being procurable at this well known emporium, where the display and quality of goods are the equal of any of the famous houses of Paris, London and New York. Not only are adults catered for, but children's needs are equally well provided for. The firm's activities extend from Capetown to Tanganyika, and its rapid progress may be attributed to the use of modern methods, combined with a desire to satisfy all.

**Departments.**—These comprise the following: costumes, evening and dinner frocks, cloaks and wraps, knitted goods, jumpers, blouses, millinery, corsets, underwear, boots and shoes, dress goods and silks, umbrellas and sunshades, gloves, trimmings, hosiery, haberdashery and laces, flowers, handbags and fancy novelties, dyeing and cleaning, house linen and soft furnishings, knitting wools, and art needlework.

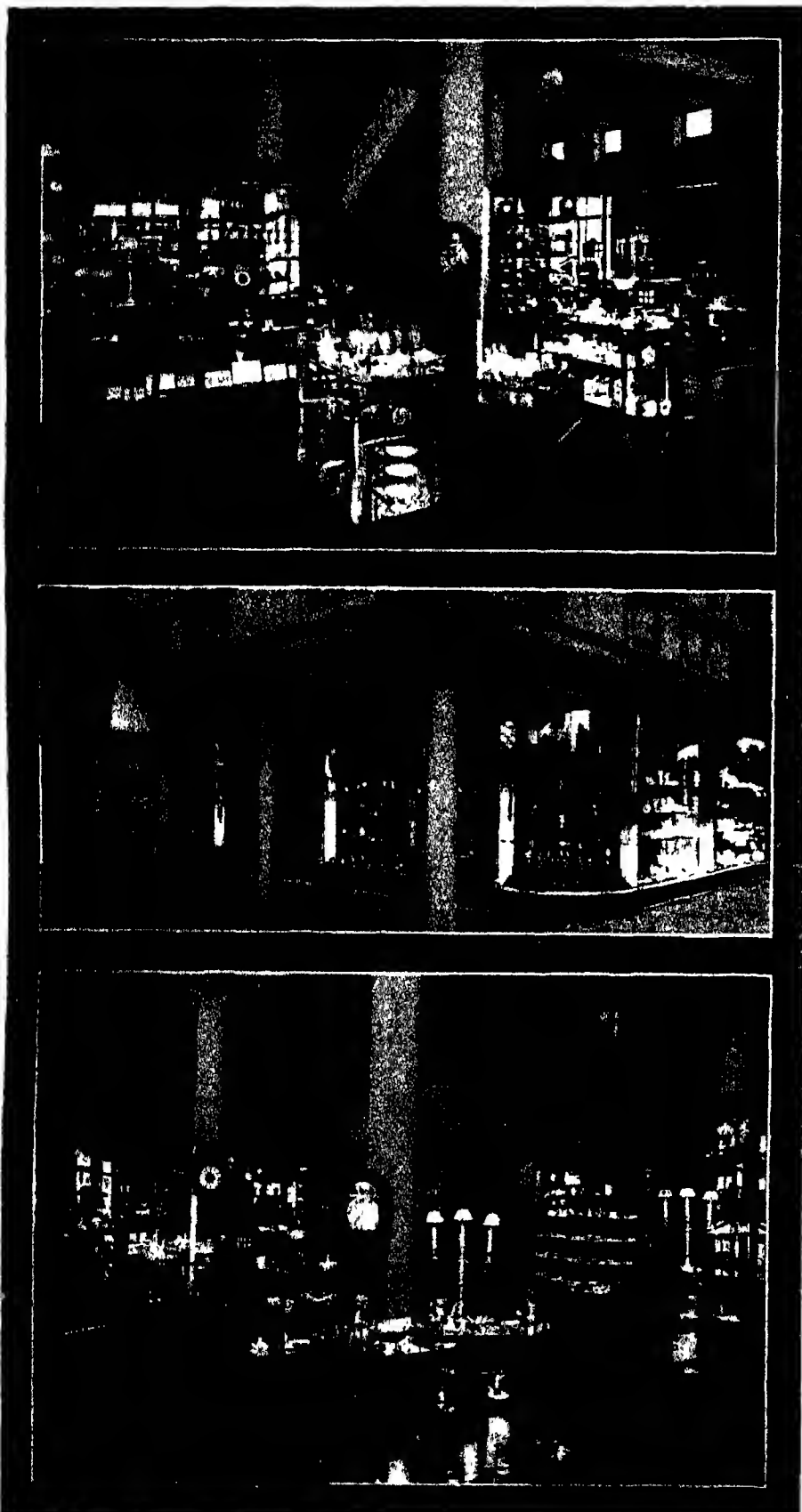
Special attention is directed to the "ready-to-wear" department, which is replete with a large stock of goods to meet all requirements. The millinery section is also a prominent feature of the establishment, as is that for footwear, these departments being maintained thoroughly up-to-date with fresh supplies by every mail. All other departments keep abreast with the trend of fashion, and any novelty placed on the market is quickly available at this progressive store.

**Mail Orders.**—To meet the wants of country residents there is a mail order department, second to none in South Africa, and it deals promptly with all post orders and letters.



BLINMAN, HOLWILL & ISLIP, Johannesburg.  
Three of the Firm's many Departments.





MAPPIN & WEBB LTD., Johannesburg.  
1 and 2. Views of the Attractive Showrooms.  
Centre. The Company's Premises, Johannesburg

**London Agents.**—Cleghorn & Harris Ltd., 12, Bunhill Row, E.C. 1. The firm has also buying agents in Paris and New York.

**Address.**—Eloff and Kerk Streets, P.O. Box 3204, Johannesburg. Telephone No. 1 Cables "Blimmans," Johannesburg.

**Bankers.**—The Standard Bank of South Africa, Ltd.

#### MAPPIN & WEBB LTD.

**Inception and Development.**—These world-renowned jewellers and silversmiths conduct the largest and oldest retail establishment of its kind in the world. Founded at Sheffield in England a hundred and sixteen years ago, with a small metal chasing workshop the business has grown until to-day the firm has manufactories in Sheffield, London, Paris and Johannesburg, all models of up-to-date equipment and efficiency. That at Sheffield is considered the finest and most modern plate and cutlery factory in the British Empire.

The Johannesburg house was started over 30 years ago, and is conducted on the lines of all the company's other branches, the same high standard of quality being maintained. Messrs Mappin & Webb Ltd. are warrant holders by appointment to H.M. the King, H.R.H. The Prince of Wales, and the Union of South Africa.

**Departments.** Among the perfectly appointed departments of the establishment are the following—

**Jewellery.**—This section contains a wonderful selection of gems, gold and platinum articles, rings, pendants, brooches, bangles, pearls, watches, necklaces and other motifs designed and set in the latest manner, and representing the finest British craftsmanship.

**Silverware.**—In this department is to be seen a splendid array of plate and fancy articles, cups for sports competitions, toilet services, and a multiplicity of other objects. Princes Plate, of which the firm is so justly proud, here displays its many uses.

**Leather Goods.**—A fine assortment of ladies' and gentlemen's travelling cases, fitted suit cases, wallets and cigar cases, made in the firm's workshops, are to be seen in this department.

**Glass and Chinaware.**—Choice varieties of tea, dinner and coffee services, glassware of every description, porcelain vases and bowls, some splendid specimens of crystal ware, and many novelties are here displayed in profusion.

**Branches and Agencies.**—The branch in Johannesburg was the first opened by Messrs Mappin & Webb, being followed by others at Buenos Aires, Mar del Plata, Paris, Rome, Salsomaggiore, Nice, Monte Carlo, Lausanne, Stockholm, Rio de Janeiro, Sao Paulo, Montreal and Copenhagen, while there are also agencies at Bergen, Madrid, Hongkong, Shanghai, and in Iceland.

**Head Office.**—London, 158-162 Oxford Street, W.1.

**Johannesburg Address.**—Mappin House, 27, Plein Street. P.O. Box 3055. Telephone 796.

**Cables.**—"Mappins," Johannesburg.

#### P. HENWOOD SON, SOUTTER & CO.

**Inception.**—The Johannesburg branch is the youngest of the several establishments of this firm as it is constituted to-day, having been founded in 1887 by Mr. Paul Henwood, ten years after the creation of the neighbouring branch at Pretoria.

**Development.**—The original premises of the firm were a double-storey building, which was enlarged to its present size in the year

1892 At the time of this re-construction the town of Johannesburg was very much smaller than it is to-day, and the foresight of the firm in anticipating its rapid growth was not appreciated by the inhabitants, who gave the building the name of "Henwood's Folly." An interesting photograph of this ambitious place in course of construction will be found in the article devoted to architecture in Johannesburg on page 76, where it is shown with Market Square and the gold reef in the background.

These premises are on Pritchard and President Streets, Henwood's Arcade and Kerk Street, and both externally and internally are well designed for the display of goods and the convenience of customers.

**Activities.**—The opening up of the country and the consequent expansion of trade have fully justified the firm's enterprise. The business is now divided into several departments, which include builders' hardware, stoves and sanitary ware, household and fancy ware, pottery and glass, furniture, dairy and agricultural machinery. The company holds numerous agencies in connection with the articles dealt in by these various sections, and imports directly much of its stock.

**Agencies.**—Among the representations held are the following: Sherwin-Williams paints, Engman-Matthews' Range Eternal, Copelands blue Italian ware, Bamford's mills and chaff cutters, Barford & Perkins' cream can sterilisers, Topliss Brothers (New Zealand) dairy machinery, etc.

The buying office in London is that of Messrs P. Henwood Son & Soutter, 65, London Wall, E.C. 2, and in New York, Messrs Smith & Kirkpatrick, 115, Broad Street.

**Directorate.** Messrs Lynton, Norman and Howard Henwood. All three are active partners in the firm and grandsons of the original founder of the business, Mr Paul Henwood.

**Branches.**—At Pictoria (Transvaal) and Durban and Maritzburg (Natal).

**Offices.**—Pritchard and President Streets, Johannesburg, P.O. Box 74 Cables "Heterodox," Johannesburg.

**Bankers.**—Standard Bank of South Africa, Ltd.

(See also this company's notice in Durban section).

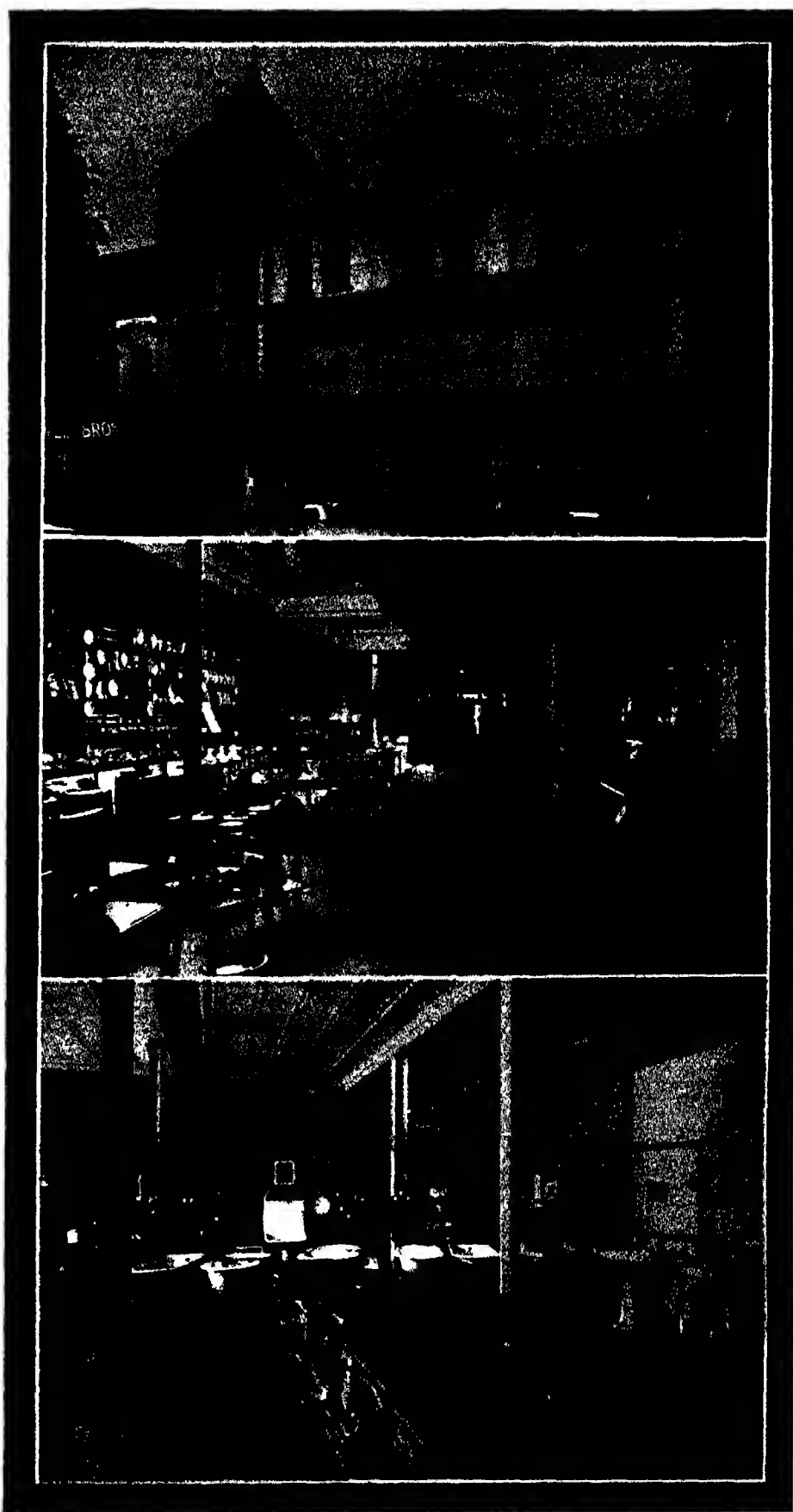
#### **SHEPHERD & BARKER, LIMITED.**

**Inception.**—This firm was founded in 1900 by Messrs W. H. Shepherd and W. P. Barker, the present managing directors, who had been connected with the furniture and decorative business in London and the provinces before their arrival in South Africa.

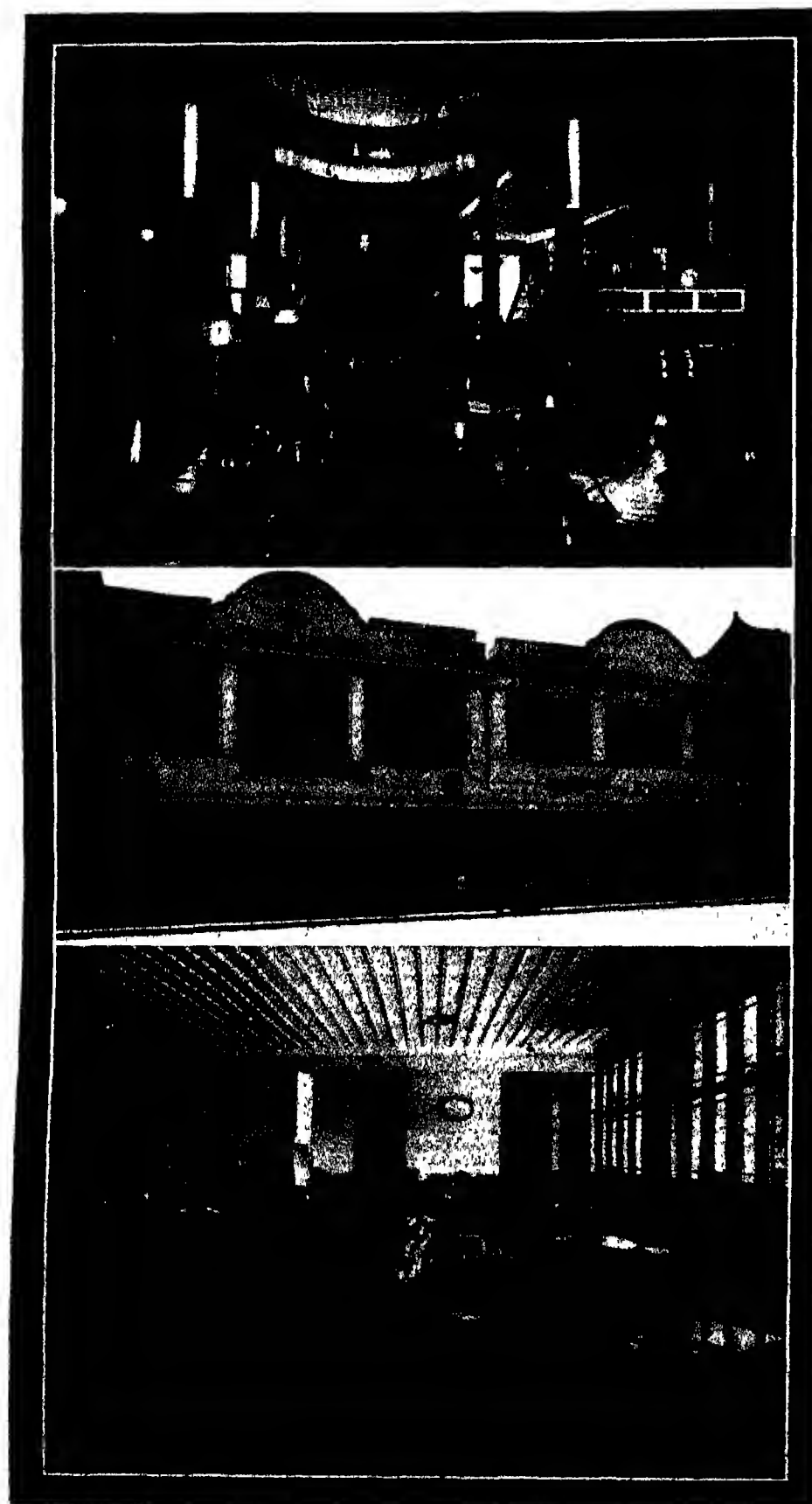
**Development.**—The enterprise was started in a small shop in Eloff Street, but, with the growth of business, the firm found it necessary to move into larger premises in 1915. The new building is one of the most attractive in the city of Johannesburg.

**Premises.**—These have a frontage and depth of 100 feet each, the area of the showrooms being about 15,000 square feet. The very attractively decorated display windows in Jeppe Street are quite a feature of the city. The showrooms are arranged so as to give the best display for the various lines of goods marketed by the firm.

**Departments.**—These are divided into English and Oriental carpets, furnishing fabrics, cabinets and upholstery, crockery and glassware, and fancy and Oriental goods.



P. HENWOOD SON, SOUTTER & CO., Johannesburg.  
1. Pritchard Street Frontage of the Firm's Premises.  
2. China and Glass Departments.  
3. A Portion of the Hardware Department.



SHEPHERD AND BARKER, LTD., Johannesburg.  
1 and 3. Two of the Firm's many Departments.  
Centre. View of the Premises.  
(See letterpress, page 71.)

**Factories.** Three factories are maintained, one for upholstery work and the manufacture of loose covers, and the other two for cabinet work. The firm makes a specialty of manufacturing goods designed by itself, and also of carrying out customers' own ideas.

**Imports.**—The company buys goods in China, India, Egypt, England, Europe and America, a member of the firm visiting the different markets every year in order to keep in touch with the latest developments and prices.

**Representations.** The firm is the special representative of Messrs. Liberty & Company, of Regent Street, London, and of Nesta Spring Mattresses, of London.

**London Agents.**—Messrs. Mackinlay & Company, 21, Chiswell Street, E.C.

**Offices.** 173-175, Jeppe Street, Johannesburg. Cables "Fabrics," Johannesburg.

**Bankers.**—The National Bank of South Africa, Limited.

#### CURTIS & COMPANY LTD.

**Inception.**—Established in the year 1886, this firm conducts one of the oldest men's outfitting houses on the Rand. The business was converted into a limited liability company in February 1925, with Mr. C. G. Curtis as managing director.

**Activities.**—As hosiers, hatters and general outfitters, Messrs. Curtis & Co. Ltd. stock only the best class of merchandise, and are agents for several English houses of the highest repute in their particular line of goods. The firm's clientele now extend all over the country, from the Cape to Central Africa, and the name is widely known as a guarantee of quality and excellence.

**Agencies.**—Messrs. Curtis & Co. are the original agents in South Africa for the famous Burberry raincoats; they are also agents for Innes Henderson & Co. Ltd.'s underwear, and for Messrs. Lincoln Bennett & Co. of Sackville Street, London, the well-known hat manufacturers.

**Directorate.** Mr. C. G. Curtis (life managing director), Mr. J. D. Corlyon (director and manager) and Mr. B. Richards.

**Offices.** London Office: 22 Basinghall Street, E.C.2. Office in South Africa: corner of Eloff and Kerk Streets, P.O. Box 96, Johannesburg.

#### HARPER'S COMMERCIAL GARAGE.

**Inception.**—Founded in April 1924 by Messrs. S. F. J., H. F., and J. W. Harper, the sole members, this firm, though comparatively a new one, is building up a first-class business based on good service.

**Activities.**—The building, of which an illustration is given on the succeeding page, has a very large floor area, regularly garaging about 100 cars. It also has a workshop, in which repairs and overhauling of every description are undertaken, a vulcanizing plant being attached. In addition, there are the usual stores and office accommodation. The business has already grown to such an extent that more room is required, and a new building, 200 ft. by 70 ft., is now under construction.

**Cars and Lorries.**—The firm acts as distributors in the Transvaal for "Paige" and "Jewett" cars, manufactured by the Paige-Detroit Motor Car Co. of Detroit, U.S.A., as also for "F.W.D." lorries in the same province, but besides the sale of spare parts and accessories the sales interests of the enterprise under notice are concentrated on the lines named.

**Offices.**—Corner of Rissik and Marshall Streets, Johannesburg. P.O. Box 2154. Cables and telegrams "Harcog," Johannesburg. Code used Bentley's.

**Bankers.**—The Standard Bank of South Africa, Ltd.

#### CONNOCK'S (S.A.) MOTOR CO. LTD.

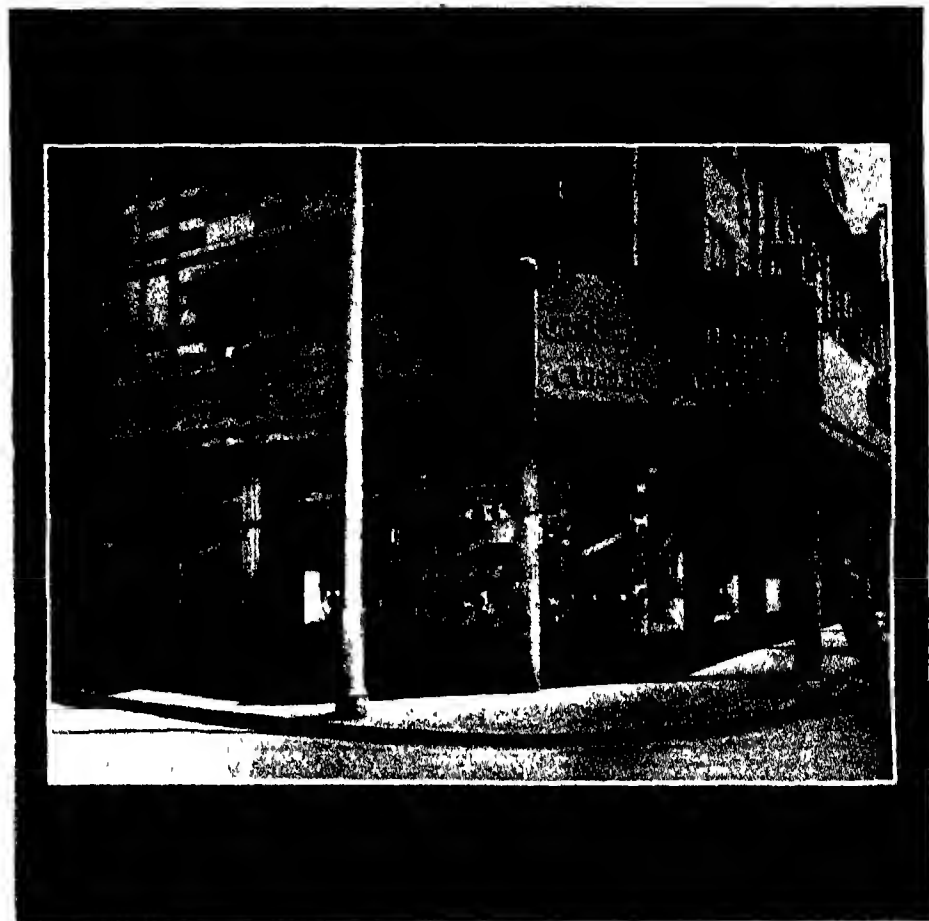
**Inception.** This firm was established in the year 1896 as a partnership concern under the style of Keith, Cullum & Connock, Mr Connock, the head of the present limited liability company, then being the junior partner.

**Development.** The firm originally engaged in the cycle trade, Mr Connock being an ardent cyclist, and the winner of many cycling trophies. In 1902 Mr Connock took over the interests of the other two partners, and, recognising the future for motor cars in South Africa, began to develop this trade, moving into larger premises. At this period the name of the enterprise was altered to Connock's South African Garage and Engineering Works.

It now became necessary to decide whether the cycle and motor-cycle business should be developed in conjunction with the motor-car, or whether one of those interests should be discarded. Automobiles were then sold on indent, sales being few, but the cycle trade was well established. However, Mr Connock wisely decided in favour of the motor-car, and abandoned the cycle business completely.

**Activities.**—In 1912 the South African agency for the Dennis Commercial vehicle was obtained, and large numbers of these lorries are now in use in the country. In this year also the firm erected one of the largest garages in South Africa, at the corner of Loveday, Harrison and Marshall Streets.

**Premises.** These have entrances at each end, large enough for two cars to pass one another. An underground petrol system and modern air-compressor have also been installed. In addition the workshops of the Rand Garage, in Marshall Street, have been purchased. In this block is a large overhead crane for lifting and placing cars where required; it also contains lathes, drilling machines, grinders, hardening furnace, and

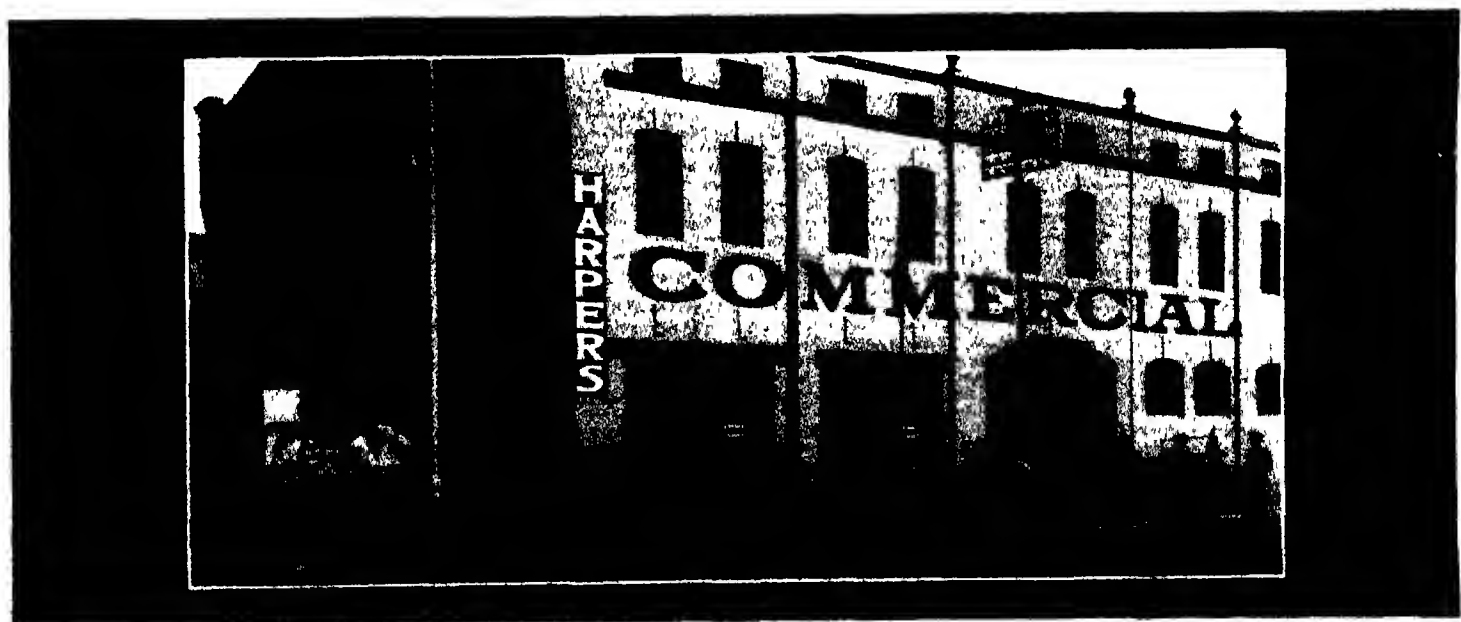


CURTIS & CO LTD., Johannesburg  
Premises at the Corner of Eloff and Kerk Streets.

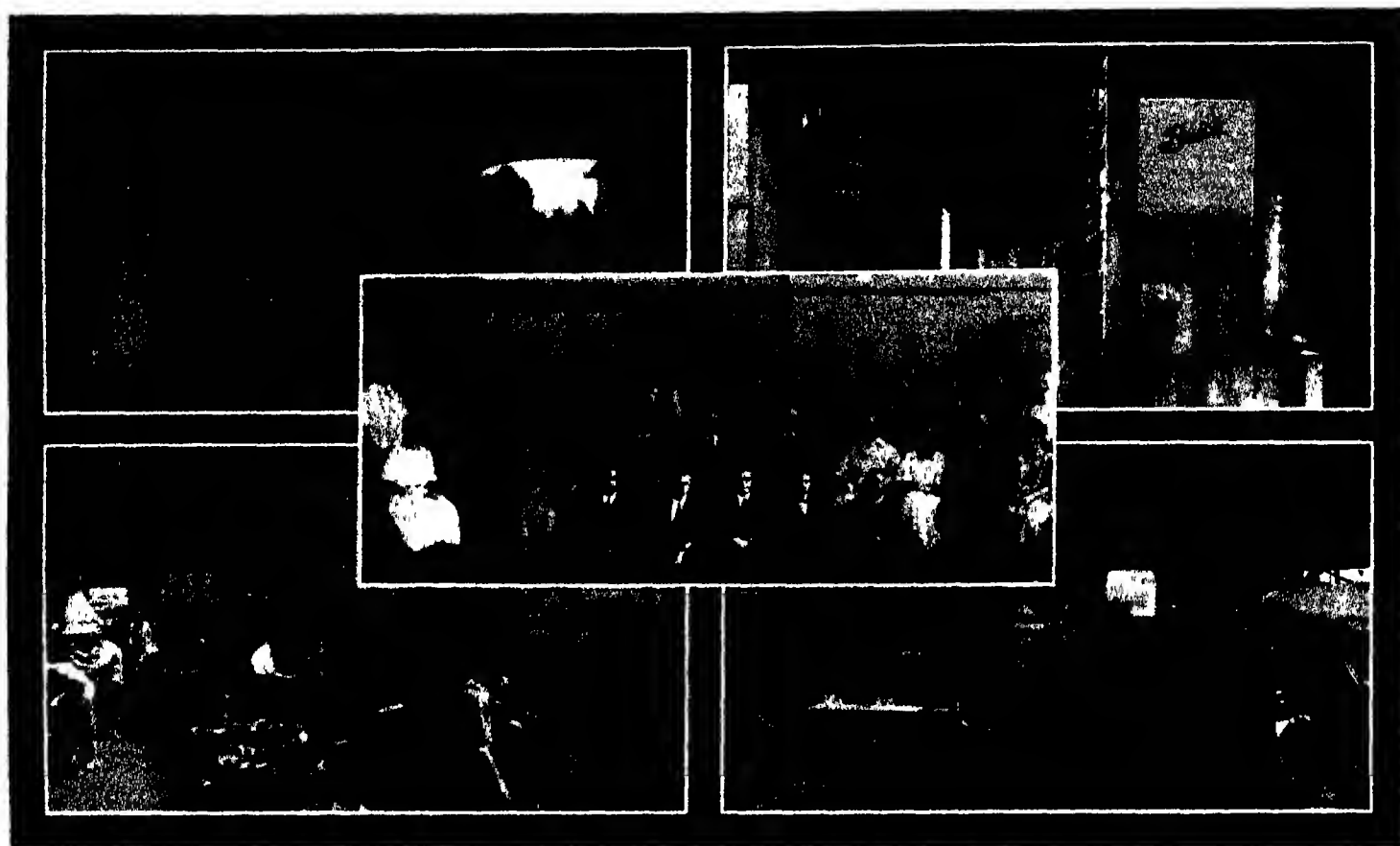
the complete equipment of a modern motor car repair workshop.

**Agencies.**—The company handles the Buick and Cadillac cars and Dennis Commercial vehicles.

**Address.**—Corner of Harrison, Loveday, and Marshall Streets. P.O. Box No. 2767. Cables, "Rover," Johannesburg.  
(See illustration page 74.)



HARPER'S COMMERCIAL GARAGE, Johannesburg.  
View of the Garage, showing a part of H.R.H. The Prince of Wales' Fleet of Cars serviced there during his visit to Johannesburg, June 1925.



CONNOCK'S (S.A.) MOTOR CO. LTD., Johannesburg.

(See letterpress, page 73)

**COLONIAL MOTORS, LTD.**

**Inception.**—This private limited liability company was incorporated in the Transvaal in 1922, having been previously a partnership concern, controlled by Messrs Stanley Anderson and C. H. Hoare. Mr. Anderson is now the managing director of the company,

while Mr. Hoare is joint managing director of the Colonial Motors (Natal) Ltd.

**Activities.**—Prior to incorporation, the firm handled "Scripps-Booth" and "Ariel Johnston" cars, but these agencies were relinquished in 1923. Colonial Motors Ltd. now holds the sole representation of the

Austin Motor Company Ltd., of Birmingham, England, for the Transvaal and Natal. Since the agency for the Austin cars was undertaken, over 200 have been placed in the Transvaal territory, and to-day the make is one of the best British sellers in South Africa.



1. FOX STREET, JOHANNESBURG. BOUSTRED'S SHOWROOMS AND OFFICES ON LEFT

2. LOVEDAY STREET, JOHANNESBURG. CONNOCK'S (S.A.) MOTOR CO. LTD., ON LEFT.



**Premises.**—The Johannesburg premises, which consist of a two-storey building, are situated in the centre of the motor industry of the city. The offices, showrooms, and storage accommodation for about forty-five cars are on the ground floor, and the workshops, stores and paintshops on the first floor. The firm keeps a complete range of spare parts for Austin cars in stock, and undertakes all kinds of repairs, overhauling, and painting.

**Staff.**—The employees number 19 Europeans and 18 natives.

**Agents Abroad.**—Messrs. Lozer, Kemsley & Millbourn, Ltd., of London and Messrs. Kemsley, Millbourn & Company, Inc. of New York, conduct all the shipping for the Transvaal house, and also for the Natal company, which however has now a separate identity.

**Bankers.** The Standard Bank of South Africa, Limited.

**Offices.**—These are situated at the corner of Marshall and Eloff streets, Johannesburg P.O. Box No. 169.

#### **WILLIAMS, HUNT & CO. LTD.**

**Inception.**—Established in 1903 as Williams, Hunt & Co. by Messrs. B. Hunt, E. H. Hunt, P. E. Hunt and B. R. Hunt, this firm started in Johannesburg with a small bicycle shop. To-day it controls one of the largest motor houses in South Africa.

**Development.**—In 1911 the 'Indian' Motor Cycle Agency for the Transvaal was secured, the agencies for the Orange Free State and Natal were added in 1915, while in 1917 the representation of the entire South African territory was granted. The Chevrolet Car agency for Cape Province and the Orange Free State was obtained in 1918, the general

agency for the Union of South Africa being granted in 1921, but in 1924 the Orange Free State and the Cape Province territory north of the Orange River was relinquished.

**Capital.**—The nominal capital of the parent company is now £100,000.

**Activities.**—The business is divided into six departments: accessories, sales, coach-building, painting, assembly and spare parts. The main building, the property of the company, covers a floor space of 37,500 square feet, while the annex, with an approximate area of 5,000 square feet, is devoted to the assembly of motor cars and cycles. There is an extensive body building plant engaged in the production of commercial bodies only, also a painting and upholstery section with modern electrically driven machinery, the painting being done by the "Devilbiss" process of spraying. All motor car and cycle accessory lines are handled, and an average stock to the value of £80,000, comprising cars, cycles, spare parts, etc., is carried. The staff numbers about 146, and the monthly turnover reaches a total of £50,000.

**Agencies.**—"Indian" motor cycles, Chevrolet cars, Gilbert & Barker petrol pumps, and "Alomite" lubrication.

**Subsidiary Companies.** Williams, Hunt & Brook, Ltd., Port Elizabeth; Williams, Hunt & Johnston Ltd., Capetown; Williams, Hunt & Co. Ltd., Benoni.

**Directors.** Messrs. H. E. H., P. E. and B. R. Hunt, A. G. Brook and C. S. Johnston.

**Offices.** 45, Eloff Street, Johannesburg.

**Bankers.** The National Bank of South Africa, Ltd.

(See also illustration, page 76.)

#### **HORTORS LIMITED.**

**Inception.**—This firm of printers, publishers and manufacturing stationers has been established many years in Johannesburg.

**Activities.**—Hortors Limited specialise in commercial, mining, and legal requirements, in high class letterpress, and in lithographic printing, die sinking and engraving, embossing, photo engraving and bookbinding.

They are the publishers of "Hortors' Diary and Law List", the "Leader" commercial diary, and many legal, mining, accounting and other publications.

**Office Specialities.**—The firm acts as sole distributors in South Africa for the following office specialties: the Underwood typewriter, Kalamazoo loose leaf books, Globe Wernicke elastic bookcases, office furniture and filing systems, Monroe calculating machine, Smead-Strand adding and listing machine and the Original-Oldner calculating machine.

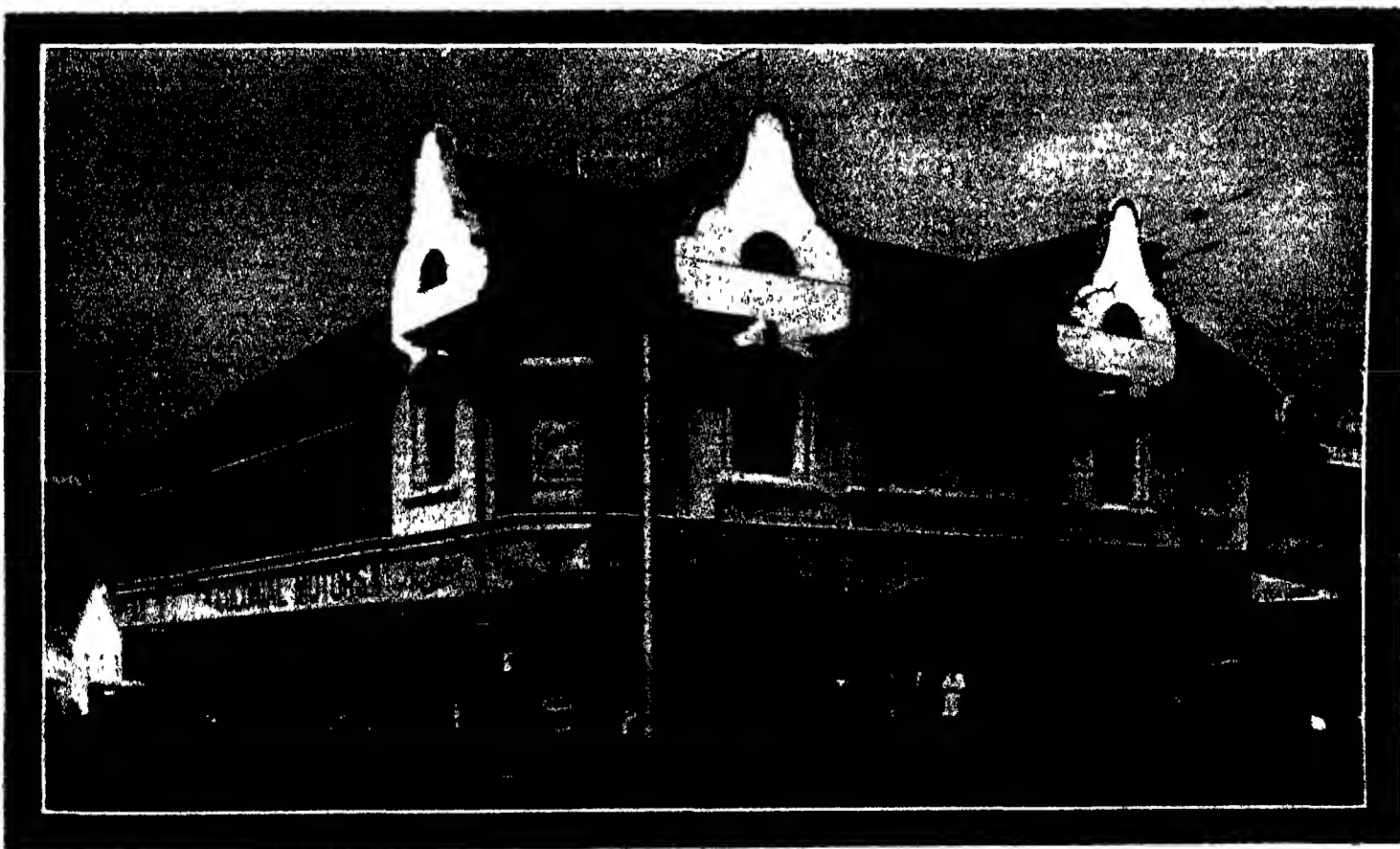
**Addresses.**—These are as follow:  
*Johannesburg* Registered office and works, Leader Building, Harrison Street, Box 1020, branch offices: Rand Club Building, Commissioner Street; Aegis Building, Loveday Street; Wemmer House, Loveday Street Extension, Pretoria 257, Market Street. *Durban* Hortors (Natal) Ltd., 55, Field Street. *Capetown* Hortors (Cape) Ltd., 130/134, St. George's Street, (works at 78, Brice Street). *Port Elizabeth* Hortors (Cape) Ltd., Mutual Buildings, Main Street.

**Secretary.** J. S. I. Berrell, D.S.O., Cables "Leader," Johannesburg.

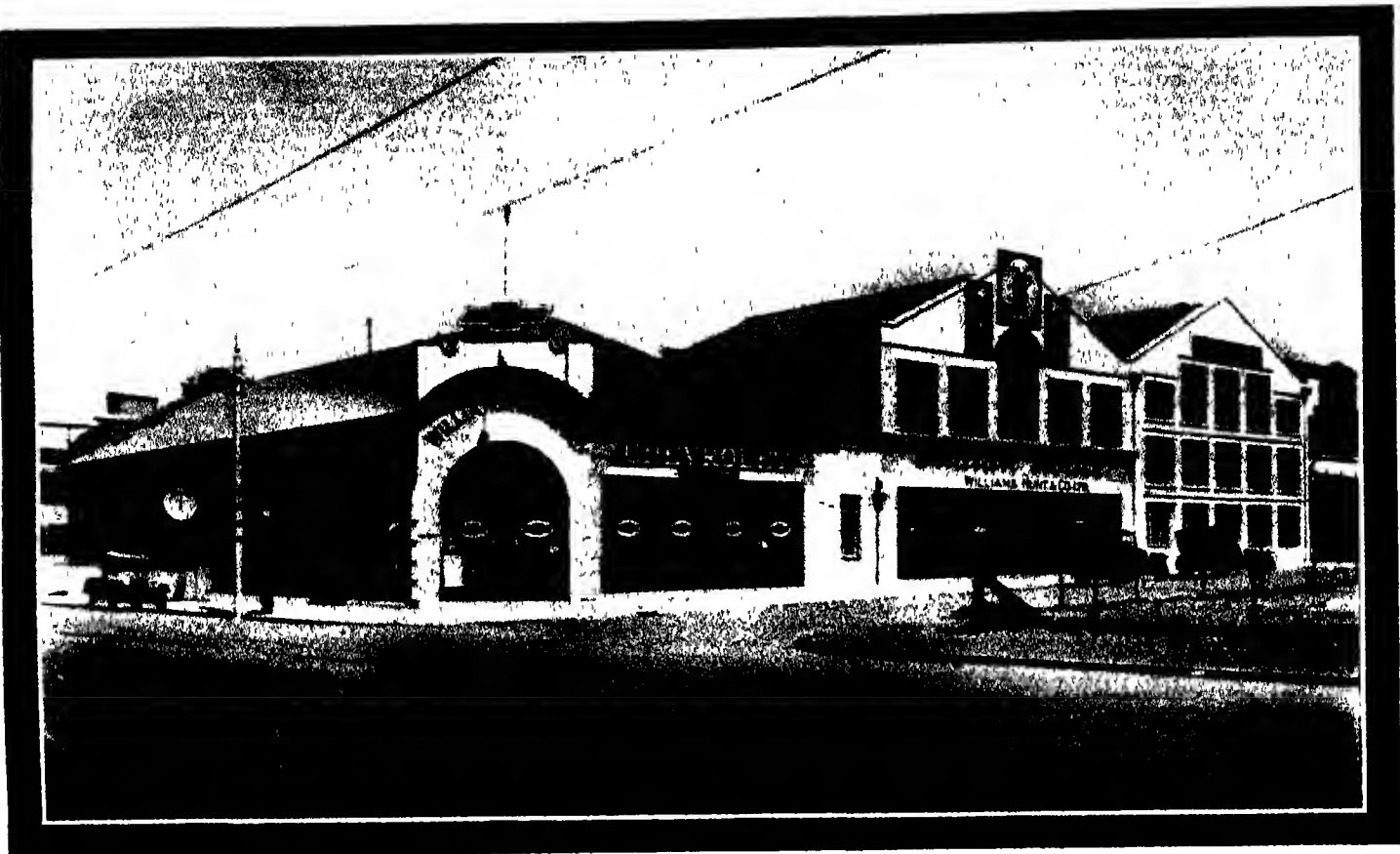
**London Agents.**—Dunant, Radford & Co. Ltd., Billiter Buildings, Billiter Street, E.C.3.

**New York Agents.** Thomsen & Co., 90/96, Wall Street.

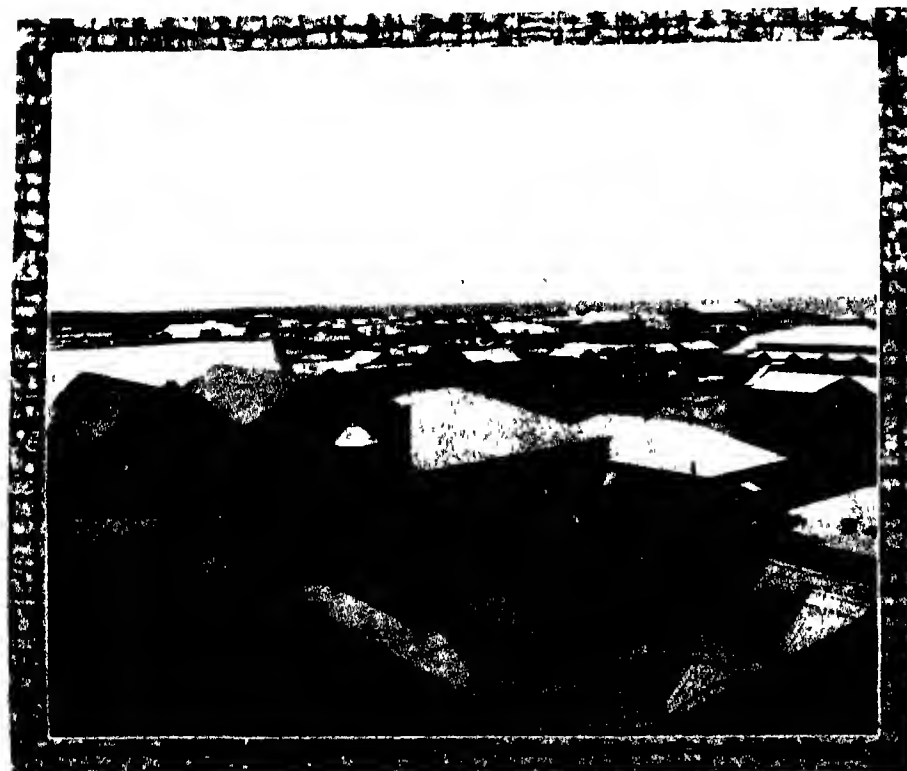
(See also illustration, page 77.)



COLONIAL MOTORS LTD., Johannesburg.  
View of Premises in Eloff Street, showing Austin Cars



WILLIAMS, HUNT & CO. LTD., Johannesburg.  
View of Premises.  
(See letterpress, page 75.)



Johannesburg in 1892, showing P. Henwood Son, Soutter & Co.'s building (then known as "Henwood's Folly") under construction, with Market Square and the Gold Reef in the background.  
(See this firm's notice, page 71.)

## ARCHITECTURE AND GROWTH OF JOHANNESBURG

Johannesburg came into being as a huddled conglomeration of tin shanties and nondescript wooden buildings. The site chosen for the future city was on the southern slope of the Witwatersrand Range, one of the bleakest and most elevated spots in the Transvaal, where land for agricultural purposes was of so little value that a few years before farms had changed hands for a team of oxen. In January 1895 two stands in Commissioner Street sold for £22,000, in 1897 one stand in Pritchard Street fetched 140,000, and in 1902 the Standard Bank of South Africa purchased four stands for £145,000. In 1917 a corner site, 50 feet by 50 feet, on Pritchard and Joubert Streets, sold for £25,000. Finally, in 1925 Bussey's Buildings, Commissioner Street, standing on a site which cost £60 thirty-seven years before, were sold to the African City Properties Trust Limited for £38,000, probably one of the most remarkable instances of unearned increment in the history of modern cities.

**ARCHITECTURAL FEATURES.**—Facts such as those instanced above show that the Johannesburg of the early days is little more than a memory, in appearance at any rate. Nearly all the old landmarks have disappeared, and the tin shanty which followed the tented wagon and canvas shack has been replaced by palatial buildings and handsome residences. Many of these are as fine as those to be found in any city of the old world. In the centre of the place, on a site which for many years was used as an open-air market, are the Town Hall Buildings, a noble pile designed by South



**HORTORS LIMITED, Johannesburg**  
Premises, Harrison Street.

(See letterpress, page 75.)

African architects and erected at a cost of over £450,000. These buildings were formally opened by Lord Buxton on April 7, 1915. The Town Hall seats 3,000 people, and its organ is considered to be one of the finest and largest in the world.

Among other important structures those of the Witwatersrand University will, when completed be a great addition to the architectural beauty of the city. The Johannesburg Hospital to the north west of Joubert Park, the General Post Office in Rissik Street, the Public Library in Keir Street, the Law Courts, Telephone Exchange, and Fire Station, all on Von Brandis Square, the fine new buildings of the Chamber of Mines and of the Stock Exchange, in Marshall Square, the Standard Bank Building, in Commissioner Street, the headquarters of the National Bank of South Africa, the Johannesburg Consolidated Investment Company's offices at the corner of Fox and Harrison Streets, and, last but not least, since it is the tallest building in the city, the Corner House at Commissioner and Simmonds Streets—these are the foremost of the structures devoted to public and private business, and will rank with those of any city overseas.

**BUILDING DEVELOPMENT.** The above are some of what may be termed legitimately the older buildings of Johannesburg. Since the War, and especially during the years 1924 and 1925, the builder has been very busy, especially so far as expensive structures in the centre of the city are concerned.

During the years 1912-25 over £11,000,000 was expended in the erection of new buildings,

entailing the completion of 8,000 of all kinds, 6,000 being dwelling houses. In the 12 months ended June 30, 1925, buildings estimated to cost £2,300,000 were put up, compared with only half a million as the cost of such operations in 1915. Recent additions to the architectural attractiveness of the city include Whitehead Court, Kil-larney (£60,000), Clarendon Buildings, Eloff Street (£50,000), Hendersons' Buildings, President Street (£50,000), the South African Party Club, Eloff Street (£32,000), the National Party Club (£35,000), and the Netherlands Bank Buildings (£30,000). On the site of the old Goldfields Hotel, associated with so much of the romance of the Rand a magnificent new building is being erected which will serve the needs of the ever expanding motor trade. Furthermore, estimates and plans are now being considered for the construction of a new railway station at a cost of a million and a quarter, and new Magistrates' Courts are also projected.

**INCREASE IN VALUES.**—In view of these facts and figures it is not surprising to find that there has been a marked increase in the rateable values of the city during the present century, and especially since the previous triennial survey in 1922. In 1902 the value of the buildings in the city was assessed at £6,875,755. By 1905 the figures had more than doubled, being £14,105,172, but during the next five years development was slow, the rateable value in 1910 showing only £1,523,795 increase. Progress was recorded in 1910, when the total valuation was placed at £33,808,207, of which amount £17,615,455 represented buildings, while,

in 1920 the rateable value was fixed at no less than £22,341,791, and in 1922 at over £26,000,000. In 1925 the assessment for buildings alone had risen to £33,371,479.

## REPRESENTATIVE PROPERTY OWNERS, ARCHITECTS, CONTRACTORS, SHOPFITTERS, ETC.

### THE AFRICAN CITY PROPERTIES TRUST, LIMITED.

**Inception.** This prominent and progressive company was formed in October 1889, with the object of investing in real estate in Johannesburg, Pretoria, and other South African towns.

**Development.**—The original purpose of the company has been followed consistently, its investments being now principally concentrated in Johannesburg, the largest city in the Union of South Africa. Here it has from time to time acquired sites in good positions. These sites have been developed by the erection of large blocks of shops, flats and offices. The firm has been mainly instrumental in improving the north side of Eloff Street, to-day without question, the big shopping street of Johannesburg.

**Constructions.**—The company's first large building was erected in 1897, since when it has put up six extensive blocks in Eloff Street and other neighbouring thoroughfares, as well as numbers of buildings in different parts of Johannesburg. It is interesting to recall that while six of the company's large buildings now stand there used to be tin shanties and small one storey structures. The buildings erected by the firm compare favourably with any in the Southern Hemisphere.

**Other Activities.**—The company owns the residential suburb of Bellside, to the north-east of Johannesburg, where it has freehold stands to offer for sale from £75 upwards. It has recently purchased a block of three stands in the business centre of the "city" part of Johannesburg, on which it has arranged to erect a building of five storeys. This block is to have shops on the ground floor, and the upper floors will be occupied by offices. In addition to its usual business, the company acts as agent for buying and selling on commission, for the letting of properties, the collection of rents, and other business connected with real estate in Johannesburg and the neighbourhood.

**Capital.** The authorised capital of the company is £375,000 divided into 250,000 ordinary and 125,000 preference shares of £1 each. The preference shares carry interest at the rate of 6 per cent per annum. Of this authorised capital, £20,334 ordinary and all the preference shares have been issued. In addition, £200,000 worth of debenture stock has been authorised and issued. The total cash resources of the company thus stand at £545,334.

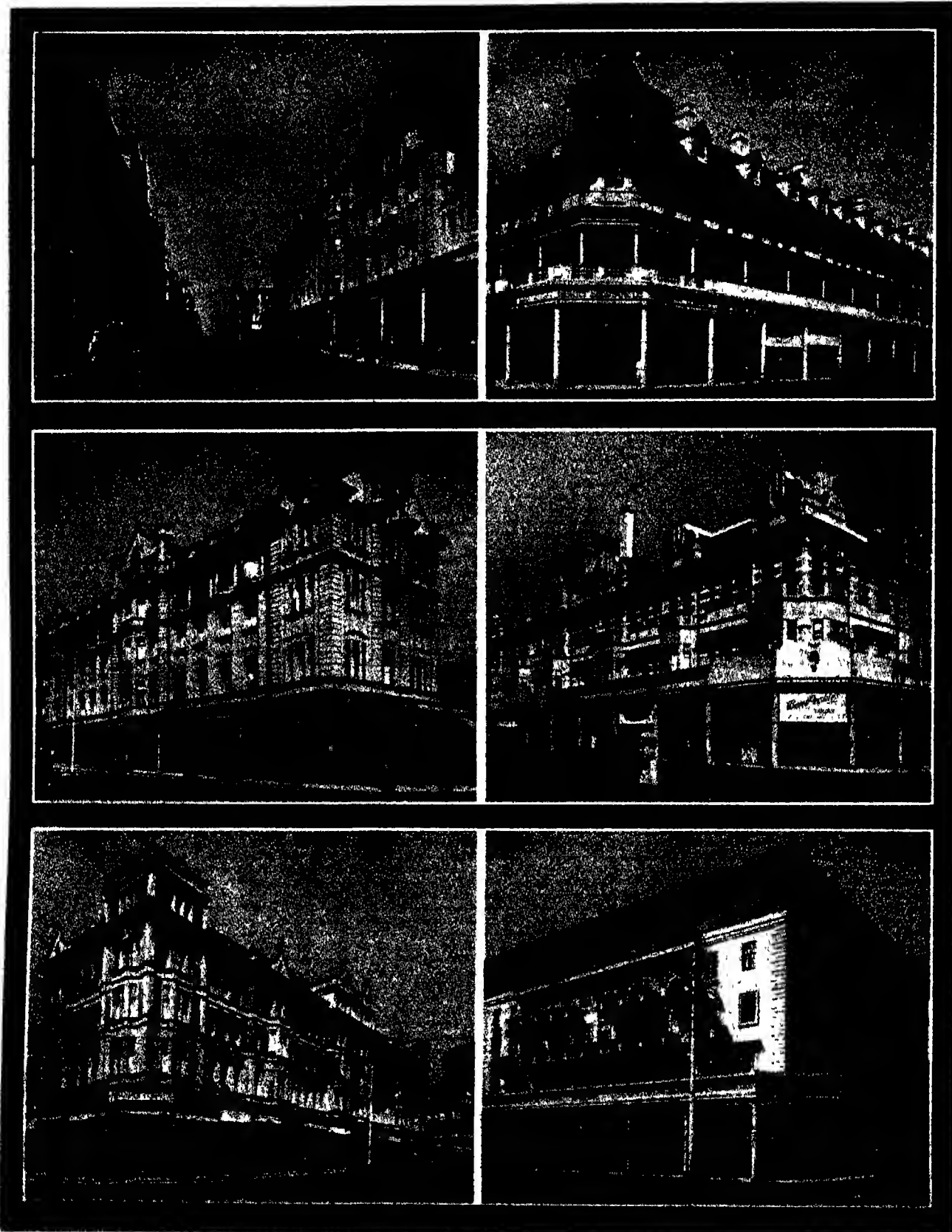
**Directorate.**—Sir Arthur Bell (chairman), Mr. Sidney St. J. Steadman, (deputy-chairman), Major Sir George E. J. Manners, D.L., J.P., and Mr. Alan J. Davidson. There is an advisory board in Johannesburg, of which Sir William van Hulse is chairman and Mr. S. J. Hunter is manager. Secretary, Mr. Charles Forbes.

**Agencies.** The company is the Johannesburg agent for the Union Assurance Society, Limited.

**Offices.**—The head office is at 6, Old Jewry, London, E.C.2. The South African office is at 76, Market Street, Johannesburg.

**Cable Address.**—"Lagostoma," both for London and Johannesburg.

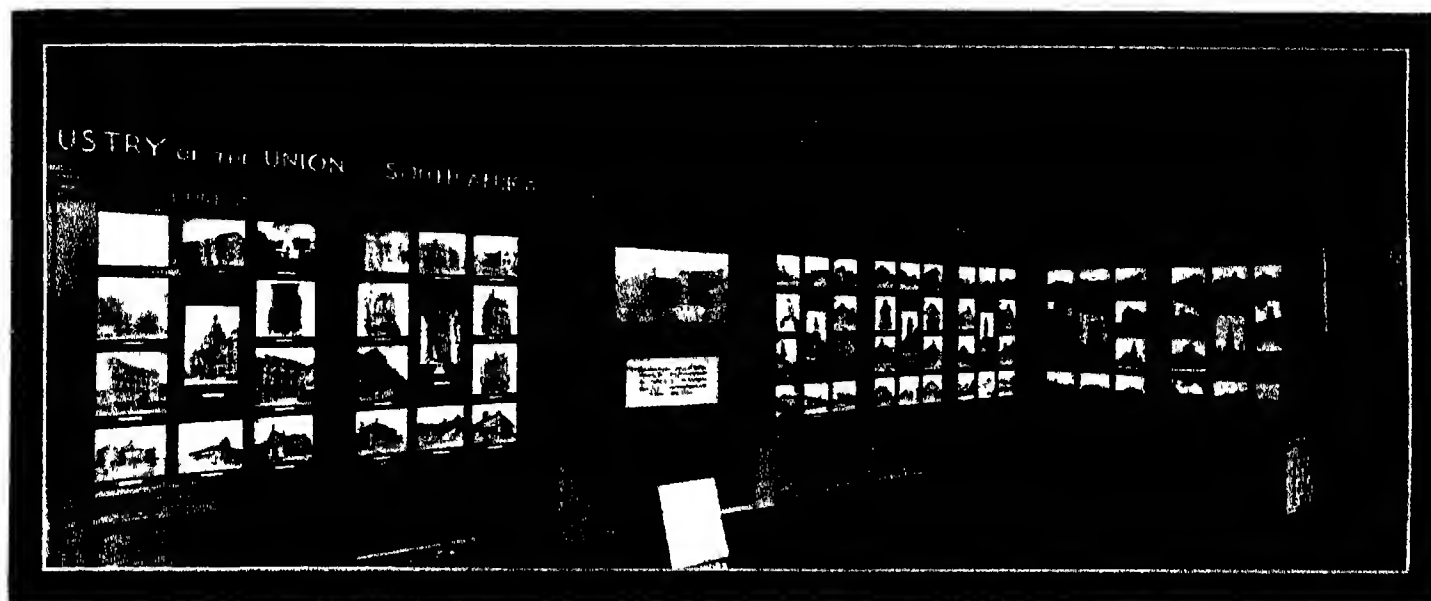
(See also illustration, page 78.)



THE AFRICAN CITY PROPERTIES TRUST LTD., Johannesburg.

- |  |   |
|--|---|
| 1. Eloff Street; African City Properties on each side. | 2. Pollock Mansions, the Company's Property.  |
| 3. St. James' Mansions, the Company's Property.        | 4. Castle Mansions, the Company's Property.   |
| 5. Walter Mansions, the Company's Property.            | 6. Davidson Mansions, the Company's Property. |

(See letterpress, page 77.)



HARRIS AND HITTINGER, Johannesburg.

An interesting exhibit at the Wembley Exhibition of the kind of work done by Harris and Hittinger throughout Africa.

#### HARRIS & HITTINGER.

**Inception.**—Established for over 19 years in Johannesburg, this firm of shop, bank and office fitters has designed and manufactured the appointments for many of the leading stores in the Union of South Africa.

**Activities.**—Messrs Harris & Hittinger specialise in the manufacture of "Kwisa" unit fittings and glass counters, wood or metal shop fronts, show cases, signs and bank and office fittings. They also specialise in the manufacture of show models for the display of ladies' dresses and men's suits, etc., and their productions compare very favourably with the imported article. In connection with this department, competent wax modellers are employed for the repair and renovation of wax display figures. The experience gained from its long association with the needs of South African merchants enables this firm to plan and design

fittings suitable for all trades in an expert manner.

**Exhibits.**—In 1924 Messrs Harris & Hittinger were awarded a gold medal for a shop-fitting exhibit at the Witwatersrand Agricultural Show, and the standing of the firm in the Union of South Africa is shown by the fact that it was entrusted with the making of the South African Building Industry Exhibit for the British Empire Exhibition at Wembley. This exhibit in the firm's workshops at Johannesburg (see accompanying photograph) was constructed in polished South African woods, and received the highest commendation.

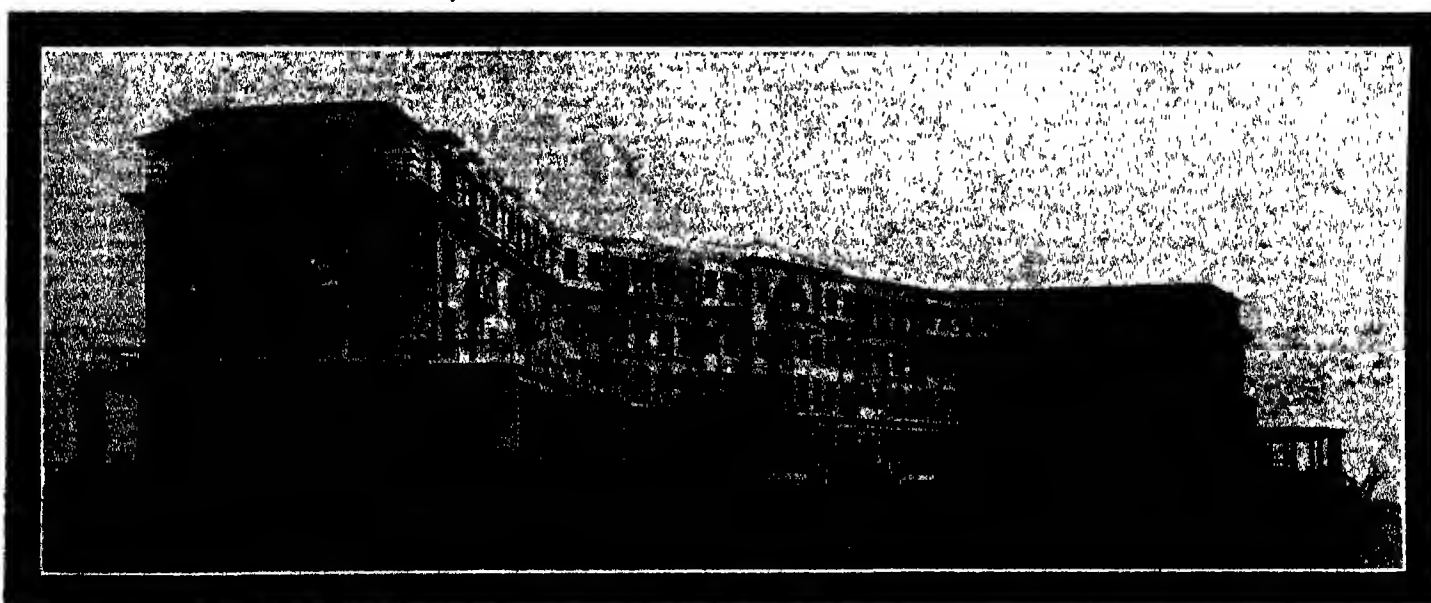
**Offices.** Corner of Kerk and Loveday Streets, P.O. Box 1379, Johannesburg, where in addition to examples of fittings, there is kept a large stock of brass, nickel-plated and oak window display fittings.

**Cables.**—"Signboards," Johannesburg.

#### WALTER AND CYRIL REID.

**Inception.** This firm of architects was established in Johannesburg in 1887, the partnership then consisting of Messrs Walter and Arthur Reid. It may be noted that Mr W. H. Reid, F.R.I.B.A., father of these partners, and grandfather of Mr Cyril Reid, commenced practice in Capetown in the same year.

**Activities.**—The firm has won many open competitions, including that for the design of the Polana Hotel, constructed for the Delagoa Bay Land Syndicate at a cost of £210,000, the Germiston Town Hall, and the Medical School, University of Witwatersrand, now in course of erection, at a cost of about £100,000. Other buildings designed and erected by the firm are the Palladium Theatre, Johannesburg, on which £40,000 was expended, the Moseley Buildings Company Limited, at a similar outlay, the offices of



WALTER &amp; CYRIL REID, Johannesburg.

The Polana Hotel, Lourenço Marques, designed by the firm.



W. B. Pickles & Son Ltd, the National Bank Buildings in Pritchard Street, also many other business premises and private residences in the Union and Rhodesia. The firm is now engaged on the construction of many buildings, including those for Messrs Fatti & Co Ltd (£21,000) and Messrs Petersen, Ltd.

**Partners.**—Mr Walter Reid, F.R.I.B.A., Member S.A. Institute of Valuers, M. Assoc. Transvaal Architects, and Mr Cyril Reid, A.T.A.

**Offices.**—22-24, Aegis Buildings, Johannesburg P.O. Box 746

#### JAMES THOMPSON.

**Inception.**—Mr James Thompson commenced business as a builder and contractor shortly after his arrival in Johannesburg in 1887.

**Development.**—At first operations were conducted in a small way at a building in Kessik Street, Johannesburg at that time being little more than a mining camp. Business soon progressed, however, and more

commodious premises were secured at the present site in Krus Street (south).

**Activities.**—The firm conducts every branch of business connected with the building trade, for, although it undertakes big contracts, it still caters for small jobbing, even to fitting a key or repairing a tap.

**Buildings.** The firm has been responsible for many of the most notable buildings in the country, from Government offices to private dwellings, the following list giving some idea as to the scope of activities.

*In Johannesburg*—Government schools, new Law Courts, Central Police Barracks, Mannors Mansions, Atlas Insurance Co's Building, Norwich Union Life Building, Union Castle Co's Building, Dutch Reformed Church, General Hospital, British Imperial Oil Co's warehouse, Sir Abe Bailey's racing stables, Union Club, Railway War Memorial, residences for Sir Lionel Phillips (now a Jewish orphanage) Sir Percy Fitzpatrick, and many others.

*In Bloemfontein*—Grey's College, Mental Hospital, Standard Bank of South Africa

building, Municipal Market buildings, Railway War Memorial.

*In Pretoria*—Railway Institute, Railway Memorial and Boys' and Girls' School.

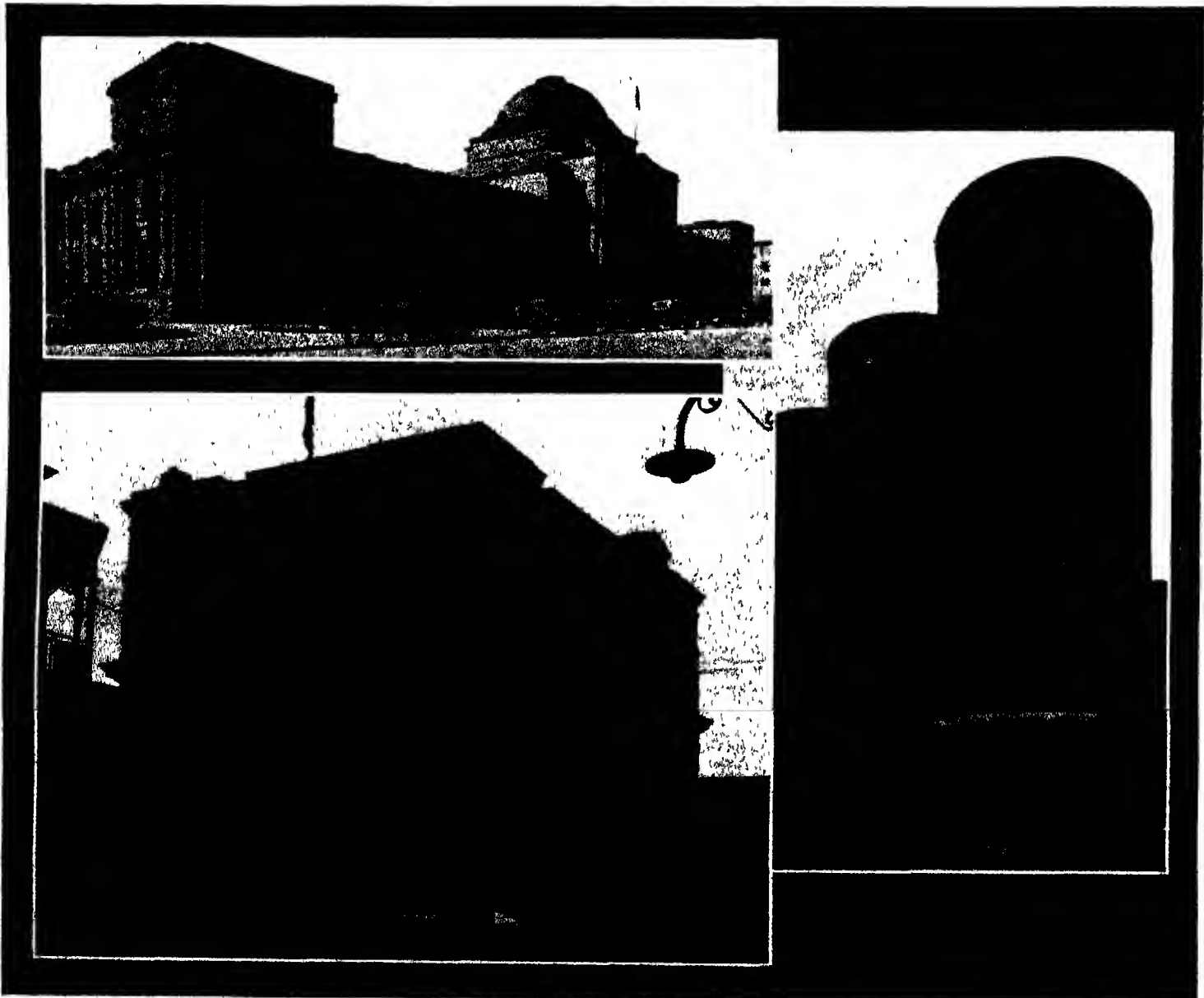
*In East London*—Police Barracks, Selborne College, Railway Goods offices.

The firm has indeed erected buildings in practically every town throughout the Union.

**Personal.**—Mr James Thompson (formerly Mayor of Johannesburg) is Deputy Grand Master of Freemasons (Scottish Constitution) in the Transvaal, Past Chief of the Caledonian Society, Past President of the Witwatersrand Master Builders, Past President of the National Federation of Master Builders of South Africa, Past President of the Transvaal Municipal Association, a member of the Rand Club and a foundation member of the New Club, Johannesburg.

**Head Office.**—Krus Street, P.O. Box 312, Johannesburg. Telephones 6209 & 6210 Central.

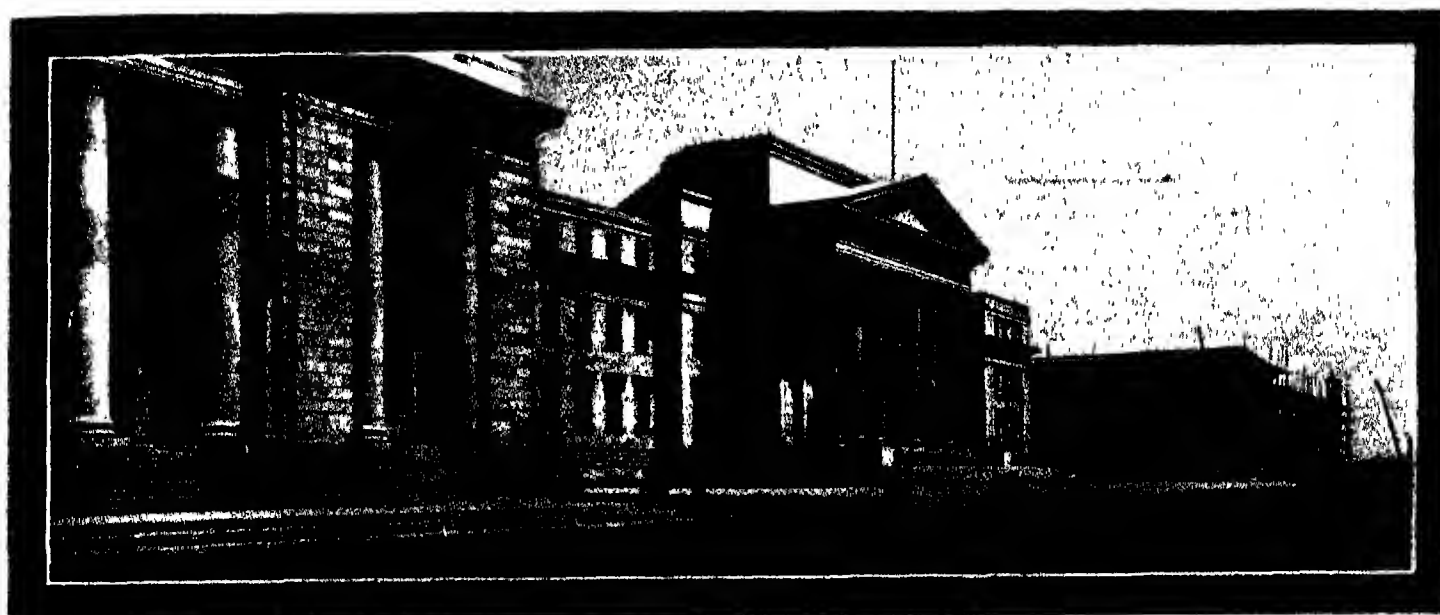
**Cables.**—"Crick."



JAMES THOMPSON, Contractor & Builder, Johannesburg.

Three interesting recent contracts.

1. The Law Courts, Johannesburg.
2. Standard Bank of South Africa, Ltd., Bloemfontein Branch.
3. New Water Cooling Towers, Power Station, Johannesburg.



JOHN BARROW, Constructor, Johannesburg. One of the Firm's Present Contracts.

#### JOHN BARROW.

**Inception.**—This firm of builders and contractors was established in the year 1896 by Mr John Barrow (snr) in partnership with his two sons, John and Albert Barrow, the former losing his life in the Boer War.

**Activities.**—Among the structures for which the firm has been responsible are St John's College, the S.A. Medical Research Building, the N.W.C.A. Buildings, Medical School, University Buildings, Witwatersrand, and the premises of Messrs Mackay Bros. In Natal, the Michaelhouse School Memorial Hall is a noteworthy example of the firm's work, while in Kroonstad it constructed the Standard Bank Building etc. Of recent years the firm has specialised in cast concrete, the University and Mackay Buildings being examples of such work, all the castings for these and similar constructions having been carried out at the firm's own works.

**Contract Values.**—The contracts which the firm of John Barrow has undertaken now reach a total value of about £750,000.

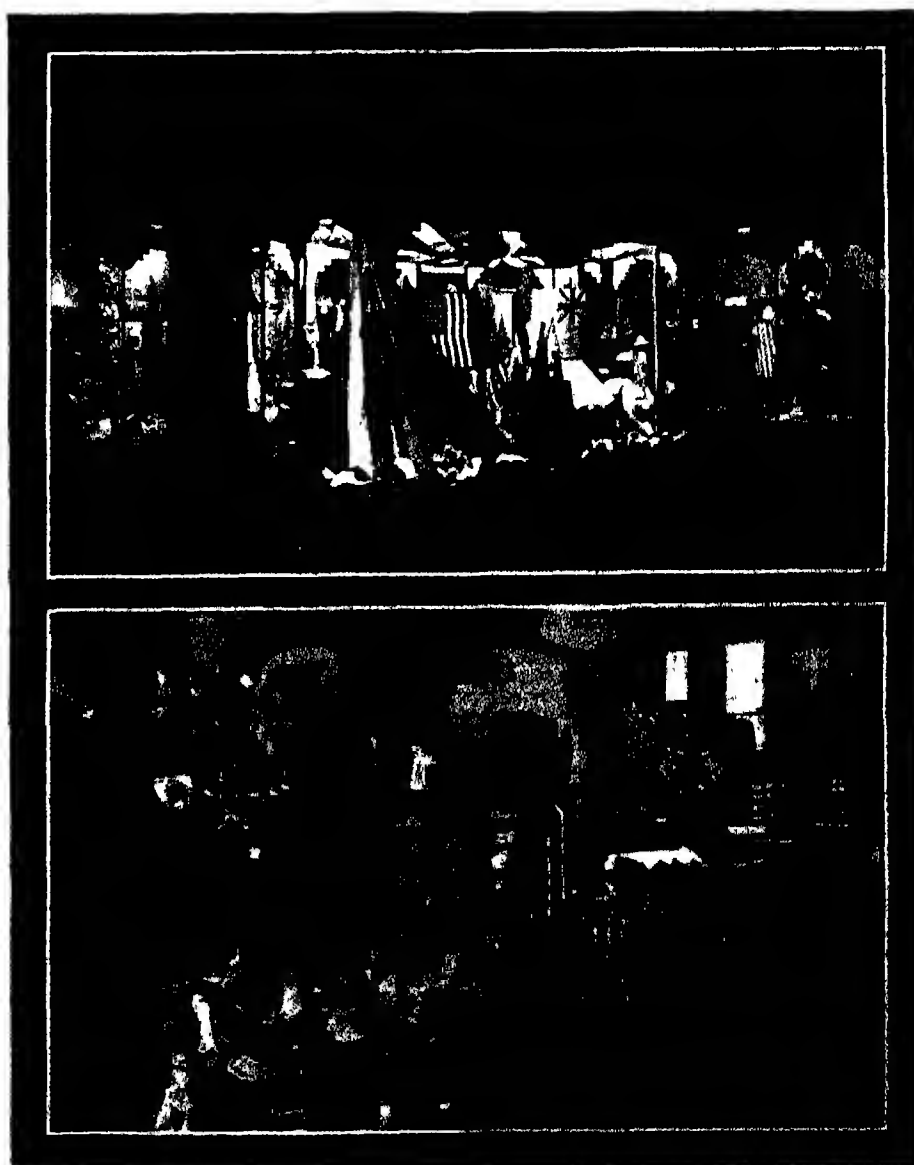
**Offices.** Miller Street, Doornfontein, Johannesburg P.O. Box 3007.

#### SAGE & CO. LTD.

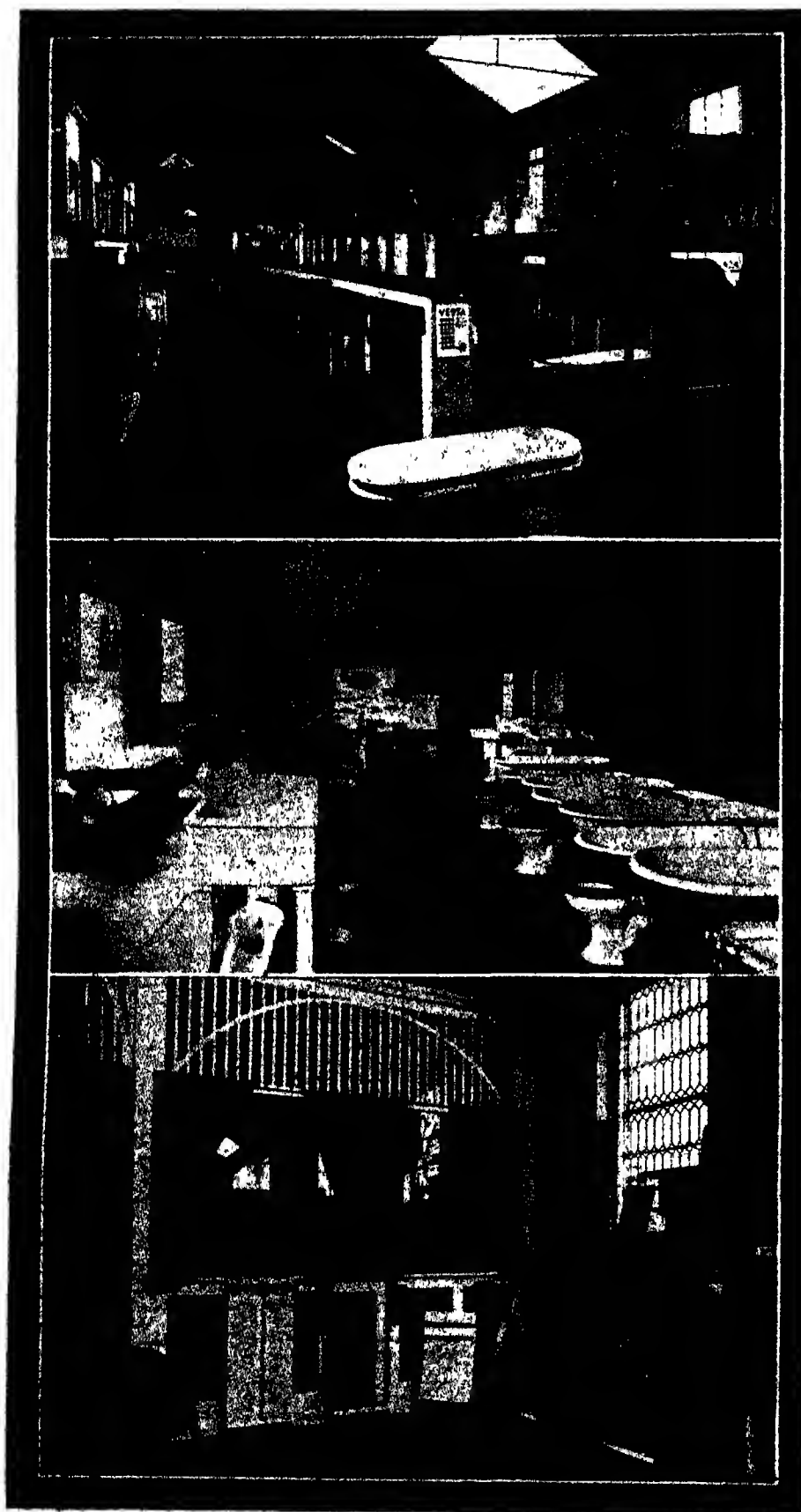
**Inception.**—This firm, which has been established for over a century in South Africa, is a branch of the well known shopfittings specialists, Messrs Frederick Sage & Company Limited, of London.

**Productions.**—Messrs Sage & Co Ltd manufacture all kinds of fittings, both for interior and exterior shop decoration and use, the scope of their activities including everything in wood, glass, or metal that the storekeeper may require. They have established a solid connection with leading firms of architects, and this association has produced such striking features as the frontages of Pollock Mansions, at Johannesburg, and of the premises of Messrs Stuttford & Co Ltd at Durban and Capetown, as also many others in different towns.

**Installations.**—Among a number, the firm has installed the shopfronts and fittings of the premises of Messrs Harvey Greenacre, at Durban, of Messrs Ireland & Co, Pietermaritzburg, of Messrs Rautenbach & Co, Kroonstad, of Messrs Champion's, Bloemfontein, and of Messrs Haddon & Sny, Bulawayo.



SAGE & CO. LTD., Johannesburg. Handsome Fittings Installed by the Firm.



W. R. BOUSTRED & CO. LTD., Johannesburg.  
Three Interesting Aspects of the Firm's Fine Showrooms.

**Workshops.** Fully equipped workshops are maintained at 145, President Street, Johannesburg. The most modern machinery has been installed, and a highly trained staff of specialists and designers is employed. The standardisation of the processes used has enabled the cost of production to be considerably lowered, permitting high-grade articles to be offered at prices at which single special units could not be produced.

**Showroom.**—Associated with the workshops is a showroom for the display of sundry fittings of all descriptions, and here samples of unit fittings, special counters and show cases can be inspected.

**Parent Company.** Messrs Frederick Sage & Company Limited, whose head office is at 58/62, Gray's Inn Road, London, W C 1, has branches all over the world, including Paris, Brussels, Buenos Aires, and Valparaiso.

**Local Offices.** 145, President Street, Johannesburg. P O Box No 777.

**Manager.**—The management of the South African business has been in the hands of Mr R Innes Abraham for the past sixteen years.

**Telegrams and Cables.**—“Sages,” Johannesburg. Code, Bentley's.

#### W. R. BOUSTRED & CO. LTD.

**Inception.**—This firm commenced operations with a retail and general hardware store in 1896.

**Development.**—Owing to the success which attended its early efforts, the company in 1898 moved into new premises in Fox Street, which were extended twelve years later, still further extensions being made in 1915. In 1911 the business was converted into a limited liability company.

**Capital.**—The original capital of the company was £20,000, but in 1923 it was increased to £30,000, while in 1924 it was raised to £40,000.

**Activities.**—The firm chiefly deals in general builders' requisites, of which large stocks are held. It also maintains a varied assortment of special goods required for Government buildings and other similar undertakings. The field of operations extends over the whole of the Transvaal, Rhodesia, and part of the Orange Free State.

**Factory.**—In 1907 the firm opened a factory for the manufacture of steel ceilings. This side of the business gradually developed, until to-day there are some twenty white and approximately thirty native employees. The firm undertakes the fixing of the ceilings which it produces.

**Distribution.**—Wholesale and retail distribution is catered for, and particular attention is paid to the wholesale country trade.

**Director.**—Mr W F Boustred.

**Overseas Representatives.**—Messrs Findlay, Durham & Brodie, of 4, Devonshire Square, Bishopsgate, London, E C 2.

**Bankers.**—The National Bank of South Africa, Limited, Natal Bank Branch.

**Cables.**—“Boustre,” Johannesburg.

#### HERBERT EVANS & CO.

**Inception.**—Mr Herbert Evans, the present principal, established this firm in 1889, contracts being secured for painting many of the large buildings then being constructed.

**Development.**—The business grew rapidly, and kept step with the development of the city of Johannesburg. After a few years the firm became an importer of paints and wallpaper, and other lines were added in the course of time. Now, after thirty-six years of activity, an extensive trade is carried on in all kinds of paints, brushware, plate glass, sheet glass, and art wallpaper. From the

foundation of the business to the present time it has been the firm's practice to give customers only the best of quality and service, the extensive development of the establishment proving the wisdom of such policy. The business is now one of the largest of its kind in South Africa, and has far-reaching connections throughout the Union and Rhodesia.

**Activities.**—The commercial side of operations is carried on in a handsome building containing several departments, including artists' materials, picture-framing, glass beveling and silvering, leaded-light making, steel ceilings, and signwriting. An attractive feature of the premises is the picture gallery on the first floor, where a well-stocked department caters for all amateur and professional requirements.

**Stocks.**—Large stocks of all kinds of paints, enamels and varnishes are kept, and a special room is devoted to the display of the latest designs and patterns in wallpapers.

**Factory.**—A paint and polish factory, equipped with the most modern machinery, has recently been established at Upper Railway Road, Doornfontein.

**Branch.** There is a branch at 203 Pretorius Street, Pretoria.

**Overseas Agents.** Messrs. Keop Bros. Ltd., of London and Birmingham, act in this capacity.

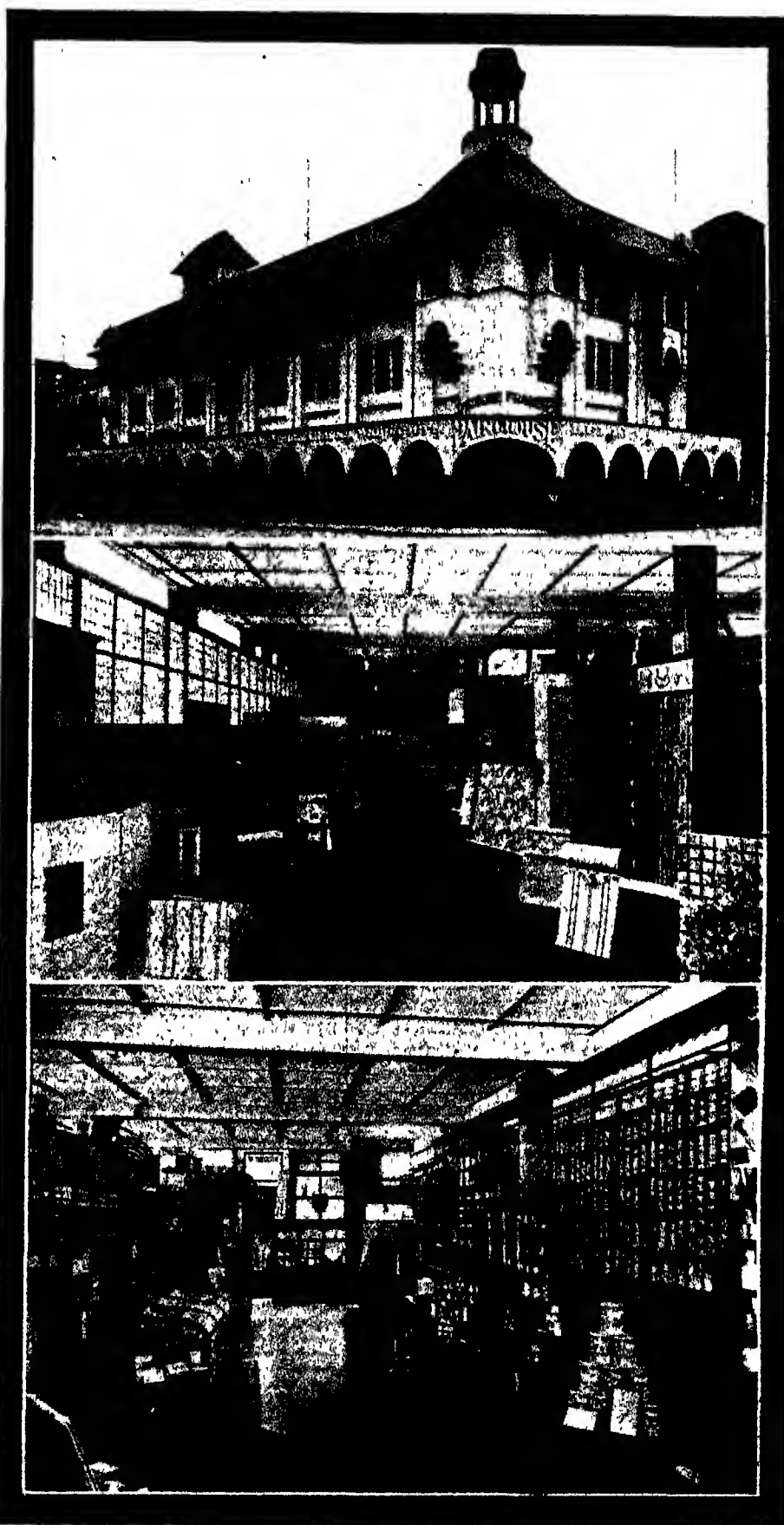
**Offices.**—The Paint House, 88, Pritchard Street, Von Brandis Square, Johannesburg. Cables "Anaglypta," Johannesburg, code, Bentley's.

**Bankers.**—The National Bank of South Africa, Limited.

## THE TRADE AND INDUSTRIES OF JOHANNESBURG

Manufacturers overseas who contemplate establishing branches in South Africa will look naturally for that centre which offers the most attractive point of contact between raw materials and the users of finished products. It is at such a place that manufacturing operations can be conducted progressively, and capital may be utilised in the best manner possible. Johannesburg, which ranks as the business and financial capital of the famous Witwatersrand area and the chief commercial centre of the Union, enjoys valuable advantages in the supply of raw materials, fuel, power, labour, manufacturing sites, markets, commercial distributing channels, and transportation. Moreover it offers the largest urban consuming market in South Africa, through its population, including that of the Reef, of over 6,000,000. Hundreds of thousands of consumers can be reached in the agricultural areas of the high and low veld, the coastal markets are within easy distance, the great hinterland of the Rhodesias, the Congo, and Central Africa lie to the north, and the export trade now being opened up to East Africa, Madagascar, Mauritius, Australia, and the East, as well as to adjacent territories, can be handled without difficulty. All factors, indeed, combine to make Johannesburg the logical centre for manufacture and distribution and for inland demand. Rainfall, temperature, and sunshine unite to provide almost ideal conditions. These features, together with the long hours of daylight, give admirable working and living conditions.

**DEVELOPMENT.**—The development of industrial Johannesburg, which, it must be remembered, came into being with extraordinary suddenness as a purely mining community, has been strictly progressive,



HERBERT EVANS & CO., Johannesburg.

1. Company's Fine Premises.
2. Wallpaper Department.
3. Paint Department.

and is based upon the natural advantages afforded by its location. In the Witwatersrand area, which includes Johannesburg, the growth since 1915 is exemplified by the following official figures of the industrial position at recent date. In 1915 the number of factories in the Witwatersrand area was 862, out of a total of 1,157 for the whole Transvaal Province, the latest available figures placed the number at 1,815 out of a total of 2,420, while the value of land and buildings had grown from £4,162,500 to £7,500,000, and of machinery and plant from £7,115,000 to £13,200,000. The total number of industrial employees in the Witwatersrand area increased from 29,050 in 1915 to over 58,000, while the gross value of output, which amounted to nearly £13,000,000 in the former year, had (as shown by latest returns) nearly trebled itself to over

cides, leather bags, trunks, and boxes, lime products; lithography and printing, macaroni, pickles, and meat pastes, maize products, mineral waters and citrus juices, nails, paints, and polishes, paper, perfumery, pottery, bricks, and earthenware, saddlery and harness, scientific instruments, soaps—toilet and washing, tiles—mosaic and other, tobacco, vinegar and condiments, vehicles, wire ropes, wood-working and joinery.

Of the above, the constructional foundry, machinery, and engineering industry has developed amazingly during the past five years in consequence of the enormous strides that have been made in the production of South African steel. The growing of what is termed "Transvaal tobacco" has resulted in the erection of many important factories, at which large numbers of workers are employed. Cotton "guns" have been

both in America and Europe. The Mines Inspector reports that he has received a great many inquiries regarding the Union's capability to send constant supplies, and that he is getting in touch with producers. These investigations, which especially concern the export and wholesale trade of Johannesburg, following as they do the report of the committee recently appointed by the Government to investigate the development of the Union's mineral resources, which report urged in emphatic terms the need and justification for State assistance for the encouragement of the mineral industries, is considered as particularly timely and significant, and some practical expression of the Government's sympathy was hoped for during the 1926 session of Parliament.

**TRANSPORTATION FACILITIES.**—The aim of the Government Railway Adminis-



JUNCTION OF COMMISSIONER AND HARRISON STREETS, JOHANNESBURG.  
The four corner buildings were designed by Messrs. Stucke & Harrison, Architects.

£36,000,000, this last figure being the Witwatersrand's share of a total of £40,000,000 for the whole Transvaal.

**LEADING INDUSTRIES.**—The following list includes the main existing industries of Johannesburg. Agricultural implements, ales, beers, and wines; asbestos sheeting and other products, bacon and similar food products, bags—linen and calico; baking powders and biscuits, boots and shoes, brushes and brooms; candles, cement, and charcoal, chemicals—hydrogen, oxygen, and carbide, cigarettes, clothing; concrete pipes, constructional foundry, machinery, and engineering work, cords, twine, and string; diamond cutting, disinfectants, electro-plating, films, flour; furniture; grocers' sundries, hats and caps; insecti-

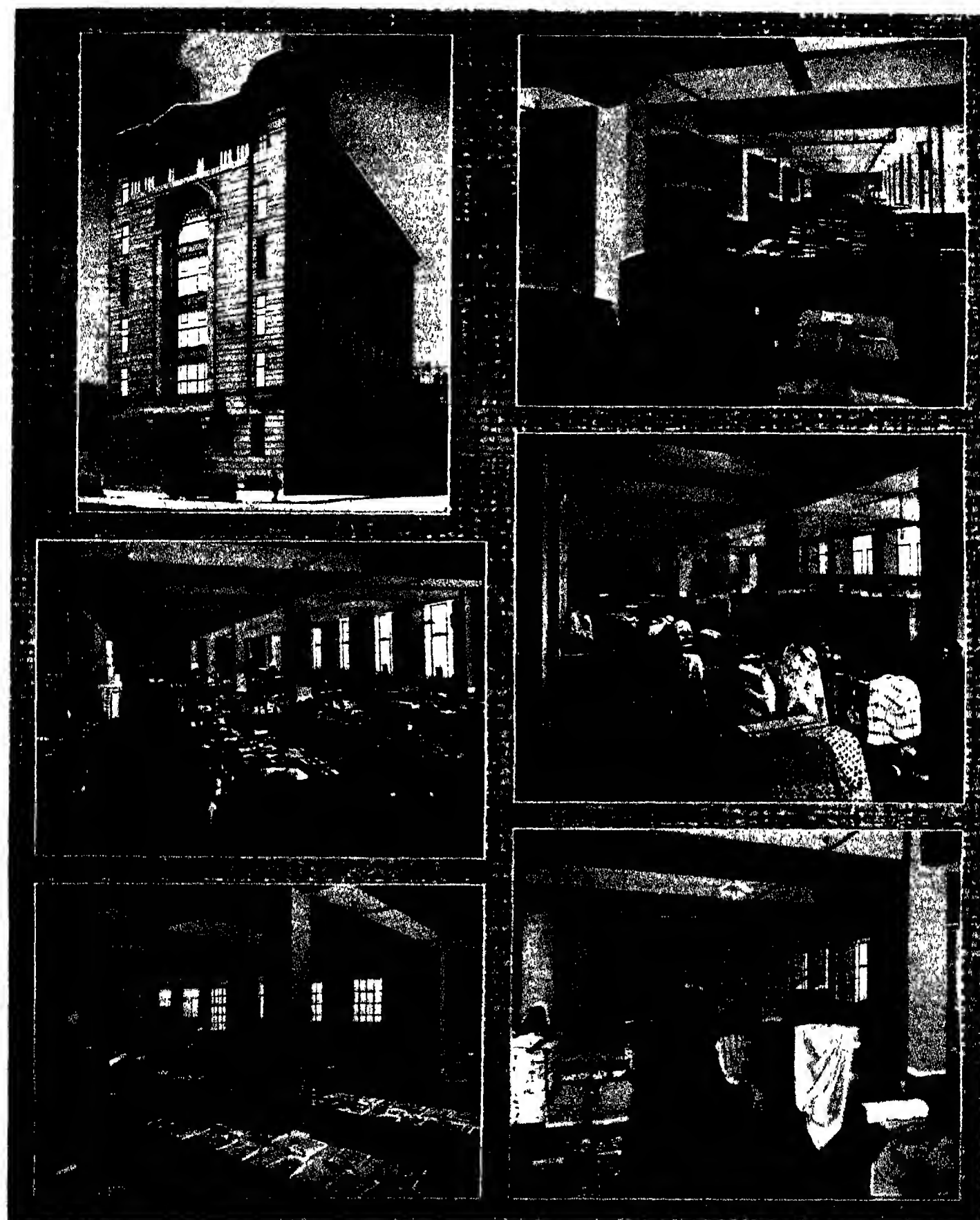
established in various parts of the district, and a fairly large export trade with Europe is now in operation.

**OVERSEAS MARKETS.**—While the British Empire Exhibition was in progress at Wembley an exhaustive tour of Great Britain and the Continent was made by the Pretoria Mines Inspector in charge of the South African mineral exhibits in order to ascertain the prospects for selling South African minerals overseas. Opportunities in the overseas markets for these would appear to be highly promising. Asbestos, chrome, corundum, mica, and talc are minerals which South Africa, and especially the Rand, can supply in abundant quantities of the necessary high grade, for all these there would appear to be an assured market

tration of the Union has always been to provide a method of transport which will offset the advantages possessed by other countries in the form of canals and navigable rivers. The Administration has initiated a system of "Distribution Centres and Rates," which enables manufactured products to be conveyed to the chief points in each consuming area under the most favourable conditions. This assists Johannesburg manufacturers in competing upon equal terms with the products of other industrial centres, and with imported commodities, in the important zones of distribution.

Thanks to the fact that Johannesburg is to-day the centre upon which all railway development has converged, while at the same time the extensive regions to the





J. NUNNERLEY & CO. LTD., Johannesburg.  
The Firm's Fine Premises and some of its many Departments.  
(See *Interpress*, page 86.)

north have been gradually opened up, the Golden City need no longer fear any possible wasting of her gold industry, since she has in her midst and in her surroundings all the facilities of an extensive system of commerce. The importance of this may be gauged by railway statistics. Taking at random a month's return of the tonnage railed from the ports of Capetown, Port Elizabeth, East London, Durban, and Lourenço Marques to the principal inland stations, it has been found that 54 per cent was forwarded to Johannesburg and the Reef, being 3,700 tons more than the combined tonnage to all other principal inland centres.

## REPRESENTATIVE WHOLESALE AND OTHER ENTERPRISES

### J. NUNNERLEY & COMPANY LTD.

**Inception.**—The rapid expansion of this firm of wholesale merchants, which started operations only a few years ago in Johannesburg, is directly attributable to its managing director, Mr. John Nunnerley, whose wide and expert knowledge of the needs and requirements of the country extending over a period of 25 years has enabled the organisation to build up one of the foremost wholesale businesses in South Africa.

**Development.**—Not content with working from Johannesburg, Messrs. Nunnerley have now built large premises in Durban, at the corner of Albert and Victoria Streets, and have also purchased a warehouse at Capetown in Buitenkant Street. From these three centres their ramifications extend to every part of the country from the Belgian Congo to the Cape Lach territory is worked systematically by their representatives, who travel by motor cars to every corner of their respective districts.

**Activities.**—Messrs. Nunnerley & Co. are specialists in Manchester piece goods and dress materials of every description, and are one of the foremost firms in South Africa dealing in piece goods. They also cater extensively for household linens, silks, soft furnishings, clothing (men's, youths' and boys'), rugs, shawls, blankets, stationery, hardware, haberdashery, ribbons, laces, hosiery, outfitting, mufflers, handkerchiefs, felt hats, buckskins and liessian. The scope of the departments is gradually increasing, and the firm feels confident that ultimately every requirement of the country will be catered for.

**Addresses.** 107-109 Market Street, P.O. Box 6327, Johannesburg, corner of Albert and Victoria Streets, P.O. Box 2159 Durban, Buitenkant Street, P.O. Box 2401, Capetown.

**Offices.**—The company has offices at 53, Finsbury Court, Finsbury Pavement, London, E.C.2., and also in Manchester (P.O. B. 107).

**Bankers.**—The National Bank of South Africa, Ltd.

**Cables.**—"Nunnerco," Johannesburg, Capetown, and Durban, Code: Bentley's (See also illustration, page 85).

### H. BEEMER & COMPANY.

**Inception.**—This exclusively wholesale business was started in a very modest way in August, 1920, and at first dealt exclusively in ladies' showroom goods.

**Premises.**—Originally the floor space was only 750 square feet, but in the course of a few months this was found to be quite inadequate, and larger premises, with a floor space of 3,000 square feet, were acquired in Market Street, now recognised as the wholesale distributing centre for South Africa. At that date a millinery and ladies' under-

wear department was added. At the expiration of another twelve months business had increased to such an extent that new premises had to be secured, and the present site, also in Market Street, was obtained. The building erected is of brick and concrete, with excellent lighting arrangements and an electric lift to all floors. In this structure the floor space is 25,000 square feet.

**Activities.** The firm has always confined its activities to wholesale business, and it supplies retail traders throughout the whole of the Transvaal, Orange Free State, Natal, Rhodesia, South West Africa and Cape Province. The goods carried are in the main of British origin, but purchases are also made in Germany, France, Italy, Switzerland, Czechoslovakia, Austria, Belgium, Holland, America, Japan, India and China. The articles stocked are of the medium to better class types, a special feature being made of all kinds of novelties. Fourteen travellers cover the Union, mostly by Dodge lorry. Goods are sent as far distant as Broken Hill, in Northern Rhodesia, Indersbucht and Swakopmund in South West Africa, Durban in Natal, Port Elizabeth and East London in Cape Province, and the Belgian Congo.

**Lines Carried.**—The firm specialises in millinery, costumes, robes, blouses, jumpers, underclothing, corsets, and hat boxes for ladies, also in baby linen, underclothes, hosiery, haberdashery, gloves, handkerchiefs, umbrellas, laces, ribbons, veils, embroideries, Manchester goods, silk, wool and cotton dress goods, dress trimmings, fancy linens, soft furnishings, blankets, calicoes, shirts, collars, ties, hats, caps, mufflers, shawls, fibre suit cases, attaché cases, and cabin trunks.

**Partners.**—Messrs. H. Beemer and J. Finn.

**Offices.**—The head office is at 154, Market Street, corner of Von Weilligh Street, Johannesburg. Telephone No. 6614 (3 lines). Post Office Box No. 4753. The London office is C/o Messrs. Landau Bros., 41, Moorfields, E.C.2. The Manchester office, C/o Messrs. Landau Bros., 74, Princess Street. The Paris office, C/o Mr. J. P. Walker, 25, Rue d'Enghien, and the Hamburg office, C/o Mr. R. Lippmann, Königstrasse 11/13.

**Cables.**—"Beemerco," Johannesburg. Codes: Bentley's, A.B.C., and Western Union.

**Bankers.**—The Standard Bank of South Africa, Limited, Bloff Street branch.

**Shipping Marks.**—"HBC" "JHB"

**SELIGSON & CLARE, LTD.**—Head S. African office, 169, Main Street, Johannesburg. Commenced business in 1919. Sole concessionaires and stockists of certain mechanical machinery, suppliers to printing and paper trades, manufacturers and millrepresentatives, large stocks held at Capetown, Port Elizabeth, Durban, Lourenço Marques and Johannesburg warehouses of productions of Karl Krause, Gebrüder Brehmer, Koenig & Bauer, F. T. Wimble & Co. Ltd., Springer & Moeller, Heidelberg Automatic Machinery, Schelter & Giesecke. Sole agents for "Pyrex" Ware (originally made by Corning Glass Works, U.S.A., now made under licence by Wear Flint Glass Works, James A. Jobling & Co. Ltd., Sunderland, England), C. & J. Robertson, Lamm Bros., James Ltd., Chapman & Co. (Ballam) Ltd. Directors: Capt. H. L. Seligson, M.C. (managing-director), Mr. A. Ward Clare, Mr. C. L. van Hasselt. Box 4416, Johannesburg Cables, "Strenuous," Johannesburg. (All codes and private). Bankers: National Bank of South Africa, Ltd., Head Office, Johannesburg, also at Circus Place, London Wall, London, E.C., and 44, Beaver Street, New York. Besides

being contractors to the South African Government, Seligson & Clare, Ltd., have the distinction of having supplied the longest newspaper rotary press (nearly 70 ft.) south of the Equator. This is installed in the works of the "Bloemfontein Friend," and was built by Koenig & Bauer Associate Companies. Seligson & Clare (Australia) Ltd., Head Office, Kembla Buildings, 58 & 60, Margaret Street, Sydney, and Seligson & Clare (New Zealand) Ltd., Head Office, 28, Fort Street, Auckland. Capital, £15,000 issued and fully paid.

### W. B. PICKLES & SONS.

**Inception.**—This firm originally commenced business in 1902 as Pickles & White, but the partnership was dissolved five years later, when Mr. W. B. Pickles started on his own account, having been during the last few years ably assisted by his two sons, Mr. Rowland and Mr. Chas. Pickles.

**Development.** Commencing in a small way at Johannesburg, the firm gradually grew in importance until to-day it has its own large premises in that city, and also at Durban, both being known as "Textile House." There is a branch office, as also a warehouse, in Capetown, while Messrs. Twan & Stevens represent the firm at Bulawayo and at Salisbury.

**Activities.**—The activities of Messrs. Pickles & Sons are mainly directed to the wholesale distribution of tailor's trimmings, woollen suitings, and ladies' dress materials, of which goods they carry one of the largest stocks in South Africa. The sales organisation consists of travellers, who cover Africa from the Cape to the Congo, and at regular intervals are in touch with all the retail merchants dealing in their particular lines.

**Premises.**—The main offices in Johannesburg and Durban have been designed with a special lighting system suitable for the woollen trade, and cover a floor area of 10,000 and 5,000 square feet respectively. The floor space occupied by Messrs. W. B. Pickles & Sons in Remington Buildings, Capetown, is of 3,000 square feet.

**London Offices.** The firm has its own representative in the offices of Messrs. W. G. Bonecock & Co., Finsbury Court, Finsbury Pavement, E.C.2, and Mr. W. B. Pickles himself spends eight months of every year in England in order to supervise the buying arrangements.

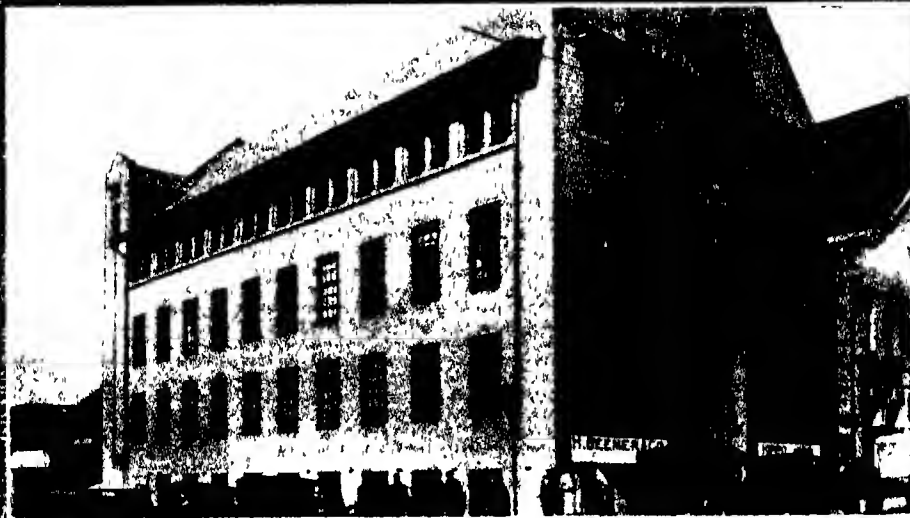
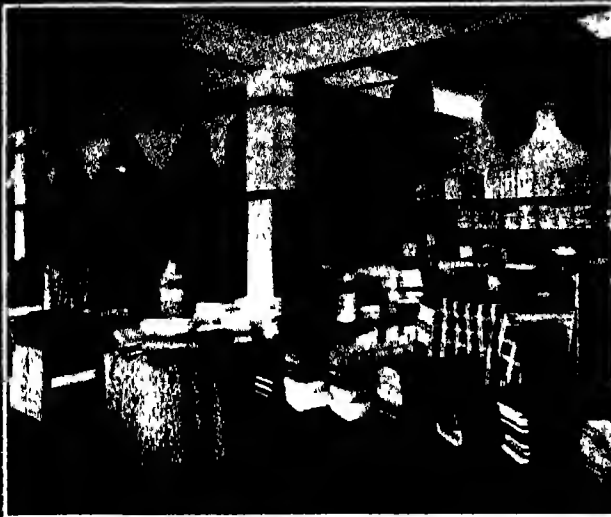
**Personal.**—Mr. W. B. Pickles is a native of Parsley, Yorkshire, where his family has been intimately connected with the wool spinning industry. He had his early training at the spinning mills of Messrs. Reuben Gaunt & Sons, where his uncle, the late Benjamin Pickles, had been manager for sixty years.

**Staff.**—This consists of 42 Europeans and 14 natives. The general manager is Mr. W. S. McFarlane. The manager for Johannesburg is Mr. G. L. Dickie, and for Durban, Mr. W. B. Kelly. Mr. H. E. Lovegrove attends to the firm's requirements in Capetown.

**Head Office.**—Textile House, Von Brandis Street, P.O. Box 279, Johannesburg. Cables, "Vicuna."

**Bankers.**—The National Bank of South Africa, Ltd. (See illustration, page 88).

**WM. H. MÜLLER & CO. (TRANSVAAL), LTD.**—Ocean Building, Simmonds Street, Johannesburg. Phones 2320/1; telegraphic address, "Ferrostaal." Also at The Hague, London, New York, etc. Local directors and managers, Messrs. G. Borcharding and Carl Rosenberg. Importers of iron and steel manufactures, such as steel plates, steel piping (welded and solid drawn) and cast iron piping, drill steel, shovels, shafting, hex bolts



H. BEEMER & COMPANY, Johannesburg.

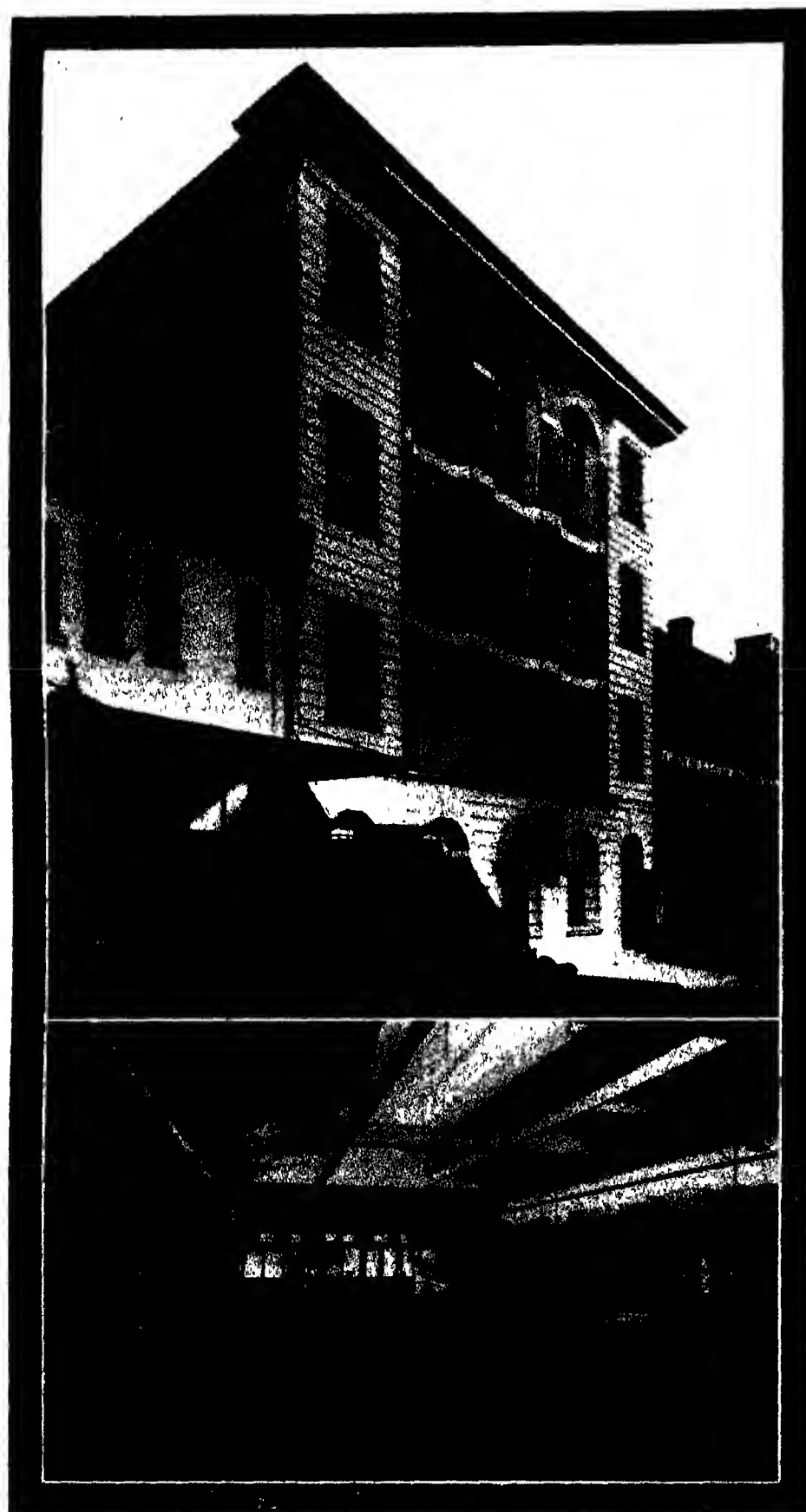
1. Piece Goods Department.

2. Haberdashery Department.

Centre. The Company's Office and Showrooms, Market Street.

4. Millinery Department.

5. Ladies' Costume Department.



W. B. PICKLES & SONS, Johannesburg.  
 1. The Company's Johannesburg Premises.  
 2. Interior of Premises at Durban.

(See Letterpress, page 86)

and nuts, washers, rivets, railway track and trucks, including light and heavy rails, wrenches, spanners, vices, saws, hammers, hoop iron, charcoal iron, wire nails, bar and plain wire, wire netting, fencing standards and droppers. Large stocks kept in own stores. Eloff Street Extension Contractors to the Government, Railways, Municipalities, etc.

#### THE NORTHERN LIME CO. LTD.

**Inception.**—This company was established in 1907 by Messrs Z Davidson and W W Men to work the deposits at Uthloop, near Potgietersrust. Since the acquisition of the Taungs works it has become one of the largest concerns of its kind in the Union.

**Works.**—These are situated some nine miles west of Taungs, and are fully developed, being equipped on the most up-to-date lines, modern electrically-driven machinery having been installed throughout.

**Production.**—The production of burnt lime is between five and six thousand tons per month, the employees numbering forty whites and six hundred natives. Almost the whole of this output is consumed by concerns in the Union and Rhodesia. It is used in gold mines for neutralising acids in the water, in sugar factories in the process of refining, and in carbide works for the manufacture of this product. In addition, the company's properties produce all classes of limestone for fluxing agricultural, and other purposes.

**Qualities and Area.** The deposit covers an area of about 640 acres, and analysis has proved it to be one of the finest in South Africa. The workings are connected to the South African Railways main line by the company's own private railway. The qualities produced are limestone 98% CaCO<sub>3</sub>, burnt lime 90% CaO, and slaked air separated 70% CaO.

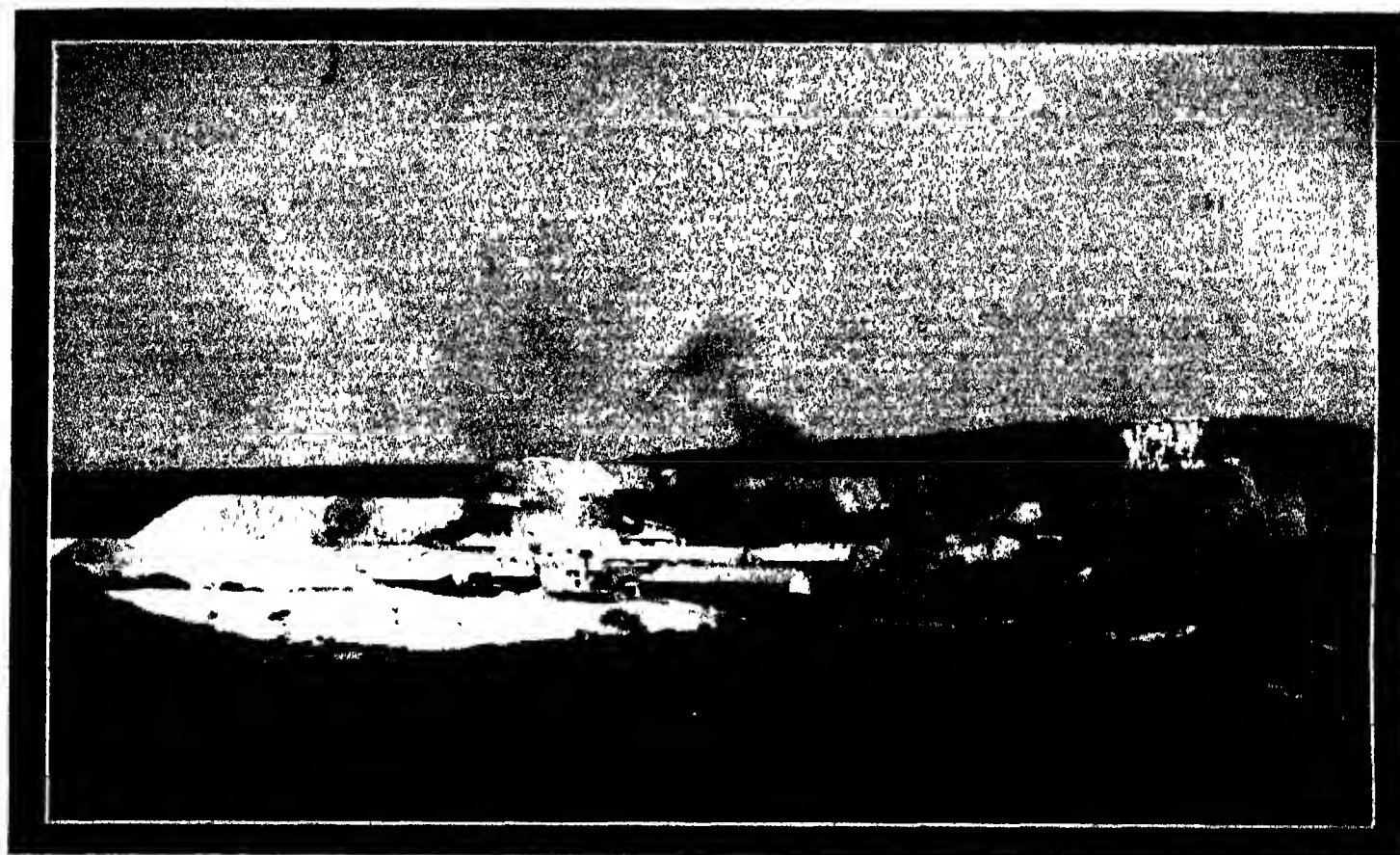
**Administration.**—The managing director is Mr J E Orr, and the general manager is Mr A F Campbell.

**Offices.**—These are at 68/72, National Bank Buildings, Simmonds Street Johannesburg. Post Office Box No 4610. Cables "Northern," Johannesburg.

**London Buyers.**—Messrs A Moor & Company, 1, London Wall Buildings, E C.

**Bankers.**—The National Bank of South Africa, Limited.

**THE NETHERLANDS INSURANCE COMPANY, Est. 1845.**—36-38, Stella Buildings, corner Kissik and Marshall Streets, Johannesburg. Founded in 1845 at Zutphen, Holland, as The Netherlands Fire Insurance Company, to transact fire insurance only, with a capital of £500,000, which is now £6,000,000 (£500,000). Company underwrites (besides fire insurance) life, burglary, plate glass, accident, motor car, fidelity and workmen's compensation insurance. Head office since 1897 at The Hague, Holland, while branch offices are at Amsterdam, Rotterdam, Breda, Alkmaar, Zutphen, Nijmegen, Groningen, Zwolle in the Netherlands, and at Batavia, Java (Netherlands East Indies), also recently at Capetown. Agencies are established all over Holland, at Hamburg and Bremen (Germany), Copenhagen (Denmark), in the United States of America, Union of South Africa, South West Africa, and Portuguese East Africa. Principal office for the Union of South Africa is at Johannesburg, where Mr. P. C. Baerveldt is the chief representative and inspector, having represented the company in the Transvaal since 1890. Branch office at Capetown controls the Cape Province and Natal. Financial position of the company is very sound, the balance sheet as at December 31,



THE NORTHERN LIME CO. LTD., Johannesburg  
Works at Taung.

1924, showing reserves amounting to £533,000. London Bankers: The National Provincial Bank, Limited; Johannesburg Bankers: The Netherlands Bank of South Africa, Limited. Cable Addresses: "Assurance," The Hague; "Oralabora," Johannesburg; "Netherinco," Capetown.

(See also notice following "Finance and Insurance" section.)

### OTHER COMMERCIAL ENTERPRISES

**AFRICAN BOARD OF EXECUTORS & TRUST COMPANY LIMITED.**—Head office, Law Chambers, Church Square, Pretoria. Branch, Aegis Buildings, Loveday and Fox Streets, Johannesburg. Founded in 1893 for the administration of estates, investment of capital and general estate business. Capital, £50,000; reserve fund, £42,575. Cables: "Board."

**AFRICAN EXPLOSIVES & INDUSTRIES, LIMITED.**—Chamber of Mines Building, Hollard Street, Johannesburg. Registered in Capetown March 21, 1924, formed by the amalgamation of the interests of Nobel Industries in South Africa with those of the Cape Explosives Works Ltd. Capital, £2,200,000. Cables: "Explosives."

**AFRICAN GUARANTEE AND INDEMNITY COMPANY, LTD.**—Empire Buildings, Kruis Street, Johannesburg. Established August, 1911. Transacts every description of insurance business. London managers: Messrs. Gold, Cook & Co. Ltd., 28, Budge Row, Cannon Street, E.C.4. Cables: "Indemco." Codes: Codem, A B C 5th Edition, and Bentley's. Bankers: National Bank and Standard Bank.

**ALLIANCE BUILDING SOCIETY.** Alliance Building, corner of Fox Street and Russik Street, Johannesburg. Founded June 18, 1894. Subscribed capital, £455,100; reserve fund, £35,725; total assets, £507,978. Thomas McKenzie, chairman; Secretary, John A. Noble. Cables: "Allbank." Bankers: Standard Bank.

**ANGUS, GEORGE, & COMPANY LTD.**—7, Southern Life Buildings, Johannesburg. Incorporated in England. Specialise in transmission beltings of all descriptions, are equipment and "Telemit" brake lining, leather, rubber and asbestos goods. Agents in chief towns of the Union. Head office, Newcastle-on-Tyne. England. Cables: "Angustate."

**ASSOCIATED ENGINEERS COMPANY LTD.** 13, Loveday Street, Johannesburg. Engineers and mining material merchants. Hold many important agencies. Branches at Capetown, Durban, Port Elizabeth and East London. Capital, £80,000. Managing director, W. Wolstenholme. Cables: "Sprinkler."

**BARRATT AND PILLANS ENGINEERING COKE AND BY-PRODUCTS COMPANY, LIMITED.** Western House, corner of Marshall and Sauer Streets, Johannesburg. Colliery proprietors, and dealers in coal and all its by-products. Bankers: The Standard Bank of South Africa.

**BRITISH MINING SUPPLY COMPANY.** 28/31, Cullinan Building, Main Street, Johannesburg. Engineers and mining material merchants. Agents for John MacDowall & Sons, woodworking machinery, and stockists of laundry machinery and supplies. Works at Jeppe. Cables: "Gudgeon." Johannesburg. Code: A B C 5th Edition.

**DUNSWART IRON & STEEL WORKS LTD.** 15-17, Southern Life Buildings, Johannesburg. Manufacturers of iron and steel bars, angles, etc., and steel castings. Works at Benoni cover an area of over 30 acres and were established in 1912 with a capital of £110,000.

**ESSON, R. L., & COMPANY LTD.** 5, 6, 16, 17, 18 and 20, Steytlers Buildings, Loveday Street, Johannesburg. Founded in 1896. Printers, lithographers, manufacturing stationers, patentees of looseleaf binders, and the Orange brand ferro-prussiate papers. London office: Billiter Buildings, Billiter Street, E.C. Cables: "Drawing." Code: A B C.

**GUEST, SYKES & CHAPMAN LTD.**—88, Fox Street, Johannesburg. Founded January 1, 1925, and registered in the Transvaal. Engineers and machinery importers, hold many important representations. London office: Guest & Thorne Chapman Ltd., 81, Gracechurch Street, E.C.3. Cables: "Guesykes." Code: Bentley's. Bankers: Standard Bank of South Africa.

**HARVEY & RUSSELL LTD.**—Central House, Summonds Street, Johannesburg. Founded in 1914. Engineers and mining material merchants. Capital, £10,000. Represent many leading English engineering firms. Specialise in power transmission. Directors: W. F. I. Harvey and G. B. Russell. Cables: "Harusco." Codes: Bentley's, A B C 5th and 6th Editions. Bankers: Standard Bank.

**HEAD, WRIGHTSON & CO. (SOUTH AFRICA) LTD.** Standard Bank Chambers, 63/66, Commissioner Street, Johannesburg. Mining, structural and general engineers. Head office: Teesdale Iron Works, Thornaby-



on-Tees London Office 5, Victoria Street, Westminster, S.W. Cables "Hedritt," Johannesburg, "Teesdale," London and Stockton-on-Tees Codes Western Union, Bentley's

**HENDERSON, R. H., LTD.**—Henderson's Buildings, Johannesburg Established in 1888 Wholesale and retail soft goods merchants, branches throughout the Union Buying offices 17, New Union Street, London, E.C. Cables "Modes"

**HILLMAN BROTHERS LIMITED.**—New Club Buildings, Corner of Main and Loveday Streets, Johannesburg Timber and mining material merchants, specialising in manufacture of joinery and furniture on mass production scale Branches Durban, Pretoria, Bloemfontein, Frakpan, etc Cables "Pibrons" Codes Western Union, A B C 5th Edition, Bentley's, Zebra and Acme

**HOFMAN BROTHERS.**—Johannesburg, P.O. Box 1089 Manufacturing plumbers and merchants, with head offices corner of Marshall and Simmonds Streets Branch at 270, Vermeulen Street, Pretoria, and London office at St Swithin's Lane

**HOSKEN, WILLIAM, & COMPANY LTD.**—Corner Fox and Rissik Streets, Johannesburg Mining material and general merchants Founded in 1887, incorporated as a private limited company in 1920, with paid up capital of £50,000 Transacts also a considerable insurance business, and act as settling agents for many well known companies London offices 7 and 8, Idol Lane, Eastcheap, E.C.3 Cables "Hosken" Johannesburg, "Ocellus," London Codes A B C 5th Edition Broomhall's and Bentley's

**INCLEDON, H., & COMPANY, LTD.**—Southern Life Buildings, corner Main and Harrison's Streets, Johannesburg Registered in England, with head office in Birmingham Established in Johannesburg in 1904 Specialise in piping, fittings, valves and accessories for all purposes Branch Durban Cables "Incledon," Johannesburg.

**KIRCHHOFF, F., & COMPANY.**—Corner of Loveday and Jeppe Streets, P.O. Box 0780, Johannesburg Founded in 1895 General distributors from Cape to Congo of all kinds of vegetable, flower, tree and held seeds imported from Europe, Asia, Australia, New Zealand and America. Cables, "Kirchhoffs" Bankers Standard Bank.

**MACKAY BROTHERS LIMITED.**—Rissik Street, Johannesburg Founded in 1888, formed into a limited liability company in 1916 Piano, organ and music saloons Branches at Pretoria, Durban, Potchefstroom, Benoni and Kroonstad Cables "Musicus"

**MCCULLAGH & BOTHWELL.**—Bothwell House, Rissik Street, Johannesburg Men's and boys' clothiers, outfitters and boot merchants First South African business opened in Kimberley 1896, Johannesburg branch established 1905 London office Bothwell & Co Moorgate Station Chambers, E.C. Bankers National Bank

**NATIONAL TRADING COMPANY.**—Ammercosa House, Holland Street, Johannesburg. Established in 1904. Importers of

mining and engineering materials, holding many important agencies Branches in most centres of the Union, etc London House A Oppenheimer & Co., 38, Finsbury Square, E.C.

**NORTH BRITISH & MERCANTILE INSURANCE CO. LTD.**—40, 41 and 42, Exploration Building, Commissioner Street, Johannesburg Johannesburg branch established in 1907, has representatives in all leading towns throughout the country, undertakes all classes of insurance Manager for South Africa E. E. Wilkinson Cables "Norbrit"

**OCEAN ACCIDENT & GUARANTEE CORPORATION LTD.**—Aegis Buildings, Johannesburg Established in 1871 Transacts all classes of casualty insurance in South Africa, has branches and chief agencies in Capetown, Port Elizabeth, East London, Durban, Bloemfontein, Kimberley, Bulawayo and Salisbury Annual Premium exceeds £6,000,000, assets, over £8,000,000 London office 30-44, Moorgate, E.C.

**O'MEARA, G. H., & CO.**—Fox and Von Weilligh Streets, Johannesburg Founded in 1894 Millers, corn factors, and produce merchants, dealing in unsifted wheaten meal, kuhne meal, refined table salt, Kafir corn meal and all maize products Output, 20 tons per 10 working hours Cables "Meal" Bankers National Bank

**PIEL'S COLD STORAGE LIMITED.**—Bree Street, Newtown, Johannesburg Sole proprietor Mr A Piel Company owns a cold storage plant suitable for export trade, an ice making plant, canning and sausage factory and fertilizer plant Cables "Pielze"

**PREMIER MILLING COMPANY, LTD.**—Corner of Quinn and Pim Streets, Newtown, Johannesburg Commenced operations in 1896 Millers and merchants, mills located at Newtown, Fordsburg and Germiston, all being electrically driven Cables "Premier" Codes A B C 5th Edition, A1, Modern, Riverside and Private Bankers National Bank

**RAND CARBIDE LTD.**—National Lank Buildings, Simmonds Street, Johannesburg Founded in 1918 for the production of carbide of calcium, output approximately 3,000 tons per annum Works South Germiston Extension, Germiston

**RAND MUTUAL ASSURANCE COMPANY LTD.**—Chamber of Mines Building, Main and Holland Streets, Johannesburg Authorised capital, £250,000, paid up, £50,000 Transacts accident and fire business, mostly in connection with mines Managing Secretary Mr James Francis Bulbrough Bankers National Bank of South Africa

**REINFORCING STEEL CO. LTD.**—Central House, corner Main and Simmonds Streets, Johannesburg Reinforced concrete specialists Capital, £10,000 Branches Durban and Capetown Representing General Fireproofing Co America Cables "Zonatura" Bankers National Bank

**SAMUEL OSBORN (SOUTH AFRICA) LTD.**—Head office and works, Clyde Steel Works, Sheffield Johannesburg office Hosken's Buildings, Fox and Rissik Streets Johannesburg Established in 1889, registered as a limited liability company in 1909. Specialises in steel products. Issued

capital, £32,000 Managing Director W R Snow Cables "Mushet," Johannesburg Codes Broomhall's, Imperial, Marconi, International. Bankers Standard Bank

**SIEMENS (S.A.) LTD.**—Corner of Loveday and Marshall Streets, Johannesburg Electrical and mechanical engineers, represented in South Africa since the pioneer days on the Rand Managing Director for S.A. Mr L. G. Weyhausen Factories at Capetown, Port Elizabeth, East London, Durban, Pretoria, etc Cables "Serapis"

**SIVE BROS. & KARNOVSKY LTD.**—Corner of Kerk and Fraser Streets, Johannesburg Founded in 1903, wholesale druggists and manufacturing chemists, etc Branch Durban London Agents Schofield, Goodman & Sons Ltd, 23, Lime Street, E.C.3 Cables "Carbolic," Johannesburg and Durban Bankers National Bank of South Africa

**SOUTH AFRICAN & GENERAL INVESTMENT AND TRUST CO. LTD.**—Head office, Pinners Hall, Austin Friars, London, E.C.2 Registered in 1909, capital, £500,000 Chairman James W Bowhill Manager for South Africa Raymond des Clayes Branches Johannesburg, Durban and Salisbury (See also notice following Johannesburg)

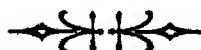
**SOUTH AFRICAN CANVAS & PROOFING CO. LTD.**—Lawson's Buildings, 34, Von Brandis Street, Johannesburg Manufacturers of tents, awnings, sunblinds, bags, etc London buyers Alexander Young (London) Ltd, 60, Fenchurch Street, E.C.3 Cables "Canvas," Johannesburg

**SOUTH AFRICAN GENERAL ELECTRIC COMPANY LTD.**—G.E. Building, 14-16, Simmonds Street, Johannesburg Incorporated in U.S.A. in 1890, registered in Transvaal as limited liability company in 1919 Represents the General Electric Co of New York throughout South Africa, and holds many other agencies Branch offices Capetown and Durban Managing Director Sidney Smith Cables "Ingenetric"

**TRANSSVAAL CITRUS FARMS LTD.**—Royal Chambers, Johannesburg Founded in 1917 One of the largest individual orange growing companies in the world, estate covers 11,000 acres, with 80,000 trees Employees average 2000 London representatives Fowle Boden & Co Ltd, City Road, E.C. Cables "Trancitrus" Bankers, Standard Bank

**WILLIAMS & WILLIAMS (SOUTH AFRICA) LTD.**—188, Fox Street, Johannesburg Manufacturers of constructional steelwork and the "Reliance" metal windows Factories Reliance Works, Chester, England Managing Director Ivor S. Augustus

**WILSON & HERD LTD.**—Standard Bank Chambers, Commissioner Street, Johannesburg Incorporated in Transvaal November 29, 1922 Electrical and mechanical engineers and contractors, Managing agents for the British Thomson-Houston Co. Ltd, and agents for Callenders Cable & Construction Co., Simplex Conduits Ltd, etc Branch: Capetown Cables "Wilsherd." Codes Bentley's, Schofield's and Private.



## VEREENIGING

**V**EREENIGING is situated on the Transvaal side of the Vaal River in the Heidelberg district, some 45 miles from Johannesburg and 77 from Pretoria. It is served by two separate lines of railway, and there are two stations on the Vereeniging Estates. The town came into being as the result of the discovery of rich coal deposits, later it acquired fame as the meeting place of the British and Boer plenipotentiaries who made peace in 1902. Vereeniging is 1,751 ft above sea level, being about 1,000 ft lower than Johannesburg, and within a few feet of the level of Pretoria, but, unlike the latter, it is not surrounded by hills, and is therefore considerably cooler in the summer months, the river also contributes towards this condition. The climate is similar to that of the Rand and the rainy season occurs during the summer months.

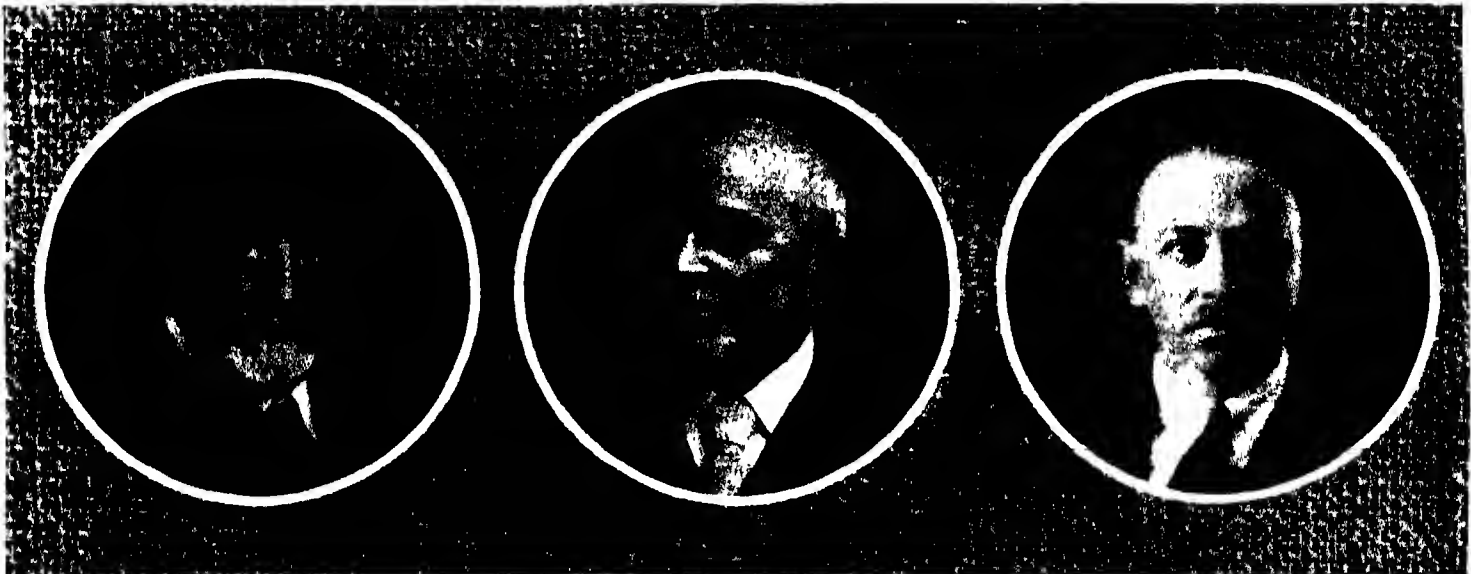
**BUILDINGS.**—The largest buildings in Vereeniging are those devoted to commerce

and the scholars number 500. There are parallel classes with English and Afrikaans as the media up to Standard IV, above that English is the medium. The school curriculum is in accordance with the code of the Transvaal Education Department. There are also several good private schools in the town and a dancing class for children.

**FORESTS AND ORCHARDS.**—Not only is Vereeniging a great industrial centre, but it is also an agricultural pivot of growing importance. The beautiful and valuable Maccauvlei Forest covers an area of approximately 4,000 acres and contains four and a quarter million trees, most of them com-fers, but many of valuable hardwood timber. The apple orchards of the district are famous, and a large portion of the Vereeniging Estates has been cut up into small farms which are fenced and provided with houses, boreholes and windmills. The best type of settlers has been attracted and mealies, tef, barley, oats, rye, and lucerne

output to 60,000 sales tons per month, and employs 130 white employees in addition to 1,800 natives. The Vereeniging Brick and Tile Company, Limited, which manufactures a wide range of products from the clays found upon the property of the Vereeniging Estates, possesses over 20 kilns with an output capacity of 700,000 bricks per month, and the works of the Vereeniging Milling Company, erected at a cost of about £85,000, are equipped with grain elevators, the first to be erected in the Transvaal, and with a capacity of 12,000 bags per diem.

The growth of so many distinct industrial activities in so short a time would seem fully to justify the statement made by the Government Mining Engineer in 1919 that the site at Vereeniging is, if not the finest, one of the finest in South Africa for industrial purposes, largely on account of the combination of water with coal, and in further combination with a healthy climate on the high veld. The three form an



1. MR. ISAAC LEWIS,  
Chairman of the Lewis and Marks Group,  
and (with the late Senator Samuel Marks)  
the pioneer of industrial development  
at Vereeniging and other parts of the  
Transvaal.

2. THE LATE SENATOR SAMUEL MARKS,  
one of the founders of the Lewis and Marks  
Group, and a great South African Pioneer

3. MR. THEODORE MARKS,  
a director of Messrs. Lewis and Marks Ltd.

cial, industrial and financial activities, prominent among these being the Vereeniging branch of the Standard Bank of South Africa, a handsome structure recently erected in the town and built throughout of local bricks and tiles. Vereeniging House, a picturesque place in the colonial style, is built on the banks of the Vaal River, and has a magnificent view of the Maccauvlei Forest and the country beyond. The most important public buildings are those of the Town Hall and the Law Courts and Post Office, which adjoin, whilst of the town's other structures the Grand Hotel, the Royal Hotel, and the Masonic Lodge should be mentioned.

**EDUCATIONAL FACILITIES.**—Vereeniging has an elementary Government school, with Form II as the nucleus of a secondary establishment. It is intended to add Form III, if sufficient pupils offer. The headmaster has a staff of fourteen assistants,

are all grown. Cattle and sheep do particularly well in the district, and the farms have the advantage of proximity to the big markets of the Witwatersrand.

**INDUSTRIAL DEVELOPMENT.**—During recent years the industrial growth of Vereeniging has been very marked, and the place bids fair to become one of the most prominent industrial centres in the Union. The town possesses the first steel works to be established in South Africa those of the Union Steel Corporation, which occupy some 50 acres on the bank of the Vaal River, with business extending over the whole of South Africa, and also Rhodesia and the Belgian Congo. The growth in the steel trade of Vereeniging may be gauged from the fact that whereas in 1913-14 the average monthly output did not exceed 325 tons, that for 1924 was between 1,500 and 2,000 tons. The well-known Cornelia Colliery has increased its

admirable combination for the establishment of industries in the neighbourhood of Vereeniging."

**POPULATION.**—The population of Vereeniging at the census of 1921 was 5,433, which number has since considerably increased.

**POWER SUPPLY.**—The important power station of the Victoria Falls and Transvaal Power Company was established at Vereeniging in 1911 for the purpose of generating electric power for transmission to the gold mines on the Rand, 45 miles away. The plant consists of four turbine generators of 43,200 kilowatts (58,000 h.p.), while 20 Babcock & Wilcox marine type boilers are also installed, fitted with chain grate stokers. The three-phase alternating current is generated at 5,000 volts, and stepped up to 85,000 volts for transmission to the Witwatersrand Goldfields, whence it is conveyed by overhead transmission cables,

and there stepped down to 40,000 and 20,000 volts for distribution to the gold mines and other consumers. The whole of the coal burnt at this station is supplied from the Cornelia Colliery of the Vereeniging Estates, Ltd. On an average workday as much as 1,400 tons of coal are burnt, about 480,000 tons of Cornelia coal being consumed annually.

In December 1925 occurred a serious, but fortunately only a temporary, breakdown at the Vereeniging Power Station. Owing to the great increase in the requirements of the mines and other industries, this station had been working at its maximum capacity - and frequently under a heavy overload - for some considerable time past, and there had been no opportunity for necessary overhauling and repairs. One of the 12,000 kilowatt turbo-generators burst, and masses

**SPORT AND RECREATION.**—As an inland watering-place Vereeniging is becoming increasingly popular, a reason for which is found in the variety of sport and amusement offered to residents and visitors. These include boating, bathing and fishing in the waters of the Vaal the area available for boating and yachting being about 10 miles. In President Park there is a fine sports ground, where Rugby and Association football, hockey, and lawn tennis have full sway. On the townlands is a 9-hole golf course open to the public while on the Free State side of the river is the 18-hole links of the Vereeniging Estates, with a magnificent club house.

**VAAL BARRAGE.** Vereeniging is an important centre in the remarkable Vaal

#### LEWIS & MARKS LTD.

**Inception.**—The firm of Lewis & Marks Ltd (incorporated in England) was established in South Africa about 1868 by Mr. Samuel Marks and Mr. Isaac Lewis, who were among the first to proceed to Kimberley on the discovery of the Diamond Fields.

**Activities.**—Originally the firm's activities were confined to general trading, including diamonds, gold, and land, the manufacture of spirits, leather, and jam, plantations and orchards, fruit cultivation on a scientific scale, and the establishment of an iron and steel industry, the manufacture of bottles, bricks and tiles, and the opening up of coal mines. It was also largely instrumental in the establishment of railway communication with the Transvaal.



LEWIS AND MARKS LIMITED.

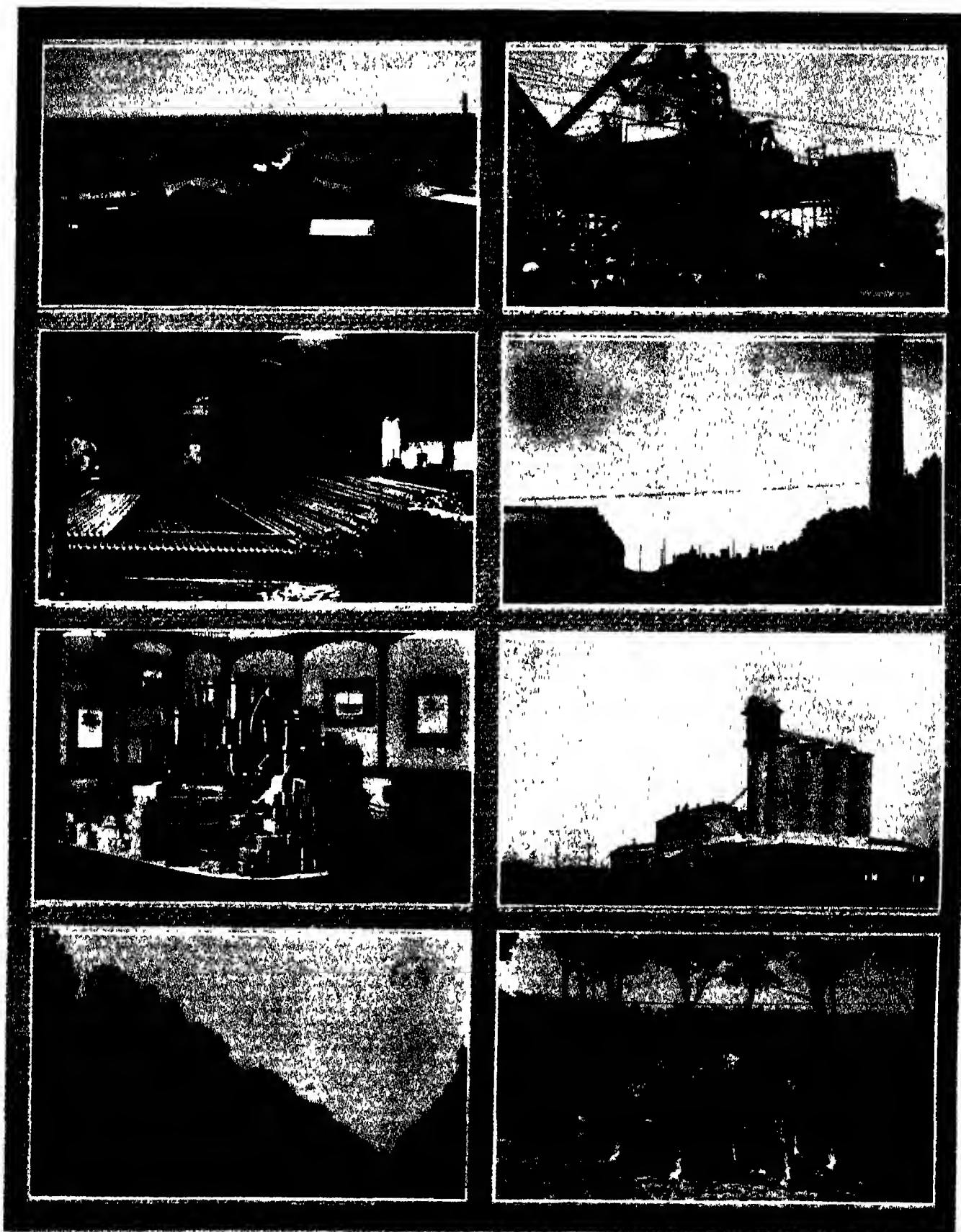
A Bird's Eye View of Vereeniging.

of the machine weighing something like 45 tons were projected through the roof, some portions being hurled across the Vaal into the Orange Free State. Since the Vereeniging plant supplies nine or ten mines on the Rand, at these mines milling operations had to cease, representing a daily loss of revenue of not less than £30,000. The supply of the mines being at a different voltage from that given by the other power stations, there was some delay in effecting a complete linking up with these, though in less than 40 hours a normal supply was available, except for the periods of peak load. The power service of the Vereeniging Station was partially restored almost immediately, two of the machines being restarted.

River Scheme, whose chief object is the provision of a permanent and reliable water supply to Johannesburg. The great Barrage, which conserves the flood waters of the Vaal River, is 25 miles down stream from Vereeniging. It took six years to complete, and was finished in July, 1923, being opened by the then Governor-General, H. R. H. Prince Arthur of Connaught. By this spectacular piece of engineering the flood waters of the Vaal are checked, thus creating a lake 50 miles in length, with a surface area of 6½ square miles, and containing 13,500,000 gallons. There are 35 piers and two abutments, thus giving 36 openings, which are closed by the same number of gates.

**Organization.**—The ramifications of the group are known in every important part of the world. It is particularly interested in the buying and selling of diamonds, business in this respect extending to Great Britain, America, Holland, Belgium, etc., London being the headquarters for this branch of its operations.

**Finance and Commerce.**—The group's activities are centred in over 40 companies with an aggregate issued capital of about £25,000,000 sterling, its commercial interests are varied, and embrace shipping forwarding business at Delagoa Bay; the manufacture of mineral waters and cement; the milling of grain and the production of salt, etc.



LEWIS AND MARKS LIMITED, Vereeniging.

1. Union Steel Corporation (of S.A.) Ltd. : Perspective View of Works.
2. The Vereeniging Estates Ltd., Cornelia Colliery.
3. Union Steel Corporation (of S.A.) Ltd. : Stock of Rails.
4. Vereeniging Brick & Tile Company Ltd. : Pipe Works.
5. The Vereeniging Estates Ltd. : Pipe Exhibit at British Empire Exhibition 1924.
6. The Vereeniging Milling Company Ltd : Grain Elevators and Works.
7. The Vereeniging Estates Ltd. : Portion of Maccauvel Forest.
8. The Vereeniging Estates Ltd. : Stud Rams.

**Interests.**—The chief interests of the company are financial, mining and farming, etc. The general interests in South Africa and Rhodesia are centred in land, both agricultural and town properties, gold, coal, bricks, electric power, water, iron, steel, diamonds, platinum, salt, breweries, mineral waters, plantations, cattle, wool, grain, apples, lucerne, shipping, transport, concessions, railways, cold storage, etc.

**Agriculture.**—The area of freehold land directly under the firm's control extends to over 2,000,000 acres in all parts of the Transvaal, Orange Free State, Southern Rhodesia, British Bechuanaland and elsewhere. The land is highly suitable for both agriculture and stock-raising.

**Manufactures.**—Besides the manufacture of other industrial commodities, the group controls the principal iron and steel works in South Africa, and is now erecting a blast furnace for the production of pig-iron in Newcastle; it owns large collieries at Vereeniging, Witbank and Springs, which yield a combined saleable output of 2,000,000 tons per annum and controls brick and tile works.

**Principal Assets.**—Among its many interests, the more important ventures controlled by the group consist of the Vereeniging Estates, Ltd., African and European Investment Co., Ltd., and the Union Steel Corporation (of S.A.) Ltd.

**VEREENIGING ESTATES, LTD.**—The issued capital of this company is £1,150,100 in

shares and £350,000 in debentures, and its properties are situated in the Transvaal and Orange Free State. The town of Vereeniging, on the banks of the Vaal River, is considered to be one of the finest in South Africa for industrial purposes. Cheap electric power is generated at the Electric Power Station. The agricultural operations of the company cover an area of 200 square miles, and the properties comprise over 600 stands in the township and 127,277 acres of land. The population of the district is 2,500 Europeans and 5,000 natives, both of which numbers are rapidly increasing. Coal extends over an area of 151 square miles, the computed output being 1,000 tons per day for a period of 1,000 years. The output of steel is over 2,000 tons of finished products per month, and the milling works have a capacity of 12,000 bags of grain per day. The brick and tile industry turns out all kinds of products, with an output of 750,000 bricks alone per month. The Estates support some thousands of head of cattle, breeding from pedigree stock being another thriving enterprise. The area of irrigable land is 800 acres, and the barrage on the Vaal River is capable of supplying 20,000,000 gallons of water per day.

**AFRICAN & EUROPEAN INVESTMENT CO. LTD.**—The issued capital is £1,297,220 in shares and £746,000 in debentures. The company controls over 1,500,000 acres of freehold land in all parts of the country, and has also large mining and industrial interests.

**UNION STEEL CORPORATION (OF S.A.) LTD.**—This corporation has a capital of £607,215, with a debenture issue of £300,000. Besides other interests, it manufactures steel and bar iron, etc., to British standard sections, and produces fishplates and tube mill bars in high carbon steel. The blast furnace which is now being erected by this company at Newcastle, Natal, will be capable of a capacity of 5,000 tons per month, so that the Vereeniging works will be assured of an adequate supply of pig-iron, besides meeting the rapidly expanding demands for pig-iron of the numerous foundries in the Union.

**Directorate.**—Mr Isaac Lewis (permanent chairman), Mr Barnett Lewis and Mr Louis Marks (permanent directors), Messrs Theodore Marks, Henry D. Lewis, C. F. Rowsell, G. Roy Lewis and Julius Weil.

**Offices.** The headquarters of the group in South Africa are at Lewis & Marks Building, Johannesburg. The resident director is Mr T. Marks, and the secretary is Mr I. First. The London headquarters are at Stafford House, King William Street, F.C., the resident director being Mr C. F. Rowsell, and the secretary Mr A. Hird.

**Branches.**—There are branches of the group at Pretoria, Capetown, Kimberley and Vereeniging.

**Cables.**—"Anecdote," Johannesburg and London.

(See illustrations, pages 92 and 93.)

## OTHER CITIES

### BARBERTON

A town of some 3,500 inhabitants, Barberton is a centre of the De Kaap Goldfields, to which place the gold rush of 1880 is still remembered. Cotton is being extensively grown in the neighbourhood, which has rich agricultural possibilities. The town is lighted by electricity, and the water supply is excellent. A Municipal Hall to seat 300 people was erected in 1910, and there is a large park with recreation ground, also an excellent nine-hole golf course.

### BENONI

The third largest town in the Transvaal, Benoni has a population of 50,000. Only 20 years ago the main street of this flourishing place was bare veld. It owes its phenomenal rise to the development of the Witwatersrand gold mines, and since 1897, when the municipality was formed, has become one of the most important industrial centres in the Union. Here are the famous Dunswart Iron and Steel Works, the East Reef Foundries and Manufacturers' and the Premier Steel Castings Company's plants, as well as welding and cutting, engineering, sawmill, and brass enterprises. The municipality controls the electric power and light supply, water supply, public library, motor transport service, and abattoir. The Municipal Offices and Library form a handsome block of buildings in Market Avenue, where are also the National Bank, Hotel Cecil, and Criterion Theatre. The town has a beautiful and spacious garden in Curtis Park, and the educational facilities are of the best.

### BOKSBURG

Fourteen miles from Johannesburg, Boksburg is an instance of a rapidly-developed mining town that has now become a

favourite residential centre. In 20 years its population has grown to 40,000. The Boksburg lake is the centre of attraction, having been made by the progressive Municipal Council "the holiday and pleasure resort" of the Rand. There is a large Government Hospital here, an ample public library, and a handsome and spacious Town Hall.

### BRAKPAN

This is the youngest of the Witwatersrand municipalities, having been constituted as such in 1910. The census figures of 1921 returned a population of 24,664, of whom 7,108 were Europeans. Brakpan is the geographical centre of the Far East Rand, and among others has within its borders the famous Government Areas and the Brakpan Mines. Industrially the town is progressing fast, many depots, foundries, engineering shops, and branch houses of large Johannesburg firms having been established. Market gardening is extensively carried out. The new Town Hall on Market Square is a striking addition to the architecture of the town.

### ERMELO

A progressive town of 4,555 inhabitants, situated in pastoral country, Ermelo is the centre of a prominent mineral district containing deposits of both gold and coal. The Government Experimental Farm adjoins the Town Lands.

### GERMISTON

The fourth largest town in the Transvaal, Germiston is the greatest railway junction in the Union, lying 9 miles east of Johannesburg and 965 miles north of Capetown. The town and suburbs cover an area of 22½ square miles, and had a population in 1923 of 49,364, of whom 20,344 were whites.

The place possesses two fine business thoroughfares in Knox and President Streets, and many progressive municipal institutions, which include a new market hall, modern abattoirs, fire brigade, sewage farm and a cottage hospital. Primarily a mining town, Germiston is, nevertheless, prettily laid out, with most attractive residential suburbs, which are connected with the centre of the town by motor bus or train. The Victoria Lake and Park, ten miles away, is one of the most popular holiday resorts in South Africa, containing a racecourse, golf course, bowling green, and cricket and football grounds.

In 1917 the municipality laid out an extensive area for industrial sites, with railway sidings, etc., adjoining the Victoria Falls and Transvaal Power Company's Station. These sites were so readily taken up that a second area has been proclaimed, and several factories have been established on the location. Local manufactures include the Government Gold Refineries, in connection with the Mint, electro-furnace products, sawdust for explosives, bolts, nuts, etc., concrete pipes, heavy chemicals and agricultural implements, starch, glucose, and other cereal products, meat canning, etc. Electric power and water are supplied on advantageous terms.

### HEIDELBERG

Noted for its particularly healthy climate, the town of Heidelberg is prettily situated at the foot of a long range of hills on the banks of the Blesbok Spruit, in which there is good fishing. It is a great educational centre, possessing a Normal College, two Public Schools, a High School, and two Primary Schools. In 1921 the population was 3,410.



**KLERKSDORP**

The old village of Klerksdorp was the first Boer settlement to be established in the Transvaal in 1838. It is connected by a bridge with the new town, which dates from 1888 and has a population of 5,700. The agricultural industry of the district is considerable, and Klerksdorp is the most important cattle centre in the Western Transvaal, with cold storage for meat. There is also a grain elevator for maize. On the Schoonspruit, 4 miles from the town, an irrigation reservoir covering 600 acres, with a capacity of 200,000,000 cubic feet, has been completed. Klerksdorp is well laid out and planted with trees, and contains several fine buildings, notably the Hospital, Market, Municipal Offices, and the Government Buildings.

**KOOMATIPOORT**

This place lies on the Transvaal side of the Koomati River, the dividing line between the Union and Portuguese Territory. It is little more than a railway junction and an important point of entry for imports and exports, the population hardly exceeding 300.

**KRUGERSDORP**

This, the principal town of the Western Witwatersrand, was founded in 1887, and had a population at the last census of 42,510. It was to Krugersdorp that the late Sir Stair (then Dr) Jameson, the leader of the historical raid on the Transvaal at the close of 1895, was brought a prisoner after being captured at Doonkop, a little to the south of the town, and a monument marks the spot where his force was defeated by the burghers of the Transvaal Republic. To the north, in the foothills of the Magaliesberg Range, is the well-known Nootgedacht battlefield. Krugersdorp boasts the largest municipal area (90 sq. m.) in the Transvaal, and contains many attractive buildings, prominent among these being the Town Hall with its handsome clock, the Great War Memorial opposite, the Carnegie Free Library, the Krugersdorp Hospital overlooking the Park, and the Old Court House which faces Market Square, the first stone of which was

laid by President Kruger in 1887. There is also a handsome library, besides several churches. The Coronation Park is one of the finest in South Africa. Perhaps the most striking feature of Krugersdorp is the famous Paardekraal Monument erected to commemorate the Voortrekkers' victory over the Zulu chief Dingaan in 1838. Every five years a solemn commemoration of the Dingaan battle is attended here by a great number of South Africans.

**MIDDELBURG**

The centre of one of the best coal districts in the Province, some twenty collieries being at work. Middelburg has a population of about 5,100. It was formerly one of the four British Military stations in the Transvaal.

**PIETERSBURG**

The principal town of the Northern Transvaal. Pietersburg had a population at the last census of 6,063, of which 2,452 were Europeans. It is the busy centre of a district rich in minerals and agricultural products, the country being well watered by the Lavuhn and Letaba Rivers. The town has electric light and power works, and an improved water supply has been completed.

**POTCHEFSTROOM**

This is the oldest town in the Transvaal, having been founded in 1839. It is rich in historical associations, not the least interesting of which is the old fort, occupying a site near the railway station and overlooking the town. It was here that Colonel Winslow and his garrison made a gallant stand in the War of 1881. At one time the capital of the Republic, it is now content to be the educational centre of the Western Transvaal, its school of agriculture and experimental farm being the finest in the country. Other well-known scholastic institutions are the Boys' and Girls' High Schools, the Africaans High School, founded in 1923, the University College, the Normal College, the Convent of the Sacred Heart, and the School of Industries. The very beautiful Park contains the tomb of Pretorius, the first President of the Transvaal.

**ROODEPOORT-MARAISBURG**

This municipality consists really of two townships, with a total population of 25,000. They are within easy reach of Johannesburg, and are near the beautiful Florida Lake, a grand sheet of water some 90 acres in area. Roodepoort has extensive and valuable gold mines, and the town is developing rapidly.

**SPRINGS**

An active mining township on the Far East Rand, Springs is 30 miles from Johannesburg. It is also the centre for the rich agricultural districts of the Eastern Transvaal, and has an assured future of greater importance when the Government gold mining leases are further developed.

**STANDERTON**

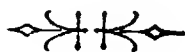
The principal town of the Eastern Transvaal, Standerton is situated on the Vaal River, which is here crossed by a fine road bridge and by two weirs, one of which holds back the water for five miles and gives facilities for boating and fishing. Standerton is the centre of a considerable pastoral country. The population in 1921 numbered 3,999.

**VOLKSRUST**

This town (with a population of 3,500) is a growing centre in one of the best pastoral districts of the Transvaal. It possesses the usual Government buildings and schools, Dutch, Anglican, and Wesleyan Churches, a swimming bath and public library, and a good water supply. Eight miles from the village, lower down the Buffalo River, are the Falls and Cascade of the Slang River.

**ZEERUST**

The administrative centre of the Marico District of the Transvaal, and one of the oldest towns in the Province, Zeerust, an abbreviation of the original name "Coetzee," which commemorated Coetzee, the owner of the farm on which the town was built, is picturesquely situated, and is moreover the distributing point for enormous ranching and cotton producing districts.



# MINES AND MINERALS

## THE WITWATERSRAND GOLDFIELD

### DIAMOND, COAL AND OTHER FIELDS

**T**HE prosperity which South Africa enjoys to-day and its importance, politically and in other respects, are very largely attributable to its mining industry, without the development of which the country would be occupying a position of comparative obscurity. In this respect she differs from most other countries in so far as the prosperity of the latter lies in the tillage of the soil. Despite the fact that South Africa is a continent of vast potentialities, its mining industry dwarfs all others, and though it has attained huge dimensions, there is nothing to indicate the probable limit of future production. One thing is certain, however, namely, that the country does, and will for many years to come offer an extraordinarily attractive field for the investor, especially in assured mining propositions such as it can boast in plenty.

**EARLY HISTORY OF THE RAND.**—There is much that is fascinating in the story of the goldfields of South Africa and the part their discovery has played in the history of the country. The earliest reference to the existence of gold in the Union appears to have been about 1850, when the Colonial Geologist of the period was instructed to

investigate the reported discovery of the precious metal in quartz formation in the Orange Free State, while in the Transvaal the first traces of gold were evidently discovered by Kail Mauch in 1868 on the north side of the Olifants River near the Murchison Range. In 1871 auriferous quartz and alluvial deposits were found at Fersteling and early in the following year alluvial gold was discovered in the Lydenburg district, the locality being proclaimed as a goldfield by the Transvaal Government in May of the same year. In 1882 an Australian digger found gold on the Kantoorn Plateau in the Kaap Valley, the result of which was the establishment of the mining town of Baberton.

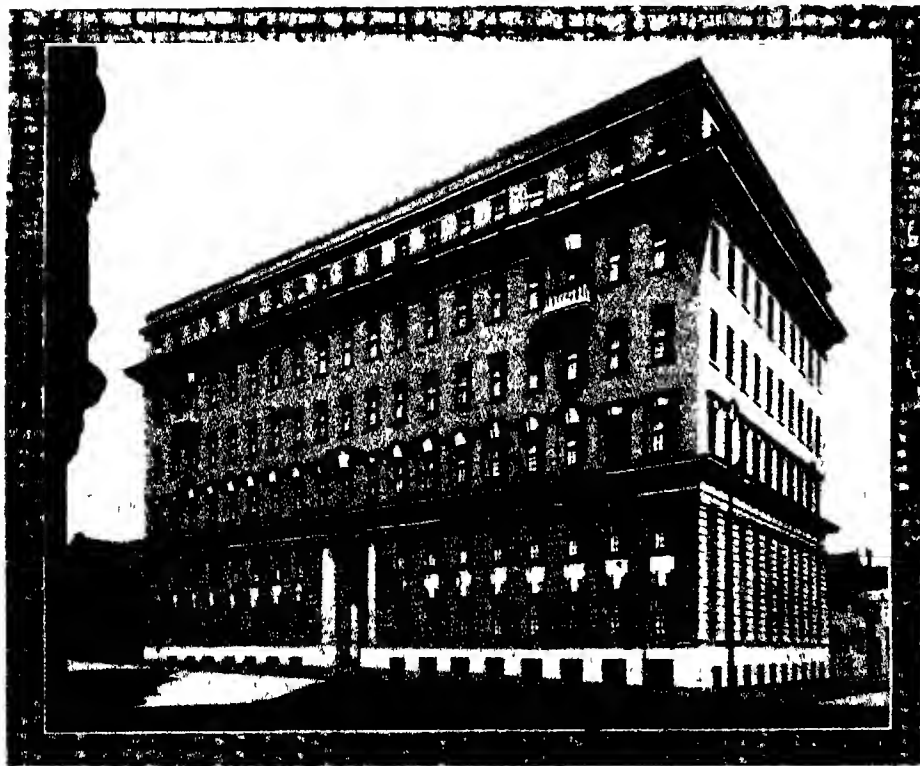
Then followed the location of the Witwatersrand (or white-waters-ridge) the richest gold mineralized area in the world. The principal credit for the discovery of which must undoubtedly be attributed to Mr. Fred Struben, who in 1883 was prospecting in the Witwatersrand district. This pioneer's story is a romantic one. He, together with other members of a syndicate, purchased two farms lying towards the West end of the range near Krugersdorp, and in January 1884 began operations.

Almost immediately he discovered a vein carrying gold, some of which assayed over 2 oz. to the ton. Here was the first proof that the Rand was gold bearing. Quickly ensued the discovery of the first conglomerate bed on the Rand, and samples from it showed it to be gold bearing. On being opened up to about 6 feet it revealed a bed of ore of some 2 ft 6 ins. to 3 ft, panning from 3 to 4 dwts. per ton.

Subsequently Mr. Struben discovered a lode which gave assay values of approximately 1,200 oz. to the ton, so marvellously rich and so finely disseminated through the rock that the rich part showed a gram of gold to a gram of quartz almost. He cut a trench across this reef, and found it to be a bed of ore between 2 and 3 feet deep with this remarkable vein of gold all through. The reef, however, proved to be a pocket and panned out, but Mr. Walker, an employee of Mr. Struben, enjoyed far greater success, and there is not the slightest doubt that he brought about the working of the Main Reef. In July 1886 the first sample of the banket formation was panned in Kimberley, and the showing was so remarkable that Mr. (now Sir Joseph) Robinson backed by Mr. Alfred Beit, who saw the panning, started for Johannesburg, and within a few days of his arrival bought the Langlaagte farm for £7,000. Messrs. Cecil Rhodes, Beit, Barnato and other enterprising Kimberley men soon followed, and the whole of the central section of the Rand was speedily taken up. After the first successes, results proved disappointing, owing to the pyritic nature of the ore, which resisted the simple processes of amalgamation. Fortunately for the Rand, the cyanide method had been discovered, and it overcame the difficulty. Prior to this, however, in almost every instance where shafts were sunk the values declined with depth, though the reefs maintained their size and leading characteristics. The early mines working the rich outcrop soon carried their operations below the oxidised zone, and this led to trouble, which, however, ceased on the installation of the cyanide treatment, with its introduction the industry developed rapidly.

**FIELDS.**—At this stage a brief description of the Rand Goldfields is opportune.

**FORMATION.**—The fields are located on an elevated plateau, nearly 6,000 feet above the sea. The Witwatersrand projects somewhat above the plateau, and the outcrop on the conglomerate beds can thus in a measure be said to be the dividing watershed between the Atlantic and the Indian Oceans, the tributaries of the Vaal River draining into the Atlantic, and those of the Limpopo or Crocodile River to the Indian Ocean. The conglomerate beds are composed of quartz pebbles, bound together by a siliceous cement containing iron pyrites. The name "banket" has been given to the conglomerate from its general resemblance to



TRANSVAAL CHAMBER OF MINES, Johannesburg.

to an almond sweetmeat with this Dutch name, it, however, refers specially to the ore taken from the oxidised zone which was "free-milling," and was found to extend only to a limited depth. The gold contained in the conglomerate is not often visible to the naked eye, occurring almost invariably in the matrix, its existence in the pebbles having been recognised only in rare instances. The gold is for the most part in very fine particles, and when examined under the microscope shows sharp crystalline structure, giving no evidence of being rounded and moulded by attrition, as is observable on examination of gold found in alluvial deposits. There are several series of these conglomerate beds in places more or less parallel to each other. Gold is found as an essential constituent feature in all the blanket beds.

The subject of the genesis of the conglomerate and gold contained therein is controversial. The most generally accepted theories are that the conglomerate beds and enclosing sandstone and quartzites were seashore deposits formed during subsidence of a coast line, that after their deposition and consolidation the blanket-bearing strata were folded into anticlines and synclines. North of Johannesburg subsequent erosion removed the anticline. The deposition and erosion in connection with the syncline have been such that a statement of a basin-shaped deposit has much justification. The beds have been subjected to fault and dyke action. These in a nutshell are the theories generally accepted. The Witwatersrand Goldfield has been generally likened to a saucer, of which the Northern rim outcrops. This rim is known as the Central Rand, and extends about 26 miles from West to East. At either side there is an extensive break in the formation.

**MAIN REEF SERIES.**—The Main Reef series on the Central Rand consists of the Main Reef Leader, the mainstay of the mines, the Main Reef, usually of no great value, and the South Reef, which is as a rule narrow but rich. At either end the South Reef disappears. At both ends, on the other side of the break in the continuity referred to, the formation turns southward. On the western side there appear to be two reefs, but on the eastern side the formation apparently narrows down to one, the Main Reef Leader. While on the Central Section the formation dips at a rather acute angle, on the eastern side there is a flattening at depth, so that properties are being successfully worked at a distance of about seven miles from the sub-outcrop. The eastern mines are characterised by poor and rich zones, but on the whole are much richer than the central mines.

**SUCCESS IN WORKING.**—Improved mechanical methods and labour organisation have gradually brought all the chief gold mines (mention of which will be made later) to a similar basis as regards both mining and metallurgy, and a very satisfactory extraction is obtained throughout the whole blanket series of reefs. The success in working these large bodies of comparatively low grade ore may be assigned to the following causes:—

- (a) the adaptability of the cyanide process to the Witwatersrand ores,
- (b) the uniformity and character of the gold bearing deposit,
- (c) cheap unskilled labour,
- (d) the proximity of coal deposits,
- (e) absence of heavy pumping charges,
- (f) good water supply.

Actual mining on the main gold-bearing area is greatly assisted by a very strong roof, which supports all excavations made

within reason and which requires a minimum of timbering and other supports. This excellent roof or hanging-wall has its limits, however, and the enormous amount of ore extracted during the past thirty years is beginning to have effect over large worked-out areas, causing extensive falls, earth tremors, and subsidences, necessitating much sand-filling and other precautions to save existing workings and communication ways.

**GOLD PRODUCTION.**—The enormous growth of the mining industry since its inception up to the present day will be appreciated from the following figures relating to production between the years 1884 and 1925.

Year	Tons Gold OZS	Value at £4 14/7 1/2 per fine oz L	
1884	2 370	10 000	
1885	1,414	6,010	
1886	8 171	34,710	
1887	30,880	69,401	
1888	227,719	967,410	
1889	350,009	1,400,508	
1890	440 152	1,860,645	
1891	688,439	2,924 395	
1892	1,060,058	4,541 071	
1893	1,290,218	5,480,498	
1894	1,805,000	7,667,152	
1895	2,017,413	8,560,555	
1896	2,025,510	8,063,821	
1897	2 743,518	11 653,725	
1898	3,823,307	16,240,030	
1899	3,637,713	15 452,025	
1900	348,701	1,481,442	South African War Period
1901	258,032	1,096,051	
1902	1,718,921	7,301,501	
1903	2,072,897	12,628,057	
1904	3,773,517	16,028,883	
1905	4,900,541	20,854,440	
1906	5,792,823	24,606,336	
1907	6,450,740	27,400,992	
1908	7,056,266	29,073,115	
1909	7,205,108	30,987,050	
1910	7,527,108	31,073,123	
1911	8,249,401	35,041,485	
1912	9,107,512	38,086,250	
1913	8,798,336	37,372,949	
1914	8,394,322	35 056 814	
1915	9,093,902	38,628,437	
1916	9,296,618	39,489,522	
1917	9,018,084	38,306,381	
1918	8,418,292	35,758 636	
1919	8,331,294	35,389,091	
1920	8,158,226	34,653,947	
1921	8 128,681	34,528,443	
1922	7,009,767	29,775,598	
1923	9,148,771	38,861,511	
1924	9,574,918	40,671,667	
1925	9,599,702	40,339,585	
Totals 198,602,617	843,172,524		

**A RECORD YEAR.**—From these statistics it will be seen that the output for 1924 established new records, both as regards weight and value, in the history of the mining industry, while another record in actual output was made in the following year, detailed figures in connection with which are given in the "Supplementary Data" following this article under the sub-heading of "Gold Production in 1925." The total for 1924 exceeded the previous best figures (those for 1916) by 301,303 ozs in weight and £3,550,599 in value, and the output for 1923 by no less than 449,803 ozs in weight and £4,177,394 in value. The tonnage milled amounted to 28,581,930 tons, compared with 26,883,344 tons in 1923. The profit per ton milled in 1924 averaged 10s 3d, the then best since 1910, when it was 10s 6d per ton. In 1923 the amount was 9s 5d per ton. Working costs, which were the lowest since 1917, were reduced

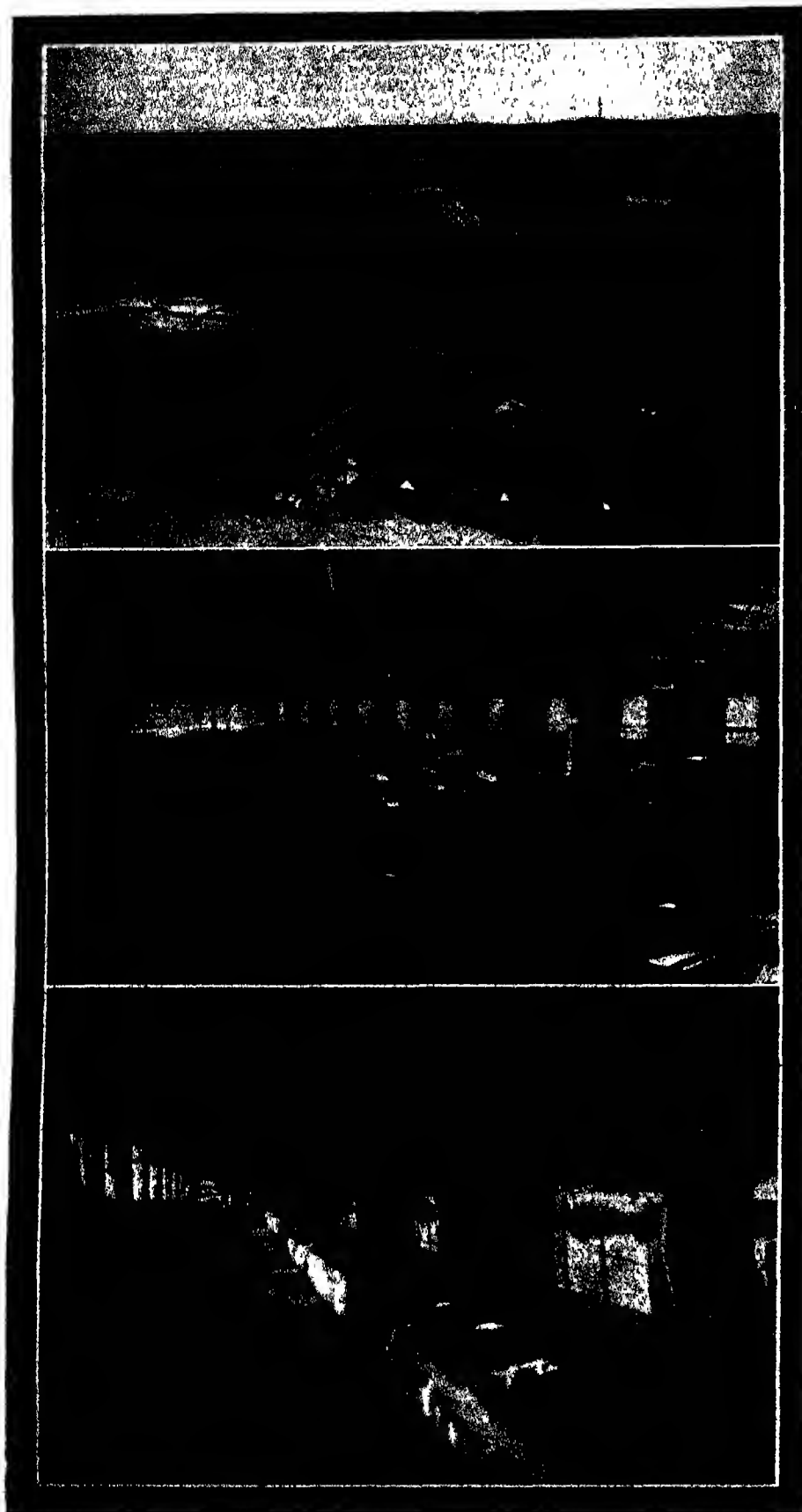
in 1924 to an average of 19s 9d per ton for the whole of the Transvaal Gold Mines, and to 19s 7d per ton for the Witwatersrand mines, as compared with 20s 2d for the Transvaal and 20s for the Witwatersrand in 1923. This lessened expenditure in working costs is an extremely satisfactory augury for the future of the industry, certainly more so than any currency premium obtained on the gold output.

The reason is not far to seek. The resumption of operations on the Rand, after the labour troubles of the Spring of 1922, was taken advantage of to rearrange underground work, particularly as regards earlier inspection of working levels, and the introduction of improvements in plant and tools used in breaking down rock, as well as in the subsequent extraction of the gold contents of the ore. The marked increase in the use of wet jack-hammers which was evident in 1922, and which resulted in a saving of labour and mining at narrower widths, continued in 1923, and striking improvements in rock-breaking efficiency have been obtained. Closer attention has also been given to the quality of drill steel, the wider use of hollow steel, and greater accuracy in providing smaller and more finely gauged bits for the drillers. Government mining regulations have facilitated the efforts to secure a longer drilling time per shift, and the corresponding lengthier period during which the drills are actually penetrating the face has shown that, with jack-hammers, more than double the footage per shift is obtainable to-day over previous performances. On the surface there have been notable advances in metallurgical practice, and altogether the mining industry is on a sounder economic basis than at any previous period in its history. This improved efficiency in working and drastic reduction in costs have also resulted in increased dividends, which in 1924 reached the record total of £9,850,923, or £500,000 more than the previous best, which was in 1909, and an increase of a million and a half compared with 1923.

**LESSER GOLDFIELDS.**—There are in the Transvaal a number of other fields, though in comparison with the Witwatersrand they are of practically negligible importance. These include the Barberton Goldfields, the Pietersburg and Murchison Range, and Lydenburg and Pilgrim's Rest. The first named date from 1885, when the phenomenally rich Sheba Mine was discovered. The field consists of a number of quartz mining propositions, situated in an ancient schist formation and intersected by numerous dykes and intrusions of trap rock. The pay ore runs in clintes and in lenticular segregations often extremely rich at surface, but becoming poorer in depth and frequently cut off by igneous intrusions or dying away in the country rock.

For a few years Barberton and the surrounding district produced a considerable amount of gold, but in late years it has taken a relatively small place in the gold production of the Union, the quartz mines being worked on a comparatively small scale by tributors, private owners and small capitalists. In the Kaapschehoop and Jamestown districts a small amount of alluvial gold continues to be found, but at the present time the alluvial digger has ceased to exist in these districts.

Similarly with the quartz mines in the Pietersburg district, which date from 1870, the ore bodies here proved patchy and irregular. An output of gold has been maintained for many years, but all the enterprises where any substantial capital was employed were failures, and mining



RAND MINES LTD., Johannesburg.

1. No. 15 Shaft, Crown Mines.
2. "C" Plant, Crown Mines.
3. Mortar Box Floor, Crown Mines.

(See *Interpress*, page 114.)

to-day is practically entirely in the hands of private individuals.

To Pilgrim's Rest, which forty-five years ago was an important alluvial field, belongs the distinction of being the only part of South Africa that ever gave good results as an alluvial digging. Later the alluvial gold became worked out, and prospecting began on the mineralized bedded veins in the dolomites, quartzites, and shales found in this area. The field attracted men with capital from the early days, with the result that the bulk of the present day output is obtained from the larger companies.

Before passing from the subject of alluvial gold, it may be mentioned that at the present date it cannot be said there are any alluvial diggings in South Africa. In 1920 the total output was only 1 130 fine ozs. from all the Transvaal districts. Alluvial gold recovered in the Transvaal from the date of the British occupation up to the end of 1923 amounted to 32,078,308 ounces of fine gold.

**MINING CAPITAL.**—The amount of capital represented in the mining industry is, of course, colossal, and the task of making an estimate of the return to investors in gold mining enterprises is by no means an easy one. The usual practice with limited liability companies of quoting the percentage that the amount of dividends in any one year bears to the amount of capital issued is generally considered to be open to objection in the case of mining companies, as such capital does not usually represent the actual amount of money invested in the concern. The Actuary of the Transvaal Chamber of Mines by evidence furnished to the Mining Industry Board in 1922 took the figure of the total capital of the Witwatersrand Gold Mines, admitted as amortizable by the Inland Revenue Department as at December 31, 1921, and, using the amount of dividends for the year 1921 less the amount of amortization allowed for that year, arrived at a return of 4½ per cent. He, however, contended that as the amount of amortizable capital did not include capital issued for vendor's interest, this figure would probably have to be doubled, thus reducing the rate of interest to 2½ per cent.

Professor Lehfeldt, a recognised economic authority, made a calculation based on the assumption that an imaginary investor had bought up the whole of the Witwatersrand Gold Mines in 1907 at market price, had supplied all the money required in the period for further capital, debentures, loans, etc., and had disposed of his investment at market price at the end of 1921. He deduced that over this period of 14½ years the investor had received 6.2 per cent on the sums invested in the beginning, and from time to time.

#### INDEBTEDNESS OF MINES --

Taking the actual indebtedness of Witwatersrand Gold Mines, which includes issued capital, debentures, premiums, loans, and advances, amounting at December 31, 1922, to £69,499,090, according to the statistics of the Government Mining Engineer, and comparing this with the dividends paid, amounting to £5,627,458, a return of 8.1 per cent is obtained for the year 1922. Similar figures for 1923 are—total indebtedness £68,137,988 and dividends £8,460,343, giving a return of 12.4 per cent. Any amounts appropriated from profits for working capital are not included in the "total indebtedness" figures quoted, as such amounts are not strictly funds received for which the industry is responsible to make some return, but may be deemed to be included in costs. If for the two years mentioned

the amounts of dividends are compared with the issued capital only, then the returns show 10.4 per cent and 16 per cent respectively. Again, if one considers only the mines which paid dividends, it is found that 23 companies in 1922 paid an average of 28.8 per cent on issued capital and 20 producing mines paid no dividend, while in 1923 an average of 34.7 per cent was paid by 31 companies, 14 producing mines returning nothing.

**MINING METHODS.** There are numerous methods of mining. These, of course, have been greatly extended and improved upon in recent years, chiefly in the direction of mechanical and metallurgical efficiency. In the early days the outcrop was developed by sinking shafts on the lowest reef. At distances apart of about 100 feet, stations were cut and development drives driven in the reef east and west, while cross-cuts to the south exposed the other reefs which were similarly developed. The areas between deep levels were cut up into suitable blocks by winzes and raises, these, when holed, became faces from which to start stoping. When it was eventually realized that the dip at depth became flatter, and that values were more or less maintained, deep level shafts were sunk. These shafts were vertical, and usually struck the reef somewhere about 1,000 feet, when they were turned south and followed the bed of the lowest lying reef.

**DEEP-DEEP LEVEL SHAFTS.**—Yet further south in time deep-deep level shafts were sunk. These struck the reef at about 3,000 feet. South of these shafts the reefs were developed from auxiliary underground incline shafts, provided with their own winding engines and equipment. The mode of development and stoping from deep or deep-deep shafts remained very similar to that obtaining in the old outcrop mines, except that the distances between levels increased to about 300 feet on the incline. Practically all development on the Rand is done by machines, but stoping is carried out both by hand and by machines, all machines being air driven. Many mines obtain their air power from a large central compressor station run by a power company, others from their own plant. Most manual work is performed by natives under white supervision, the proportion being about 9 to 1.

**ORE (REMOVAL OF).**—For the most part the ore is trammed in one-ton trucks from loading boxes to ore bins at shaft stations. There it is raised to the surface in skips drawn by engines, which are for the most part propelled by electric power, which has greatly displaced steam. The electric power is developed by four central stations, three on the Rand and one at Vereeniging, 40 miles south of Johannesburg. Most of the mines drain to the deepest levels, the water being thrown to the surface by powerful electric pumps. Mining operations are controlled by very stringent regulations for the safety and health of workers.

**UNDERGROUND MINING PRACTICE.**—To sum up, during the first period of development the fields may be said to have been opened up on Cornish mining lines. Later, a larger and rather improved method of American mining was adopted, and latterly there has been a strong tendency to utilize coal mining practice in the exploitation of the mines at depth. In the early days nearly everything was sacrificed to the first extraction of payable rock. The lay-out underground was cramped and badly designed, important shaft pillars were robbed, artificial ventilation was non-existent, and the mortality among under-

ground workers became so great that a compulsory scheme of compensation had to be passed by the Government, which has cost the country and the mine-owners huge sums up-to-date in direct money payment, without taking into consideration the large expenditure upon improved ventilation and dust-allaying appliances. During the past few years conditions underground have greatly improved, dangerous work is not allowed to be rushed as it used to be, working hours are compulsorily shorter, and a strict code of safety regulations is provided for all classes of mining.

**MINING RIGHTS AND LEASING.**—When mining on the Rand became a deep-level proposition, the rights of the general public to peg out claims on proclaimed ground became an embarrassment to the authorities and to the Mining Industry. It was an economic impossibility to sink the costly shafts needed to develop such areas unless

richness, or supposed richness, of the ore, and are calculated by means of formulae which differ for each lease. These variations have arisen owing to such areas having been submitted to public tender, those offering the highest percentage of profits to the Government having been generally, though not invariably, accepted.

The Union Government in settling the terms under which State property became exploitable by private undertakings, recognised that mines were wasting assets, and that the capital expended in bringing such properties to a producing stage should receive compensation by an annual allowance—amortisement before division of profits, so calculated that by the time the mines should become exhausted working capitals would be returned to the companies. This allowance, being estimated over the presumed life of the mine, may vary from year to year, as the technical position of the property



BARS OF GOLD, CROWN MINES, JOHANNESBURG.

a substantial number of claims were held, and the pegging of single claims by individuals meant that the possessors, unable to work such small areas, held them only as a speculation, hoping that their interests would be bought out in some combination of ground. The continuance of public pegging over deep-level ground would therefore have resulted in the tying up of such areas and the suspension of mining development. The Union Government accordingly took over on behalf of the State the mining rights on all deep-level ground not accruing to owners of farms under *mynpacht* rights, and leased the areas most favourable for immediate exploitation on terms under which the profits were divided between the mining companies operating on such leased areas and the authorities. Mere divisions of earnings vary in accordance with the

may change, and therefore no hard and fast rules can be given as to the probable amount of amortisement allowed. This allowance for amortisement is treated as part of working costs—an arrangement which decreases the ratio of profits to recovery values, thus reducing the percentage of profits going to the Union Government. As some misconception exists with regard to the Government's interest in profits on leased areas, it may be pointed out that such properties have been handed over to the operating companies free of any purchasing consideration, except the percentage in results. It is therefore, reasonable to assume that, had such areas been bought from private owners, the cost expressed in the increased capitals necessary would have reduced the profits per share quite as much as the present arrangement.





JOHANNESBURG CONSOLIDATED  
New State Areas  
(See letter)

**PLANT FOR REFINING.**—Though the idea of establishing a refinery and mint for refining and coining the gold produced had been mooted for a considerable time, it was not till 1919 that the proposal took a concrete form, when the Government decided to establish a branch of the Royal Mint at Pretoria if the mining industry undertook to erect a gold refinery on the Witwatersrand. A private company styled the Rand Refinery Ltd was registered in 1920, the shareholding being limited to gold-mining companies, members of the Transvaal Chamber of Mines. A site near Germiston was selected, and a refinery was erected there in 1921. The capacity of the refinery is sufficient to deal with the whole of the gold produced in South Africa, the plant being the largest and most complete of its kind and containing the most modern apparatus. The operations during 1925 proved successful in every direction. The gross weight of the bullion received amounted to 10,468,571 ounces, a decrease of 244,768 ounces over the receipts during 1924.

The year 1924 was remarkable on account of the large quantities of refined gold sent to the East. No less than 35 per cent of the production of the Witwatersrand fields was shipped direct to the purchasers in India after refining. In addition, approximately 744,000 ounces of fine silver extracted from the bullion were sent to Bombay. The advantage of making direct shipments such as these is that the producers do not have to pay freight.

**PRICES OF GOLD.**—The currency price of gold has undergone many fluctuations, due to the chaotic conditions created during the War. In 1914 it was deemed inadvisable

to make weekly shipments of gold to Europe, but it was necessary to make arrangements whereby the mining companies could obtain currency for the payment of wages in the Union and supplies, etc., in London. An agreement was therefore made early in the year named under which South African gold was purchased by the Bank of England at the standard rate as soon as it was deposited in the South African Banks in the name of the South Africa Minister of Finance. The producers could then draw on local banks and Bank of England advances up to 97 per cent. All charges for refining, insurance, freight, etc., had to be borne by the producers, which meant, during the War increased realization charges of approximately £400,000 per annum. The charge for insurance and freight was fixed at 25 per cent. This agreement was terminated in July 1919, from which date it was arranged that all gold deposited with South African banks, with the exception of a small quantity required for local currency, would be shipped to England by the producers, consigned to the Bank of England, but sold by the producers' agents on their behalf in the best available market. Before that date 50,000 ozs of gold were released by the Bank of England for the purpose of a test or trial sale and realized 85s 6d per standard ounce, or 93s 5d per fine ounce, an increase of almost 10 per cent.

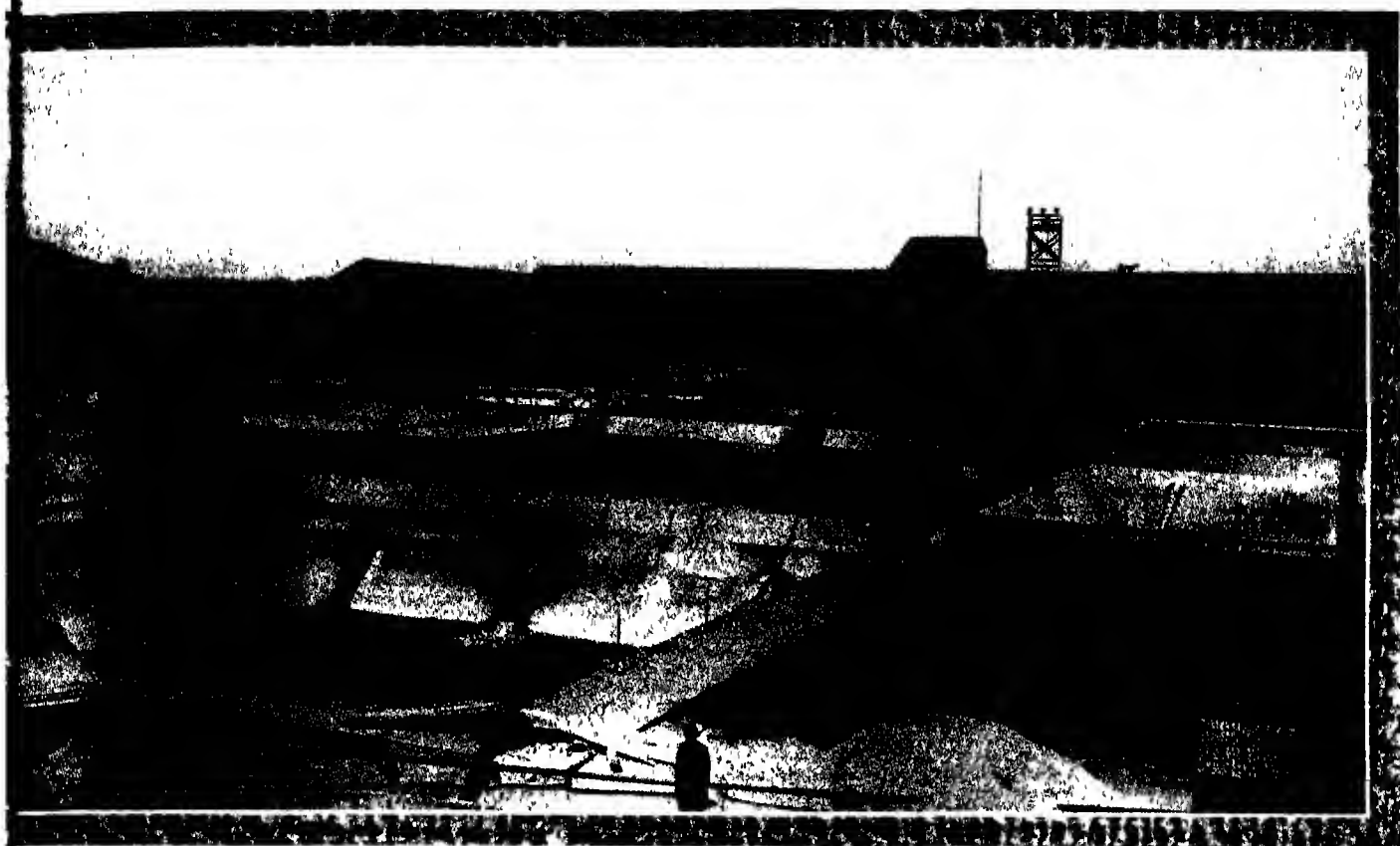
This arrangement was the beginning of what is generally known as the gold premium. Since then the price of gold has fluctuated greatly, reaching a maximum of 127s 4d. per fine oz in February 1920. As the currency of the United States of America remained on the gold basis, there is a close

correspondence between the London-New York Exchange and the price of gold. The 1919 agreement was amended in 1923, when a new agreement came into effect whereby producers were enabled to ship gold, including coin, to destinations other than the United Kingdom. As a consequence of this an appreciable amount of gold has been shipped direct to India and New York. It is worthy of note that though now deprived of the "gold premium," the Mines have proved their ability to earn substantial profits, details of which have already been given.

**PRINCIPAL MINES.**—On the Witwatersrand there are approximately 36 producing mines, 22 being in the Central and Western Rand Section and 14 in the Eastern Section. In the former category, the principal properties are City Deep, Crown Mines, the Langlaagtes, Village Deep, Randfontein and West Rand Consols. In the Eastern Section are Brakpan, Geduld, Modder B, Government Mining Areas, Modder Deep, New State Areas, Springs and West Springs.

The principal controlling groups are the Rand Mines Ltd, New Consolidated Goldfields, Johannesburg Consolidated Investment, General Mining & Finance, Anglo-American Corporation and Union Corporation.

**PROCESS OF PRODUCTION.**—The process of extracting the metal from the ore is briefly as follows. Firstly, the valueless rock is picked out on picking belts or tables. The gold-bearing rock is then reduced to smaller size in jaw or gyratory stone breakers, crushed finer in stamp mills and still finer in tube mills. Formerly the coarser free gold was recovered from the finely crushed ore by the usual process of amalgamation on plates. In



INVESTMENT CO. LTD., Johannesburg  
New All Slitting Process.  
(press page 118)

that method the ore from the stamp or tube mills was carried in a stream of water over mercury-coated copper plates, where the gold was caught as amalgam by the mercury. The amalgam scraped from the plates was "retorted," the mercury being distilled off and the gold "sponge" remaining in the retort subsequently melted down into bars. In 1923, however, the process of amalgamation on plates was practically abandoned. The plates now are covered by strips of corduroy cloth, the pile on which catches some of the particles of gold and other heavy minerals. The strips of cloth are removed at intervals and washed in tanks of water, from which the "blanket concentrates" or "black sands" are subsequently taken and passed over a concentrating table. The richer and heavier portion separated on that table goes to an amalgamation barrel.

The sludge from the tables is then classified, the finer particles going to vats, where the remaining gold is dissolved by cyanide solution, the coarser particles being returned to the tube mills for further grinding. After being agitated in the cyanide vats, the solution is drained away, the gold contained being precipitated by means of zinc shavings or powder, while the slimes are passed through filters which squeeze out any cyanide solution not removed by the draining.

#### PROSPECTS OF THE INDUSTRY.—

The total amount of gold to be ultimately produced by the Witwatersrand has frequently been the subject of investigation and speculation, and expert estimates of future production vary considerably. In 1914 the Union Government Mining Engineer, in his evidence before the Dominions Royal

Commission, estimated the tonnage to be crushed for the mines producing at that time as 587,000,000, and from mines and areas not then producing as at least the same quantity. The Transvaal Chamber of Mines stated in evidence before an Economic Commission that from 42 of the 51 gold mines producing in 1913 there would be worked from a depth of 7,500 feet 550,000,000 tons of ore, which would yield in gold more than the cost of working, which would be £500,000,000 approximately. Before the Dominions Royal Commission the Chamber made a similar estimate.

**RAND CONTINUITY.**—The continuity of the Rand as a gold producer depends on the practicability of mining at great depth and on the extension of the reef in the Eastern area, where great possibilities exist favorable to a large gold production. It should, in fact, be possible to mine at greater depths than have been attained hitherto in any part of the world on account of the great strength of the formation and the low rate of increase of temperature with depth. The limits of deep mining are governed by many causes, and have been variously estimated at from 6,000 to 10,000 feet, but it appears reasonably certain that mining can be carried on to a depth of at least 7,000 feet, where the grade of ore mined is sufficiently good to cover the high cost which is unavoidable at such a depth. Already the City Deep, Crown Mines and Village Deep are being mined at between 6,000 and 7,000 feet, a depth which surpasses that of the St. John del Rey, in Brazil, hitherto the deepest mine in the world. But remarkable, in fact unique, as are the resources of the

Witwatersrand (it can only be regarded as being on the average a low grade gold-field and with only a few shillings per ton profit to work upon), the question as to what companies can profitably continue to mine at greater depths is inextricably bound up with that of working costs, which is again largely dependent on the supply and cost of labour.

A progressive output of gold may certainly be looked for from what is known as the Far East Rand, which contains the Main Reef series over about 247 sq. miles, and for 203 sq. miles of this area the reef lies at a depth of less than 5,000 feet. The Far East Rand has assumed very great importance in recent years, and from here it is anticipated the output will take the place of the exhausted properties of the Central Rand and that of the large group of mines which are showing a serious falling off in values at depth.

A number of producing companies are at work in this Eastern area, and given an average life of 21 years may be expected to contribute a large amount of gold to the Union output. Apart from these promising ventures, the State owns a considerable number of undeveloped claims which are leased from time to time to companies capable of finding the enormous sums of money required to bring these deep level mines to the producing stage. The Government itself works no mines. Mining and boring operations have shown that over almost the whole area only one reef series has been or is likely to be continuously worked, and the average estimated stopping width is about 5 feet. In most of the mines in this area there exist non-productive

zones in which no payable ore is obtained, the percentage of such zones varying from 15 to 50 per cent in different mines on the basis of the existing relations between recovery and costs, and in estimating the possibilities of the ground still to be worked 60 per cent of the area is assumed as non-productive. Recent calculations show that if only one half of the State-owned claims in the Far East Rand not held by producing companies, and containing reef at a depth of less than 5,000 feet, prove remunerative, after a deduction of non-payable zones a yield of gold to the approximate value of £450,000,000 may be obtained.

It is interesting to study the face forecast offered by the Government Mining Engineer two years ago, as an indication of the probable extent of the gold mining industry during the next ten years.

DATE	No. of MINES CRUSHING	TONNAGE MILLED PER ANNUM	VALUE OF GOLD WON PER ANNUM £	PROPORTION AS COMPARED WITH PRESENT CONDITIONS	
				TONNAGE MILLED PER ANNUM	VALUE OF GOLD WON PER ANNUM
1922	40	25,750,000	17,500,000	100	100
At end of 1927	44	20,000,000	31,000,000	78	83
At end of 1932	21	19,000,000	29,000,000	71	77

(Small mines crushing less than 20,000 tons per annum are not included in the above table)

The forecast takes no account of possible new producers, other than New State Areas and West Springs, and, like all estimates of a similar character, must necessarily be found to be increasingly inaccurate as the period gets more remote.

**RAND TOWNS.** The development of the goldfields naturally brought into being towns of no mean size and importance, a description which is particularly applicable to Johannesburg, the hub of the Witwatersrand. In 1886 it consisted of a few straggling shanties, to-day it is the largest city in Africa south of Cairo, with a white population bordering on 200,000. When it was founded, the existence of the Reef at this point was not suspected, but when the fact became known immediate steps were taken to secure a more suitable locality, and the nucleus of the present town was laid out in December 1886. The site chosen was on the southern slope of the Witwatersrand range, one of the bleakest and most elevated spots in the Transvaal, where land for agricultural or pastoral purposes was of so little value that a few years before farms had changed hands for the value of a team of oxen. In January 1885 two stands in Commissioner Street (one of the chief thoroughfares of the city) sold for £22,000. In 1897 a stand in Pritchard Street (another of the principal roadways) fetched £40,000, and in 1902 the Standard Bank purchased four stands for £145,000. In 1917 a corner site, 50 ft by 50 ft on Pritchard and Joubert Streets, sold for £25,000. The rateable value of Johannesburg for 1923-24 was £50,698,026, including £16,096,823 land value, the rate being 7d in the £ on site values only. The municipal area extends over 8½ sq miles and includes 118 townships. Enormous sums of money have been expended on buildings, and the town has about it an air of prosperity and enterprise comparable with many of the biggest cities in England.

Krugersdorp, named after President Kruger, is the largest town on the West Rand, though in no sense to be compared with Johannesburg, which is 20 miles away. It has a white population of about 15,000.

On the East Rand, Germiston holds pride of place, being the fourth largest town in the Transvaal. It is only 9 miles from Johannesburg, and is an extremely important railway junction.

Benoni is one of the youngest and most progressive municipalities on the Rand. Within its area of 43 sq miles are some of the richest mines of the world, including the celebrated Modderfonteins, the Van Ryns and others. A few miles further east are Brakpan and Springs. The latter was formerly a large coal-producing area, but most of the coal seams first opened up are now worked out, though others are being developed. The township promises to become populous and important when the Government gold mining leases to the East and South are in full work.

**RATES OF PAY AND LABOUR SUPPLY.** In 1925 the number of white employees on the Witwatersrand Mines (producing and non-producing) was 19,156 and of coloured 170,793. The ratio of coloured to white employed was therefore 8.9 to 1. In 1924 it was 9.7 to 1. An amount of £7,250,500 for salaries and wages was disbursed to whites, while native and coloured labour accounted for £5,810,400. The rates of pay are on a generous scale. Shift bosses receive 30s 6d per shift, timbermen, 22s 6d, pipemen, 20s 10d, fitters, 23s 5d, platelayers, 20s 10d, shiftmen, 17s 3d, trammers, 17s 9d, pumpmen, 20s, machine stoppers, 20s 6d, hand stoppers, 20s 10d, machine developing, 38s 11d, shaft sinking, 50s 8d, reclaiming, 23s 1d, engine drivers (winding), 24s 2d, and winch drivers, 24s 2d. The figures relating to machine stoppers and the ensuing occupations mentioned are the contract payments. The average rates of wages of coloured persons other than native labourers, employed on the mines on any of the above classes of labour underground is approximately one-fourth of the amount shown for white men. The average earning of native labourers is 2s 3d per shift, and in addition they are provided with free quarters and food estimated to cost 11d per shift worked. The mines also expended in 1924 a sum of £13,250,185 on stores, £8,317,162 of which was absorbed by South African produce or manufactures.

**NATIVE LABOUR.** There is no factor in the industrial fabric of the mines of greater importance than the native labour supply. No fewer than 210,000 natives are employed by the mines of the Transvaal. A considerable percentage of this labour is imported from Portuguese East Africa, the Gold Mines actually employing 72,000 natives from there, or in other words 42 per cent of the total native labour strength. The East Coast "boy" works on an average 18 months before returning home, whereas the Union native works on an average only 9 months at a stretch. Consequently, to maintain 100,000 East Coast natives in the Union, 66,000 per annum must be obtained, while to maintain the same number of British South African natives at least 132,000 recruits per annum would be required. When it is remembered that the mining industry, in spite of every effort, can obtain only about 150,000 British South African natives per annum, and that practically every industry in the Union is short of labour—if not permanently, then at very frequent intervals—the impossibility of replacing the East Coast native by the British South African native is obvious. It should also be remembered that the Portuguese native spends on the Witwatersrand £4 out of every £5 of his earnings, whereas in the

case of other natives the position is reversed—only £1 out of every £5 is spent on the Rand, the remainder being taken to the native territories, including areas outside of the Union, such as Basutoland, Swaziland and Bechuanaland.

**LABOUR PARTY'S AIM.** When all these facts are considered the anxiety felt by the mining industry at the aim of the Labour Party (which with the Nationalist Party forms the Coalition now governing South Africa) to stop the importation of labour for the mines can readily be appreciated. The adoption of such a policy would compel the industry to resort to every means to obtain further native labour from the Union. But since all Union natives available for work are, at most times, fully employed, the mines can only fulfil their requirements at the expense of other industries, including agriculture. Even when this resource was exhausted, there would, it is pointed out, still remain a large shortage and the richer mines would be compelled to outbid the poorer ones for the labour available; the latter would be unable to continue operations, and would have to close down; a part of the industry would survive, but the community not only of the Rand but of the Union, would suffer.

**PROGRAMME OF NATIONALIST PARTY.** The Nationalist Party is committed to a policy of segregation, which is equally unacceptable to the mining industry. The Bill which General Hertzog, the South African Prime Minister, introduced into Parliament in 1926 aims at the gradual withdrawal of natives from mines and other industries, the prevention of natives from carrying out any skilled work in European areas, and the cessation of recruitment of natives in the areas to be set apart for the natives for employment in European areas. Such a scheme also of necessity implies the prohibition of the employment of Portuguese natives on the mines, and would naturally have an effect in restricting the number of natives available similar to the Labour Party's proposal. It would appear that both schemes have in view the substitution of natives by Europeans on unskilled work. This is a revival of the old theory that it is possible to work the mines solely by European labour, and that by keeping them short of native labour more Europeans would be employed. This point was investigated and most conclusively rejected by the Low Grades Mine Commission, the Unemployment Commission, the Mining Industry Board, and various other independent investigations, which all came to the conclusion that the restriction of the native labour supply, far from increasing the scope for European employment, reduces it by curtailing the operations of the mines. Actual experience shows that shortage of native labour is followed by the retrenchment of Europeans. Figures showing the course of European and native employment on the mines during 1923 disclosed the fact that when in February 185,109 natives were working, 17,773 Europeans were employed, whereas in August when 109,620 natives were employed the number of Europeans dropped to 17,376.

The idea that because in Canada and Australia gold mines are worked by Europeans only they can be similarly worked on the Witwatersrand appears to be at the bottom of the contention. It is seemingly forgotten that in those countries the ores worked are generally of a higher grade than the Witwatersrand ores, and, further, that

while the Witwatersrand industry is maintaining its position, gold mining in Australia is declining, the number of Europeans employed having fallen from 70,972 in 1901 to 11,218 at the present time, largely through the heavy cost of labour. The Witwatersrand gold mining industry has been made possible by the low cost of native labour, and its existence on a large scale depends on obtaining an adequate supply of that labour.

**PROGRAMME OF OPPOSITION PARTY.** As regards the South African Party, which was deposed from office in 1923, nothing is contained in its programme directly affecting the native labour supply of the industry. But the Party's attitude while in power was to compel the industry to employ all suitable Union natives offering themselves for work, only thereafter to employ Portuguese natives, and those in inadequate numbers. This is claimed to be to the industry's detriment, inasmuch as it entails the replacement of a stable, efficient supply by one unstable and less efficient. The industry has frequently objected to this policy, which compels it to employ Union natives whenever the other industries

Under the Wage Act, for example, the Minister of Labour is authorised to prescribe the rate of wage and all other conditions of employment for any employee in any business, except farming and domestic service. The Minister may consider but need not necessarily take the advice of a Wage Board to be set up. There is also provision for the appointment of an arbitrator, who will be a Government nominee and whose recommendations will not be binding.

An Emergency Powers Bill is contemplated which provides, inter alia, that in the event of employees going on strike, no one may be engaged to take their places, and that strikers may not threaten violence to person or property. These provisions are no doubt designed to be impartial as between strikers and employers.

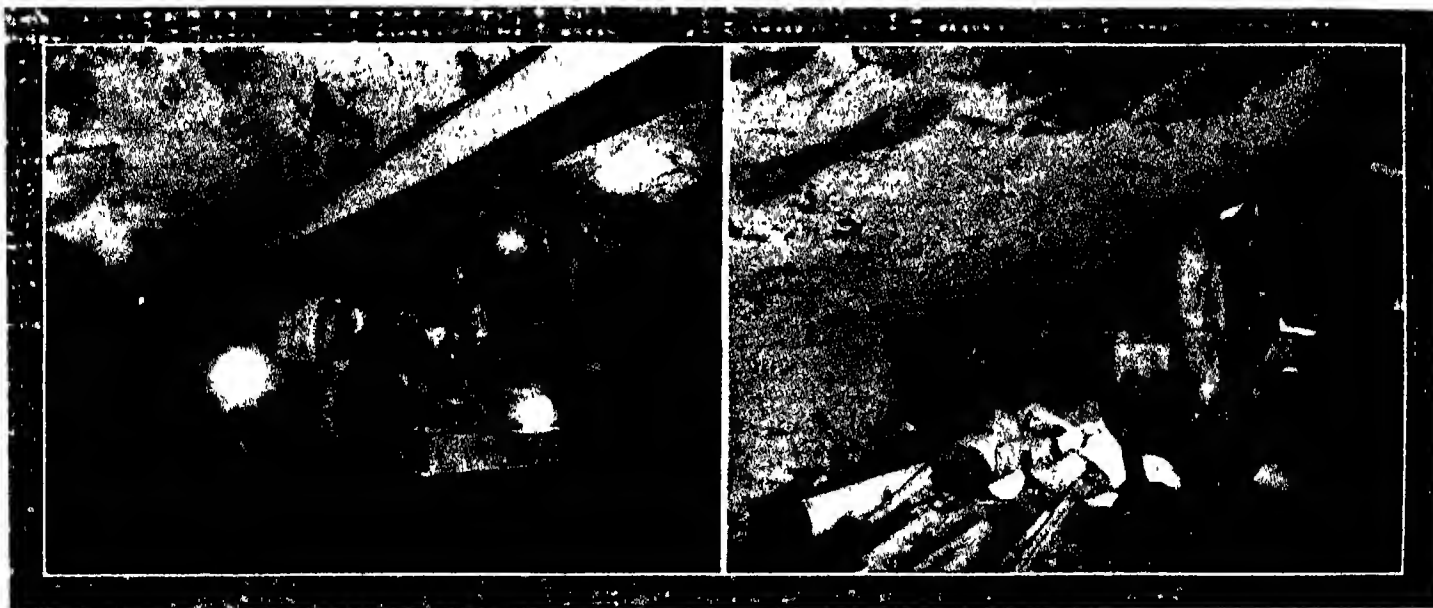
The financial position created by miners' phthisis legislation has also given rise to concern on the part of those responsible for carrying on the gold mining industry. One important provision in the Amending Act, which was recently passed, is that the outstanding liabilities of the Compensation Fund have been apportioned among the contributors to the fund. The position

capitalised value of the outstanding liabilities of the Fund will be increased by at least £2,000,000. The gross outstanding liability under the Miners' Phthisis Acts, payable over a number of years, will then amount to over £11,000,000.

#### TRANSVAAL CHAMBER OF MINES

The Witwatersrand Gold Mining Industry is represented in any movement, political or legislative, by the Transvaal Chamber of Mines, membership of which embraces every mine on the Reef. Its chief objects are to advance, promote and protect the mining interests of the Transvaal by the consideration and discussion of all questions connected therewith, to promote any legislative measures, or petition the Union Government, or any other legislative or provincial body, on any matters directly affecting the mining industry's interests, to grant subsidies to any associations or institutions connected with the Mining Industry, and to act as arbitrators in the settlement of any dispute arising out of mining.

The following were the officers and officials of the Chamber of Mines and of



1. ELECTRIC TRAM, CROWN MINES, JOHANNESBURG.

GOLD MINE UNDERGROUND 2,000 FEET, CROWN MINES, JOHANNESBURG.

by which they are habitually employed do not for the time being require them.

The failure to establish another Mozambique Convention also raises the question of recruitment of native labour from Portuguese territory. In consequence of this, the Union Government will only allow the replacement of East Coast natives as the periods of employment of those already engaged in the industry expire.

**SOUTH AFRICAN LEGISLATION.**—The mining industry, it is contended, is also being made the subject of legislation of a character not calculated to relieve the financial burden of the producers. A number of Bills have been gazetted, and if all these go through it is feared that much of the control of industrial and commercial undertakings may be taken out of the hands of those who have devoted their lives to the study of the different problems arising in each, and will devolve upon those who cannot be expected to have full knowledge of such problems.

had hitherto been unsatisfactory, because though there was a large outstanding liability, the amount of which was unknown, there was no means of apportioning this liability among the various mines, which were, therefore, not aware of their individual liability. This has now been rectified. The capitalised outstanding liability of the fund as at July 31, 1924, was £5,780,112, less an amount of £1,372,240 which the Phthisis Board had in hand. Compensation is provided on a scale which is unsurpassed in any country. The mines since August 1919 have been contributing £800,000 per annum to the Compensation Fund, and are still contributing this amount. This is equivalent to over 6s. per shift for each underground white shift worker. The Government have now introduced a Consolidated Miners' Phthisis Bill, which, if it becomes law, means that an additional initial sum of £800,000 will be required to meet immediate claims arising out of the legislation, and it is estimated that the

the Gold Producers' Committee for the year 1925-26 —

**CHAMBER OF MINES** — President P. M. Anderson, Vice-Presidents Arthur French and D. Christopherson, C.B.E., Executive Committee G. H. Beatty, J. H. Crosby, Sir Wm. Dalrymple, K.B.E., Samuel Evans, P. Ross Frames, C.M.G., Sir Julius Jeppe, C.B.F., J. Jourdan, L. Marks, Sir Ernest Oppenheimer, F. Raleigh, A. W. Rogers, and Sir Evelyn A. Wallers, K.B.F.

**GOLD PRODUCERS' COMMITTEE** — P. M. Anderson (chairman), D. Christopherson, C.B.E., J. H. Crosby, Sir Wm. Dalrymple, K.B.E., Arthur French, F. R. Lynch, and Sir Evelyn A. Wallers, K.B.E., General Manager W. Gemmill, J. I. A. Native Labour Adviser H. M. Tabberer, Consultant, H. O. Buckle, Assistant Native Labour Adviser, H. Wellbeloved, Technical Consultant, F. G. A. Roberts, Legal Adviser: E. L. R. Kelsey.

## SUPPLEMENTARY MINING DATA

It is sometimes said that the Union of South Africa has reached the peak of development of its great mineral resources, and that the Union's future expansion must come from agriculture and industry. Only in the sense that both agriculture and the manufacturing industries are capable of tremendous development is this true. Some five years ago it was declared before a select Committee on the Gold Mining Industry that the gold mines contributed 30 per cent of the total Government revenue and other mines 11 per cent, whilst agriculture and other industries contributed each 25 per cent. The marked difference between these relative values will no doubt be greatly lessened in the future, but there is every reason to believe that the total mineral output of the Union

**BEWAARPLAATZEN.**—These (the Dutch word means depositories or store-houses) are areas secured by various mining companies in the early days of the Rand for the purpose of dumping tailings, etc. but carrying with the surface rights no claim to under-lying minerals. At the time they were considered to be of no importance, but have since proved to be of great value, and their ownership became a subject of keen controversy. The Government finally decided to allocate nineteen-fortieths of moneys received for mineral rights before July 2, 1917 and eighteen-fortieths of amounts received subsequently to the owners of the freehold, the Government retaining the remainder. Some 300 claims were involved.

	1914	1924	1925
Tons milled	25,701,954	28,109,073	28,082,238
Gold recovered	8,033,570	9,514,918	9,599,702
Value of gold recovered (including pre-mining)	£11,121,131	£40,671,667	£40,339,585
Salaries and wages paid	£11,711,982	£13,500,000*	£13,000,939
Expenditure on supplies	£9,541,360	£13,500,000*	£13,083,602
Total working expenditure	£21,943,602	£28,211,500	£27,668,373
Total working cost per ton	17s 1d	10s 9d	10s 4d
Total working profit per ton	9s 6d	10s 3d	8s 6d
Dividends paid	£8,073,436	£9,541,516	£8,722,853
Direct Government revenue from those mines	£1,440,223	£3,000,000	---

\* Approximate figures

Note that the term "ton" on the Rand



JOHANNESBURG CONSOLIDATED INVESTMENT CO. LTD., Johannesburg.

1. Government Areas: South East Shaft.

2. Government Areas: Portion of Reducing Plant.

(See letterpress, page 118)

is capable of considerable increase. Up to the present only gold, diamonds, coal, cement minerals, and copper have been extensively exploited, some of the valuable metals and minerals which are known to exist in large quantities have hardly been mined at all, and are only awaiting improved means of communication hand-somely to repay exploitation. It is for instance, impossible to foretell what may be the results of the dramatic platinum discoveries of 1924 and 1925.

**ACCIDENTS.**—The total accident rate for 1923 on the Rand was 2.59 per thousand, due mainly to three disasters wherein 47 persons lost their lives, in 1924, the rate was 2.63, also largely the result of the shaft accident at Randfontein in December of that year, in which 31 persons were killed. In the last named year there were 520 deaths and 3,246 cases of injury. For the first six months of 1925 deaths totalled 236 and injuries 1,885.

**DEPARTMENT OF MINES.**—The Mines Department is a separate division of the Department of Mines and Industries, which controls all mining and industrial matters within the Union, including labour problems. The organisation of the Mines Division has been built up from that of the old Department of Mines of the Transvaal Republic, which was taken over by the Colonial Government at the end of the South African War. When the Union was constituted the various Mines Administrations of the other colonies were absorbed so as to form one Mines Administration for the Union. Formerly situated at Johannesburg, the Head Office of the Administration is now at Pretoria, with district offices in all the principal mining centres.

**FINANCIAL RESULTS.**—The financial results for 1924 and 1925 of the Transvaal Gold Mines are given in the table following. For the purposes of comparison the figures for 1914 are also added:—

indicates 2,000 lbs., and the term "fine oz" one ounce troy of pure gold.

(Further financial results for 1925 will be found under "Working Profits".)

**DIVIDENDS, 1924-25.**—The dividend record of the Rand gold mines for 1925 was hardly so satisfactory as that for 1924, which represented an increase of £1,133,000 over 1923, and beat the previous record of £9,310,750 in 1910 by nearly a quarter of a million. Profits for the year 1925 were estimated at about £12,450,000, in contrast with £14,505,000 in 1924.

The estimated tonnage crushed of 28,300,000 was about 150,000 tons in excess of that for the previous year, but the profit per ton was only about 8s 9d, as against 10s 3d. Recovery was, if anything, a trifle better, at 6.50 dwt per ton, as against 6.55, but instead of the revenue being 29s 10d, it was only 27s 11d. per ton. Against this drop of virtually 2s. per ton, there was an economy of about 5d. a ton.



in working costs, which average 19s 2d. The reason for this fall in profits was the disappearance of the currency premium on gold, estimated by Sir Ernest Oppenheimer, M.L.A., at £2 386,500.

The actual dividend aggregate fell by less than £1,500,000, a decrease smaller than might have been expected in view of the shrinkage in profits. Dividends for 1925 totalled, in respect of the Rand, £8,164,150, representing a decrease of £1,380,306, the aggregate being slightly larger than that for 1923. Very few companies (all situated on the far East Rand) were able to pay larger dividends than they did in 1924, the most conspicuous improvement being that made by the Modderfontein, which paid 15 per cent more, representing no less than £210,000. Brakpan and Geduld showed improvements of 2½ and 1½ per cent, representing £25,000 and £16,000 respectively.

**GOLD PRODUCTION, 1925.**—According to the figures issued by the Transvaal Chamber of Mines, the grand total of gold yielded by all mines in the Transvaal in 1925 was 9,599,702 fine oz., compared with 9,514,918 oz. in 1924, the declared value being £40,339,585, compared with £40,671,667 in the previous year. Having regard to the disappearance of the gold premium, which in 1924 represented a revenue for the gold-mining industry of the Province of no less than £1,000,000, these returns for 1925 may be fairly considered those of a record production. It is noticeable that while the total of working costs declined from £28,214,509 in 1924 to £27,068,373 in 1925, and the average from 19s 9d to 19s 4d for the whole of the Transvaal and from 19s 7d to 19s 2d for the Witwatersrand mines, the declared estimated working profit also declined from £11,505,000 to £12,410,700 for the Witwatersrand, and the average profit per ton milled from 10s 3d to 8s 9d.

**IN VESTIS OF PRODUCTION BY MINES.** The following figures of production of individual companies are those published for the month of December 1925:

NAME OF COMPANY	TOTAL MILLED FINE OZ.	TOTAL REVENUE £	TOTAL WORKING COSTS £	ESTIMATED WORKING PROFIT		ON A CAPITAL OF £	RATE PER CENT	TOTAL DECLARED DIVIDEND FOR YEAR 1925 TO DATE £
				Total	PER TON MILLED			
Aurora West	3,094	123,186	12,167	1,019	1 8	106,352	—	10,635
Brakpan	28,904	122,551	24,021	47,580	12 6	1,020,000	25	181,500
City Deep	32,657	130,317	109,938	32,379	7 1	1,205,000	15	372,312
Consolidated Main Reef	17,664	75,517	68,874	6,643	2 5	1,217,002	2½	60,016
Crown Mines	64,960	276,706	193,661	83,045	8 3	946,106	30	553,838
Durban Deep	11,868	51,410	17,821	1,289	1 11	440,270	—	—
E.R.P.M.	33,002	141,657	131,970	7,687	1 3	1,445,807	—	—
Ernest Deep	8,234	35,000	39,534	1,477	2 7	980,000	—	48,192
Geduld	27,227	110,309	70,109	49,209	12 3	1,328,052	18½	461,818
Goldenbuis Deep	14,041	59,635	57,230	2,405	9	585,753	—	—
Govt. G. M. Atlas	21,176	105,305	135,684	170,281	21 5	1,400,000	32½	910,000
Janglaagte Estate	21,632	94,216	80,171	14,045	3 10	1,519,833	2½	75,992
Limpaards Vlei	4,348	18,195	19,747	( Loss )	( Loss )	472,012	—	—
Meyer and Charlton	6,732	29,107	16,694	13,013	19 3	200,000	35	140,000
Modder B	25,371	109,375	61,885	47,490	14 10	700,000	35	325,000
Modder Deep	23,631	99,788	33,763	66,025	29 11	500,000	70	675,000
Modder East	14,980	63,048	42,798	20,250	11 11	465,465	—	—
New Kleinfontein	11,467	49,296	48,240	1,056	5	1,151,540	—	—
New Modderfontein	61,650	263,953	108,060	154,993	25 4	1,100,000	55	1,610,000
New Primrose	4,406	18,866	16,853	2,013	1 11	325,000	2½	8,125
New State Areas	29,997	127,759	79,579	57,180	15 8	1,500,225	7½	225,017
Nourse Mines	13,317	56,591	56,491	100	0	827,821	—	—
Randfontein	46,360	200,496	170,539	30,957	3 4	4,003,553	—	203,178
Robinson	1,896	8,012	7,947	65	2	2,750,000	—	—
Robinson Deep	21,606	92,313	64,044	28,269	7 9	906,807	—	207,271
Rose Deep	11,907	50,027	42,830	8,097	2 11	700,000	5	82,873
Simmer and Jack	15,289	64,546	37,435	7,091	2 0	625,000	10	62,500
Springs	30,026	127,374	68,004	59,368	17 6	1,491,157	10½	465,987
Van Ryn Estate	9,442	39,991	33,977	6,014	3 3	500,000	5	62,500
Van Ryn Deep	24,078	103,516	52,877	50,639	15 5	1,196,862	22½	598,446
Village Deep	13,994	60,142	59,025	1,117	6	1,060,671	2½	50,006
West Rand Cons.	9,336	40,348	36,344	4,004	2 1	2,004,424	—	—
West Springs	17,247	73,071	41,788	31,283	13 3	1,793,000	7½	134,475
Witwatersrand	9,581	41,896	39,370	2,526	1 0	469,625	—	23,481
Witwatersrand Deep	12,181	51,618	38,247	13,371	6 8	550,000	10	103,125
Wolhuter	6,832	29,023	28,706	319	3	860,000	—	—
Miscellaneous Producers	9,021	—	—	—	—	—	—	—
	769,722	3,252,928	2,228,084	1,024,844	8 10	—	—	8,157,917

**CENTRAL MINING—RAND MINES GROUP.**—The operations of the City Deep, Cons. Main Reef, Crown Mines, New Modderfontein and Nourse Mines were interfered with by a stoppage of power due to an accident in the Vereeniging Station of The Victoria Falls and Transvaal Power Co. Ltd. The E.R.P.M., Nourse Mines and Village Deep still suffer acutely from the continued shortage of native labour.

Dividends of companies in the Group (except Modderfontein B and New Modderfontein) are calculated on issued capital less ex-enemy shareholdings.

#### GOVERNMENT REVENUE FROM MINES.

For the financial year ended March 31, 1925, the estimated revenue of the Union Government from the gold mines totalled £3,431,930 and from the diamond mining industry £1,363,032. Adding the revenues from coal and base metal mining the total enrichment of the State Treasury as the result of the country's mining industry for 1924-25 was estimated at £5,174,200, compared with £4,576,117 in the previous financial year. Of this total, Union taxation amounts to almost exactly half (£2,580,711), and share of profits £2,155,385, licences and minepacht dues reached £200,500 and provincial taxes £162,700.

#### MILEAGE (UNDERGROUND).

The approximate mileage of underground excavation, that is to say, main shaft sinking, main drives, crosscuts and other developments, achieved on the Rand since production commenced in 1887 up to the end of 1924 was 3,250 miles, which would suffice to drive a tunnel from Glasgow to Quebec, or from Capetown to Khartoum. These figures give some idea of the vast amount of developing operations that have been carried out.

**MINES.** There were thirty-six mining companies producing gold in the Transvaal during 1925. The mines owned by these companies are comprised in six principal groups, a summary of whose activities follows:

#### ANGLO-AMERICAN CORPORATION.

This important corporation, which is

interested in the Consolidated Diamond Mines of South West Africa, Springs Mines, Ltd., West Springs, Ltd., Brakpan Mines, Ltd., Daggafontein Mines, Ltd., and other mining properties, declared a profit for the year ended December 31, 1924, of £550,604, making with £589,600 brought forward, a sum of £1,140,203 in all. Under the chairmanship of Sir Ernest Oppenheimer, M.L.A., the Corporation has a record of regular dividends since its inception and a future of considerable promise. (See article later on this corporation.)

#### ANGLO-FRENCH EXPLORATION

**COMPANY.** This well-known Corporation, which is now in the thirty-sixth year of its existence, has always been substantially interested in South Africa, where a good percentage of its money is invested in holdings in front-rank gold mines, such as City Deep, Crown Mines, Government Areas, New Kleinfontein, New Modders, and Rand Mines. It also has a two-thirds holding in the Anglo-French Matabeleland Company, as well as interests in Canada and Trinidad. For the year 1924 profits totalled £10,225, as against £57,275 in 1923 and a loss of £10,401 in 1922. (See article later on this company.)

#### CENTRAL MINING-RAND MINES

**GROUP.** The importance of this colossal mining control can be measured by the fact that nearly a score of gold mining companies are included, some of which have been producing and earning profits for 30 years. Amongst them are such famous concerns as the Robinson, Modderfontein and Crown Mines. The record of the group as a whole from the date of mining to the end of December 1924, and/or the end of June, 1925, is shown in the following table:

Tons milled	159,661,467
Gold won	60,055,176
Revenue	264,050,520
Expenditure	108,248,633
Working Profit	95,801,886
Net Profit	96,178,056
Dividends	71,235,319

The profit earned by the companies amounted to £5,760,313 in 1924, as against £5,533,171 in 1923. The loss of the premium adversely affected the returns for 1925, the profits of the Group declining by roughly £1,000,000.

The year 1924 was distinguished not only by greater efficiency in the mechanical department of mining on the Group's properties (see separate article on "Mining Machinery"), but also by remarkable progress on the metallurgical side, the residue of gold unrecovered in its metallurgical plants having decreased from 0.329 dwts. per ton in 1923 to 0.311 dwts. per ton in 1924. In addition, a further reduction of approximately 2d per ton was effected in reduction costs, mainly due to the decrease in labour and maintenance costs following the substitution of corduroy concentration for plate amalgamation. The former process is now in use throughout the Group's reduction works. Its adoption has induced a steady improvement in the recovery of the valuable metals of the platinum group, the mines' total for 1924 amounting to 2,468 oz. of osmium concentrate, worth approximately £60,000, an increase of 895 oz. in weight and of £20,000 in value as compared with 1923.

Of the many mines controlled by the Rand Mines Group the well-known Robinson, dating from 1888, has been described as "the world's greatest gold mine," and after a wonderful record of accomplishment closed down in 1926. Two of the oldest

and most profitable mines are the Ferreira Deep and Geldenhuys Deep, while the Village Deep Mine has the distinction of being the deepest gold mine working on a large scale of operations anywhere in the world, the Reef there having been followed down to a vertical depth of 6,200 ft., or a mile and a quarter from the surface (See article later on Rand Mines Ltd.)

**JOHANNESBURG CONSOLIDATED INVESTMENT GROUP**—This is the enterprise which goes forward under the Barnato auspices, and includes as its six subsidiary companies the Government Areas, to-day the greatest gold-mine in the world, Randfontein Estates, which is steadily advancing in its scale of production and becoming one of the great mines of the fields, Van Ryn Deep, which is earning big profits and paying big dividends, Langlaagte Estate, which may lengthen its life and very creditable record by the acquisition of new grounds and New State Areas, which declared its first dividend in 1925. The Johannesburg Consolidated has also large interests in the diamond industry in Rand real estate, and in coal. (See article later on this company.)

**NEW CONSOLIDATED GOLD-FIELDS**—This company took over in 1919 the assets, liabilities, and interests of the Consolidated Gold Fields and besides administering the affairs of many other companies in the Transvaal and Rhodesia, owns the three important gold mines known as Simmer and Jack, Robinson Deep, and Sub Nigel. For the year ended June 30, 1925, the total profits realised by these three mines were £153,465, £52,244, and £94,133 respectively. (See article later on this company.)

**UNION CORPORATION**—Like other important finance houses originally founded for the purpose of facilitating the development of the Transvaal mining industry, the Union Corporation, Ltd., no longer confines its activities to South Africa. Its more important mining interests are still centred on the Rand, but for a considerable time it has been associated with profitable mining enterprises so far afield as Mexico, notably the San Francisco Mines of Mexico. The Corporation is also interested in the Premier Cotton Estates of South Africa, Ltd., owning a large concession in Mozambique. From the early days of the Rand it has played a prominent part in the development of the mining industry of that famous goldfield, and the principal mines there under its control now are the Geduld Proprietary Mines, Ltd., and the Modderfontein Deep Levels, Ltd., both of which are highly prosperous and paying very substantial dividends to their shareholders. (See article later on this corporation.)

**MINING LAW.**—The mining laws of the Union have not yet been consolidated, and the measures passed by the various Colonial Governments prior to the constitution of the Union are still in force in the different Provinces, with the exception of the "Union Mines and Works Act" of 1911, which deals with the actual working and inspection of mines, works, and machinery throughout the Union. By this Act, the supervision of all mines, works, and machinery is placed under the Government Mining Engineer and the Inspectors of Mines, Inspectors of Machinery, and Inspectors of Explosives, responsible to the Government Mining Engineer. The Act lays down the hours for underground labour, and provides for the trial of breaches of regulations or rules and for inquiries by

Inspectors of Mines into accidents. The regulations deal in detail with all the various questions appertaining to the safety of persons employed on mines and works. (See also under "Labour" and "Gold Mining.")

**MINING MACHINERY.**—See special article following.

**RAND PROFITS IN 1925.** The profits of the six big mining groups of the Rand for the year 1925 totalled £12,400,000, over £2,000,000 below the aggregate for 1924. The profits of the Central Mining Group were down £1,000,000 the Barnato Group, £800,000, Union Corporation Group, £82,000, Gold Fields Group, £196,000, and General Mining Group, £80,000, while the Anglo-American Group's profits were up by £162,000. It was generally considered that, having regard to the disappearance of the gold premium, the shortage of native labour, and the concessions made in wages, these results were satisfactory, and constituted a tribute to the increasing efficiency of the industry.

#### VALUE OF MINES TO UNION.

From time to time various Commissions have thoroughly investigated the operations of the Gold Mines and the general relationship existing between the mines and the country as a whole. In every instance the reports of such Commissions have established the bona fides of the mine managements and the importance of the gold mining industry to South Africa. Thus the Low Grade Mines Commission of 1919 found

"That the Witwatersrand Gold Mines were the sole support of at least a quarter of a million whites and two million natives, that in every part of the Union there were people who were more or less dependent for their living on the spending power of the money put into circulation by the mines of the Rand, and

"That of the total Union Revenue General and Railway nearly one-half was traceable to the mines of the Witwatersrand."

It may be added that since 1910 (the year of Union) the Government had derived up to the end of 1923 a sum of £23,550,869 in direct revenue from the gold mines, in addition to some £3,500,000 in licences and minepacht dues, which are nearly all paid by the gold mines.

**VALUE OF OUTPUT.**—The values of the mineral output for the Union for the years 1923 and 1924 were as follow—

	1923	1924
Gold (value at £4 24773 per fine oz)	38,861,511	40,671,667
Silver	197,054	212,602
Diamonds	6,038,207	8,033,406
Coal	3,713,706	3,830,163
Copper	404,511	511,844
Tin	170,337	304,108
Arsenic	290	4,260
Iron Ore	230	—
Lead	133,373	140,194
Manganese	1,584	1,300
Asbestos	121,483	110,075
Corundum	22,543	13,284
Graphite	1,837	1,597
Iron Pyrite	4,906	3,109
Magnesite	2,943	4,159
Mica	1,038	2,296
Mineral Paints	468	634
Soda	1,013	9,844
Talc	1,065	1,592

The total value of metals and minerals produced in the Union during 1925 was £54,251,976, compared with £53,958,306 for 1924. The principal totals for 1925 were:

Gold, £40,767,982, silver, £166,842, osmium, £170,095, diamonds, £8,198,368, coal, £3,880,442, copper, £495,797, and tin, £298,773.

**WAGES.**—The salaries and wages earned by European and other employees of mining during 1924 amounted to some £17,000,000, of which approximately £13,500,000 were paid out in the Transvaal gold mines. Wages in the diamond and coal mining industries totalled about £1,300,000 and £1,650,000 respectively.

**WORKING COSTS.**—Working costs on the mines of the Witwatersrand showed in 1925 a tendency to rise, and if legislation of various kinds in respect of wages and in regard to tariff increases for essential supplies and requirements of the mines becomes operative there can be little doubt that in the future there will be further increases in working expenditure.

In 1925 the payable ore reserves of the Witwatersrand gold mines were approximately 92,000,000 tons. This is the stock-in-trade of the industry, representing the accumulated tonnages of conglomerate blocked out and ready for excavation, containing a gold content which will pay for working, with gold at standard price and working expenses at the present level. In 1925, also, the mines were directly employing between 10,000 and 20,000 Europeans, or, roughly, one for each 5,000 tons of ore in reserve. In addition, mine others are indirectly employed, the result being that each 5,000 tons of ore affords employment for ten Europeans in connection with its mining, in the recovery of its gold content, and in the replacement of the tonnages exhausted. The margin of profit on the Rand ores, which are of comparatively low-grade nature, is small. For the whole industry, that is for rich and poor mines alike, the average is only 8s 9d per ton, and that is not all distributable profit, since taxation, etc., have still to be deducted. For the first six months of 1925 the distributed profit was only 5s 10d per ton. A great deal of this ore has a value of under 7 dwts per ton, the last available calculations showing that in 21 out of the 36 productive mines of the Rand the value of the ore reserve was below 7 dwts per ton, and in 12 out of those 21 the average value was under 6 dwts per ton. It is obvious that any material increase in working expenses must result in the lower-grade blocks of ore being rendered unprofitable to work, and, in the case of mines without any higher-grade blocks, in a contraction ultimately leading to complete cessation of operations.

**WORKING PROFITS.**—The following table shows in detail the working profits of the Transvaal gold mines for 1924 and 1925.—

	1924	1925
Tons crushed	28,209,073	28,682,238
Total ore recovered	9,352,396	9,599,702
Dwt. per ton	6.55	6.56
Revenue—	£	£
Total	42,865,345	40,339,585
Per ton	29/10	27/11
Working Costs—	£	£
Total	28,214,509	27,668,373
Per ton	19/7	19/4
Estimated Profit—	£	£
Total	14,505,000	12,450,000
Per ton	10/3	8/9

**WORLD'S OUTPUT.**—The estimate of the world's output of gold from 1883 to 1887 was about £18,000,000 per annum, the United States coming first, Australia second, and Russia third. In 1896 it had risen to £40,600,100, America being first, Australia second, South Africa third, and

Russia fourth. In 1898, South Africa came first, with an estimated output of 28 per cent of the total world's production, the world's output for that year being 13,805,497 fine oz. In 1906 the figures were: South Africa, £24,579,987; United States, £19,431,040; Australia, £16,570,312; Russia, £4,300,000; Mexico, £3,086,000.

Canada, £2,400,000; Rhodesia, £1,971,259; total, £82,230,000.

In 1916 the Transvaal produced 9,296,331 oz. valued at £39,188,306, or 41.26 of the world's output, which was £95,700,000. The United States produced 19.89 per cent, and Australia 9.21 per cent. In 1923 the Transvaal's percentage of the world's output

of £73,900,000 was 52.6, the highest yet recorded. In 1924 the percentage fell to 51.6 per cent, the world's output aggregating £79,000,000, taking gold at 84s. 11d. per fine oz.

In 1925 the total world output was valued at £81,000,000, the Transvaal's share at nearly £10,800,000 being 53.6, a new record.

## DIAMOND MINING

**3**N all the history of the development of South Africa there is perhaps no chapter more full of romance than that which describes the discovery of the Diamond Fields of Kimberley. It was a discovery which has since added more than £250,000,000 to the wealth of the country and though the industry was hit very severely by the European War, as also by the economic depression which followed, there are signs that it is on its return to normal. South Africa is, however, no longer in the happy position it was some years ago of having practically a world monopoly of the supply of diamonds, as the production of other parts of the universe has risen until that of the Union is now about one-quarter of the total.

### DISCOVERY AND EARLY HISTORY.

It was a farmer's child who, whilst at play in 1867 on the bank of the Orange River, picked up the first diamond to be marketed in South Africa. A general examination of the district where now stands the town of Barkly West followed, leading to the discovery of other stones, and in the same year a Griqua shepherd found the superb white diamond weighing 83.5 carats (the "Star of South Africa") which was afterwards purchased by the Earl of Dudley for £25,000. The discovery of this gem caused a rush to the Vaal River, prospectors of every rank and type coming from all parts of the country, and even from overseas.

As yet no geological characteristics guided the search, which was haphazard and capricious. The Vaal River diggings proved mostly disappointing and in 1870 the collapse of the industry appeared imminent. Then, in the August of that year, one De Klerk, overseer of the farm of Jagersfontein near Laursmith, about 100 miles south-east of Klip Drift noticed that many small garnets mixed with pebbles of agate were sprinkled upon the dry bed of a little stream that ran through the valley. De Klerk began prospecting, and quickly found a diamond of 50 carats.

Hardly had the news of this discovery circulated when, in September 1870, at Du Toits Pan, about 20 miles south-east of Klip Drift, another and a more remarkable discovery of diamonds was made, the "Blink Klippe," as the Boers called them, being found in abundance and with but little trouble both there and on the adjoining Bultfontein and Vooruitzicht farms. The last named, owned by two brothers, D.A. and J.N. De Beer, was at first called the New Rush, or Colesberg Kopje, and became famous in history as the Kimberley Mine.

Klip Drift was deserted, and the rush concentrated on these new fields. A town sprang up like magic, with churches, hospitals, and theatres. By the end of 1871 there were 50,000 whites and blacks working on the fields. The diggings were at first only a jumble of hills, pits, and burrows, with no attempt to secure any system or union in mining. No one at that time foresaw



THE BIG HOLE, PREMIER DIAMOND MINE.

the developments that lay ahead. Then it was found that not only the upper "yellow ground," but also the underlying "blue ground," the depths of which have not yet been plumbed, were rich with diamonds. It was then that the feverish competition began which was later to bring about amalgamation.

In 1875 the first steam winding engine was employed at the Kimberley Mine, and from that moment dates the application of

modern mining methods to the South African diamond fields. At this period the question of the falling in of the reef was causing serious alarm. By 1883 even the central claims were being overwhelmed, and it was realised that the only possible remedy lay in the general introduction of a system of underground mining. It was a succession of disasters and this realisation of the need of expensive construction work that led to the amalgamation of the competing

claim owners and to the consolidation of interests from which the great De Beers Company was formed, the moving spirits being the late Barney Barnato and Cecil John Rhodes. Between the interests dominated by those rival personalities commenced a struggle the character of which was always more than merely financial. It ended in the triumph of Rhodes, when at last in 1887 the De Beers Mine acquired the other three mines at a cost of 14½ millions sterling. Since that date the great corporation known as the De Beers Consolidated Mines, Limited, has conducted a single, broad, and comprehen-

**FAMOUS STONES.**—The Porter-Rhodes diamond, a white octahedron, weighing 152 carats and valued at £60,000, was found in 1880 near the centre of the Kimberley Mine. In 1917 a diamond of 442 carats, said to be the largest stone ever found in the Kimberley mines, was obtained from the Du Toits Pan. The biggest stone from the De Beers was an imperfect one of 503 carats found in June, 1896, but the best specimen from that mine weighed 428½ carats, was cut down to 228½ carats, and sold for £13,000. Even larger stones have been found in the Jagersfontein and Premier Mines, the most famous of all being the

satisfy the market for the next hundred years. New mines will almost certainly be found, and the present difficulty of restraining the output will remain, even if it does not become accentuated. New discoveries, therefore, however welcome to the discoverer, will not increase the immediate wealth of the country.

**I.D.B.**—The facility with which diamonds could be stolen and the profits attached to systematic methods of thieving, naturally attracted to Kimberley in the early days many criminals from all parts of the world, who found ready tools in the natives employed in the mines. This illicit traffic ("I.D.B."—Illicit Diamond Buying) attained enormous proportions, and it is supposed that at one time not half the diamonds found reached their legitimate owners. In 1882 and 1883 stringent regulations were enacted with regard to the possession of rough diamonds, and an extensive detective department was inaugurated, the trapping and spying system which was developed being defended on the ground of the great difficulty involved in obtaining a conviction against illicit diamond buyers by the ordinary means of justice. In 1904 some of the most drastic clauses of the I.D.B. Act were rescinded, but it is still a punishable offence to buy a diamond from any but a licensed dealer.

**JOINT PRODUCTION.** The diamond is almost entirely an article of luxury, for which the market must always be a limited one, unable to absorb anything like the output of which the South African mines are capable. It became necessary, therefore, some years ago to restrict output by arrangement between the four chief producers in South Africa, viz., the De Beers, South West Africa, Premier, and Jagersfontein Mines. Until recently there was an understanding between them and the London Diamond Syndicate, which purchased from them at agreed-upon prices diamonds to a certain total value, and these were supplied by the four producing mines in agreed-upon proportions. In 1925 the Union Government passed the Diamond Control Bill, which placed the control of the diamond output, except from alluvial diggings, in the hands of a board of three persons appointed by the Government. The passing of the Control Bill was followed by an arrangement made by the diamond producers with a new syndicate controlled by the owners of South-African diamonds, of which Sir Ernest Oppenheimer is the head. This syndicate made an offer for the sale of diamonds for five years (the London Syndicate having disappeared), to which proposal the Union Government agreed. It is stated that as a result of this arrangement both the prices and production of diamonds have advanced. Further, the control of the sale of diamonds will now be in South Africa, and the head office will be situated at Kimberley.

**MINES (LEADING).**—The Koffiefontein mine having of recent years come under the control of De Beers Consolidated Company, and the small mines of the Boshof district being of comparatively little account, the great producing mines of the Union may be considered as consisting only of De Beers Consolidated, the Premier, and Jagersfontein. These great corporations have all been eminently successful financially, and, in view of their enormous reserves of ground, have long lives in front of them.

**DE BEERS CONSOLIDATED MINES LIMITED.**—The production of diamonds from mines within Cape Province is practically limited to the De Beers Company, whose properties are known as the Kimberley, De Beers, Dutoitspan, Wesseltown, and Bult-



SORTING TABLE, PREMIER DIAMOND MINE.

sive plan for the disposal of the total product of the mines to the best advantage.

**DISTRIBUTION.**—The areas in which kimberlite (the general term by which the rock of the diamond mines is now generally known) occurs are spread over a great part of the Union, the chief centres being Barkly West and Kimberley in the Cape Province, Boshof, Koffiefontein, Jagersfontein, Kroonstad, and Theunissen in the Orange Free State, and the Premier Mine in the Transvaal.

**EXPORT TRADE.**—See under "Commerce."

celebrated "Cullinan" diamond, discovered in the Premier on January 26, 1905. This stone weighed 3,024½ carats, about 1½ lbs. It was purchased by the Transvaal Government for £150,000 and presented to King Edward VII. While undergoing cutting in Amsterdam a flaw was discovered, and the diamond was divided into a number of gems, including the two largest brilliants in existence, viz 516 and 309 carats.

**FUTURE OF INDUSTRY.**—It is authoritatively stated that there are enough diamonds in the mines working at present to

fontein The Kimberley Mine is the parent of all South African mines, having been first pegged out in 1871. Mining here has been carried on to a depth of over 3,600 feet. The De Beers Mine lies a mile to the east of the Kimberley Mine, and is somewhat larger in extent. The Bultfontein Mine produces a small diamond, but of an exceptionally pure colour. Very valuable stones have come from the Du Toits Pan Mine, which has an open area of over 45 acres. (See also under "Discovery.")

The authorised capital of the De Beers Consolidated is £1,750,000. Besides its properties in Cape Province, the company controls the Koffiefontein and Voorspoed Mines in the Union, and holds the pre-emptive right to any diamond mines discovered in Southern Rhodesia and South-West Africa.

**JAGERSFONTEIN MINE**—This is the most important mine in the Orange Free State, and was discovered in 1878, being worked for a long time on the open system. Since 1910 it has been operated on the underground system as at Kimberley. Stones of very fine quality are produced by the Jagersfontein Mine, one especially, a flawless white stone of 634 carats, found in 1895 being considered the most perfect diamond ever discovered. The mine is controlled by the New Jagersfontein Mining and Exploration Company, Limited, which, with an authorised capital of £1,000,000, produced diamonds to the value of £502,631 in 1923-24, sales totalling £495,958.

**PREMIER MINE**—The Premier Mine, situated 25 miles east of Pretoria, is the largest of all diamond mines. Its discovery in 1902 was the most important event in the history of the diamond industry of the Union since 1870. The pipe is roughly an oval, 2,900 ft long by 1,500 ft across, giving an area of nearly 80 acres, or 3,570 claims. The enormous surface extension thus represented as compared with other pipes, will be realised when it is stated that it amounts to only a few hundred claims less than that of the three largest mines of the Kimberley group put together. Down to the present depth of working (over 300 ft) the walls are practically perpendicular, and have shown no disposition to cave. In normal times before the War the mine employed some 900 white men and 14,000 natives, and the rate of working amounted to 33,000 loads of 16 cubic feet daily, or over 10,000,000 loads per annum. Since the War, however, the scale of work has been reduced considerably, employees in April, 1924 totalling only 4,438, while the number of loads washed during the year named was 3,544,576, this being an increase of 1,311,552 loads on the figure for 1923, while the output of diamonds (694,880 carats, value £1,027,110) was greater by 217,821 carats than in 1923. The Premier Mine is so large that at the present rate of working the average depth only increases 8½ ft a year, the present method of working being likely to continue for many years to come.

The Government of the Union holds a six-tenths interest in the Premier Mine, which is otherwise controlled by the Premier (Transvaal) Mining Company Limited, with a capital of £80,000. The accounts for the year ended October 31, 1924, showed a profit of £557,779, of which the sum of £339,066 was due to the Union Government. The sum of £372,500 was paid in dividends, at the rate of 250 per cent cumulative dividend on the preference shares of 5s and 700 per cent. on the deferred shares of 2s 6d.

**MINING (ALLUVIAL)**—The principal alluvial diggings are in and near the bed of the Vaal River. For many years the river diggings were confined to the neighbourhood of the confluence of the Vaal with the Orange River in Cape Colony, Barkly West being the centre of operations. Since 1900, however, the South-West Transvaal has been the centre of considerable activity and alluvial diamonds are being worked over an area of 4,000 square miles extending north to Schweizer Reineke and Lichtenburg, and nearly as far east as Vereeniging, while new diggings are being proclaimed every year. In 1925 some 6,400 Europeans and 22,600 non-Europeans were engaged in alluvial operations, in comparison with 4,600 Europeans and 16,000 non-Europeans in 1913. The diamonds won in 1925 amounted to 239,257 metric carats, valued at £1,906,618, giving an annual value per carat of 159s 5d. Though the alluvial production was the lowest for three years, the average price realised was the highest recorded since 1919, and showed an increase of nearly 10s per carat as compared with the 1924 value.

**MINING LICENCES**—All diamonds in the Union are subject to export tax, but, apart from this, the only obligation required of the digger by Government is payment of his claim licence. In the Transvaal, claims measure 45 ft square, and are subject to a monthly tax of 5s. In Cape Province the standard claim is 30 ft square, but this has been increased by proclamation to 30 ft by 60 ft in Griqualand West. The latter is subject to a licence costing 5s monthly. In the Orange Free State £1 is charged on the full claim of 90 ft square.

**MINING METHODS**—The most important source of production of South African diamonds is the pipes or dykes of "kimberlite," which near the surface is a soft yellowish clayey rock, and from below 140 ft a harder rock, known from its peculiar greenish or greyish-blue colour, as "blue ground." This "blue-ground" is mined to a great depth by elaborate methods of open-cast and underground mining, successful operations having been conducted at Kimberley to a depth of 3,500 ft. The methods of winning the marketable diamonds from the mass of conglomerates in which they are embedded have changed very much since the days of the early diggers, who were content to make use of rude machinery and a series of laborious washings and pickings by hand. Then came the discovery that a greased surface allowed the concentrates to slip off while the rough diamonds remained, and upon this was built up the principle of the "pulsator," which has practically eliminated hand washing. To-day the recovery of the diamond from the hard "blue-ground" in which it is embedded involves several complex processes and machinery which are the outcome of 50 years of practical trial and experience.

**BLUE GROUND TREATMENT**—This is in effect pulverisation by natural or mechanical means. Until recent years the "blue-ground" was brought by hoists and skips to large "distributing floors," on which it was spread and exposed to sun and rain until it crumbled and disintegrated, the process often occupying as long as 18 months. As the Kimberley mines became deeper and deeper, the "blue ground" became less and less amenable to treatment by flooring, with the result that the period required for its complete disintegration became excessive, and too large a capital was locked up in the deposited "blue ground." For this and other reasons it was resolved

in 1920 to abandon flooring at Kimberley in favour of mechanical crushing and harrowing, or direct treatment, as it is popularly termed. At the Premier Mine direct treatment was adopted at the outset, flooring on a large scale being now only carried out at certain mines in the Orange Free State.

**CONCENTRATION**—The preliminary concentration of the crushed or disintegrated "blue-ground" is carried out in rotary washing pans or jigs. These are shallow cylindrical troughs containing muddy water, in which the diamonds and other heavy materials (concentrates) are swept to the rim by revolving toothed arms, while the lighter stuff escapes to the centre of the pan. Further concentration is carried out in jigs or tube mills, from which the lighter material passes to the "pulsators." These are sloping tables greased with petroleum jelly, from which the particles of garnet, pebbles, cyanite, mica, ilmenite, chromite, magnetite and other minerals slip away, while the valuable diamond remains, the shaking taking place under a stream of water. Thus the final concentration of the diamond is effected. In all these processes the valueless matrix, representing about 90.99 per cent of the rock mined, is progressively eliminated, actually less than 0.1 per cent representing the diamonds recovered, which are then cleaned with petrol and hydrofluoric acid, and afterwards classified according to size, crystallisation, purity, and colour. As many as 1,000 grades are discriminated in the larger mines.

**DIAMOND-CUTTING**—Diamond-cutting a highly specialised art, is carried on chiefly at Amsterdam and Antwerp. Some small diamond-cutting establishments have been in operation at Johannesburg and Pretoria, but the output hitherto has been negligible. The value of diamonds cut and polished in South Africa in a recent year amounted to only £26,853.

**OUTPUT**—Very satisfactory progress was shown in the statistics relating to the diamond output of the Union for 1925. The total production, both for mines and alluvials, for that year amounted to 2,443,380 carats, valued at £8,198,368, as compared with 2,440,397 carats, valued at £8,033,406, in 1924. Thirteen mines contributed to this output, with a production in the aggregate of 2,104,013 carats, valued at £6,201,750, while the alluvial production reached the figure of 239,257 carats, valued at £1,906,618. In 1924 the alluvial production achieved the record of 287,555 carats, valued at £2,150,373.

The total production of diamonds in the Union of South Africa since the establishment of the Union is as follows—

YEAR	CARATS	ESTIMATED VALUE
1911	5,021,734	8,746,724
1912	5,206,388	10,061,480
1913	5,300,483	11,389,807
1914	2,875,200	5,487,194
1915	106,127	390,810
1916	2,408,554	5,728,391
1917	2,979,388	7,713,810
1918	2,604,650	7,114,867
1919	2,656,651	11,734,495
1920	2,612,511	14,762,890
1921	828,035	3,103,448
1922	669,559	2,266,631
1923	2,053,004	6,038,207
1924	2,440,397	8,033,406
1925	2,443,380	8,198,368



The 1925 figure of value was the highest recorded since 1920. For the first quarter of 1926 the output was valued at £2,203,400.

**PRICES.**—For the three last full years previous to the European War, viz 1911, 1912, and 1913, the average prices for mine stones, as produced in the Union, were respectively 32s 9d, 36s 2d and 40s 4d per metric carat of 200 milligrams. During the War, as a result of the control of prices by agreement, improved values were obtained and continued up to the close of 1920, the Union average price for mine stones in that year being 103s 4d. At the end of 1920, however, there was a complete collapse of the diamond market owing to the world-wide financial depression, in which the diamond trade suffered in common with other luxury trades, and as a result of a large number of diamonds being placed on the European market by the Soviet Government and various persons. Prices dropped to 79s 5d, in 1921, and to 61s 2d and 59s 10d

in 1922 and 1923 respectively. In 1924 there was a distinct improvement, the average price rising to 66s 2d. It must be remembered that the average prices given above are lowered considerably by the inclusion of the Transvaal production, which is of comparatively poor quality. Thus for the year 1920 Cape stones realised 127s 5d, Orange Free State 110s 8d and Transvaal stones only 50s 6d. In 1925 the difference in the prices obtained by those areas was not so marked the average realised in that year being Cape, 57s 8d, Orange Free State, 73s 9d, and Transvaal 31s 4d.

In the case of alluvial stones, which on the average are much more valuable than mine stones of equal weight, prices generally follow the fluctuations of the market for mine stones. In 1913 the average price realised was 105s 9d per metric carat, the price rising till 1919, when 251s 9d was obtained. With the general slump, prices dropped to 118s 1d in 1921, recovering

again to an average of 135s 8d per metric carat for the year 1923, 151s 1d for 1924 and 159s 5d for 1925.

**SOUTH AFRICAN DIAMONDS (CHARACTERISTICS).**—The South African fields produce diamonds of every conceivable hue, but true blue-white or super-white stones are comparatively rare. The Premier Mine yields a very hard diamond whilst South-West African stones are the softest and most easily cut. The "Kimberlite" pipes produce the largest and most valuable diamonds, the comparatively low average value of their output (106s 3d as against 220s 6d for alluvial fields) being due to the fact that they yield a large proportion of stones of very inferior quality. This is particularly the case with the Premier pipe, the greatest known repository of precious stones, which produces an unrivalled variety of diamonds, ranging from exquisite blue-whites and fancy stones on the one hand to unsightly rubbish on the other.

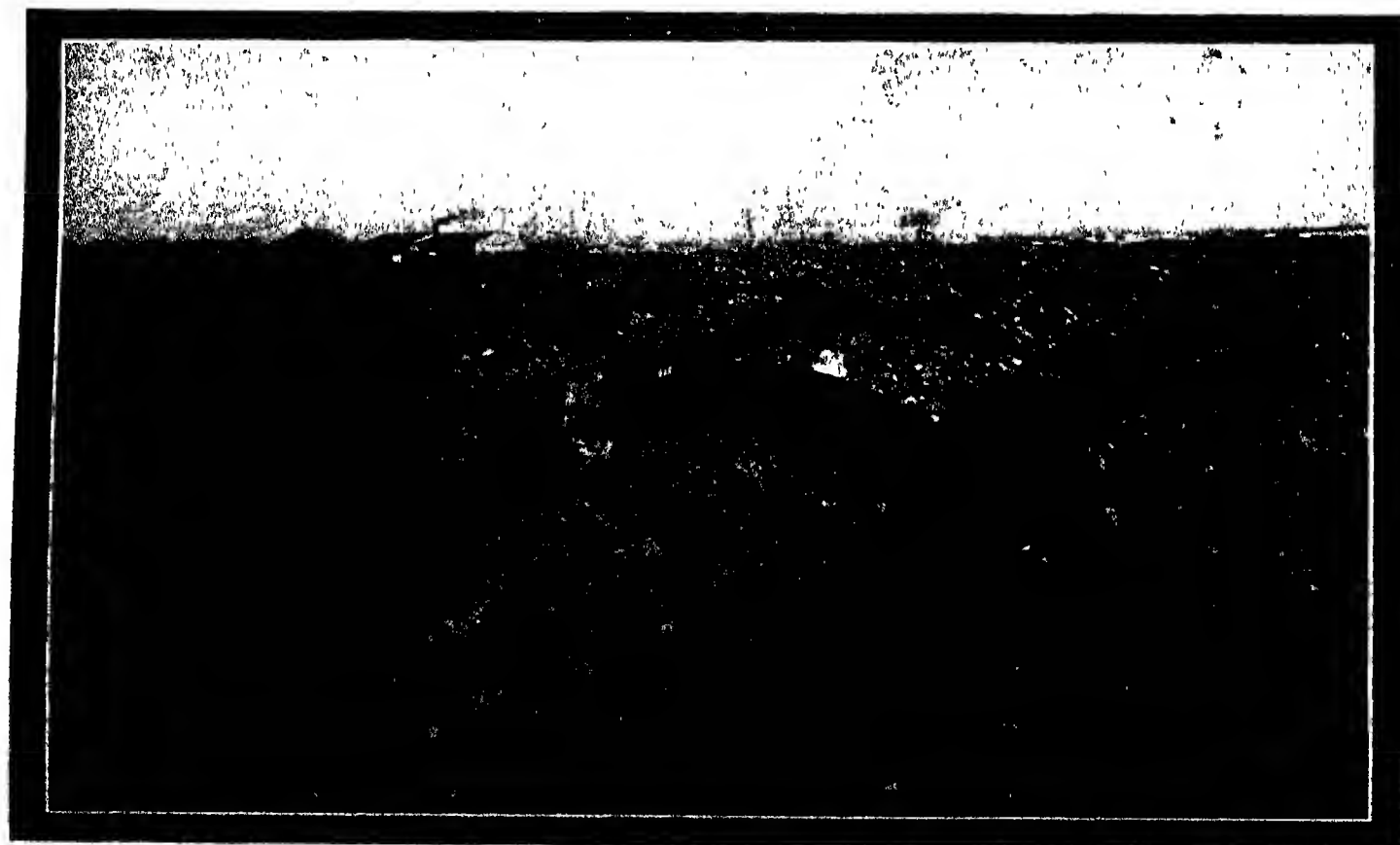
## COAL MINING

**ANYTHING** like an accurate knowledge of the various coalfields of South Africa and of their vast potentialities is unobtainable as yet. The various coal bearing areas have still to be properly mapped and their economic importance determined before more than a comparatively rough estimate can be formed of the total quantity of coal available in the Union. The exploitation

of the product is of comparatively recent growth, not extending further back than a generation, and the annual output of the mineral is thus far insignificant compared to the total resources of the country. During the years following the War, however, the industry has made perceptible strides, and must have a great future. With the increase of railway communication and the opening up of the numerous industries for

which South Africa has the means and facilities a large demand for coal must follow, to say nothing of the increasing requirements of shipping at the Union ports.

**BY-PRODUCTS.**—The manufacture of coke is at present confined to the Province of Natal, which supplies all that is used in South Africa, and also exports a considerable quantity. Natal coke is of excellent quality, especially for foundry work, being



THE TRANSVAAL COAL OWNERS' ASSOCIATION (1923) LTD., Johannesburg.  
Some of its Output Awaiting Shipment at Lourenço Marques.  
(See letterpress and illustration, page 123.)

very dense and hard. Other by-products of Natal coal are tar, sulphate of ammonia, light creosote oil, naphtha salts, and solvent naphtha. Much of the sulphate of ammonia goes to Mauritius, and the other products find a ready market in South Africa.

**DISTRIBUTION.**—Above a certain altitude coal has been found over nearly the whole of the Union, the area where it is known to exist exceeding 56,000 square miles.

**CAPE PROVINCE.**—The workable seams of coal are confined to the Molteno beds of the Stormberg Series, and are found at three well defined horizons, known as the Indwe, Guba, and Molteno seams. Practically the whole output, however, has been obtained hitherto from the Indwe and Molteno mines. Cape coal has only a low calorific value and cannot compete, except for purely local purposes, with the higher grade coals of Natal and the Transvaal.

**NATAL.** The coalfields of Natal are situated in the districts of Klip River, Newcastle, Utrecht, and Vryheid, practically 50 per cent of the output coming from the last named district. Much coal is known to exist also in Zululand, but so far little prospecting has taken place. With the extension of the railways, however, the Zululand coalfields may become highly important. The Natal coal is of first-class quality and is being increasingly used for shipping purposes. In 1924 there were 31 producing collieries in the Province, and the number is being added to.

**ORANGE FREE STATE.**—The coal-mines of the Orange Free State are situated towards the northern boundary of the Heilbron District and in the northern and north-western portions of the Kroonstad District. The coal is of second-grade quality, but is considered generally a useful steam article and excellent for domestic purposes.

**TRANSVAAL.** In the Transvaal the District of Middelburg is the principal coal area. There are, however, important mines to the east of the Witwatersrand and in the Ermelo District. Coal is also found to the north of Zoutpansberg, but the mines here have not been worked since 1918, and in the Pilgrims' Rest District, where one small mine is working. The Transvaal coals are generally of good quality, and some are much better for cooking requirements than any yet found elsewhere in the country.

In 1925 the coal output of the Transvaal increased by 608,689 tons and the value by

£140,654, as compared with 1924, there being 31 collieries at work on the last day of the year.

**EMPLOYMENT AND WAGES.**—On December 31, 1925, there were 30,129 persons employed in coal mining in the Union, of whom 1704 were Europeans. In the collieries the white miner is in the position of a supervisor, having usually from 50 to 100 natives under him. He does little manual work, beyond conducting blasting operations and examining the places before the natives enter and start duty. Natives do all harder work, such as hewing, filling, and trimming. In Natal, Indians are largely employed.

White miners' wages vary from 24s. to 30s. a day, a fifty-one hour week being the rule except in the Witbank area, where a forty-eight hour week is worked. Natives draw from 40s. to 60s. a month, with free quarters, rations, and medical attendance.

**OVERSEA MARKETS.** With several collieries in Natal turning out coal up to 40,000 tons and more per month, the problem of sales and markets becomes of very serious importance. Railways and other inland markets absorb most of the output in "smalls," and the coal from the smaller collieries. For the shipping trade the great market place is in London, and influential London agents are of the utmost value for the sale of Natal shipping coal. The bulk of the trade is now in the hands of some five or six large firms closely associated with shipping, who have connections in various parts of the world. The export trade in Natal coal has developed greatly during the last few years, and for its further extension a big efficient organisation is necessary in order to secure business that otherwise may go to England, India, or Australia. Natal coal now holds its own throughout the Indian Ocean littoral, and goes to Port Sudan, Aden, Karachi, Bombay, Madras, Colombo, Singapore, Sabang, and Hongkong. Occasional cargoes are sent to Buenos Aires and Iquique in South America and to Suez in North Africa. A great field for future expansion undoubtedly lies in South America, which, except for some inferior coal in Chile, has comparatively little of its own. Unfortunately, the question of return cargo is always a big difficulty.

**PRODUCTION.**—The annual output of marketable coal for the whole Union, with the value thereof, for the years 1920-25 was as follows:—

YEAR	TOTAL OUTPUT TONS	VALUE £
1920	11,473,464	4,510,605
1921	11,396,905	5,072,401
1922	9,734,313	3,305,170
1923	11,917,036	3,713,706
1924	12,490,493	3,830,689
1925	13,007,141	3,880,442

The production by provinces in 1923 and 1924 was:—

	1923 TONS	1924 TONS
Cape	6,359	5,329
Natal	1,392,892	1,711,004
Transvaal	6,742,280	6,790,689
Orange Free State	865,400	983,471
Totals	11,917,036	12,490,493

**SALES AND PRICES.**—Following are the figures of sales and values for each province in 1924:

PROVINCE	VALUE AT PER TON £	VALUE PER TON S. D.
Cape	3.783	14 2
Natal	1.831.997	7 9
Transvaal	1.721.098	5 1
Orange Free State	273 345	5 7
Totals	£3,830,103	8 14

It will be noticed that the price of coal varies very much in the different Provinces, the reason being largely due to the situation of the collieries. Cape Province coal fetches the highest price because the mineral from the other Provinces has to be transported long distances by rail. Natal coal, which is the best in the Union, commands a comparatively high price because of the very large bunker and export trade done at the port of Durban. The Transvaal and Orange Free State coal is mostly consumed in those Provinces, and as the demand is no greater than the supply there has been little opportunity for prices to increase.

**COMPARISON OF PRICES.** Apart from the price of Cape coal, which is relatively high on account of the scarcity of the product in that Province, the cost in the Union compares very favourably with the figures in other parts of the world.

(See also special articles later on Transvaal Coal Owners' Association, Natal Navigation Collieries, and Estate Company, and Natal Steam Coal Company.)

## OTHER MINERALS

**A** PART from gold, coal and diamonds, few of the many minerals which are known to exist throughout South Africa are at present of outstanding importance. Many of them, however, are capable of great development. The known metals and minerals include the following:

**ANTIMONY.** This metal occurs as antimonite in the gold reefs of the northern line of the Murchison Range in the Zoutpansberg District of the Transvaal, the ore containing from 6 per cent to 60 per cent antimonite and from 3 dwts to 1 oz of gold to the ton. A considerable amount of hand-picked antimonite was exported during the European War, and a certain quantity of fused antimonite was also produced. Since the war, however, there has been no production.

**ARSENIC.**—This mineral occurs as arsenical pyrites in certain gold and tin ores, but

only three mines, the Consort and Maid of de Kaap gold mines, near Barberton, and the Stavoren tin mine in the Waterberg district have produced arsenic. In 1924 some 100 tons of white arsenic were obtained the value of which was £1200.

**ASBESTOS.**—Blue asbestos of excellent quality has been mined in the Prieska and Hay districts of Cape Province for many years, and it is also mined in the Transvaal, in the north Lydenburg District. The total output increased from 4,389 tons (£81,230) in 1922 to 8,303 tons (£121,453) in 1923, but fell to 7,240 tons (£110,075) in 1924, rising to 10,167 tons, valued at £115,000 in 1925.

**BARIUM.**—The existence of barytes has been noted in the Transvaal at several points in the bushveld area, and also at Saltpetre Kop and Spiegel River in Cape Province, but no attempt has been made to exploit the mineral.

**BISMUTH.**—Bismuth is said to occur in some of the gold ores in the Sabi district and in the Stavoren tin mine, but the mineral is not yet of commercial importance.

**CHROMIUM.**—Chromite ore occurs in quantities in the Transvaal and some of it has been assayed. In the Lydenburg District a rich ore exists, only awaiting development when the district is opened up. Production in 1924 amounted to 2,055 tons of chrome ore, valued at £2,446, the figures for 1925—12,473 tons (£20,760)—easily constituting a record.

**CLAYS.** The materials for pottery obtainable in the Union are ball-clay, china-clay, fireclay, quartz, and various red and other common clays and shales.

**CHINA CLAY.** China-clay, or kaolin, is found in various parts of South Africa, usually impregnated with a large percentage of iron, though sometimes quite pure.

Specimens of absolutely pure kaolin have been taken from the Upper Witsberg rocks near Grahamstown. A deposit of pure kaolin also occurs at White River, Transvaal. Kaolin of good quality is found near Steinkopf, in Little Namaqualand, but the deposit is at present too inaccessible to allow the material to be utilised.

**FIRECLAYS.**—These are associated with the coal measures of the country, and many are of excellent quality. Good firebricks and crucibles are being manufactured from such clays near Boksburg and Vereeniging.

**QUARTZ.**—Quartz, very white and free from iron, is obtained from a huge vein of pure quartz in the grounds of the Modderfontein Dynamite Factory and similar deposits are frequent in all granite areas. This excellent material has been used with success in bodies and glazes for tiles and earthenware, and also for silica bricks. Accessible deposits of quartz occur in many parts of the Transvaal.

**RED AND YELLOW CLAYS.**—Excellent common red and yellow clays are widely distributed over the country but, generally speaking, little has been done with them up to the present, and their properties are not very well known. Fine grades of clay have been obtained in the Somerset West District, in the Maritzburg Valley, and in the region between Algoa Bay and the mountains near Uitenhage. (See also under "Industries.")

**COBALT.**—This was one of the first minerals to be worked in the Transvaal, an extremely complex ore, which fetched several hundred pounds per ton, being exported from the Krui River Farm in the North Middelburg District in the early 'eighties. The mine, however, soon closed down, and has not been re-opened. Several other cobalt deposits were opened in 1906 near the railway at Balmoral, and, though hitherto they have not been carried to the producing stage, it is probable that they will become productive in the near future.

**COPPER.**—The greater portion of the copper in South Africa comes from the well-known mines in Namaqualand, Cape Province, where it was discovered as long ago as 1685. The mines have been worked for more than 60 years by the Cape Copper Company and by the Namaqua Copper Company, and during that time the former company has paid nearly £5,000,000 sterling in dividends. In the Transvaal the Messina mine is the only one of importance. The output of copper in 1925 was 9,972 tons, value £495,797, compared with 9,953 tons, valued at £511,844, in the preceding year.

**CORUNDUM.**—The existence of this valuable mineral in the Zoutpansberg and Barberton areas of the Transvaal was known many years before the demand created by the European War brought it into prominence. Corundum occurs in the form of broken crystals in the surface detritus derived from certain belts in the gneiss, being won by screening and washing the gravel in rotary pans. The Zoutspanberg Grain Corundum Company's five-stamp battery and dressing plant at Bantolierkop now produces about three tons a day crushed and graded corundum, for which there is a ready market. Steps are being taken to ensure more correct grading, and the future of the industry appears to be secured. The output decreased from 2,815 tons in 1923, valued at £22,543, to 1,867 tons (£13,284) in 1924.

**GRAPHITE.**—This is known to exist in both the Transvaal and Cape Province, but so far has only been worked in one

place—in the Zoutpansberg District where a small mine turns out about six tons per month, the total output for 1924 being valued at £1,597, as against £1,837 in 1923.

**GYPSUM.** Gypsum, for the manufacture of plaster of paris, is mined in the valley of the Ingela, Natal, near Kimberley and in the Boshof District of the Orange Free State, where the largest deposit at present worked is situated. It also occurs frequently in pans in Griqualand West. In 1923 the output (the first recorded since 1918) amounted to 6,410 tons.

**IRON.**—Valuable deposits of iron ore exist in the neighbourhood of Pretoria and Vereeniging in the Transvaal and of Newcastle in Natal. The Pretoria iron mines have been extensively developed and the smelting works attached are steadily producing a high class cast iron which is in good demand. In 1923 the three concerns at Pretoria, Vereeniging and Newcastle were amalgamated, and the immediate programme of development includes the production of pig iron at Newcastle and the extension of the Vereeniging works. If further expansion is justified at a later date it is intended to establish additional smelting works at Pretoria. The total output of iron pyrites for 1924 was valued at £3,109, compared with £5,130 in 1923.

**KAOLIN.**—See "Clays" ("China-Clay").

**KIESELGUHR.**—Kieselguhr, or diatomaceous earth, occurs in the Amsterdam District of the Eastern Transvaal, also near Krugersdorp, and in Griqualand West and Gordonia. It is found as a deposit in the beds of certain small fresh-water marshes, but has hitherto only been worked to a little extent, mainly for use in boiler-lining materials.

**LEAD.**—Lead ore to the value of £140,194 was produced by South African mines in 1924, an increase on the figures of £133,573 for 1923 and £94,720 for 1922. Galena is found in several places, the largest supply of lead being extracted near the Marico in the Transvaal. It is also produced at Edendale and Kookkrantz near Pretoria.

**LIME.**—Three forms of limestone—magnesian, white and desert—are known and worked, the magnesian limestone, or common dolomite, covering vast areas in the Transvaal and Cape Provinces, the white variety coming from Potgietersrust in the Transvaal and Tanning in Bechuanaland, and the desert limestone, while occurring in all the provinces, being principally worked near Pretoria, Mafeking, and in the Orange Free State. The output of lime in the Union in a recent year was—Cape of Good Hope, 37,391 tons, valued at £79,915; Natal, 4,824 tons, valued at £6,437; Transvaal, 71,221 tons, valued at £147,411; Orange Free State, 1,169 tons, valued at £6,229, or a grand total of 114,605 tons, worth £239,992.

**MAGNESITE.**—This in workable quantities occurs in several places in the Transvaal, notably at Kaapmuiden, where a railway traverses the deposits. In 1918 the output reached an average of nearly 70 tons a month, and this has gradually increased to the 1,367 tons yielded in 1923, and 2,012 tons (£4,159) in 1924. In 1925 the output was 2,050 tons.

**MANGANESE.**—This is found almost entirely in the Transvaal, where, in the Krugersdorp district, there are large lateroidal deposits which can easily be worked. No export trade has as yet developed, but the amount mined in 1924 (584 tons) was the largest output since 1918.

**MICA.**—Excellent mica occurs in the Transvaal along the Olifants River, below the Berg in the Leydsdorp division of the Pietersburg District. It has first-class electrical resisting properties, but, owing to the distance of the fields from the railway and difficulties in marketing the produce, all attempts to work it have hitherto proved unremunerative. With the advent of the railway it is hoped that the industry may become profitable. The output of the Union was valued at £1,038 in 1923 and £2,290 in 1924. The 1925 production of 1,453 tons represented a considerable increase.

**NITRATES.**—It was announced at the end of 1925 that an important discovery of nitrates had been made in the Matzap brine, in the Hay District of Cape Province. At the present time South Africa imports large quantities of nitrates, and the value of this discovery, should its commercial possibilities be found satisfactory, would be of immense importance.

**OIL SHALES.**—Beds of oil shale, up to 4 ft in thickness, associated with the coal measures, occur in the Transvaal, Natal, and Cape Provinces. A company has been formed to exploit the shales lying in the Wakkerstroom District of the Transvaal, where at least 7,000,000 tons of the mineral in a continuous seam are estimated to exist, and some of the shales in the Ermelo District are reported to be extremely rich, being likely to yield an average of 40 gallons to the ton. The Union Government has been asked to offer a bounty on production by way of stimulating an industry which must have to face severe competition from overseas.

**OSMIRIDIUM.**—This very precious metal is contained in the auriferous conglomerates of the Rand, and is recovered by some gold mines on the Witwatersrand at the rate of about 150 oz. per month, valued at from £25 to £30 per oz. There has been a considerable expansion in production in recent years, the output having risen from 510 fine oz. (£6,801) in 1921 to 4,107 fine oz. (£102,886) in 1924 and 6,955 oz. (£170,995) in 1925.

**PLATINUM.** A mineral development which has aroused world-wide interest, and which may ultimately prove the most important in South African history since the opening of the Rand, was the discovery of workable deposits of platinum in the Waterberg district of the Transvaal in 1923, followed in 1924 by discoveries of still greater importance in the Lydenburg district, North-eastern Transvaal. This discovery of pure platinum (which is five times more valuable than gold) was followed by an inspection and report upon the locality by Dr. Hans Merensky, a prominent Rand geologist and mining engineer. According to him, the platinum deposits are situated in a belt of country nearly 60 miles long. For the greater part of its length the belt has a north and south trend, but at its northern end it swings to the north-west in conformity with the strike of the rocks of the norite zone. The manner of occurrence of the metal in the two districts is totally different. In the Waterberg district it is found in a quartz lode, whereas in the Lydenburg fields it occurs on a primary constituent of ultra basic and basic belonging to the norite zone, and in alluvial deposits derived from the disintegration of these rocks, the conditions under which it is found being very similar to those in the Ural Mountains and British Columbia.

Following a most encouraging report, early in 1925, by the Government Geologist, the new Lydenburg platinum fields were invaded by a frenzied rush for platinum.

holdings, and new companies sprang up like mushrooms. Fortunes were made in a few days. Later came a reaction. It became obvious that much time must elapse before any reliable estimates could be made as to a new mining industry being established on any considerable scale. The metallurgical difficulties to be overcome are known to be many and great, and it is significant that not a single ounce of the metal has as yet (1926) figured on the returns of the mineral production of the Union. There is, however, good reason to suppose that these difficulties will be overcome, the acute question of restriction and pooling be settled, and a new and valuable industry be set on its feet before very many months have passed.

**SALT.**—No deposits of rock salt are known to occur in South Africa, but in the Cape, the Orange Free State, and the Transvaal Provinces a very large quantity of rough salt is made from the liquor of salt pans, the evaporation being done by solar heat. The largest salt pan in Cape Colony is that near Uitenhage, where as many as 100,000 bushels have been procured in a year. The production is entirely for domestic consumption, and in a recent year totalled 68,531 tons valued at £114,225.

**SILVER.**—The greater part of the silver won in South Africa hitherto has been that contained in the gold bullion of which it forms about 10 per cent by weight. The opening of the lead mines near Argent, which are known as the Transvaal Silver Mines, has added considerably to silver production, which increased from 830,329 oz. in 1921 to 1,115,676 oz. in 1922, to 1,373,930 oz. in 1923, and to 1,399,625 oz. in 1924, the value of the last year's output being £212,602. A lessened output of 1,160,069 oz., valued at £106,842, was recorded in 1925.

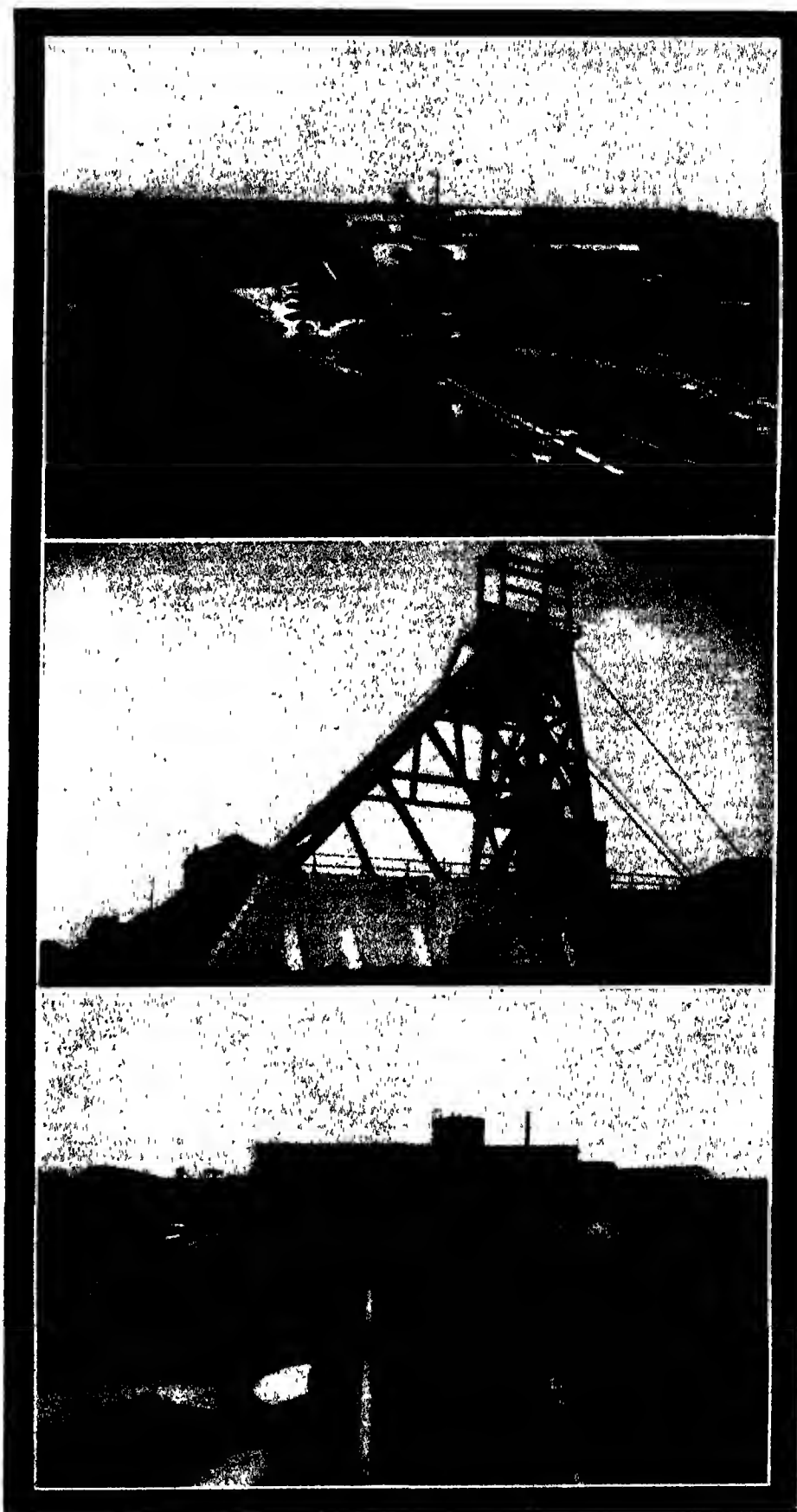
**SODA.** Soda is only known to occur once in any quantity in the Union, at the Pretoria saltpan, a crater-like depression some 200 feet below the surrounding country and about 28 acres in extent. It contains three valuable ingredients, viz., saline mud, which is said to go at least 200 feet deep, layers of trona or crystallised carbonate of soda, and saline liquor containing approximately 10 per cent soda and 15 per cent common salt. For some years the deposits were worked by the South African Alkali Company, but owing to the excessive price of production and marketing operations had temporarily to be suspended in 1923. In 1924 the output for the Union was valued at £9,844.

**SULPHUR.**—Deposits of sulphur have been found at Malmesbury, Fouw's River (Cape Province), Nylstroom, Amsterdam (Transvaal), and in Danaraland.

**TALC (STEALITE).**—Stealite of excellent quality occurs in the Barberton District, and has been noted in other areas. The output increased in value from £1,005 in 1923 to £1,592 in 1924, and a development of the export trade is confidently expected.

**THORIUM.**—Monazite occurs in many places in the Transvaal, as do other various rare minerals, but no attention has so far been paid to these, though the monazite is reported to have distinct radio active qualities. The mineral is also found along with cassiterite in the alluvial workings of Swaziland.

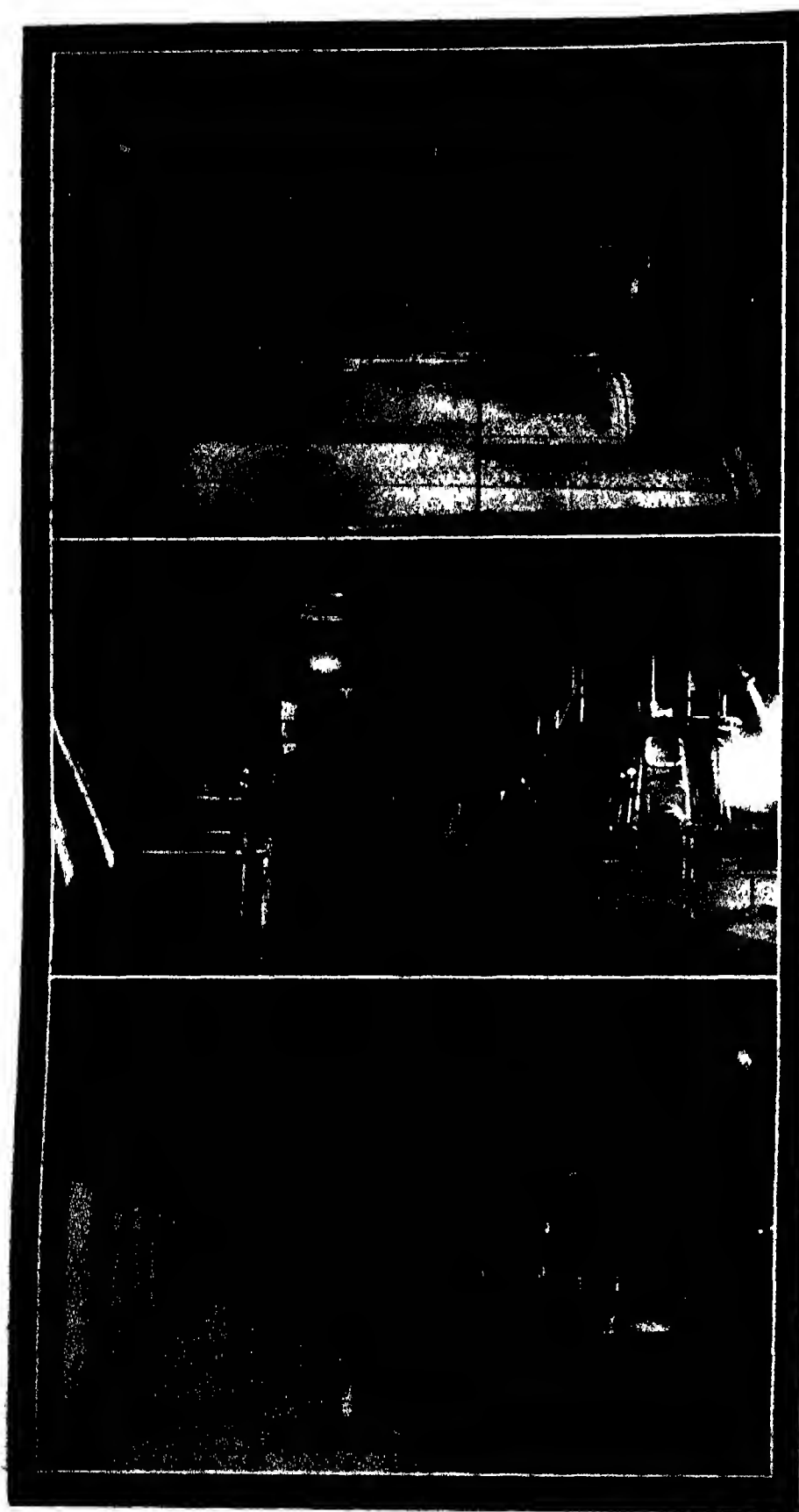
**TIN.**—Tin has been discovered in payable quantities in Swaziland, 60 miles east of Lake Chrissie. Traces have also been found near Grahamstown and in Table Mountain. In the Transvaal a large alluvial deposit has been discovered at Zwaartkloof, about



RAND MINES LTD, Johannesburg

1. General View of New Modderfontein Gold Mines.
2. No. 2 Circular Shaft, New Modderfontein Gold Mines.
3. Mill Water Tank and Sand Cones, New Modderfontein Gold Mines.

(See letterpress, page 114, and illustrations, pages 98 and 114)



RAND MINES LTD., Johannesburg.

1. Tube Mill Plant, New Modderfontein Gold Mines.
2. Electric Hoist Engine House, New Modderfontein Gold Mines.
3. Nissen Stamp, New Modderfontein Gold Mines.

eight miles from Warmbaths. Production increased from 1,424 tons (£170,337) in 1923 to 2,049 tons (£304,108) in 1924, falling slightly to 1,937 tons (£298,073) in 1925.

**VANADIUM.** This mineral has been found associated with the lead ores of the Marico district in considerable quantities. In a recent period of two months there was a production of 54 tons of concentrates, containing about 7 per cent of vanadium.

**ZINC.**—Zinc, like lead, occurs in irregular deposits throughout the dolomite area of the Transvaal, but with the exception of one mine at Witkop, no attention has been paid to its occurrence. The last recorded output was in 1921, when 1,210 tons were extracted, valued at £8,410.

### REPRESENTATIVE MINING ENTERPRISES

#### RAND MINES LIMITED.

**Inception.** This very important mining organisation, controlling a number of prominent subsidiary companies, was incorporated in the Transvaal.

**Capital.**—The original capital was £400,000, divided into £1 shares, of which 332,708 were issued and fully paid. In 1889 the capital was increased to £400,000, and in 1901 the £1 shares were sub-divided into 5s shares. In 1911, in order to acquire additional share interests from Wernher, Beit & Company and others, the capital was further increased to £550,000 in 5s shares, of which £531,498 15s 0d has been issued and fully paid.

**Group.** The Central Mining Rand Mines Group is composed of the following companies: Ceylon Lydenburg, Ltd (issued capital, £22,000), City Deep, Ltd (issued capital, £1,205,000), Consolidated Main Reef Mines and Estate, Ltd (issued capital, £1,247,002), Crown Mines, Ltd (issued capital, £940,106), Durban Roodepoort Deep, Ltd (issued capital, £440,070), East Rand Proprietary Mines, Ltd (issued capital, £2,445,897), Ferreira Deep, Ltd (issued capital, £980,000), Geldenhuys Deep, Ltd (issued capital, £585,753), Glynn's Lydenburg, Ltd (issued capital, £170,000), Modderfontein B Gold Mines, Ltd (issued capital, £700,000), Modderfontein East, Ltd (issued capital, £465,485), New Modderfontein Gold Mining Company, Ltd (issued capital, £1,400,000), Nourse Mines, Ltd (issued capital, £827,821), Robinson Gold Mining Company, Ltd (issued capital, £2,750,000), Rose Deep, Ltd (issued capital, £700,000), Transvaal Gold Mining Estates, Limited (issued capital, £604,225), Transvaal Platinum, Ltd (issued capital, £27,044), The Wolluter Gold Mines, Ltd (issued capital, £860,000), Village Deep, Ltd (issued capital, £1,060,071), and Witbank Colliery, Ltd (issued capital, £350,000).

**Operations.**—The results of the gold mining operations for the year 1924 were as follow: Tons mined, 14,223,677, percentage of waste sorted, 10.7, tons milled, 12,745,300, gold produced, 4,108,868 fine ounces. The working revenue amounted to £18,692,516, the working profit being £5,769,313, and the dividends distributed to shareholders, £4,249,000. Working costs came to £12,923,203, made up as follow: white wages, £3,138,680, coloured wages, £2,530,278, stores and materials, £4,515,832, general costs (which include claim licences, power purchased, miners' phthisis contributions, native recruiting, repatriation and passport fees, native hospital, insurance premiums, holidays and sick leave, assessment rates, Rand Water Board fixed charges,



sundry expenditure, and head and London office expenses) came to £2,738,413. The price actually realised for the gold was an average of 91s per fine ounce in 1924, an increase of 2s 11d on the average of 88s 1d for the previous year. A dividend of 12s per share and a bonus of 8s per share, amounting together to £425,000, were paid by the Central Mining Investment Corporation Limited, and £613,545 6s 0d or 120%, by the Rand Mines Limited.

**Labour and Hygiene.**—The average labour force for 1924 consisted of 9,264 white and 79,751 coloured employees. Health conditions continue to receive every possible attention, and the accident death rate of the native labour force on the mines of the group was 3.11 per 1,000, while the mortality rate from disease was 10.80 per 1,000.

**Further Interests.** During 1924 the company took full advantage of any opportunity of acquiring further interests in new enterprises, as has always been its policy. It is interested in conjunction with the Central Mining and Investment Corporation, Limited, and the Transvaal Consolidated Land and Exploration Company, Limited, in the recent platinum discoveries in the Lydenburg and Rustenburg areas, and prospecting operations are in full progress, with gratifying results in the former district. It is also interested, through the Anglo-Spanish Construction Company, Limited, in financing the construction and equipment of approximately 260 miles of broad gauge railway under the terms of a concession granted by the Spanish Government in north-eastern Spain. Among the assets of the company are its reservoirs and pumping plants, and the supply of water from this source constituted a fresh record during 1924, amounting to 923,641,000 gallons. At Booyens pumping station the installation of electric power has been completed, and is giving satisfactory results.

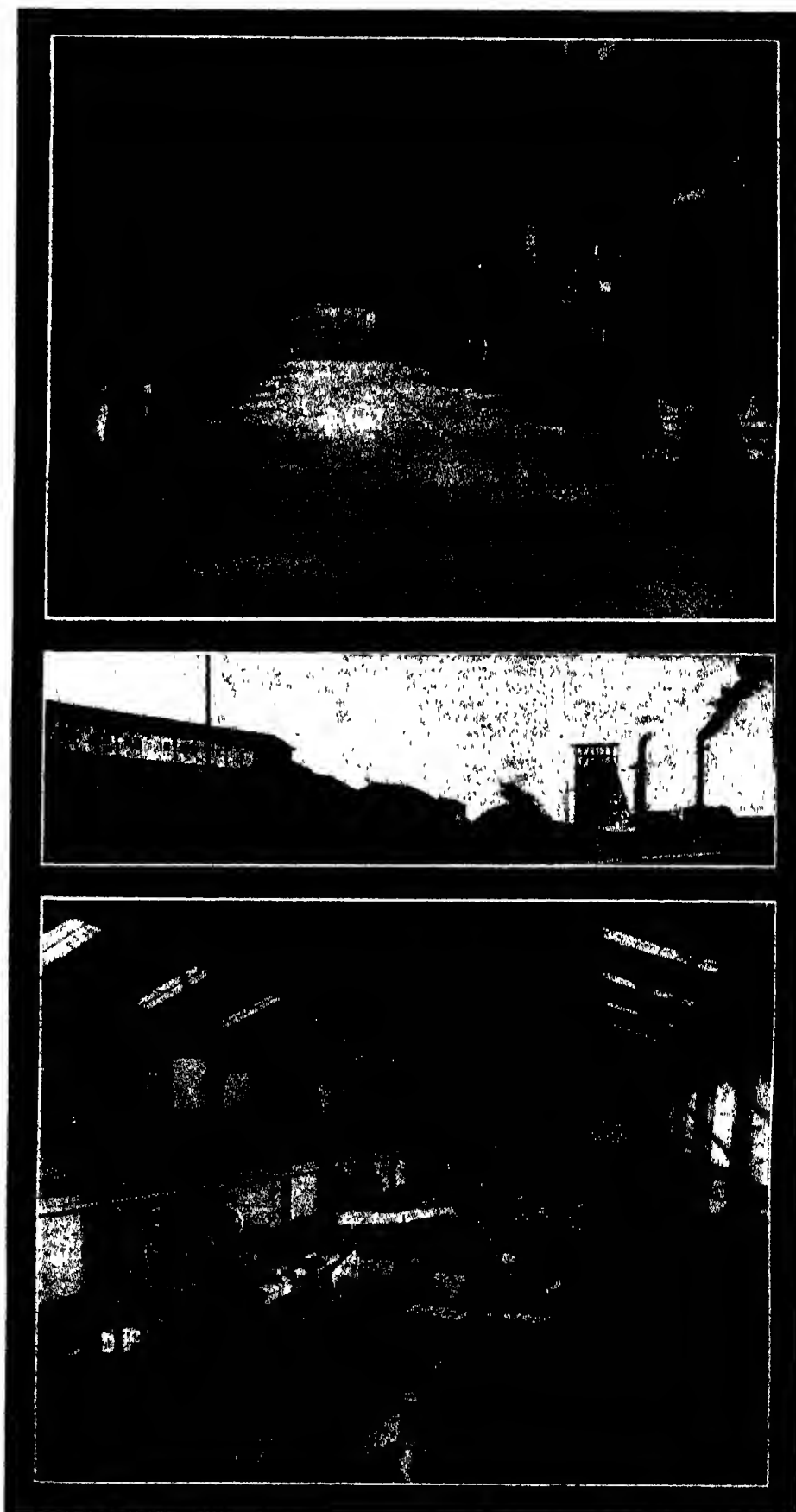
**Accounts.** The accounts of the company for the year ended December 31, 1924, submitted in Johannesburg June 4, 1925, showed a profit for the year of £822,842, an increase of £143,826 making, with the £1,147,746 brought in a balance available of £1,970,578, as against £1,805,893 at December, 1923, when a sum of £154,752, being net amount received from investments, was included.

Two dividends totalling 120% were declared as in 1923, taxation absorbed £51,201 and forfeited dividends refunded £1,381. The sum of £321,622 was added to reserve, being net amount spent on investments, while £24,413 was deducted from reserve for writing down investments. After providing for the dividends, £613,545, the balance unappropriated, represented by cash and cash assets, less liabilities, was £982,828.

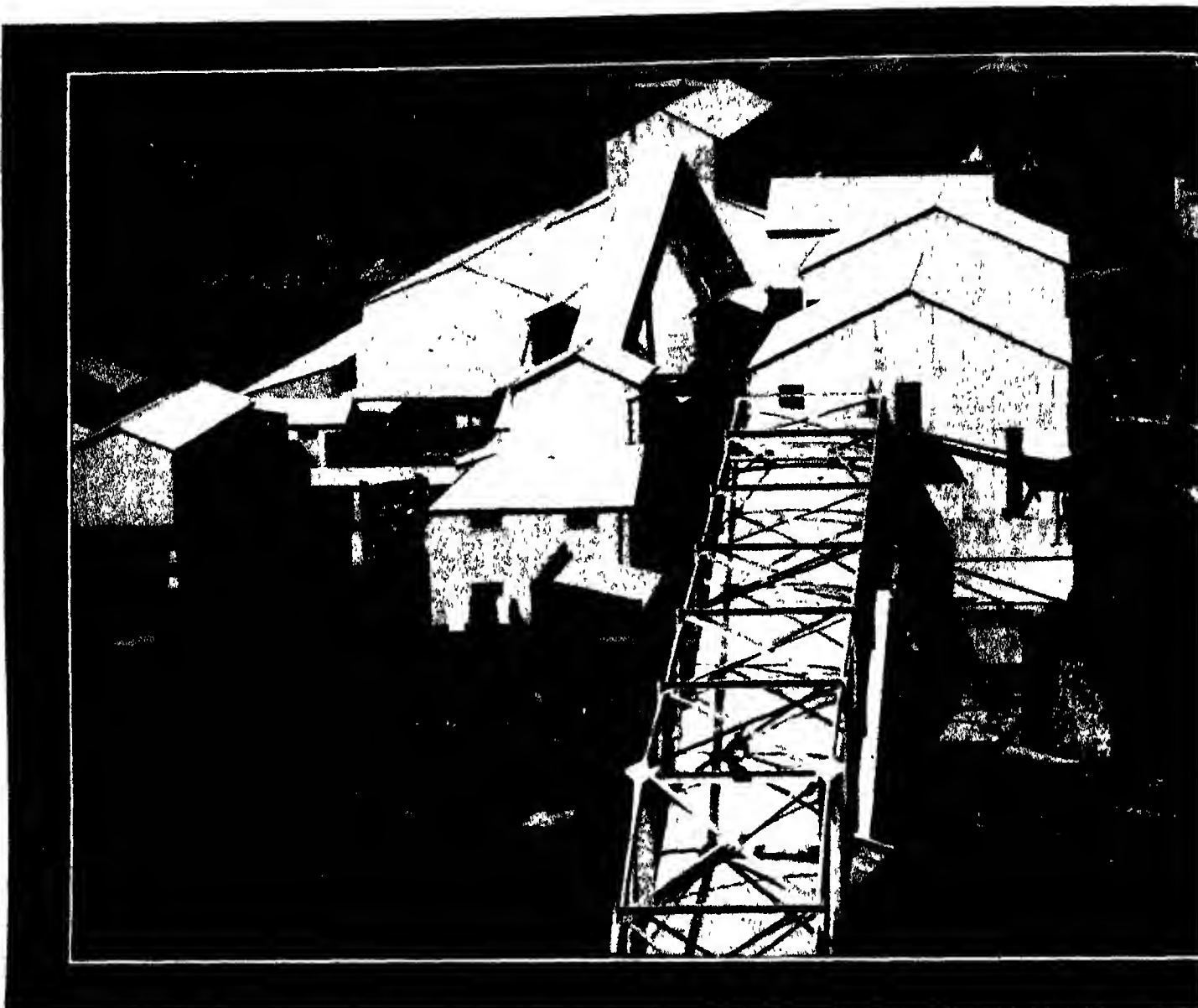
Appended are the results for the years named —

	1923	1924
Dividends received	£589,050	£648,928
Sundry revenue	86,009	105,031
Profit on investments		
sold	155,300	104,422
Brought in	842,135	1,147,746
*Investments sold	341,945	202,485
bought	187,103	524,107
Dividends	120%	120%
Taxation	£43,952	£51,201
Forward	1,147,746	982,828
Issued capital	531,499	531,499
Investments	2,408,575	2,765,785
Cash	1,094,021	1,045,472
Reserve fund	1,937,077	2,234,289
Total assets	4,097,053	4,221,407

\*Book value



ANGLO-AMERICAN CORPORATION OF SOUTH AFRICA LTD.  
 1. Tube Mills Feed Floor at West Springs.  
 2. View of West Springs.  
 3. Tube Mills Grinding and D.O.H. Classifying Plants at West Springs.  
 (See letterpress and illustration, pages 116-117)



ANGLO-AMERICAN CORPORATION  
General View of

**DIVIDENDS**—1898, 100%, 1899, 75%, 1902, 80%, 1904, 100%, 1905, 100%, 1906, 180%, 1907, 130%, 1908, 190%, 1909, 350%, 1910, 220%, 1911, 220%, 1912, 220%, 1913, 220%, 1914, 200%, 1915, 160%, 1916, 150%, 1917, 145%, 1918, 85%, 1919, 100%, 1920, 145%, 1921, 70%, 1922, 100%, 1923, 120%, 1924, 120%, 1925, 50%, June 16

**Administration.**—Directors Sir Evelyn Wallers, K B E., chairman (alternate, Mr C Meintjes), Mr F Raleigh, managing director, Messrs A W Rogers (alternate, Mr A. F Mullins), E G Izod, M B E., (alternate, A J. Wright), W Mosenthal (alternate, G D Massey), H Rothbath (alternate, W H A Lawrence), J L Jourdan (alternate, J E Evans), and F G C. E. Robellaz (alternate, B L Blaine). London Committee: Lieut-Colonel S H. Pollen, C.M.G. (alternate, Mr R. A Macqueen), Messrs. F. Heim (alternate, R Walker), P. Troquet (alternate, G F. Rutt), and H C Boyd. Manager and secretary Mr. S. C Steil Transfer secretary Mr. F. H. Barry

**Offices.**—Head office The Corner House, Johannesburg. London Offices and Secretaries A Moir and Company, 1, London Wall Buildings, E C 2 Paris Representatives Credit Mobilier Francais, 30/32, Rue Taibout

(See also illustrations, pp 98, 113, 114)

#### ANGLO-AMERICAN CORPORATION OF SOUTH AFRICA, LTD.

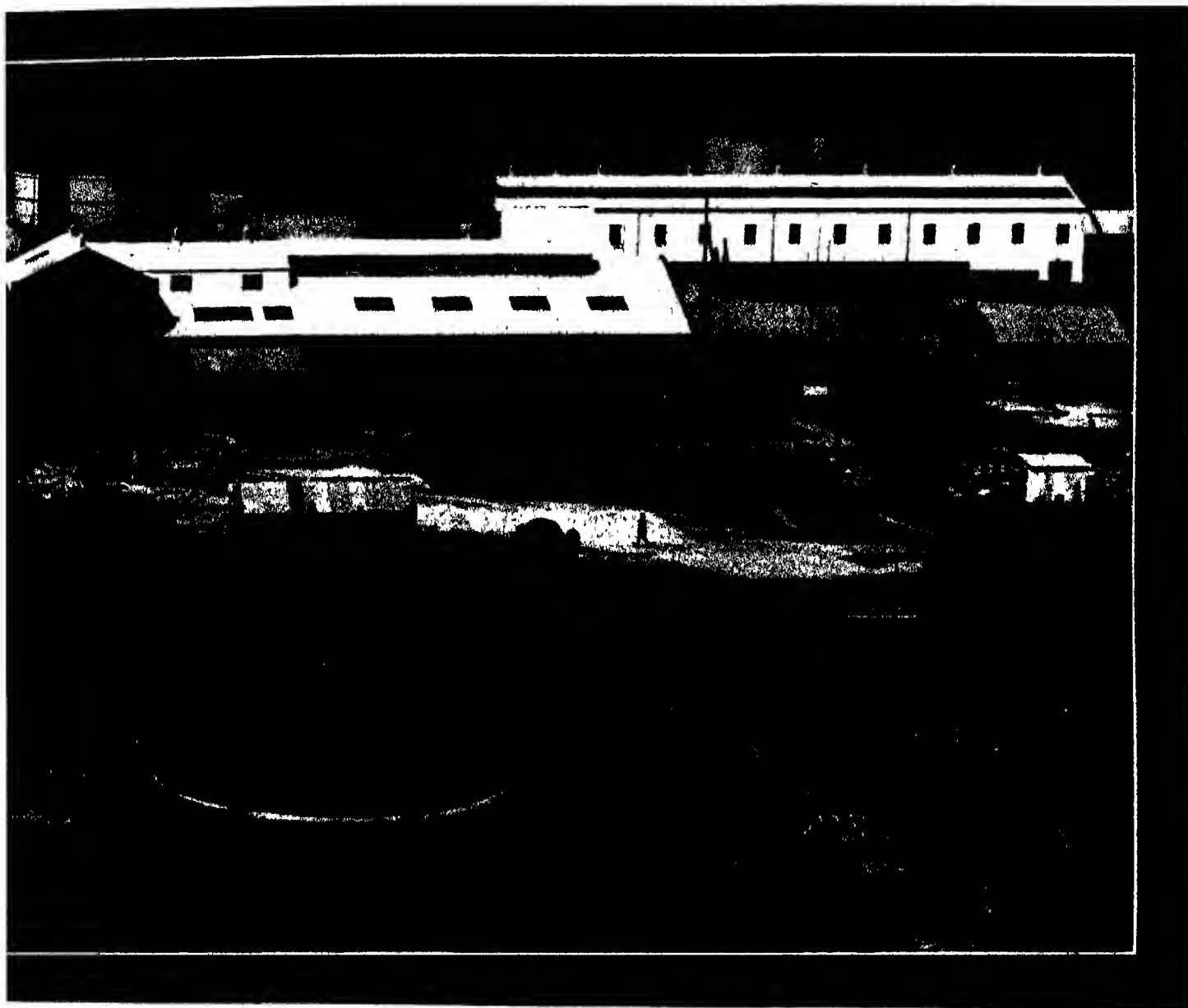
**Status.**—This company, which is in a very strong financial position, controls a number of important mining concerns in South Africa

**Capital.**—The authorised capital is £4,000,000, of which £3,720,000 has been registered, and £3,664,856 issued. This latter amount is reduced from £3,718,453 by the purchase of 53,597 ex-enemy shares from the Custodian of Enemy Property. The revenue for the year 1923 amounted to £527,475, compared with £335,073 for the previous year. A reserve fund of £200,000 was established to form the nucleus of a sum to meet whatever

depreciation may occur in the gold mining interests of the company through gradual exhaustion of the mines. The cash assets amounted in all to £3,162,884, which figure exceeded the cash liabilities of the same date by over £800,000

**Properties.**—The mines in which the company is interested are the Prakpan Mines; West Springs, Ltd., the Rand Selection Corporation, Springs Mines, Daggafontein Mines, Ltd., New Era Consolidated, Ltd., and the Transvaal Coal Corporation

**BRACKPAN MINES**—Capital, £1,020,000, in £1 shares, all issued and fully paid. Property 3,387 claims, of which 1,811 are leased from the Government. The dividends paid to 1923 amounted to £4,192,972, making 477.5 per cent. In the year named, following the satisfactory development results which had taken place, the nominal capacity of the reduction plant was increased from 70,000 tons to 80,000 tons monthly. It was also decided to re-model certain old sections of the plant so as to increase the output still further to a nominal



OF SOUTH AFRICA LTD., Johannesburg.  
West Springs.

capacity of 85,000 tons per month, and the chairman at the annual meeting stated that if favourable conditions prevailed there was no reason why this nominal capacity should not be exceeded. At December 31, 1924, the ore reserve was 2,848,540 tons, value 7.55 dwts., over an average stopping width of 69.59 inches.

**WEST SPRINGS, LIMITED**—Capital, £1,575,000 in £1 shares, of which 1,573,190 are issued and fully paid. Debentures outstanding amount to £331,620. Property: 2,236 claims, leased from the Government. The plant of novel design, had a nominal capacity of 40,000 tons monthly, but was expected to be increased to 50,000 tons by experiments which were conducted in 1923. On December 31 of that year the payable ore reserve was estimated at 2,099,484 tons, of an average value of 7.49 dwts. over 63.14 inches. Production commenced July 1, 1924.

**RAND SELECTION CORPORATION**.—Capital, £600,000 in £1 shares, all issued and fully paid. Property: freehold of the farms

Weltevreden and Kietfontein, on which are situated Brakpan Mines, Springs Mines, and West Springs, also the Brakpan township, and two extensions to the Springs township as well as large blocks of shares in the three mines. There are extensive tree plantations on the farms, and these are approaching maturity. The dividends paid to December 31, 1924, amounted to £2,639,760, making 478.15 per cent.

**SPRINGS MINES**—Capital £1,500,000, in £1 shares, of which 1,491,157 are issued and fully paid. Debentures outstanding amount to £31,550. Property: 3,568 claims, of which 2,235 are leased from the Government. Here also the capacity of the reduction plant was considerably increased in 1923, and at December 31, 1924, the ore reserve was 3,272,756 tons, value 8.64 dwts., over an average stopping width of 58.47 inches. The dividends paid to December 31, 1924, amounted to £2,006,079, or 135 per cent.

**DAGGAFONTEIN MINES, LIMITED**.—Capital, £1,017,075 in £1 shares, all issued and fully paid. Property: 2,058 claims, of

which 449 are leased from the Government. All operations on this mine were suspended pending the raising of further capital.

**NFB LRA CONSOLIDATED, LTD.**—Capital, £100,000 in 5/- shares, all issued and fully paid. This is a financial company, which holds large share interests in mines of the Far East Rand. The dividends earned to December 31, 1924, amounted to £222,837, making 224.75 per cent.

**TRANSVAAL COAL CORPORATION**.—Capital, £250,000 in £1 shares, all issued and fully paid. Property: the corporation has purchased the coal rights over an area of 11,045 morgen, and holds long-period options on a further area of 2,665 morgen.

**GENERAL REVIEW.**—The following is a summary of the chairman's review of the corporation's various activities at the 1924 annual meeting.

**GOLD MINING**—There has been general improvement in the gold-mining industry of the Witwatersrand, attributable to the improvement in the native labour

supply and the continuation of excellent relations with the European employees, with consequent freedom from industrial troubles. These conditions have afforded opportunities to all concerned in the industry to investigate methods systematically, and to improve efficiency. Of late years attention has been directed particularly to economies in rock-breaking, and the use of a heavier type of rock-drill has been extended, both in the Leyner type of drill and in jack-hammers. Experiments have also been made with the heat treatment of drill steel, and the use of high-grade alloy steels to form bits. Practical success has been achieved in this direction with the installation of electrical butt-welding machines at Springs mines and Brakpan mines, where also electrical heating furnaces have given good preliminary results. In metallurgical practice similar advances have taken place, and a new era of progress is developing on the Rand for all the companies concerned.

**DIAMOND MINING.** The corporation acts as secretaries and consulting engineers in Johannesburg to the Consolidated Diamond Mines of South West Africa, Limited. In spite of the fluctuations in the diamond

the beginning of 1924 was estimated at 7,567,000 tons, averaging 3.9 per cent of copper down to the 350 ft level.

**Administration.**—Chairman of Directors Sir Ernest Oppenheimer, M.L.A. Deputy-chairman Mr F. R. Lynch. Consulting Engineer Mr Carl R. Davis. Managers Messrs A. F. Lyall, and L. A. Pollak. Secretary Mr J. H. Groatton, F.C.I.S.

**Offices.**—Head Office: Amnicosa House, Holland Street, Johannesburg, P.O. Box No. 4587. Cables: "Amnicosa." Johannesburg. London Office: 5, London Wall Buildings, E.C.2. New York Office: 14 Wall Street, N.Y.C.

(See illustrations, pages 115, 116 and 117.)

#### JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY LTD.

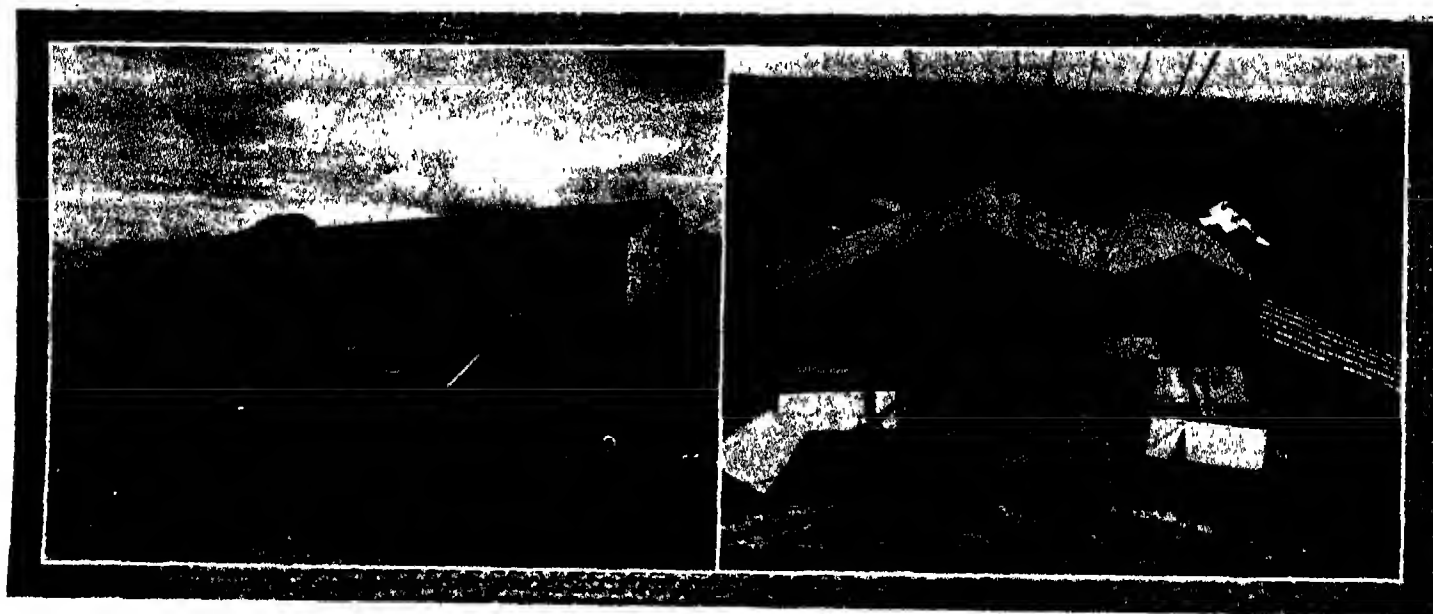
**Inception.**—This important company was formed and registered in 1889 to carry on a financial and general agency and investment business, also to deal in land and mining properties.

**Development.**—In 1895 the company purchased the interests of the South African Trust and Finance Company Limited also

£350,000, and later in the same year to £650,000. In the following year it was brought up to £800,000 in order to acquire the undertakings of the South African Trust and Finance Company. In 1896 it was again increased to £850,000, and later in the same year to £2,750,000 to purchase the Barnato Bank and other undertakings. In 1905 the capital was raised to the present amount, 1,200,000 fully paid shares being issued in payment for the Barnato Consolidated undertaking.

**Company Interests.**—Following are particulars in brief of the principal mining interests of the Johannesburg Consolidated Investment Company Limited to the end of June 1925:—

**GOLD MINING.** **GOLD MINING ARTISTS (MODDERBONTEIN) CONSOLIDATED LIMITED.**—A record working profit of £2,309,740 was obtained by this company, of which the sum of £1,311,289 accrued to the Union Government under its agreement with the Company, the total sum paid to the Union Government on this account amounting to £6,113,412. The tonnage



JOHANNESBURG CONSOLIDATED INVESTMENT CO. LTD., Johannesburg

1. Randfontein Estates: 600 Stamp Battery, largest in the world.

2. Randfontein Estates: Crusher House

market, owing to the unsettled conditions of trade and other contributory causes, the position of the diamond trade remains intrinsically sound. With every sign of improvement in financial and industrial conditions, there is an increased demand for diamonds, but the trade reacts to each change, whether for better or worse. Real prosperity for the producing companies can only come with the re-establishment of trade generally on a firm basis, and the Consolidated Company has, therefore, pursued of late a policy of caution and the husbanding of resources.

**COPPER MINING.**—The corporation is the local representative and consulting engineers for the Bwana M'Kubwa Copper Mining Company Limited. In 1924 this mine was still in the development stage, but the future of the Northern Rhodesia copper fields is promising, and the district may eventually develop into one of the great copper-producing areas of the world. The ore reserve of the Bwana M'Kubwa mine at

the agency business of Barnato Bros. In the following year the Barnato Bank Mining and Estate Corporation, Limited and the Houghton Estate and Gold Mining Company Limited, were acquired, while in the same year the estate portion of the property of the Johannesburg Waterworks Company and the Yeoville estate of the Johannesburg Building & Estate Syndicate, Limited, were purchased. In 1902 the Troye Exploration Company Limited, was bought, and in 1905 it was resolved to purchase the undertaking of the Barnato Consolidated Mines Limited, for 1,200,000 fully-paid shares. The company has large holdings of shares in mining and other concerns, also estate property in Johannesburg and London, mining properties in the Transvaal, and interests in Delagoa Bay. It erected the Carlton Hotel in Johannesburg, together with new office buildings.

**Capital.**—Of the authorised capital of £4,500,000 in £1 shares, 3,950,000 are issued and fully paid. The capital, which originally was £175,000, was increased in 1894 to

treated was 1,874,000 tons, and on December 31 ore reserves were estimated at 10,970,000 tons, of an average value of 9.1 dwts. over a stopping width of 72 inches. Dividends for the twelve months to June 30 totalled 65 per cent, which constituted a record in the annals of the company.

**FAN RYN DELP, LIMITED.**—This company's working profit during the year amounted to £887,998, and the tonnage treated was 790,000 tons. The ore reserves stood at 3,055,000 tons of an average value of 7.5 dwts. over a stopping width of 76 inches. Dividends for the year amounted to 60 per cent.

**LANGLAAGTE ESTATE AND GOLD MINING COMPANY LIMITED.**—During the year a total of 1,147,900 tons was treated by this company at a working profit of £310,378. The ore reserves were estimated at 1,693,700 tons of an average value of 6.4 dwts. over a stopping width of 53 inches. The dividends for the year amounted to 7½ per cent.

**NEW STATE AREAS, LIMITED**—This company has now entered the list of dividend payers, an initial distribution of 7½ per cent having been made, and a long and successful life seems assured. The ore reserves were estimated at 2,582,400 tons of an average value of 8.8 dwts. over a stoping width of 60 inches.

**RANDFONTEIN ESTATES GOLD MINING COMPANY, WITWATERSRAND, LIMITED**—A record tonnage of 2,432,000 tons was treated, resulting in a working profit of £701,077. The ore reserves at the end of 1924 were estimated at 5,085,700 tons, of an average value of 6.14 dwts. over a stoping width of 44 inches. A dividend of 5 per cent was declared in December and in June.

**GLNLRIL**—The value of the gold produced by the company's mines for the twelve months ended June 30, 1925, was approximately £11,320,000. The coal concerns in which the company is interested show improving results, and its holdings in the leading diamond mines remain unchanged. A powerful syndicate has concluded an

now stands at £550,000. A dividend of 15 per cent, free of income tax, was paid for the year.

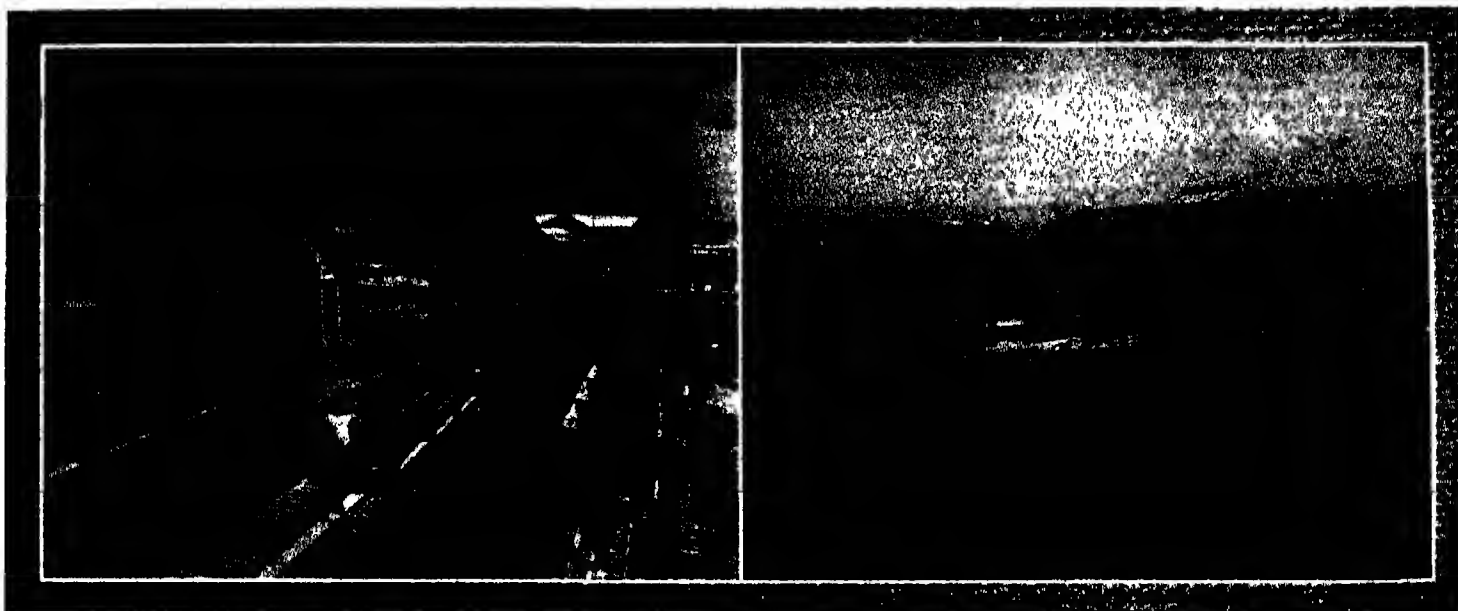
**Staff.**—The numbers of Europeans and natives employed by the Barnato Group of companies during July, 1925, were as follow:

	EUROPEANS	NATIVES
Govt. Gold Mining Areas (M)		
Consolidated, Ltd.	893	10,133
Langlaagte Estate & Gold M Co., Ltd.	658	7,138
New Primrose G M Co. Ltd.	148	1,806
New State Areas, Ltd.	447	1,937
Randfontein Estates G M Co. Ltd.	1,340	15,057
Van Ryn Deep, Ltd.	350	4,234
Witwatersrand G M Co. Ltd.	303	2,970
Consolidated Collieries, Ltd.	35	646
Natal Cambrian Collieries, Ltd.	24	530
New Springs Colliery, Ltd.	16	191
Total	4,280	17,057

#### NEW CONSOLIDATED GOLD FIELDS, LTD.

**Inception.**—This company originated in London in 1887 under the name of the Gold Fields of South Africa, Limited, with a capital of £250,000, its founders being the late Rt. Hon. C. J. Rhodes and the late Mr. C. D. Rudd.

**Capital.**—As the company's interests extended on the Witwatersrand and elsewhere, fresh capital was raised from time to time to deal with new openings for investment and for the absorption of other concerns carrying on business with similar objects. In 1892 the title of the company was altered to The Consolidated Gold Fields of South Africa, Ltd., the capital being increased to £1,250,000, while in 1894 an issue of £600,000 5½% debentures was made, all of which have since been paid off. In 1898, by which date the total capital of the company had increased to £3,250,000 the Gold Fields Deep was absorbed, this company having been formed in 1893 to take over deep level properties. Finally, in 1911, a new issue of £1,250,000 in 11.6% second preference shares was made, the bulk of which was invested in America, while a portion was utilised for expanding business.



JOHANNESBURG CONSOLIDATED INVESTMENT CO. LTD., Johannesburg

1. Rand Estates Cyanide Plant.

2. Van Ryn Deep Cyanide Works and Mill.

agreement with the South African diamond mining companies under which the latter will sell their production to this combine for a number of years. The Johannesburg Consolidated Investment Company has secured participation in this contract, and is confident it will prove beneficial. The sales of building sites on the company's townships have been satisfactory, and the development of the lower Houghton estate has made good progress. Every encouragement is given in this direction, especially by the establishment of necessary services, such as light and water.

**Balance Sheet.**—The company's balance sheet for the financial year ended June 30, 1925, shows the following: After making provision for English and Colonial income-tax and depreciation, and placing £150,000 to reserve, the profit for the year amounted to £594,671 3s. 3d. This sum, together with £175,000 5s. 5d. carried forward from the previous year, brought the aggregate profit to £770,661 8s. 8d. The reserve fund

**Directorate.**—Mr. S. B. Joel, J.P. (permanent chairman). The Right Honourable Sir Arthur S. F. Griffith-Boscawen, P.C., Messrs. J. Emrys Evans, C.M.G., J. Friedlander, G. Imroth, J. B. Joel, J.P., Professor J. G. Lawn, C.B.E., Messrs. Isaac Lewis, John Munro, A. R. Stephenson, Walter S. Webber, and Sir Willem van Hulstyn.

**Managers.**—General manager in South Africa: Mr. J. H. Crosby, assistant general manager in South Africa: Mr. R. L. Innes. London manager: Mr. W. J. Benson, C.B.E.

**Secretaries.** In Johannesburg: Mr. M. N. Nicolson. In London: Mr. Thomas Honey.

**Consulting Engineers.** In South Africa: Mr. G. H. Beatty. In England: Professor J. G. Lawn, C.B.E.

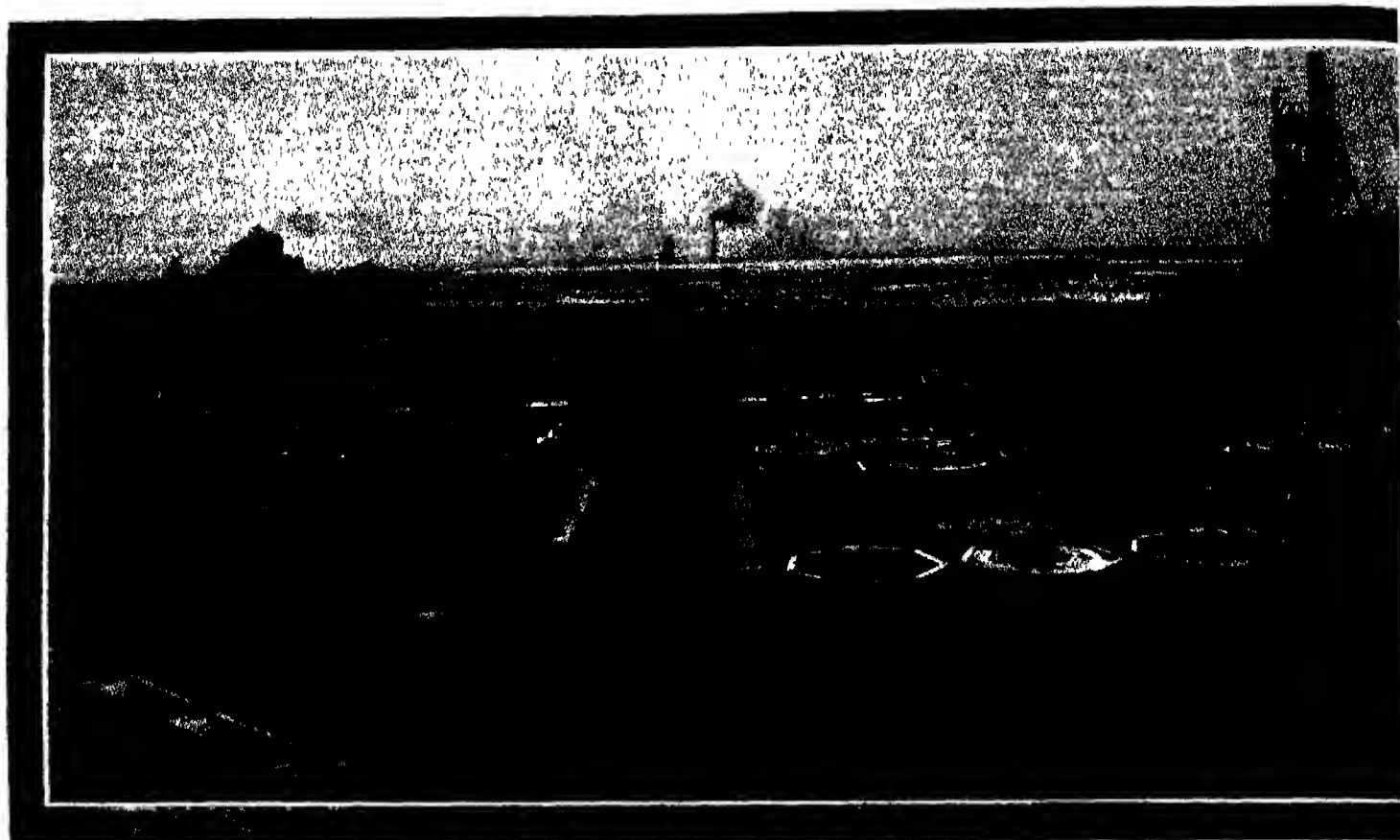
**Offices.**—Johannesburg, Consolidated Building. London, 10 & 11 Austin Friars, E.C.2.

(See also illustrations, pages 100-101 & 104.)

in Rhodesia. The total issued capital of the company at March 1911 was, therefore, £1,500,000, made up as follows: £200,000 in 11 ordinary shares, £1,250,000 in 11.6% first cumulative preference shares, and £1,250,000 in 11.6% second cumulative preference shares. In August 1919 a new company was registered in London under the name of the "New Consolidated Gold Fields, Limited," and took over all the assets and liabilities of the old company excepting the profits up to the date of completion of purchase and the balance to credit of the profit and loss account. The new company has a similar capital to that of the old company, £4,500,000, the shares all being held by the latter. The total dividends declared on the ordinary and preference shares, including cash bonuses, up to 1925 amount to £11,770,000.

**Properties.**—In the Transvaal the crushing gold mining companies of the Group are Simmer and Jack Mines, Ltd., Robinson Deep, Ltd. and Sub Nigel, Ltd.





NEW CONSOLIDATED  
Simmer &

**SIMMER & JACK.** Of these, Simmer & Jack Mines, Ltd., was registered in March 1924, to take over the undertaking of the Simmer and Jack Proprietary Mines, Ltd. as a going concern with all its assets and liabilities, as at January 1, 1924, the latter having been originally formed in 1887 as the Simmer & Jack Gold Mining Co. Ltd., with a capital of £73,000. The capital of the present company is £625,000 in 5,000,000 shares of 2/6d each. The battery of the mine has been increased from 25 stamps in 1888 to its present capacity of 320 stamps and 7 tube mills. The tonnage crushed to December 31, 1924, amounted to 17,450,186, the production of gold to the same date being 5,225,619 fine ounces, while the total dividends, including bonuses, were equivalent to £6,438,000. The total profit during the twelve months ending June 30, 1925, was £153,465, average working costs being 15/9 3/4d per ton, a reduction of 6 3/2d per ton as compared with the previous year.

**ROBINSON DEEP LTD.** Robinson Deep Ltd. was incorporated on December 31, 1915, being a reconstruction of the Robinson Deep Gold Mining Co. Ltd., itself a reconstruction of the original company formed in 1894. The present capital consists of 500,000 "A" shares of 1/- each and 881,807 "B" shares of 1/- each. Milling was commenced on April 6, 1898, since when, up to December 31, 1924, 12,976,798 tons were crushed, producing a total of 4,752,655 fine ounces of gold. Total dividends up to June 30, 1925, amounted to £5,247,912. Gross profit for the year ended June 30, 1925, was £526,244, compared with £514,608 for the previous year, working costs averaging 17/1 4d per ton, a reduction of 10.17d per ton on the previous twelve months.

**SUB NIGEL.** Sub Nigel Ltd. has a total issued capital of £605,000 in shares of 1/- each, and is a reconstruction of the company registered in August 1895. The property at the present time comprises 2,622 mining claims, as well as farm and water rights. The plant consists of 30 stamps and two tube mills, the tonnage crushed up to December 31, 1924, being 1,605,554 producing 878,203 ounces of fine gold. The total dividends distributed up to June 30, 1925, amounted to £722,032.

**Other Interests.**—In addition to these mines, the company administers the affairs of the African Land and Investment Co. Ltd., Albany Brick Tile & Potteries Ltd., Consolidated East Coast Engineers Ltd., East Rietfontein Syndicate, Ltd., Elandsfontein Estate Co. Ltd., Germiston Laboratory & Industrial Company, La Rochelle Syndicate Ltd., Lydenburg Platinum Areas Ltd., Middlevel Estate & Gold Mining Co. Ltd., Reuxville Diamonds Ltd., and S.O.S. Boots, Ltd. It has also large interests in other concerns in the Transvaal, as well as in Rhodesia, America and other parts of the world.

**Financial.**—The realised profit of the company on the operations for the year ended June 30, 1925, amounting to £316,845 7s 8d, was derived almost entirely from the dividends on the shares of the New Consolidated Gold Fields Ltd. Adding to this the balance brought forward from the previous year of £42,261 1s 7d, and deducting the dividends on the first and second preference shares for the year amounting to £117,187 10s, there remained a balance of £241,918 19s. 3d available for dividend, which was declared at 12 1/2 per cent. less income tax on the 200,000 ordinary shares, amounting to

£195,312 10s, leaving £46,606 9s 3d to be carried forward.

**Directorate.** Lord Harris (chairman), Messrs J. A. Agnew, E. Birkenruth, Lord Brabourne, Messrs S. Christopherson, D. Christopherson, C. B. E. (resident director in Johannesburg), Count L. A. G. Dru, Messrs D. O. Malcolm, H. C. Porter and J. C. Prinsep.

**Offices.** London Office: 8, Old Jewry, E.C. 2. Office in South Africa: 29, Simmonds Street, Johannesburg. Cables: "Giovano," Johannesburg.

#### UNION CORPORATION LIMITED.

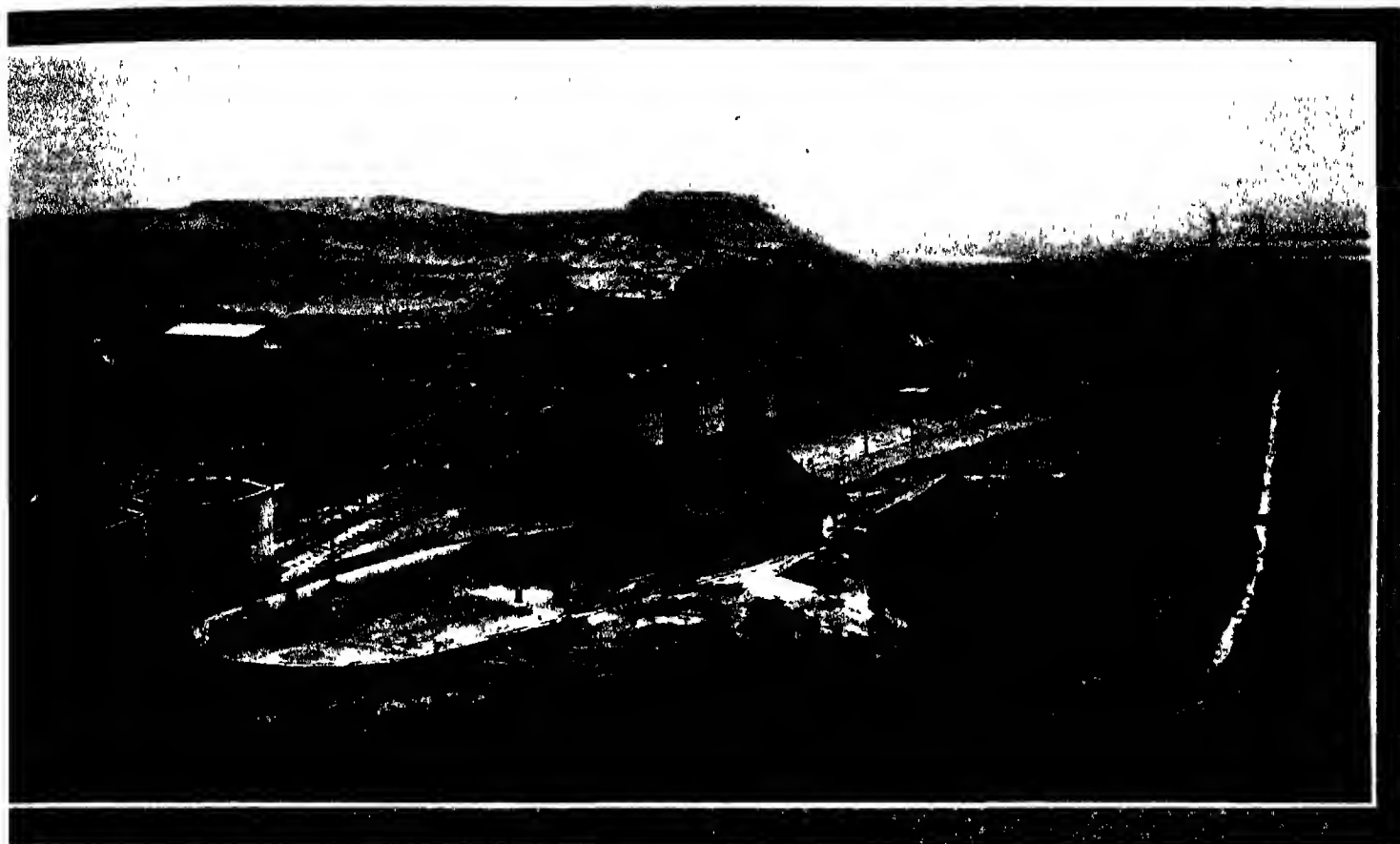
**Inception.**—This company was formed to acquire the assets and liabilities of Ad Goertz & Co., which in itself was the outcome of a syndicate constituted in 1889 to develop, finance and operate gold mines. The consideration was £640,000 in fully paid ordinary shares. Registration of the corporation was effected in 1897.

**Capital.**—The authorised capital of the company is £875,000, in 1,400,000 shares of 12/6 each, all of which are issued and fully paid.

**Development.**—It was agreed in 1906 to extend the company's operations to countries other than South Africa.

**Properties.**—The principal interests are largely centred in the following companies: Modderfontein Deep Levels, Geduld Proprietary Mines, La Fe Mining Company Ltd., San Francisco Mines of Mexico Ltd., (Mexico), Compania Internacional Minera (S.A.), and Burma Corporation.

**Geduld Mines.**—At the annual general meeting of the Geduld Proprietary Mines, Ltd., on May 16, 1924, the chairman stated that the year 1923 had been the most grati-



**GOLD FIELDS LTD**  
Jack Mines. (See *Littlerpress*, page 119.)

lying in the history of the company. This was attributable directly to the successful operation of the increased reduction plant, which came into commission on April 24, and the more satisfactory labour conditions since the termination of the 1922 strike. The tonnage milled was 722,500, as against 460,700 in 1922, while during the first four months of 1924, 275,700 tons were milled, showing a further increase on the figures of 1923. Working expenses also indicated a steady decrease, the total profit for the four months of 1924 being at the rate of about £9,000 more per month than the average for 1923. At the end of 1923 the recalculated ore reserves amounted to a total of 5,750,000 tons of an average assay value of 7.1 dwts over an estimated stoping width of 63 inches. The year's operations showed a profit of £469,319, which was £108,376 more than that for the previous year, while sundry revenue derived from sales of water, interest, rentals, etc., amounted to £16,883, raising the gross profit to £486,201.

**Modder Deep Levels.**—During 1923 the reduction works of the Modder Deep Levels, Ltd., were run at full capacity, resulting in 525,000 tons being crushed, which was a record for the mine up to that date. Working costs averaged 17/5d per ton, a reduction of 1/7d compared with the previous year. This decrease was due largely to improved conditions of labour, as in the Geduld Proprietary Mines. The developed ore reserves, as measured and valued at December 31, 1923, amounted to 4,800,000 tons, of an average assay value of 9.3 dwts over an estimated stoping width of 79 inches. During the first four months of 1924, 174,900 tons were milled, the gross profit being £298,000, representing an increased rate of about £5,500

per month, compared with the average for the previous year, while working costs showed a further reduction.

**San Francisco Mines of Mexico.** The mill of these mines was increased in 1923 to meet current and future requirements, and is now capable of dealing with 180,000 tons of ore per annum, while other equipment has been or is to be overhauled and enlarged. Two adjoining properties have also been acquired of which one at least contains the extension of the San Francisco main vein, to which operations are at present directed. Shortage of labour, however, due to the rebellion in Mexico at that time had reduced the scale of working.

**Financial.** The accounts for the year ended December 31, 1924, showed a net realized profit for the 12 months, after deducting all outgoings, of £348,802, making with £81,295 brought forward, a total of £430,097, the reserve account, by the addition of £30,000 and the transference of the £10,000 hitherto standing to the credit of the exploration reserve account, was raised to £462,376, dividends absorbed £315,000, leaving £147,376 to be carried forward.

**Administration.**—Directors: Sir Henry Strakosch, K.B.E., chairman and managing director (alternate, Mr P. M. Anderson), The Rt. Hon. Earl Buxton, G.C.M.G., The Rt. Hon. Sir Robert Horne, G.B.E., P.C., K.C., M.P., Mr Joseph Kitchin (alternate, Mr Paul Strakosch), and Mr Joseph Temperley, (alternate, Mr H. R. Hill). Manager in Johannesburg, Mr P. M. Anderson.

**Offices.**—94, Main Street, Johannesburg Cables "Unicorpora," Johannesburg (See also illustration, page 122.)

#### THE ANGLO-FRENCH EXPLORATION CO. LTD.

**Inception.** This company was registered in England in 1889.

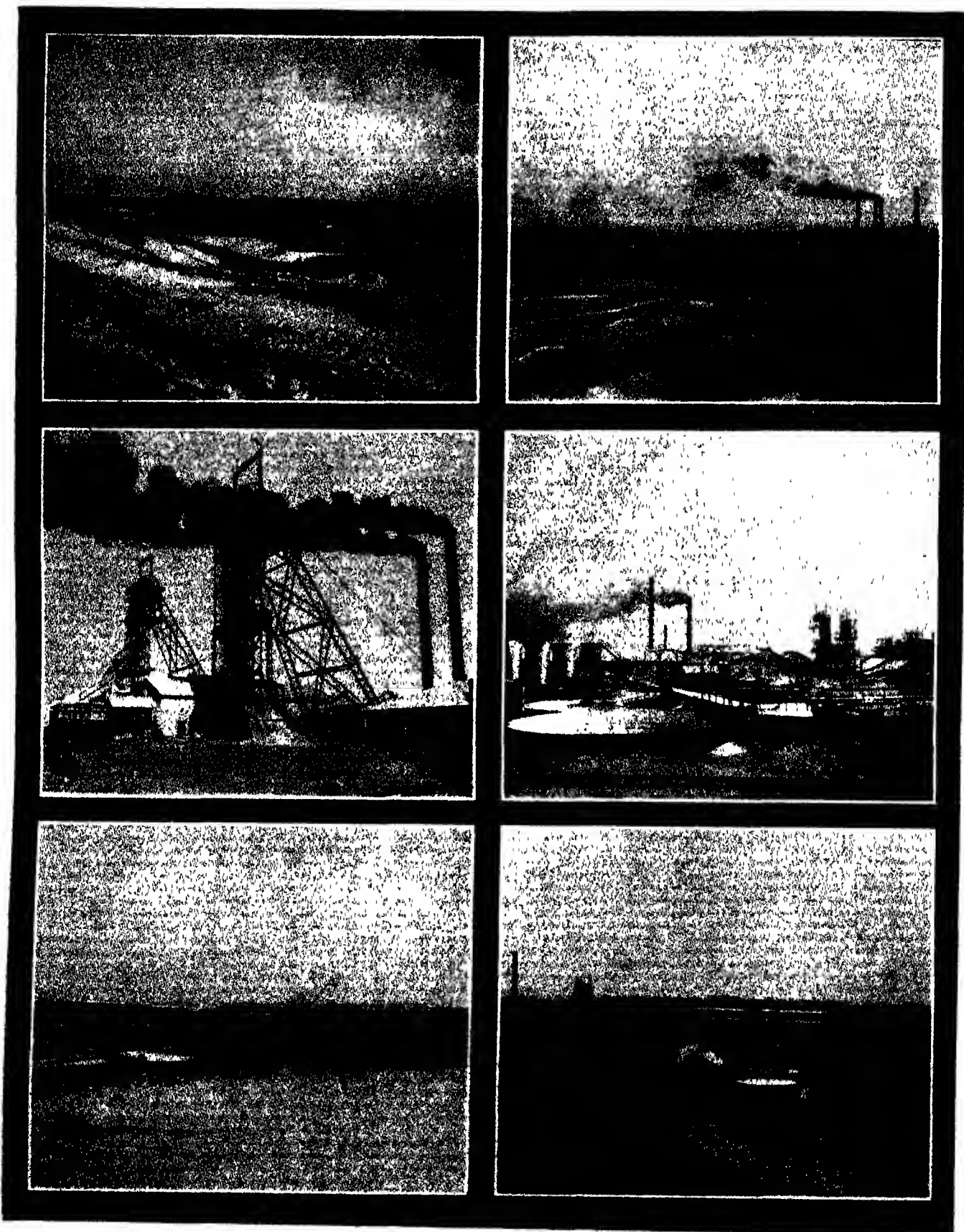
**Capital.**—Authorised, £500,000, in ordinary shares of £1 each, all issued and fully paid. Debentures £165,000, carrying interest at 4½ per cent per annum.

**Holdings.**—Following are the companies in which the Anglo-French Exploration Co. Ltd. has its principal holdings: Brakpan Mines Ltd., Daggafontein G.M. Co. Ltd., Kleinfontein Estates & Township Ltd., Modderfontein B.G.M. Ltd., Modderfontein East Ltd., Springs Mines Ltd., West Springs Ltd., City Deep Ltd., Crown Mines Ltd., Meyer & Charlton Ltd., Village Deep Ltd., The Anglo-French Matabeleland Co. Ltd., Hollinger Consolidated G.M. Ltd. (Canada), Magadi Soda Co. Ltd. (East Africa), East Pool & Agar Ltd. (Cornwall), Apex Trinidad Oilfields Ltd. (Trinidad).

**Agencies.** The company also acts as London agents for Anglo-French Land, Apex, New Boksburg Gold Mines, Afrikander Proprietary, Kleinfontein Estates & Township, New Kleinfontein & Rooiberg Minerals Development.

**Financial.**—For the year ending December 31, 1924, a net realised profit of £40,226 was shown, making, with £16,410 brought forward, a total of £56,636. A dividend of 6 per cent was paid.

**Directorate.** Messrs. F. A. Robinson (chairman), W. Frécheville, L. C. Mocetta, Louis Ochs, F. W. F. Shipton, W. T. Anderson, C.B.E., G. R. Airth (managing director in London), Sir William Dalrymple, K.B.E. (managing director in South Africa).



UNION CORPORATION LIMITED, Johannesburg.

1, 3, 5, Modder Deep.

2. Geduld No. 1.

4. Geduld.

6. Geduld No. 2.

(See Interpress, page 120.)

Trustees for debenture holders. The Rt Hon Viscount Knutsford and Thomas C Garrit, J P, D L.

Manager in South Africa Edward H Read

**Engineer Representatives.**—In London Mr John A Dennison, M I M M In Canada Messrs J B Tyrrell, M A, M I M M and J A P Gibb, M I M M

**Office Addresses.** London 208-224, Salisbury House, Finsbury, E C 2 South Africa Third Floor, National Bank Buildings, Simmonds Street, Johannesburg

**Bankers.** London Midland Bank Ltd Johannesburg The Standard Bank of South Africa, Ltd

**Cables:** "Fiscal" Johannesburg (See also illustration, pages 124-125)

#### THE TRANSVAAL COAL OWNERS' ASSOCIATION (1923) LTD.

**Inception.**—This Association, the largest coal contractor in South Africa, was incorporated in the Transvaal

**Activities.** The principal colliery companies operating in the Transvaal and the Orange Free State are members of or in agreement with, the Association, and it has at command the resources of ten collieries in the Witbank district producing a uniformly high grade of coal (Government grade "A"), thus placing it in a favourable position to deal with and fulfil large orders for export cargoes and for bunkering requirements at the shortest notice. Stocks of this coal are always on hand at Lourenço Marques, Capetown and Walvis Bay. The Association's coals are regularly supplied to the British Admiralty, the Portuguese Government steamers and the shipping companies, to practically all gold,

diamond, and base metal mining companies of note, and also to power companies, municipalities, and industrial concerns throughout South Africa

**Consumers.**—The capacity of the collieries amounts to 750,000 tons of coal per month, with one-shift working, and the following are among the largest consumers of the output. The South African Railways and Harbours (about 1,000,000 tons annually), the Portuguese Railway and the Victoria Falls and Transvaal Power Company Limited, which regularly uses in its power stations on the Reef over 30,000 tons per month. The company has also entered into a long-period contract for the supply of coal requirements of the new power station in course of erection at Witbank

Best Witbank district coal is also supplied under contract to the undermentioned shipping companies. The Union Castle, Shaw Savill and Albion, Osaka Shosen Kaisha, Nourse, Nippon Yusen Kaisha, New Zealand Shipping, Messageries Maritimes, Italian Navigation, Houston Harrison, Hain, Federal, Ellerman and Bucknall, Elder Dempster, Cia Nacional, and British India Steam Navigation Companies, and to the White Star, Aberdeen, Clan, Ellerman Hall and City, Ellerman's Wilson, Indian-African Natal District, Norwegian-African, Prince, Rio-Cape, Scandinavian East Africa and Swedish South Africa Lines

**Quality.** The coal produced by the Association, especially in the Witbank district, is of a uniform standard of good quality, has high steaming efficiency, low sulphur content, and is sufficiently hard to withstand the effects of transportation and handling at the ports. There has never been a case of spontaneous combustion in a cargo

of this coal, due to the fact that the chemical composition is such that danger under this head is entirely negligible. The company readily sends particulars of analysis, etc., to municipal engineers on receipt of request

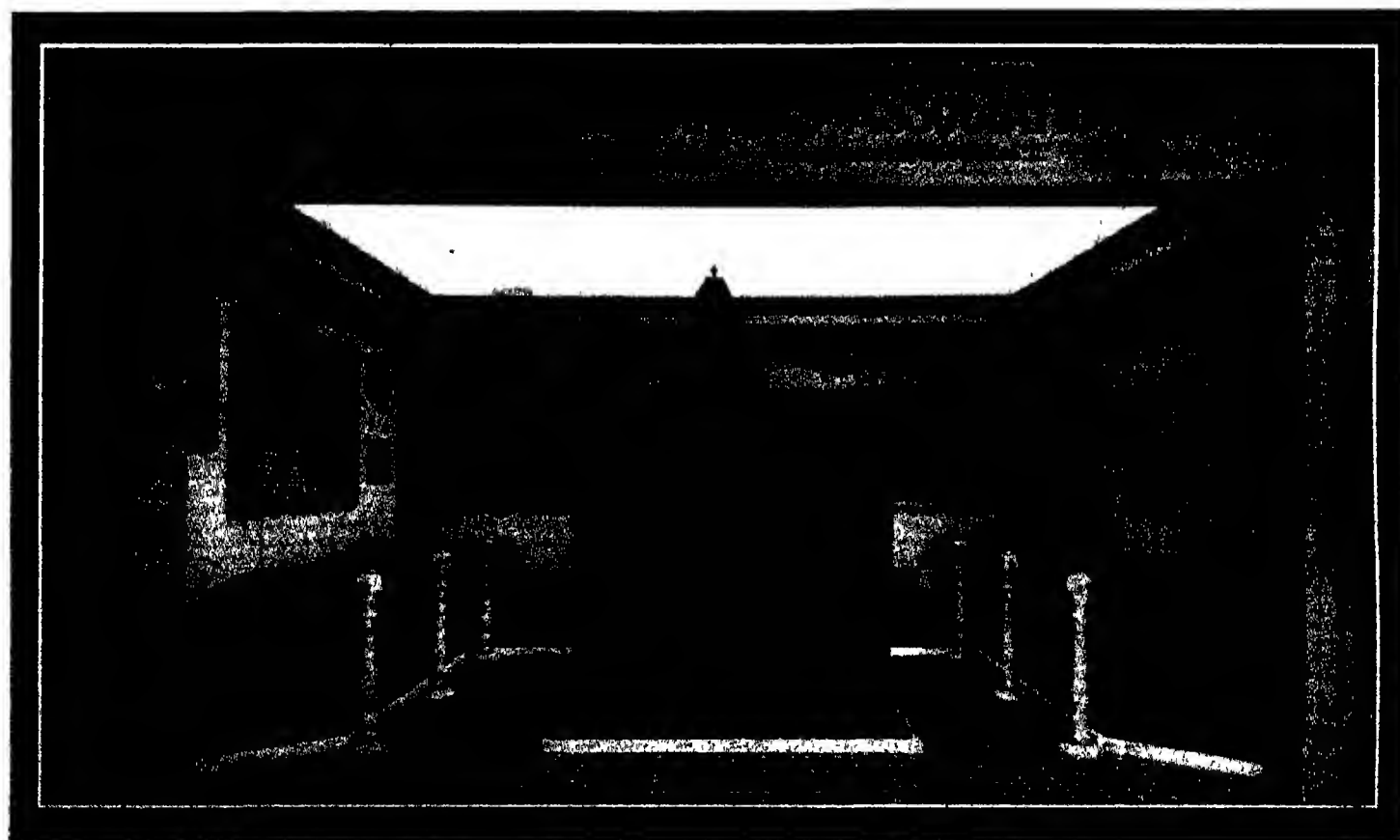
**General.** The Association retains the services of a fully qualified analytical chemist at Lourenço Marques, and all coal arriving at that port is carefully sampled in accordance with the procedure adopted by the British Engineering Standards Committee (South Africa Section), and tested for its calorific value. The company is equipped with the latest and most up-to-date plant for the handling of coal. Labour conditions in the coal mining districts of South Africa are more stable than in most other parts of the world, consequently the risk of the detention of vessels in port is greatly minimised. Prompt loading and despatch at Delagoa Bay and Capetown can be relied upon, and at Delagoa Bay the coaling appliances are capable of handling 700 tons per hour

**Selling Agents.** For export and bunkers, Mann George & Company (Delagoa) Limited, Lourenço Marques. Mann George and Company (South Africa) Limited, Capetown, and Mann George and Company Limited, Cory Buildings, Fenchurch Street, London, E C 3

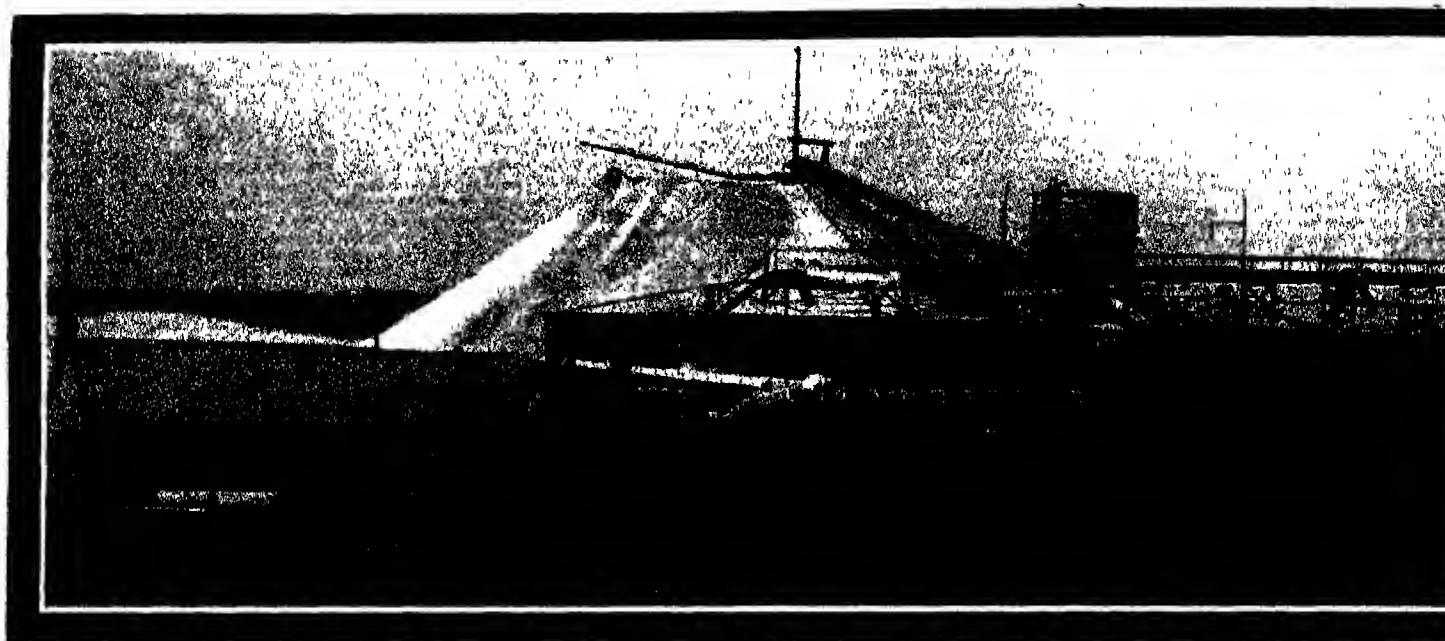
**Head Office.** General Mining Buildings, Johannesburg, Transvaal

**Management.** Chairman and managing director Mr John Roy Secretary Mr J P Cowan

**Cables.** "Coalsales," Johannesburg Codes, A B C 5th Ed., Bentley's Phrase and Scott's 10th Ed. (See also illustration, page 110)



THE TRANSVAAL COAL OWNERS' ASSOCIATION (1923) LTD., Johannesburg.  
Exhibit of Witbank Coal.



THE ANGLO-FRENCH  
New Kleinfontein  
(See letter)

#### THE NATAL NAVIGATION COLLIERIES AND ESTATE CO. LTD.

**Inception.**— This company which was registered in 1902, is a reconstruction of the Natal Navigation Collieries, which was incorporated in 1897.

**Group.**— The group consists of the following: The Natal Navigation Collieries and Estate Company Limited (originally formed in 1897), the Vryheid (Natal) Railway Coal and Iron Company Limited (formed in 1909) and the Northern Natal Navigation Collieries Limited, (formed in 1917). These produce about one-third of the Natal coal output and of its shipment coal, and are the largest exporters of coal from South Africa. The group is the biggest supplier of coal in Natal for the use of the

Natal Government Railways, and most of the municipal power contracts are held by it.

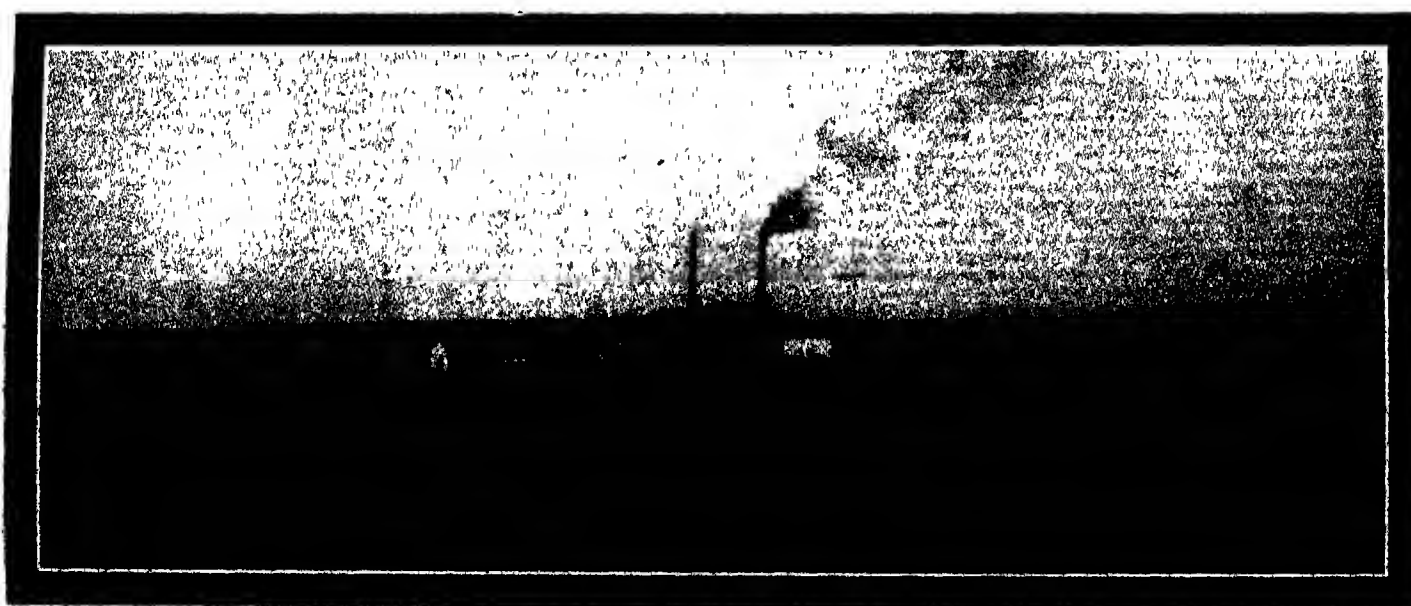
**Capital.** The capital of the company is £725,000 in £1 shares, of which 668,307 are issued and fully paid. Originally the capital was £425,000, it being increased to £525,000 in June 1921, while in September 1922 it was further raised to the present amount to enable the company to obtain a controlling interest in the Vryheid (Natal) Railway Coal and Iron Company Limited.

**Financial.** The accounts for the year ended June 30, 1924, showed a profit of £112,632, to which was added the balance brought forward, making a total of £146,866. Of this amount, dividends absorbed £100,225, de-

preciation £25,804 and tax £2,941, leaving £17,896 to be carried forward. The cash assets in excess of liabilities were £96,654, while investments and Government bonds stood at £346,982. The companies of the group are regular dividend payers, and the financial position is exceptionally strong.

**Output.**— The progress of the company is well illustrated by the following figures, which show the yearly increase in the output of the group's collieries: Output in 1919, 780,629 tons; in 1920, 850,446 tons; in 1921, 960,964 tons; in 1922, 1,045,366 tons; in 1923, 1,116,549 tons; and in 1924, 1,271,436 tons.

To the end of 1924 the group had exported 16,000,000 tons, and the present rate of



THE NATAL NAVIGATION COLLIERIES AND ESTATE CO. LTD., Durban.  
Company's Property near Hattingspruit, Natal.  
(See also illustrations, page 127)





**EXPLORATION CO LTD., Johannesburg.**  
**Mine, Benoni.**  
*(press, page 1-1)*

output is about 120,000 tons a month, of which seventy to eighty thousand tons are shipped for bunkering steamers and for supplying cargoes for overseas destinations.

**Policy.**—The company is continually prospecting for coal, and its policy has always been to abandon rights as soon as drilling has failed to disclose the existence of a good mineral, and take up rights in other directions. Its collieries are equipped with all modern appliances for placing the coal on the market under the most favourable conditions, especially in regard to screening, picking and washing plants.

**Quality.** The main features of the coal are the low ash percentage, the low sulphur content, and, owing to its chemical constituents, freedom from any chance of spontaneous

combustion. The ash is of a non-clinkering character. These qualities are well-known to users of the coal throughout South Africa, and account in great degree for its increasing popularity and success.

**Management.** Messrs Dundas Simpson (chairman), Leonard Tine, J.P., Sir W. D. Mitchell Cotts, Bt. (alternate, Mr J. Dick, J.P.), W. Yuill (alternate, Frank C. Horner) and J. Townley Williams (acting chairman and managing director). London Committee, Captain B. Mansford, C.B. (chairman), Major G. H. Peake, Messrs J. C. Owen, A. Scott and F. J. Dundas. Secretary, Mr J. T. Jones. London Secretary, Mr A. Hamilton. Mine manager, Mr Robert Campbell.

**London Agents**—Mitchell Cotts and Co., 3, St. Helen's Place, E.C.

**South African Agencies.** For Capetown, Port Elizabeth and East London, Mitchell Cotts and Company (S.A.) Limited. For Durban, William Cotts and Company Limited.

**Offices.** Head Office, 28, Natal Bank Chambers, (P.O. Box 993) Durban. London Office, 3, St. Helen's Place, E.C. 3.

**Cables.** "Natnavico." Codes, Bentley's, A.B.C. 5th Edition and Broomhall's Imperial. (See also illustration, page 127.)

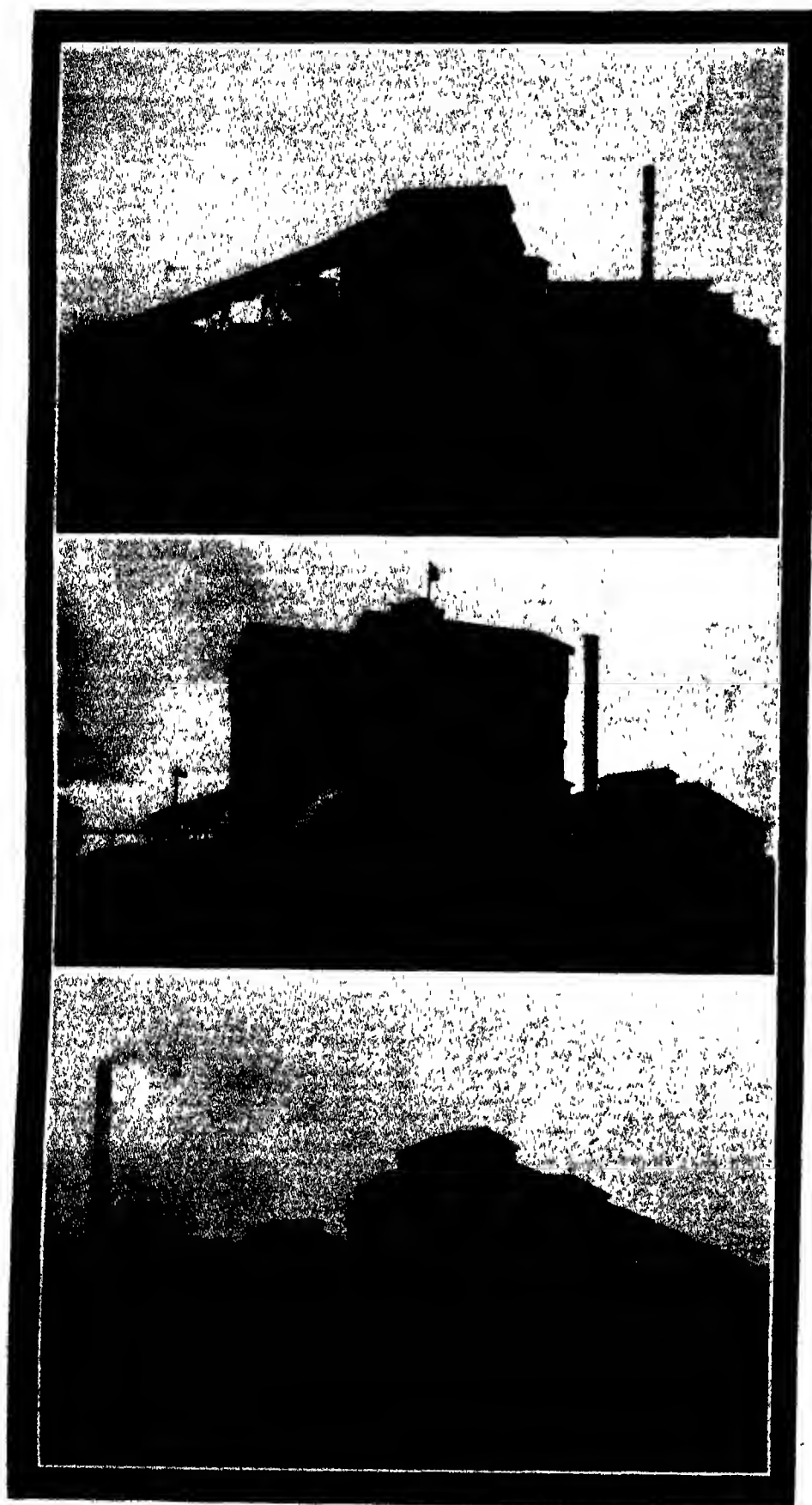
#### **TRANSVAAL AND DELAGOA BAY INVESTMENT COMPANY LTD.**

**Inception.**—This company, incorporated in the Transvaal, was registered in 1895.

**Capital.** The capital of the company is £300,000 in £1 shares, of which 270,500 are issued and 22,500 held in reserve.



**TRANSVAAL AND DELAGOA BAY INVESTMENT COMPANY LTD., Johannesburg.**  
**The Douglas Colliery; Sorting and Screening Plant.**



TRANSVAAL AND DELAGOA BAY INVESTMENT COMPANY LTD., Johannesburg.  
1 and 3. No. 2 Shaft: Conveyor Belt, Sorting and Screening Plant, etc.  
2. No. 1 Shaft and Plant.

(See letterpress, page 125.)

**Properties.**—The company owns the collieries known as the Transvaal and Delagoa Bay Collieries, situated on the farm Driefontein No 309, District Middelburg, Transvaal, in extent 7,230 acres freehold, and the Douglas Colliery, situated on the farm Leeupoort No 206, District Middelburg, Transvaal, 4,147 acres freehold. Valuable freehold properties are also held in Delagoa Bay.

In addition to house property in Johannesburg and mining claims, the company's holdings in Transvaal farms embrace freehold, full interest 113,651 acres, freehold, undivided half interest 96,012 acres, mineral rights only, full interest, 30,975 acres, and mineral rights only, undivided half interest, 21,873 acres. Included in the holdings are a large number of valuable coal bearing farms.

**Platinum.**—On the farm "Der Brochen," Lydenburg District, held jointly with the Transvaal Consolidated Land & Exploration Co. Ltd., in extent 7,145 acres, the norite reef carrying platinum has been traced throughout the length of the property and the prospects are very encouraging.

**Coal Output.** The output of the collieries for the years named has been as follows:  
1921-22 660,200 tons 1922-23 688,402 tons 1923-24 820,300 tons 1924-25 833,407 tons. The excellent quality and thickness of the seams in both the old and new portions of the property have been maintained. The Transvaal Coalowners' Association Ltd. handles the company's coal, enabling it to export the same to all seaports in Africa and to the Far East.

**Financial.** For the year ended August 31, 1925, the accounts showed a nett profit of £78,076, after providing for depreciation and Union taxes. A dividend of 22½% was paid for the year and a balance of £74,280 carried forward. The reserve fund remained at £140,000, whilst cash and equivalent assets amounted to £228,152. The company held £110,000, Union Loan Stock, £72,000 Union Treasury Bills and £20,188 cash.

**Dividends.** Dividends have been well maintained by the company, 432½ per cent. having been paid since 1902, ranging from 10% to 25% per annum. In 1920 there was also a bonus distribution of one new share for every two old shares held.

**Directorate.** Messrs W. Dereham, chairman and life director (alternate, J. M. Buckland), J. Berlein, life director (alternate, W. M. Berlein), S. C. Blick, acting chairman and managing director, and Comte F. de Fernieres.

**London Committee.** W. Dereham, C. M. S. Shore and F. Smith.

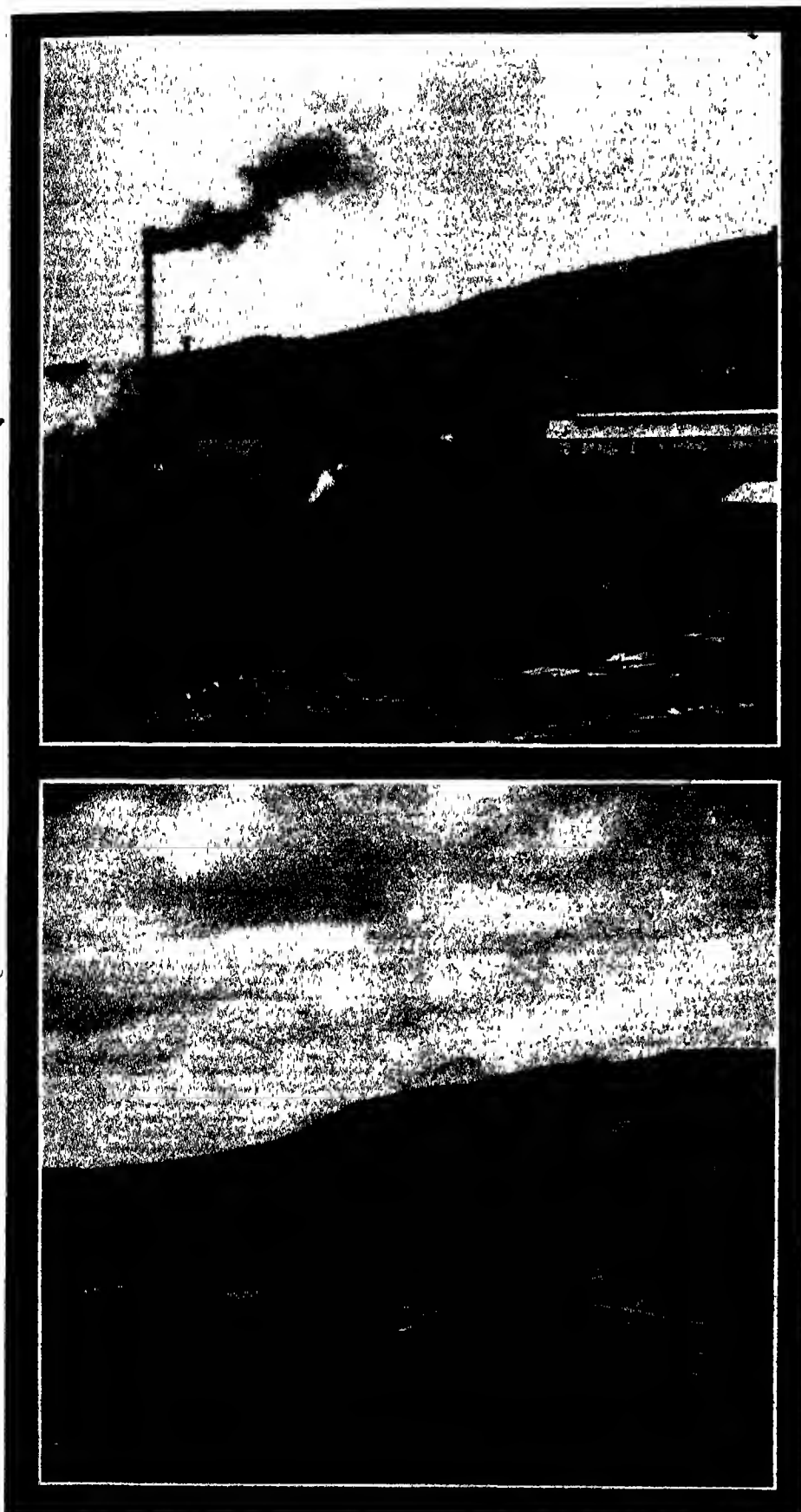
**Offices.** Transvaal Gold Fields Building, 6, Fraser Street, Johannesburg. Secretary and business manager, Mr. B. Moses.

**Acting London Secretary and Offices.**—Mr. A. R. Atkinson, 533 & 536 Salisbury House, London Wall, E.C. 2.

**Telegrams and Cables.**—"Muscoide," Johannesburg.

(See also illustration, page 125.)

**NATAL STEAM COAL COMPANY LTD.**—Leuchars' Buildings, Smith Street, Durban. London offices 6, Old Jewry, E.C. 2. Capital £50,000 fully paid. Collieries situated at Wessels Nek, Natal. Suppliers of best Natal steam coal for export and bunkers; best Natal steam coal for industrial use in South Africa, and also hand-picked house coal. Directors: Mr. David Calder, J.P. (chairman), Sir David Harris, K.C.M.G., M.L.A., James



THE NATAL NAVIGATION COLLIERIES AND ESTATE CO. LTD., Durban  
 1. Colliery near Township of Vryheid, Natal.  
 2. Company's Mine, near Paulpietersburg, Northern Natal.  
 (See letterpress and illustration, page 124)

Henderson, M.L.A. and David Citroen (London) Manager and secretary at Durban, Mr Edmund H. Tonison Mine manager at Wessels Nek, Frank S. Hatton. The colliery was founded 30 years ago, the present title being adopted in 1916. Colliery output is 100,000 tons per annum. Dividends paid have averaged 9 per cent since 1911. Bankers: The National Bank of South Africa, Limited. Telegraphic Address: "Steam."

#### **SOUTH AFRICAN TOWNSHIPS, MINING AND FINANCE CORPORATION, LTD.**

**Inception.**—This corporation was registered in the Transvaal in 1896.

**Interests.**—The company's very extensive interests embrace large areas of land, a number of townships and farms, houses and buildings, also mining and other ventures in the Union of South Africa and in Rhodesia.

**Freehold Farms.** The corporation holds nearly a million acres in the Transvaal, and over half a million in Rhodesia. In addition to these freehold areas, which include the mineral rights, the company owns the mineral rights only over about 800,000 acres, mostly in the Transvaal. The corporation has with others, purchased the total land holdings of the Oceana Consolidated Company Limited, comprising about 205,000 acres in freehold, and about a million acres of mineral rights only; it has also farms available for settlement suitable for ranching, cotton, tobacco, and general farming in all parts of the Union. These are sold on easy terms over a long period of years.

**Townships.** The corporation owns the following townships about Johannesburg and Pretoria, i.e. Jeppestown, Belgravia, Jeppestown South, Malvern, Fordsburg, Bellevue, half interest in Bellevue East, North Doornfontein, Auckland Park, Rossmore, Kew and Ferndale in Johannesburg and Waterkloof at Pretoria, also numerouserven in Muckleneuk, Brooklyn, Sunnyside, Arcadia, and in Pretoria itself. These townships and town properties stand in the books at £285,753.

**Mining Properties.** The company is largely interested in many coal, gold, tin, diamond and platinum companies, among which are the following together with brief reference to actual operations, etc.—

**Hendie's Lydenburg Platinum, Limited.**—Prospecting and development are being actively carried on here. Six inclines have been sunk, and all show good values.

**Kerstegeluk Platinum Mines Limited.**—Values up to 7 dwts. are shown in the latest developments, the length of the outcrop already exposed being over 3,000 feet.

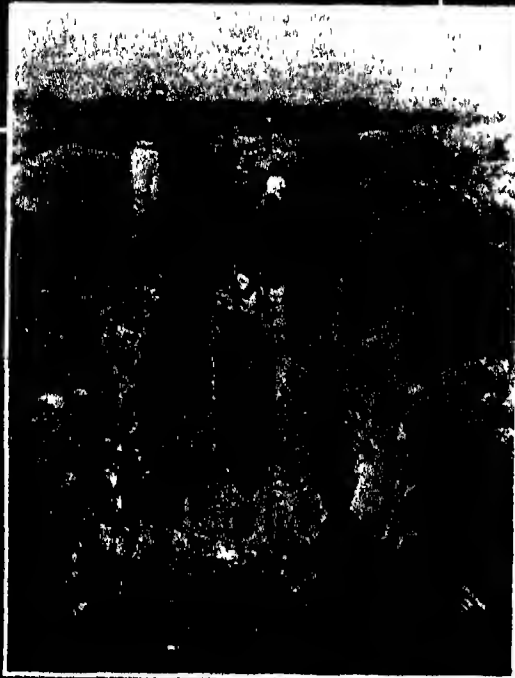
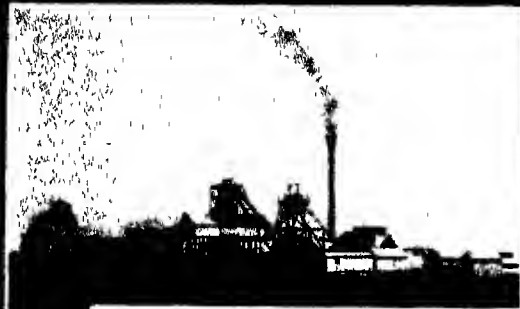
**Polgietersrust Platinum Limited.** Active development is proceeding, the reef being wide and giving good values.

**South African Coal Estates (Witbank) Limited.**—This company owns three large and well-equipped pits in the Witbank area, two of which are being worked, and are producing 105,000 tons monthly.

**Leeuwpoot (African Farms) Tin Mines Limited.**—This property is 3,962 morgen 255 sq. roods in extent, the company also owns the mineral rights of the whole of the adjoining farm, forming a compact block of highly mineralised ground covering 9,010 morgen.

**West End Diamonds Limited.**—This company owns an up-to-date plant capable of dealing with 2,000 loads a day. Large stones are found, and a satisfactory monthly profit is made.

**Laure Proprietary Mines Limited.**—This company owns over 5,000 morgen in the Heidelberg and Pretoria districts, and the



**SOUTH AFRICAN TOWNSHIPS, MINING & FINANCE CORPORATION LTD., Johannesburg.**

1. Overhead Gear on one of the Company's Coal Mines.
2. Incline on one of the Company's Coal Mines.
3. No. 2 Incline, Eersteginsk Platinum Mines Ltd., one of the Company's interests.
4. No. 5 Shaft. Hendles Lydenburg Platinum Ltd., Winaarshoek, Lydenburg.
5. West End Diamonds Ltd., the Mine.
6. The Country Club, Waterkloof, near Pretoria; one of the Company's Properties.

(See letterpress, page 127)

mineral rights of Spaarwater, covering 5,718 morgen. It also possesses cash assets of about £150,000.

**Welgeducht Exploration Company Limited**—Owns 1,240 claims, portions of which have been leased by the Government to Modderfontein East, Ltd. The remainder of the farm is utilised for agricultural and tree planting purposes. The company's cash assets amount to about £78,000.

**McGreedy's Tins (Swaziland) Limited**—Owns land and mineral concessions covering 100,626 acres, which are being worked for alluvial tin. Profit for the year ending June 30, 1924 was £3,574. There has been a temporary stoppage but the plant is in good condition, and normal returns are anticipated at an early date.

**South African Alkali Limited**—This company owns a long lease of the Soda pan on the Government farm Zoutpan, where it produces carbonate of soda of the finest commercial quality. It is also intended to instal plant for the production of salt. The company is in a position to produce sufficient carbonate of soda to supply the requirements of the whole Union.

**Diepkloof Mynpacht Claim and Estate Company Limited**—Owns a quarter of the farm of Diepkloof, and a quarter of the mynpacht on the same farm. At present only agricultural and tree planting operations are being carried on.

**Finance.** The capital of the corporation is £988 053, divided into shares of ten shillings each. The accounts at December 31, 1924, showed total assets value £1,765,113, but this valuation is considerably below the present day market prices.

**Directors.** Sir Julius Jeppe, (C.B.E., chairman (alternate, A. A. Barker), Sir Abe Bailey, Bt. K.C.M.G., M.L.A. (alternate, W. Nelson), Sir William Van Hulsteyn

(alternate, R. F. Ford), J. Emrys Evans, C.M.G. (alternate, J. Emrys Evans, jr.), L. M. Hind, B. Southwell (alternate, G. B. Pascoe), and W. J. Gau (alternate, H. L. L. Feltham). Secretary: W. E. Drummond.

**London Committee.**—Lord Lurgan, Lord Rossmore, and Messrs. L. E. B. Homan and G. Seymour Fort.

**London Offices.** Robert R. Meldrum (transfer secretary), Palmerston House, Old Broad Street, London, E.C.2.

**Bankers.** The Standard Bank of South Africa, Limited.

## MINING MACHINERY

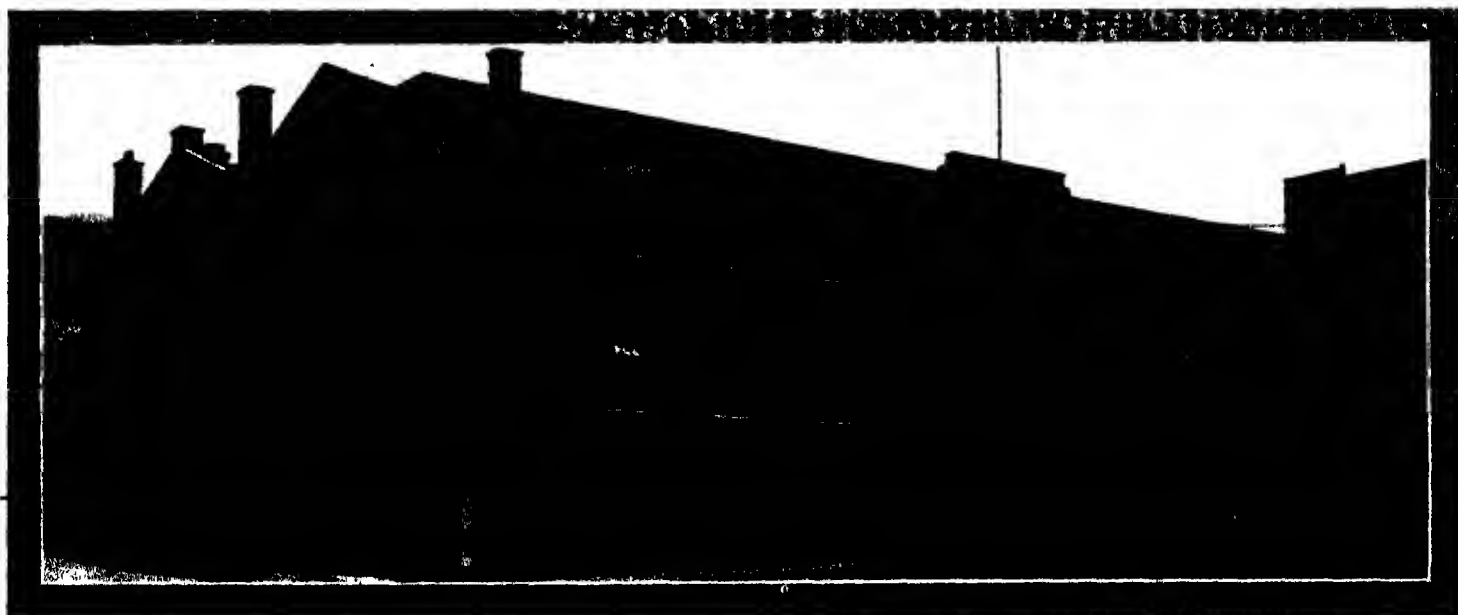
During 1924 the South African mining industry purchased £16,097,000 worth of stores and machinery. Of this total £6,128,000 or 40 per cent. represented the value of goods obtained abroad. That this percentage will in a short time be decreased seems likely, in view of the enormous strides that have recently been made in the production of South African steel. As a consequence of the largely increased equipment at the two great steel plants of the Union and at the various engineering works on the Rand, the mines are now able not only to place a far larger proportion of their machinery requirements locally, but also to get very much bigger jobs carried through than would have been entered upon a few years ago. During 1924 and 1925 there were several instances on record of the manufacture and replacement of intricate machinery by Union firms which a few years previously would have meant going overseas and consequent delays of six months or more. In many smaller lines, too, in which there is a good deal of repetition work, South African firms have, to a considerable extent, wrested the trade from overseas, and, at prices that compare favourably

with those of the imported article, machine moulding operations have been very largely increased.

**GENERAL MACHINERY.**—Of the stores purchased by the mining industry, machinery forms a very large item, imports of mining machinery in 1924 being valued at £974,512. What may be termed the ordinary mining machinery and implements vary little from year to year. It is in what is known as metallurgical machinery that the greatest improvements have been made of recent years. While the main principles remain substantially unchanged, alterations and improvements in detail are always being considered and tested, with a view especially to that reduction in working costs at which all mine managements aim. Some of the recent improvements in the methods and machinery of metallurgy are described below, mainly on the authority of the well known Rand metallurgist, Mr. H. A. White.

**GRIZZLIES AND TROMMELS.** These are part of the crusher house and sorting plant. Though trommels are able to give a more complete separation of coarse and fine ore, and enable washing to be more thoroughly performed by turning over the particles under the water jets, the costs of operation and maintenance are much greater than with the simple grizzly, and the capital cost is also much heavier, so that the older method still holds its position. A mechanically-driven instrument of this type but with square holes formed by rotatable wheel members, is now being tried and it offers the advantage of requiring less head room.

**JACKHAMMERS.** The recent economies in working in the gold mines of the Rand have been largely assisted by means of the jackhammer, which is coming into general use for breaking up fathomage. The year 1924, in particular, was remarkable for a continued increase in mechanical efficiency, leading to greatly improved working results.

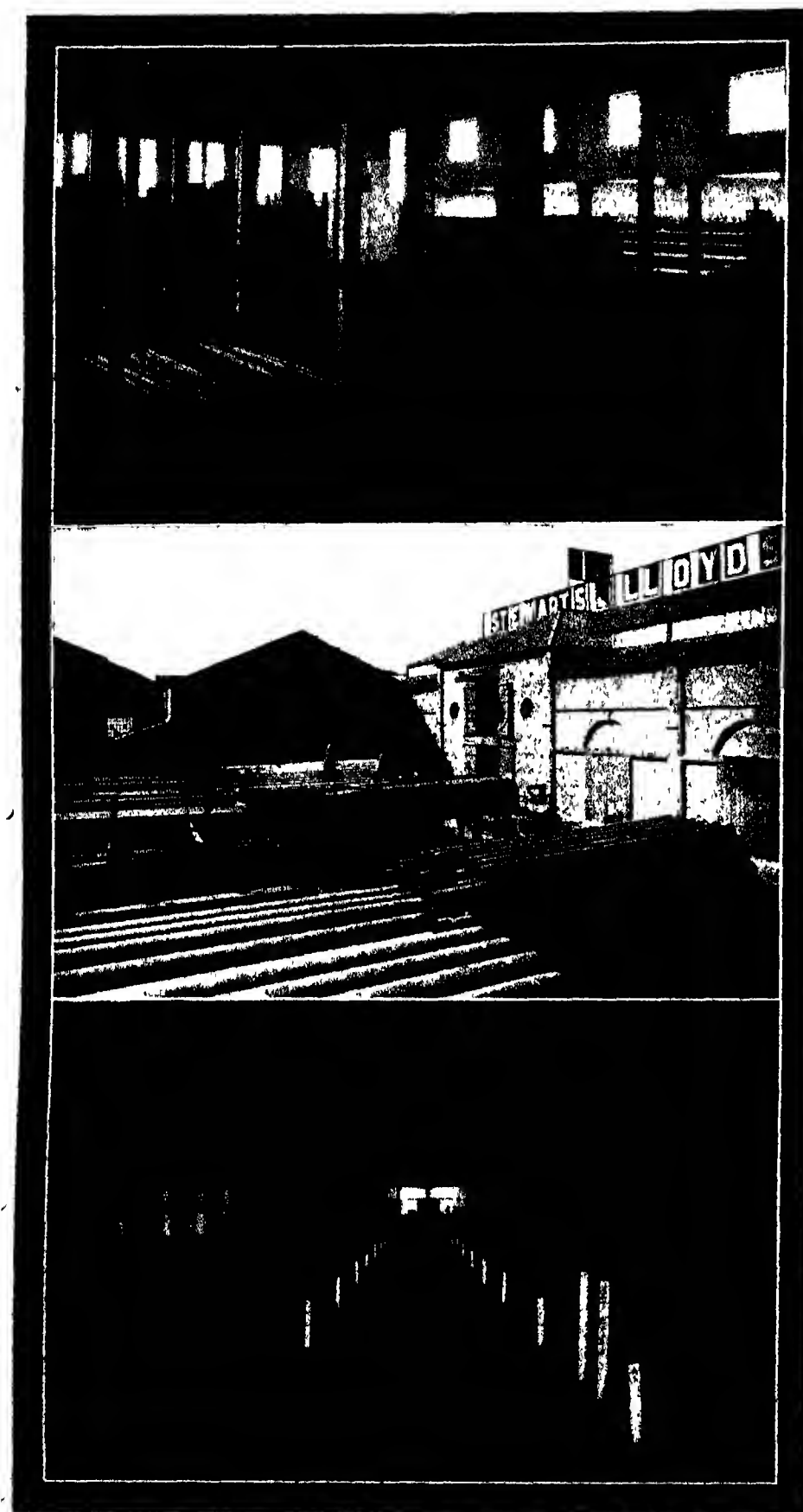


STEWARTS AND LLOYDS (SOUTH AFRICA) LTD., Johannesburg.

The Company's Premises at Capetown.

(See *Letterpress*, page 131.)





STEWARTS AND LLOYDS (SOUTH AFRICA) LTD., Johannesburg.

1. A Corner of Store showing Stocks at Capetown.
2. Some of the Company's Stocks of Tubes at Johannesburg.
3. The Warehouse at Durban.

(See *Interpress*, page 131)

especially in connection with this type of machine. Wherever jackhammers have been introduced, whether on the flatter measures of the Far Eastern Rand or in the steeper inclines of the Central and Western Mines, a marked and immediate increase in efficiency per machine shift and a corresponding decrease in breaking costs have followed. In addition, there has been in all cases a material narrowing of stoping widths, resulting in either a better grade of ore being sent to the mill or in the crushing of ore which under other conditions would have been below the pay limit.

The report of Crown Mines for 1925 states that the company's total working costs per ton milled fell from 22s. 5d in 1922 to 18s. 9d in that year, while the City Deep Company also attributes to the use of the jackhammer its reduction in the cost per fathom mined from 40s. 3d in 1923 to 32s. 7d in 1925.

**ROCK-BREAKERS.**—Especially where ore tends to break into slabs and splinters, it is found that crushers of the revolving cone type are the most efficient for this work. Where it is desired to have the crusher-product as fine as practicable a system of choke-feeding is applied by providing bin capacity immediately in front of the crushers, which are then quite full when running. It is to be noted that the capacity of rock-breakers is seriously diminished, and cost increased, when fine-crushing is demanded from them.

**SCREENS.**—On the Rand it is now quite common to use screening, having apertures up to one inch square and it is found that tube mills of 5 ft. 6 in. diameter are just able to deal with this product when suitable rock for pebbles is supplied up to 6 in. in diameter. Ease of operation sets the usual aperture at  $\frac{1}{2}$  in. aperture, and the wear on pumps and launders is much reduced at that size. Where very coarse material has to be water borne the wear upon launders is very severe and liners of 1 in. white cast iron are usually employed, while successful experiments have been made with iron concrete created with battery "chips" and local cement. Rubber in various forms is also used with advantage.

**STAMPS.**—Stamps weighing more than 2,000 lbs. are in use in recent installations on the Rand, or in some cases Nissen stamps of even greater weight, and no difficulty is now experienced in their successful operation, though it is possible that this portion of the reduction works will not be required in future plant, its place being likely to be taken by an extension of tube mills or of the preliminary breaking-plant or both.

The biggest stamp battery on the Rand is that of the Randfontein Central Gold Mining Company. It contains 600 stamps, and is the largest mill under one roof in the world. The total length of the mill is 630 ft., or much the same as that of the Union Castle liners, "Windsor Castle" and "Arundel Castle."

**TUBE-MILLS.**—As far back as 1914, the stamp mill, so long the standard gold-milling appliance, had been relegated to the role of secondary crusher, merely preparing the ore for the tube-mill, in which the grinding is now carried to such a degree of fineness that all the ore is treatable as slime, and the separate treatment of sand is thus eliminated. This has brought about a considerable simplification of plant, which is a factor in materially reducing operating costs.

## REPRESENTATIVE HARDWARE AND OTHER ENTERPRISES

### STEWARTS & LLOYDS (SOUTH AFRICA), LTD.

**Inception.**—When this firm of irrigation engineers, whose activities now extend throughout the Union, established its first warehouses in South Africa in the early 'nineties it derived initial advantage from the prestige attaching to the parent concern, Messrs. Stewarts & Lloyds, Ltd., of Glasgow, Birmingham, London and elsewhere.

**Parent Company.**—The manufactures of the parent company are regarded with world-wide esteem. This great enterprise, with collieries, blast furnaces, steel foundries, steel works, tool works and pipe tube works in various localities of Great Britain, has an annual capacity of 407,000 tons of tube (butt-welded, lap-welded, hydraulically welded and weldless hot rolled), 600,000 tons of steel and 540,000 tons of pig iron. These figures merely relate to the firm's principal products.

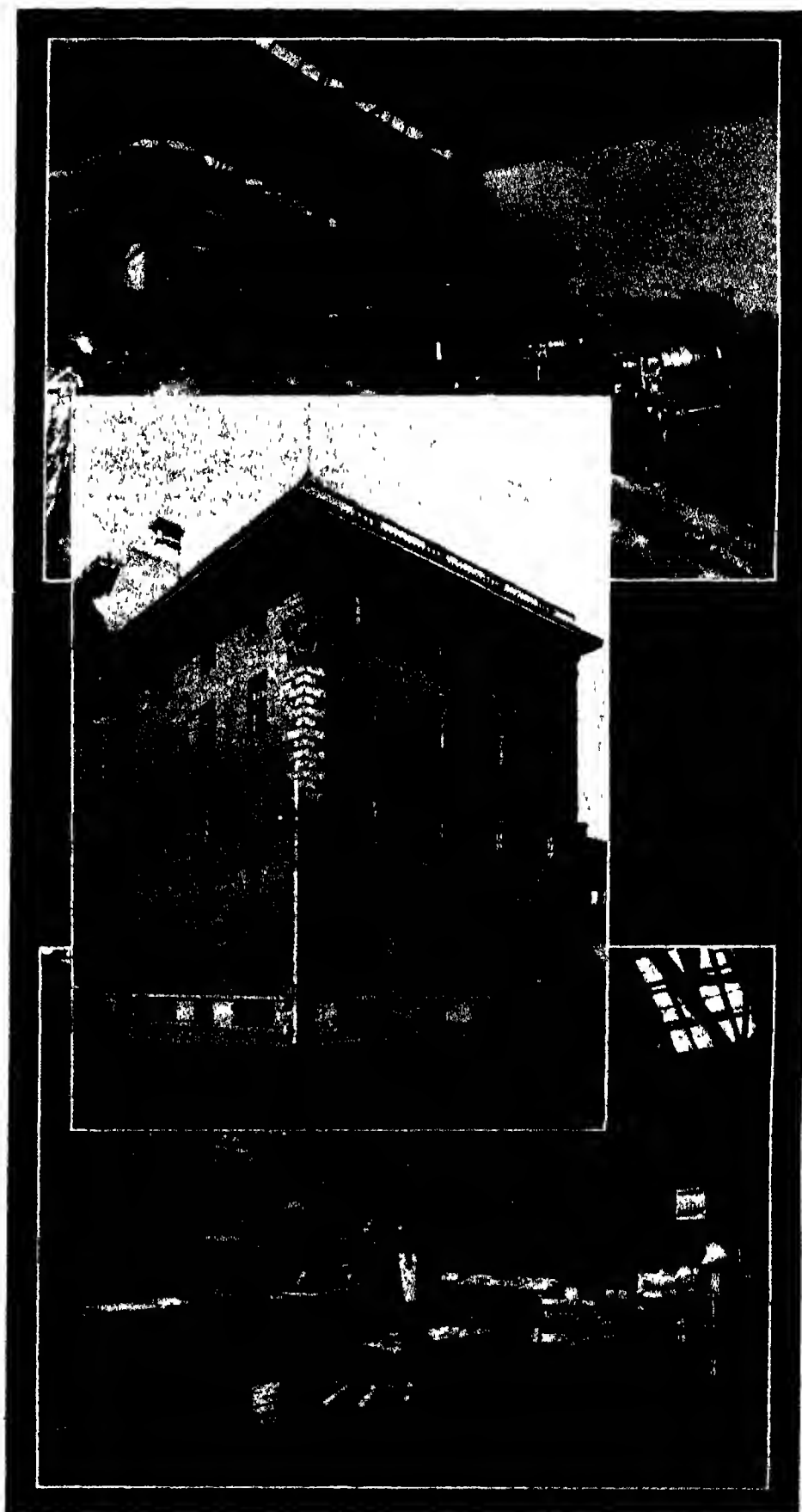
By the installation of a new "Universal" mill with a capacity of 5,000 tons of "Universal" steel plates per week, in widths up to 48 inches, the erection of new and improved tube mills, and the purchase of collieries, blast furnaces, etc., the company has placed itself in a very strong position, increased its productive capacity and obtained control of one of the most up-to-date tube making organisations in the industry.

**Development.**—The original reputation which Messrs. Stewarts & Lloyds (South Africa), Ltd., achieved for high grade British goods, for efficient service and for strict business integrity has been maintained and enhanced throughout the difficult times always encountered in the making of a new country. Continuing a progressive policy, the firm has kept pace with South Africa's development in general and irrigation requirements in particular. From solely representing the manufactures of its parent company, it has extended its operations to larger fields in which other products usually associated with tubes are employed.

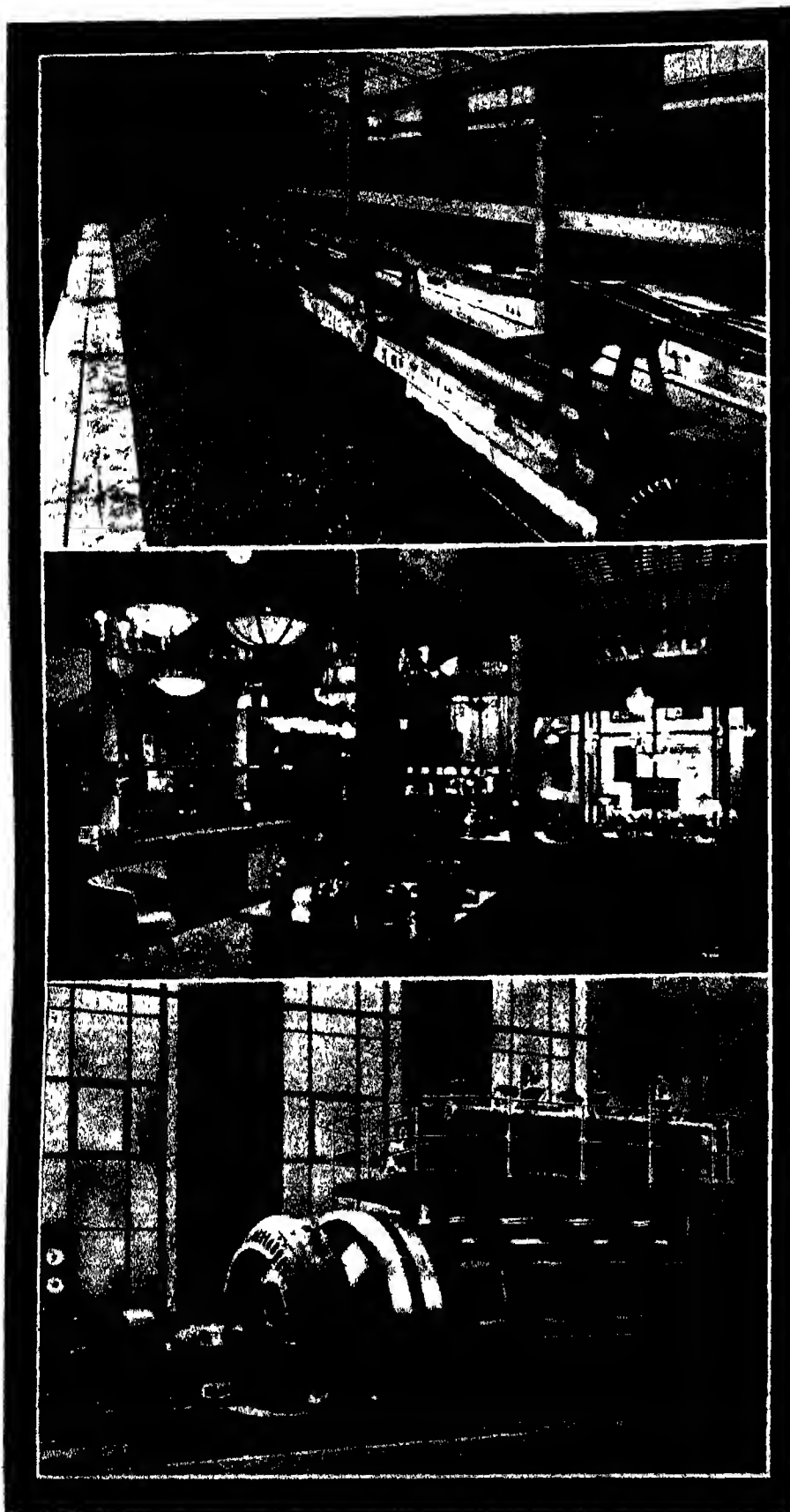
**Contracts.** Advancing steadily with faith in the future of South Africa and in the supremacy of British goods, the firm has secured large and important contracts for mines, municipalities, water boards, railways and Government departments, recent examples being the Shongweni-Durban water scheme and the Bulawayo waterworks. Moreover, due to a long and intimate connection with the irrigation problems of South Africa, the company is frequently called upon to provide numerous power plants and pumping installations.

**Representations.**—The most prominent agencies secured by the company and held for a number of years to the entire satisfaction of all principals are: Glenfield & Kennedy Ltd (valves, meters, etc.), National Gas Engine Co. Ltd (gas, oil and petrol engines), Thomas & Son (Worcester) Ltd (Chmax oil bath windmills and pumps), John Blake Ltd (hydraulic rams), J. Hopkinson & Co. Ltd (steam valves and boiler mountings), Gilbert Gilkes & Co. Ltd (water wheels, turbines and centrifugal pumps), Murrells, Bickerton & Day Ltd (crude oil and Diesel engines), Bells Bros (Manchester), Ltd (mechanical filtration plants).

**Workshops.**—All the warehouses are equipped with up-to-date workshops capable of turning out high-class tubular construction and other similar work connected with irrigation plants.



REID BROS. (S.A.) LTD, Johannesburg.  
1. Interior of Machine Shop.  
2. View of the Company's Building.  
3. A Portion of the Stores.  
(See letterpress, page 132.)



HUBERT DAVIES & CO. LTD., Johannesburg.

1. Coal Conveyor for Overhead Bunker supplied and erected by the Company for Pretoria Municipality.
2. Electrical Fittings and Wireless Department.
3. Two Units for Salisbury, Rhodesia, and one for Pietersburg, Transvaal, supplied and erected by Hubert Davies & Co. Ltd.

**Staff.**—The South African staff numbers over 150 white employees.

**Branches.**—The company owns warehouses holding extensive stocks at the following towns in South Africa: Johannesburg, Pretoria, Durban, Maritzburg, Capetown, Port Elizabeth, East London, Bloemfontein, Kimberley, Windhoek, Salisbury and Bulawayo.

**Offices and Stores.**—Corner Main and Moor Streets, Johannesburg. Cables "Tubes," Johannesburg.

**Birmingham Office.**—Broad Street Chambers.

**Glasgow Office.**—41, Oswald Street.  
(See also illustrations, pages 129, 130.)

#### REID BROTHERS (SOUTH AFRICA) LTD.

**Inception.**—This company, an offshoot of Reid Brothers (Glasgow) Ltd. (which was established by the late Joseph Reid in 1858), started operations in Johannesburg towards the end of 1887 as engineers and importers of mining materials and machinery.

**Development.** Johannesburg, at the time of the firm's inception, was practically a mining camp. The company's growth has kept pace with the development of the city, and it is now the oldest established concern of the kind on the Witwatersrand. Towards the end of last century the business was converted into a private limited company, trading under the name of Reid Brothers (Johannesburg) Ltd., but the title was subsequently altered to Reid Brothers (South Africa) Ltd., when a branch was opened at Durban.

**Activities.**—The main activities of the firm are connected with the mining and allied industries, and its ramifications extend over the whole Union, as well as to Rhodesia, Portuguese East Africa and the Congo. The Durban branch devotes its energies primarily to sugar mills, estates and collieries, etc., but has also worked up a large connection with other industries.

**New Departments.**—A mechanical engineering department has recently been inaugurated, and has developed most satisfactorily. Another department was also formed to develop the machine tools and woodworking machinery side of the business. This has proved a very successful departure, the firm being fortunate enough to secure the representation of several leading British houses.

**Premises.**—The head office is situated at the corner of Main and Harrison Streets, and the building in which it is located (the firm's property) is considered to be one of the most handsome edifices in South Africa. The company's stores, a three storeyed building, are situated in Commissioner Street.

**Branch.**—Durban—Southern Life Buildings, Smith Street.

**Agencies.**—Peter Brotherhood Ltd., Carton Co., Blantyre Engineering Co., Anderson Boyes & Co., Hardy Patent Pick Co., Newman Hender & Co., Small & Parkes Ltd., Sturtevant Engineering Co., Siebe Gorman & Co., Perry & Hope, Denham's Engineering Co., Swift & Sons, Omeroids Tool Co., Smith Barker & Willson, Smith & Mills, Cushman Chuck Co., Haighs (Oldham) Ltd., Quasi-Arc Co. Ltd., Acetylene Corp. of Great Britain Ltd., J. Beardshaw & Son Ltd., Graphite Products Ltd., R. & J. Dempster, Durvite Ltd., Ronald Trist & Co., Liverpool Borax Co. Ltd., Weldless Chains Ltd.

**Cables.**—Johannesburg—"Reef." Durban—"Supplies." Codes. Western Union, Bentley's, A.B.C. 6th Ed.

(See illustration, page 131.)

**HUBERT DAVIES & CO. LTD.**

**Inception.**—This enterprising firm of mechanical and electrical engineers, which was founded by the late Mr J. Hubert Davies in Johannesburg in the year 1880, was converted into a private limited liability company in 1917.

**Activities.** The company specialises in providing complete equipment for all kinds of power and lighting installations to municipalities, mines and factories, and does a large business as importers of machinery and general engineering supplies, as well as being contractors for tramway, pumping, hoisting and irrigation and hydro electric plants, air compressors, ventilating fans, cranes, lighting appliances, wire ropes, gas, oil and steam engines, turbines, etc.

**Municipalities.**—Plant and equipment have been supplied by the company to the following municipalities: Johannesburg, Durban, Pretoria, Ladysmith, Klerksdorp, Cradock, Potchefstroom, Kroonstad, Wellington, Heilbron, Worcester, Paarl, Benta, Salisbury, Heidelberg, Standerton, Senekal, Parys, Winburg, Pietersburg, Somerset West, Springs, Roodepoort, Vereeniging, Oudtshoorn, Umtali, Ermelo, Bethlehem, Middelburg (Transvaal), Somersetstrand, Vrede, Estcourt, Rietz, Frankfort, Malmesbury and Mozambique.

The company has received repeat orders from the municipality of Kroonstad for a complete new power station, and from the Salisbury municipality for two large 300 k w vertical gas engines, together with the necessary gas producing plant, and an extension to the lighting and power plant of the Potchefstroom municipality. These repeat orders indicate the confidence that is reposed in the firm.

**Recent Contracts.**—The company has recently erected about 275 miles of 88,000 volt 3 phase transmission lines for the electrification of a section of the Natal line of the South African Railways and Harbours. The cost of these lines was over half a million, and was the largest electrical contract ever handled by a purely South African firm. The rapidity with which the work was carried out probably constitutes a world's record. The accompanying illustration gives some idea of the hilly and broken nature of the country over which the lines run.

Complete water works and electric lighting and power plant have also been installed for the Ixkusburg municipality, and distribution systems for Riversdale, Mafeking and Humansdorp, while contracts are in hand for the electric lighting of Walmer, the transmission of electric power from Pretoria to Roberts Heights, and the extension of power station equipment for the municipality of Vrede.

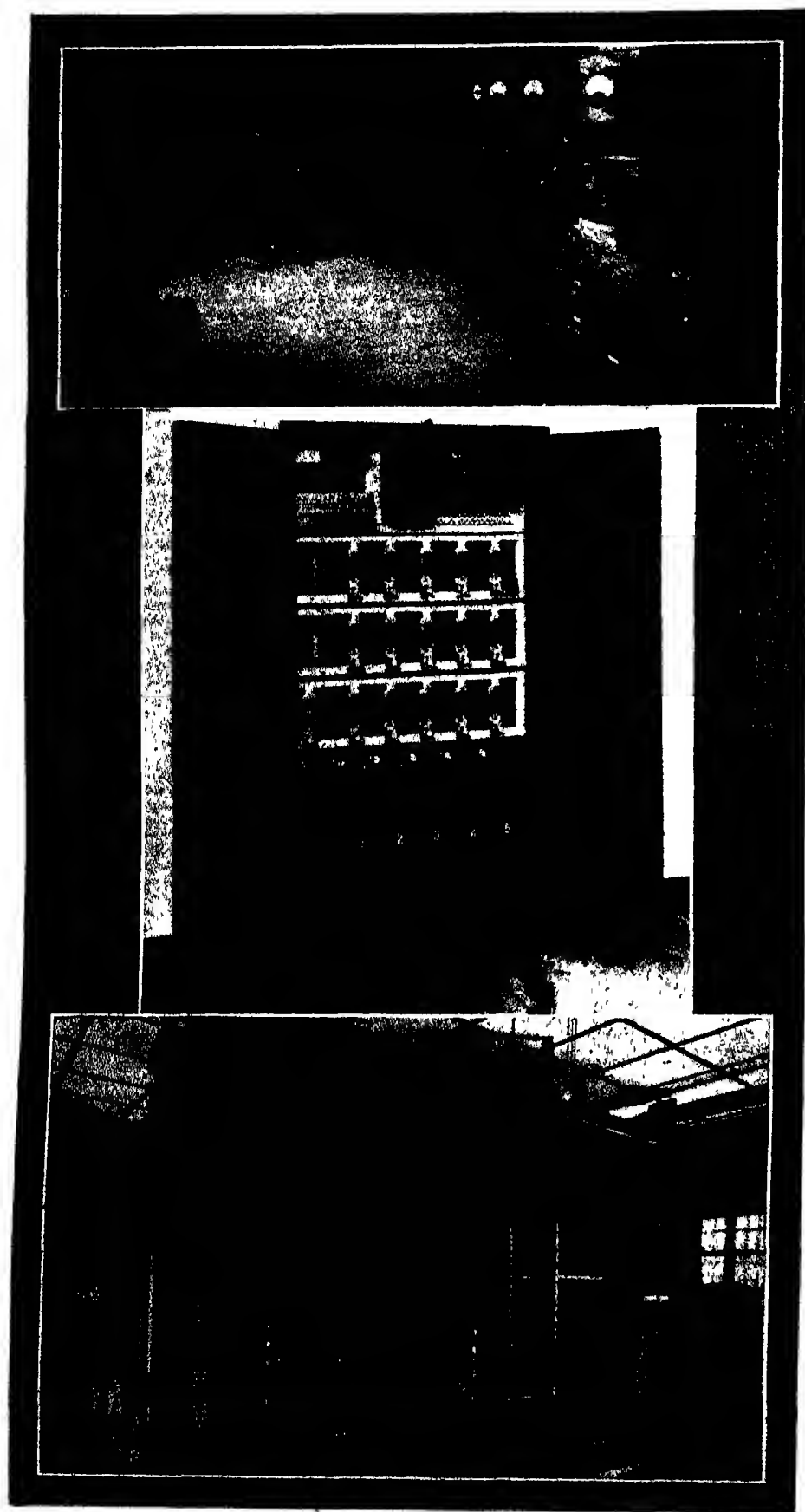
**Turbine Plants.**—A steam turbine plant has been supplied to the East Rand Proprietary Mines of 16,000 h.p., a water turbine-driven plant of 1,700 h.p. to the Rezende Mines (Rhodesia), and a steam turbine plant of 2,200 h.p. to the Railways at Durban, also other large water power plants for Piggs Peak Dev Co., Worcester G. M. & Exploration Co., French Bobs Mine, and the Parys municipality, steam plant for the Messina Copper Mines, re-equipment of the power plant for the B.S.A. Explosives Co. at Modderfontein, Tweefontein Collieries, Ltd., etc., besides trams and tramways for Johannesburg, Durban, East London, and several mining companies.

**Pumping Plants.**—Among the many pumping plants that have been supplied are eight sets of turbo-pumps, 350 h.p., each



HUBERT DAVIES & CO. LTD., Johannesburg.

1. Six Ton Cableway and Concrete Chuting Plant with 240 ft. Tower on a South African Dam.
2. 88,000 Volt Outdoor Station Steelwork, supplied and erected by Hubert Davies & Co. Ltd. for the South African Railways Electrification; also showing one of the Towers, of which about 2,300 were supplied and erected.
3. Section of 88,000 Volt Transmission Lines near Pietermaritzburg.



STANDARD TELEPHONES & CABLES LTD. (formerly The Western Electric Co. Ltd.), Johannesburg.

1. Stamford Hill Automatic Telephone Exchange for Durban Corporation. Power Plant and Test Clerk's Desk.
2. Automatic Telephone Exchange for Offices, Works, etc.
3. Stamford Hill Automatic Telephone Exchange for Durban Corporation. Rear View Miscellaneous Bay Registers and Group Selectors.

delivering 60,000 gallons of water per hour against 1,150 ft. head, 32 sets reciprocating pumps each delivering 10,000 gallons per hour against 1,100 ft. head, 20 large bore hole pumps for the Rand Water Board, numerous plants for delivery from 500 to 30,000 gallons per hour, and many irrigation plants, etc., while the company has recently completed for the Rand Water Board a 1,750 b.h.p. steam turbine, driving through special gearing a turbine pump capable of delivering 5,500,000 gallons of water per day against a head of 1,100 ft.

**Construction Plant.**—Construction plant for building dams and irrigation works has been widely catered for by the company, and the largest concrete chuting plant installed in the country has been erected at Van Rynveld's Pass. The steel tower of this plant is 240 feet high, and designed to handle a ton of concrete per minute. The largest aerial cableway in the country was erected by the company at Lake Arthur Irrigation Works. This had a clear span of 1,000 feet, and handles sixteen loads. Cableways of the same load capacity but shorter span have also been erected at other irrigation works.

**Other Works.** The company has undertaken work in connection with sugar cotton and sisal machinery, and has installed plant for a fertilizer factory at the Cape, in fact, erection work of every description is undertaken, a world's record having been recently established by the erection of a 32-page Goss printing machine for the Rand Daily Mail and Sunday Times Syndicate of Johannesburg, the machine being completely set up in 12 days from the time the first case was opened, against a previous record of 21 days.

**Workshops and Stores.**—The company owns large stores and workshops, with storage accommodation covering 2½ acres, in the centre of Johannesburg. It has also new workshops and stores in Cato Street, Durban, and its own premises in Capetown. Large stocks of all mechanical and electrical goods are held in the various depots of the company.

**Directorate.**—E. W. D. Davies, B.Sc., AMICE, AM (S.A.), I.E.E., chairman, and managing director, F. Maigrie, AMIEE, J. H. Dryburgh, R.P.A. (Transvaal), S. F. Harvey, A (S.A.), I.E.E., R. Paget, AMIMECH, AMNCC, R. F. Botting, AMIEE, M (S.A.), I.E.E., Secretary C. Percy A.C.I.S.

**Head Office.**—Hudaco Buildings, Johannesburg.

**Branches.**—Smith Street, Durban, Longmarket Street, Capetown, Angwa Street, Salisbury, Main Street, Bulawayo.

**London Buying Office.**—Salisbury House, London Wall, E.C., under the management of Mr S. S. Crouch.

**Cables.**—"Dynamo"

(See also illustrations, pages 132, 133.)

#### STANDARD TELEPHONES & CABLES, LTD. (formerly The Western Electric Co. Ltd.)

**Inception.**—This very important enterprise, formerly known as the Western Electric Company Ltd., was incorporated in England, and, with its associated companies, is the premier telephone manufacturing organisation throughout the world.

**Activities.**—The company has devoted great attention to the development of automatic telephone equipment, such as central and private manual and automatic exchanges, railway traffic control systems, telephone and power cables, telephone repeaters, broadcasting stations, point to



point wireless transmitting equipments, wireless receiving sets, and parts, public address systems and electrical domestic appliances. In the field of world communication, both in development and improvement, the company's achievements are unique, while its representatives are to be found in every part of the world.

**Systems.**—Among the various systems the company manufactures are the following:

**Rotary Automatic Telephone Exchange.**—This is power driven, a small electric motor being sufficient to keep a large exchange in operation and permitting switches of more robust construction to be used. This type of apparatus is installed at Toll Gate, Stamford Hill, and Overport, Durban, also at Christania, Copenhagen, The Hague, Brussels, and Zurich.

**The Strowger Automatic Telephone Exchange.**—This system has been successfully installed in many parts of the world, a notable example being the Buenos Aires equipment, erected early in 1923, where four automatic exchanges, serving 7,500 lines, are now successfully operating over a large area. The ultimate size of the network will be 30 exchanges, controlling 30,000 lines.

**Private Automatic Telephone Exchanges.**—Large business houses and institutions have been quick to realise that prompt service and absolute security may be secured by the introduction of a private automatic exchange, and the company supplies equipments from 20 lines upward.

**Traffic Control System.**—This system is used in the control of traffic, particularly on railways, where apart from the regular signalling arrangements there is much to be done in the marshalling of goods and in the collection of reports from clearing yards. It is now in use on the majority of large railways throughout the world.

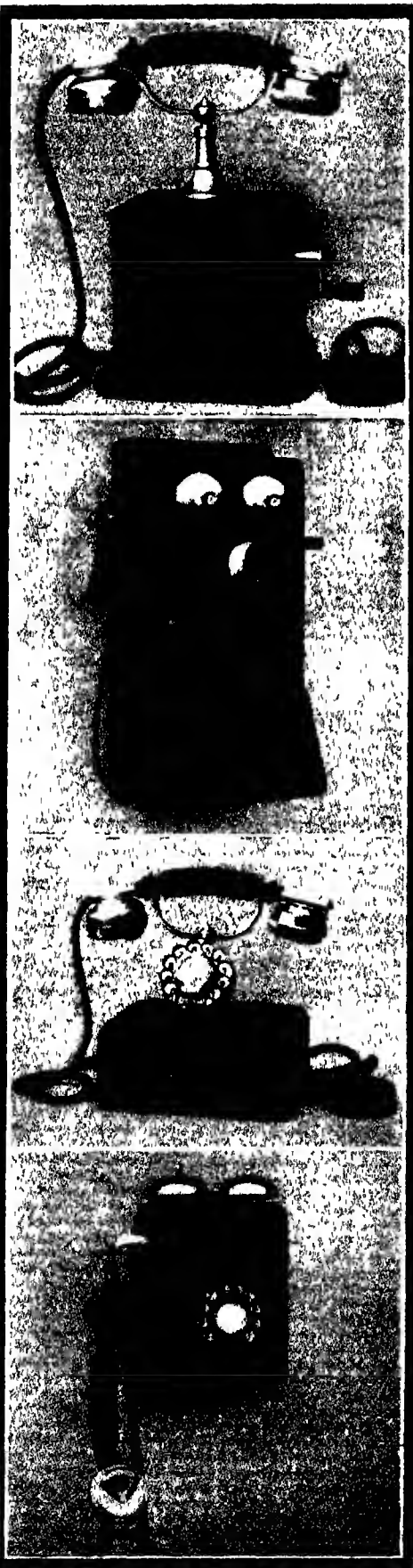
**The Multiplex Printing Telegraph System.**—Modern telegraphy like most other scientific branches of industry, has been revolutionised by new methods, and the company's system is well in advance of the times. It is in use on most of the telegraph lines in South Africa and elsewhere.

**Simultaneous Telephony and Telegraphy.**—This is one of the most interesting developments which has been effected in the art of communication. The company's "Composite" system is being used by the South African Government and other Administrations.

**Telephone Cable Developments.**—In the development of the underground telephone cable the company claims to have made gigantic strides toward perfection, chiefly due to the invention and introduction of a new type of dielectric.

**Power Cable Developments.**—In the development of these cables the company has played an important part.

**The Thermionic Valve.**—This vacuum tube, known more familiarly as the "valve," one of the most remarkable scientific discoveries of modern electrical research, has revolutionised the field of wired and wireless telephony and telegraphy. The valve manufactured by the company is distinguished by its uniformity of performance, obtained by robust construction, and it is actually possible to change one of the tubes for another without making any alterations in the voltage supplied to the tube terminal. There is no difference between the operating characteristics of any two tubes, the "Wecovalve" operates on a filament current of one dry cell, or a little over 1 volt.



STANDARD TELEPHONES & CABLES LTD.  
(formerly The Western Electric Co. Ltd.), Johannesburg.  
1. Magneto Table Telephone.  
2. Magneto Wall Telephone.  
3. Automatic Table Telephone.  
4. Automatic Wall Telephone.

**Repeaters and Repeater Stations.**—The repeaters as designed and manufactured by this company, which are based on the principle of the thermionic valve, are nearly perfect in operation, but so unobtrusive in use that their existence is not much known to the general public, although they have been the means of making telephone speech possible between Johannesburg and Capetown, a distance of 1,000 miles.

**Wireless Transmitting Equipments.**—The company manufactures transmitting sets of all sorts, and has supplied the equipment of 102 broadcasting stations in other parts of the world.

**The Public Address System.**—This is a device which effectively overcomes the natural limitations of the power of the human voice, and enables a speaker to address an audience of several thousand people. It is worthy of note that the company's system was used by H.R.H. The Prince of Wales throughout his tour of South Africa.

**Address.**—Cam Buildings, Simmonds Street South, Johannesburg.

**Resident Director.**—Lieut. Colonel N. Harrison, C.M.G., D.S.O., M.I.E.E. (late Under Secretary and Engineer-in-Chief Dept. of Posts and Telegraphs, South Africa). Manager, J.D. Carpenter, M.I.E.E. (S.A.).

**Registered Office.**—Connaught House, Alwaych, London, W.C.2.

**Cables.**—"Microphone" Codes: Lieber's and 10 Letter, Bentley's 5 Letter.

(See also illustration, page 13.)

#### DOWSON AND DOBSON, LIMITED.

**Inception.**—This firm was established about 18 years ago under the name of R.M. Dowson, Limited, but it has been operating under its present title since 1919.

**Capital.**—The capital of the company is £25,000, all the shares being held by the two directors.

**Activities.**—As engineering agents, merchants and contractors, the company represents many leading British firms in South Africa, among the number being that of Vickers Limited and its associated companies, Stothert and Pitt, Limited, of Bath, The Glasgow Steel Roofing Company, North Western Works (Ponsonby) and R. Hood Haggie and Son, Limited, of Newcastle-on-Tyne.

**Contracts.**—The many contracts carried out, or in hand, include the complete boiler equipment (with Illinois mechanical stokers from Vickers-Spearing Boiler Company, Limited), new main haulage plant, and power units, also machine shops and machine tools equipment for the Koffyfontein Diamond Mines, 50 ton Titan and Gohath cranes for Capetown, Durban, Port Elizabeth, East London, and other centres, and a number of smaller cranes for shipping at these ports.

Messrs. Dowson and Dobson Limited are also erecting the largest underground electric 3-phase winder in the world, the mechanical portions of which are being supplied by Vickers at Barrow, another very large winder for the Crown mines is also on order. In addition, the firm equipped the whole of the buildings of the Bwana M'Kubwa Copper Company in Rhodesia, amounting to some 3,000 tons, a complete range of buildings for the Sena Sugar Estates in Portuguese East Africa, a range of buildings comprising compressor house, condenser



DOWSON &amp; DOBSON, LTD., Johannesburg.

1. Crane at Port Elizabeth installed by the Firm.
2. Refrigerating Plant at Johannesburg Municipal Abattoirs.
3. Centre. Head Office at Durban.
4. Leaching House, Bwana M'Kubwa Copper Co.
5. Vickers Phase Underground Winder—Mechanical End.

(See *Interpress*, page 135.)

house, boiler house, induced draught house, and the coal handling plant for the central compressor station, East Rand Proprietary Mines Group

**Cold Storage.**—Dowson and Dobson Limited also specialise in cold storage equipment, having supplied a large part of the Johannesburg Abattoir installation, likewise the whole of the installation for the cold storage in Capetown Docks for the fruit export trade, and they have furnished many ice-making and refrigerating plants throughout the Union

**Storage.**—The company owns extensive storage accommodation at Johannesburg, Capetown and Durban, and manages the South African Oxygen Works in Johannesburg for the Hydrogen, Oxygen and Plant Company, Limited, of England. Attached to these are the Park Road Engineering Works, where general engineering and welding are carried on

**Directors.**—Messrs Robert Manning Dowson, A.M.I.M.E., and Joseph Henry Dobson, D.S.O., M.Sc. (Vict.), M.Eng., Liverpool, M.I.C.E., M.I.M.E.

**Addresses.**—Head office Corner of Simmonds and Anderson Streets, Johannesburg. London Shippers 11 Chaplin and Company, Leadenhall House, Leadenhall Street, E.C. Technical Representatives Messrs Frank Wright and Partners, Abbey House, Victoria Street, Westminster, London, S.W. 1

**Branches.**—Capetown Dowson, Dobson and Behr, Limited, 61, Bug Street, Durban Dowson and Dobson, Limited, Anglo-African House

**Direct Agencies.**—Rhodesia and Portuguese East Africa

**Cables:** For all branches, "Downright" Codes A.B.C. 5th Edition and Bentley's

#### HYDROGEN, OXYGEN & PLANT CO. LTD.

**Inception.**—This is an English company, with works at Newcastle-on-Tyne and Cardiff. A branch was established at Newtown, Johannesburg, in 1920 under the management of Messrs Dowson & Dobson Ltd., who continue to control the company's operations in South Africa

**Activities.**—The company manufactures oxygen for industrial and medical purposes by the Claude system from the atmosphere. Branch factories have been established at Durban and Capetown, and depôts throughout the Union, Rhodesia and Portuguese East Africa. Up-to-date engineering workshops, known as the Park Road Engineering Works, have been created close to the oxygen works at Newtown, and these works specialise in electrical welding, having carried out several important contracts

**Contracts.**—The firm recently secured the contracts for the 42" pipe line for the Government's Sabie Gorge Hydro-Electric Scheme, the manufacture of gas generators for the South African Railways, furnace water jackets for the Transvaal Silver & Base Metal Co., and special vacuum tanks for Messrs Fraser & Chalmers, agents for the Merrill Shmes Precipitation Process.

**Control.**—The whole business is under the direct control of Mr. C. N. Dutton, M.(S.A.)I.E.E., A.M.(S.A.)I.E.E., of Messrs. Dowson & Dobson's staff.

**Works.**—99, Park Road, Newtown, Johannesburg.

**Cables.**—"Hopco," Johannesburg.

**BRITISH AGENCIES LTD.**

**Inception.**—This company of mechanical and electrical engineers and merchants was founded by Mr A J Paddon in the year 1914.

**Activities.**—The firm caters chiefly for the mines, municipalities and power stations, and always has on hand large stocks of machine tools, woodworking machinery, water meters, motors, insulated wires, electrical meters and general accessories. It has representatives in all the principal centres of the Union of South Africa, as well as in the South West Protectorate and Rhodesia.

**Agencies.** British Agencies Ltd holds the sole agencies for the following overseas manufacturers: Evershed & Vignoles Ltd, electrical instruments, Landis & Gyr Ltd, electricity meters, time switches, etc.; Greenwich Cable Works, waterproof wires; Pulsometer Eng Co Ltd, filtration plants; R S Clare & Co, Talco; Sherwin Williams Co, insulating varnishes; Tinsley & Co, scientific instruments; Buffalo Meter Co, water meters and Gisholt Machine Co, turret lathes, etc.

**Address.**—70, Main Street, Johannesburg.

**Cables.** "Arms" Codes ABC 5th Edition and Western Union Universal Ed.

**J. & R. NIVEN LTD.**

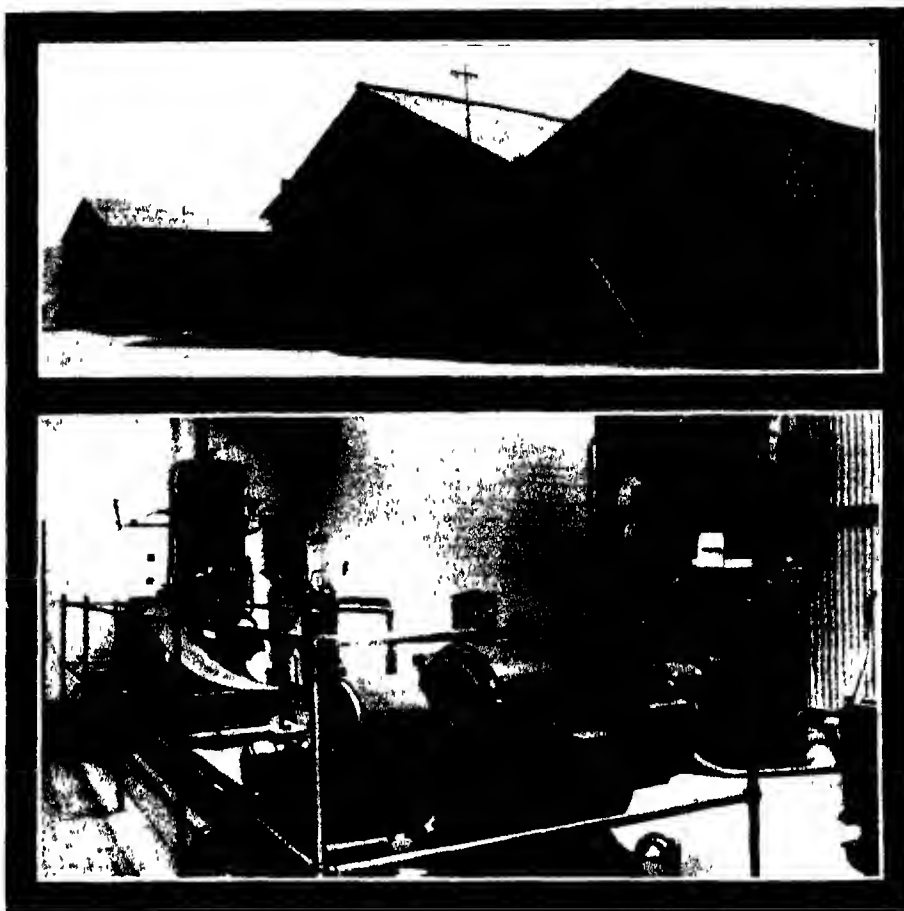
**Inception.**—This firm of engineers, iron and steel merchants and contractors was established by Mr Robert Niven in 1895.

**Activities.** The most active interests of the company are concerned with colliery equipment. In the earlier days of coal mining in South Africa the methods employed in cleaning and handling the coal were very primitive, but as the industry was extended more modern appliances were introduced, until at the present day the plants at the larger collieries are equal to the best in use in any part of the world.

Messrs J & R Niven Ltd specialise in this direction, and have perfected methods for both screening and cleaning, also in the washing of small coal. South African coal is, for the most part, of a very friable nature, and must therefore be handled in bulk, with great care. The company introduced certain mining methods adopted in other countries,

but modified them to meet the special needs of South Africa. That the firm's endeavours have met with every success is shown by the fact that a large number of the collieries in the country are equipped with its plants.

**Personal.** The founder of the firm, Mr Robert Niven, is still its active head. He is one of the electricity commissioners of the Union, has on different occasions been chairman of the Johannesburg Chamber



**HYDROGEN, OXYGEN & PLANT CO LTD, Johannesburg**

(Represented by Dowson & Dobson, Ltd.)

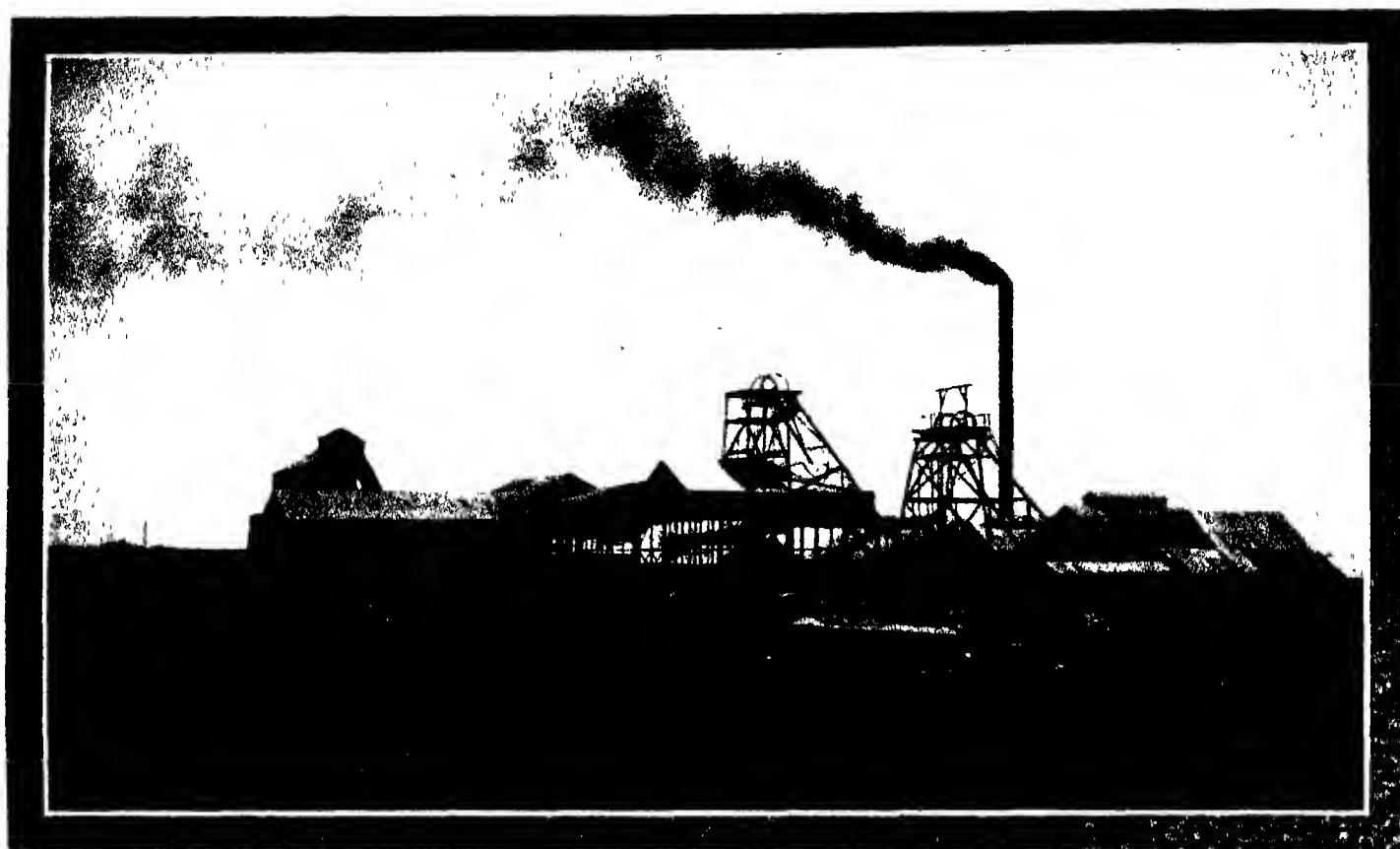
1 General View of the Works at Newtown.

2 Liquid Air Plant



**BRITISH AGENCIES LTD., Johannesburg.**

Two Views of the Showrooms



J. & R. NIVEN LTD, Johannesburg.  
Plant Designed and Erected by the firm for The South African Coal Estates Ltd (Navigation Section)  
(See *Advertiser*, page 15.)

of Commerce, and is also a past president of the Associated Chambers of Commerce of South Africa.

**Address.** Barsdorfs Buildings, Marshall Square, Johannesburg. The company's works are in Johannesburg and at Hatting Spruit, Natal.

**Cables.**—"Nivonia," Johannesburg. Codes, A B C 5th Edition Bentley's, Western Union 5 letter.

#### THE SKEFKO (SOUTH AFRICA) BALL BEARING CO. LTD.

**Inception.**—This is an affiliated company of the Aktiebolaget Svenska Kullagerfabriken S K F, Gothenburg, which was founded in 1907.

**Activities.**—The principal products manufactured by the S K F are self-aligning double-row ball and roller bearings, single-row roller bearings, tapered roller bearings, single-row ball bearings without filling slots, thrust bearings, pulleys and other transmitting appliances, and ball bearing hubs and axles for horse drawn vehicles. These S K F products cover the complete field of bearing requirements, and are used by the railways, the municipalities, the mines, factories, engineering works, garages and agriculturalists throughout South Africa.

**Staff.**—In addition to the supply of these products, the company maintains an efficient staff of technical engineers and draughtsmen to give advice as to the correct application and mounting of bearings. In this connection the engineers have the world-wide experience of the S K F organisation to draw upon.

**Steel Works.**—The company has its own steel works at Hofors Bruk, Sweden, where



D. DRURY & CO. LTD., Johannesburg.  
A Portion of the Showroom.

the special chrome steel used in the S.K.F. bearings is manufactured, and as the iron used in the production of this steel comes from the mines near by, also owned by the firm, it is able to supervise the manufacture of its wares from the mining of ore to the labelling of the finished article. These steel works also produce hollow drill steel, and the S.K.F. Hofors drill steel is now in great demand on the mines of the Witwatersrand.

**Factories and Offices.**—The main ball bearing factory is in Gothenburg, Sweden, and that for the manufacture of housings and pulleys in Katrineholm, Sweden. The English company, The Skefko Ball Bearing Co. Ltd., has its factory at Luton, Bedfordshire, and there is one factory in France, also three in the U.S.A., one in Germany, one in Russia, and iron mines and steel works in Hofors, Sweden. In addition to these, the company has 123 offices in different parts of the world.

**Agents.** The sole agents for the S.K.F. Hofors steel in South Africa are Messrs. Reunert & Lenz, Ltd., Johannesburg, for the Transvaal, Orange Free State and Rhodesia; Messrs. Rogers-Jenkins & Co., Durban for Natal, and Messrs. Rogers-Jenkins & Co., Capetown and Port Elizabeth, for the Cape Province, while there are sub-agents in all towns of importance in the Union of South Africa and in Rhodesia.

**Head Office.** 57-59, Exploration Buildings, Commissioner Street, Johannesburg. Cables: "Skefko," Johannesburg.

#### D. DRURY & CO. LTD.

**Inception.**—This private limited liability company was registered in 1915, and took over the business of mining material merchants and importers which had been founded in Johannesburg many years previously by Mr. Denis Drury.

**Activities.**—The company has always specialised in machine tools, and is one of the chief machine tool houses in South Africa, representing the principal manufacturers in the United Kingdom and America. In 1919 it extended its activities to mechanical and electrical engineering, and since that date has successfully undertaken several engineering contracts in South Africa.

**Premises.** In 1919 the firm moved into its present building, where it has one of the largest showrooms in the city, some 5,500 square feet of floor space providing ample room for the display of machine tools, general engineering plant and equipment.

**Representations.**—Among the numerous sole agencies held by the firm are the following:

**British.** Aster Engineering Co. Ltd., F. W. Brackett & Co., Clifton & Waddell, Drummond Bros. Ltd., Wm. Muir & Co. Ltd., Wm. Park & Co., Smith & Coventry, Ltd., Thwaites Bros. Ltd., Webster & Bennett Ltd., and many others.

**American.** Ajax Mfg. Co., American Tool Works Co., Blanchard Machine Co., Diamond Machine Tool Co., France Packing Co., Hendey Machine Co., National Acme Co., Rice Mfg. Co., H. D. Wallace & Co., Yale & Towne Mfg. Co., etc.

**Continental.** Alfred Eriksen, Germany, Franco Tosi, Italy, etc.

In 1923 the company was appointed sole agent in South Africa for Ransome & Marles' ball and roller bearings and plummer blocks, this agency being run as a separate department under the supervision of a technical salesman from the principals' factory in England.



THE SKEFKO (South Africa) BALL BEARING CO. LTD., Johannesburg.

1. The Skefko Ball Bearing Co. Ltd., Luton, Bedfordshire, England.
2. A Crushing Plant in Johannesburg, fitted with Skefko Ball Bearing Plummer Blocks.
3. Skefko Steel Works, S.K.F., Hofors Bruk, Sweden.



**Agents.**—The company is represented in Natal by Webb, Wraith & Co Ltd, and in Cape Province by Rutherford Ltd.

**Buyers.**—London Durant Radford & Co Ltd, Gillespie Bros & Co New York Gillespie & Co Inc.

**Directorate.** Messrs H B Waite (chairman), J T Goldsbury, and A G Brown.

**Offices.** Western House, corner of Marshall and Saut Streets, Johannesburg Cables "Drumco," Johannesburg.

**Bankers.** National Bank of South Africa.

#### EDWARD L. BATEMAN.

**Inception.**—The machinery business of this firm, one of the oldest established on the Witwatersrand, dates from 1892, when it was founded in Johannesburg by the late Mr Herbert Ainsworth, who died in 1920,

magnetic clutches, continuous vacuum filtration, etc. It is thus in a position to furnish complete equipments for mining, industrial and power plants. Cement making machinery is one of the firm's specialties, and practically the complete equipment for the Pretoria Portland Cement Company's plant at Pretoria and Slurry, and that for the Cape Portland Cement Company Ltd, in Cape Province, were supplied by it.

**Agencies.**—These include Allis Chalmers Mfg Co, Blaw Knox Co, Bull & Bull Mfg Co, Canada Carbide Co Ltd, Conveying Weigher Co, Deister Concentrator Co, Dings Magnetic Separator Co, The Dorr Co, Duro Metal Products Co, Fuller Lehigh Co, Green Engineering Co, Igramic Electric Co, Husley Manufacturing Co, Kidwell Boiler and Engineering Co, Lenher Engin-

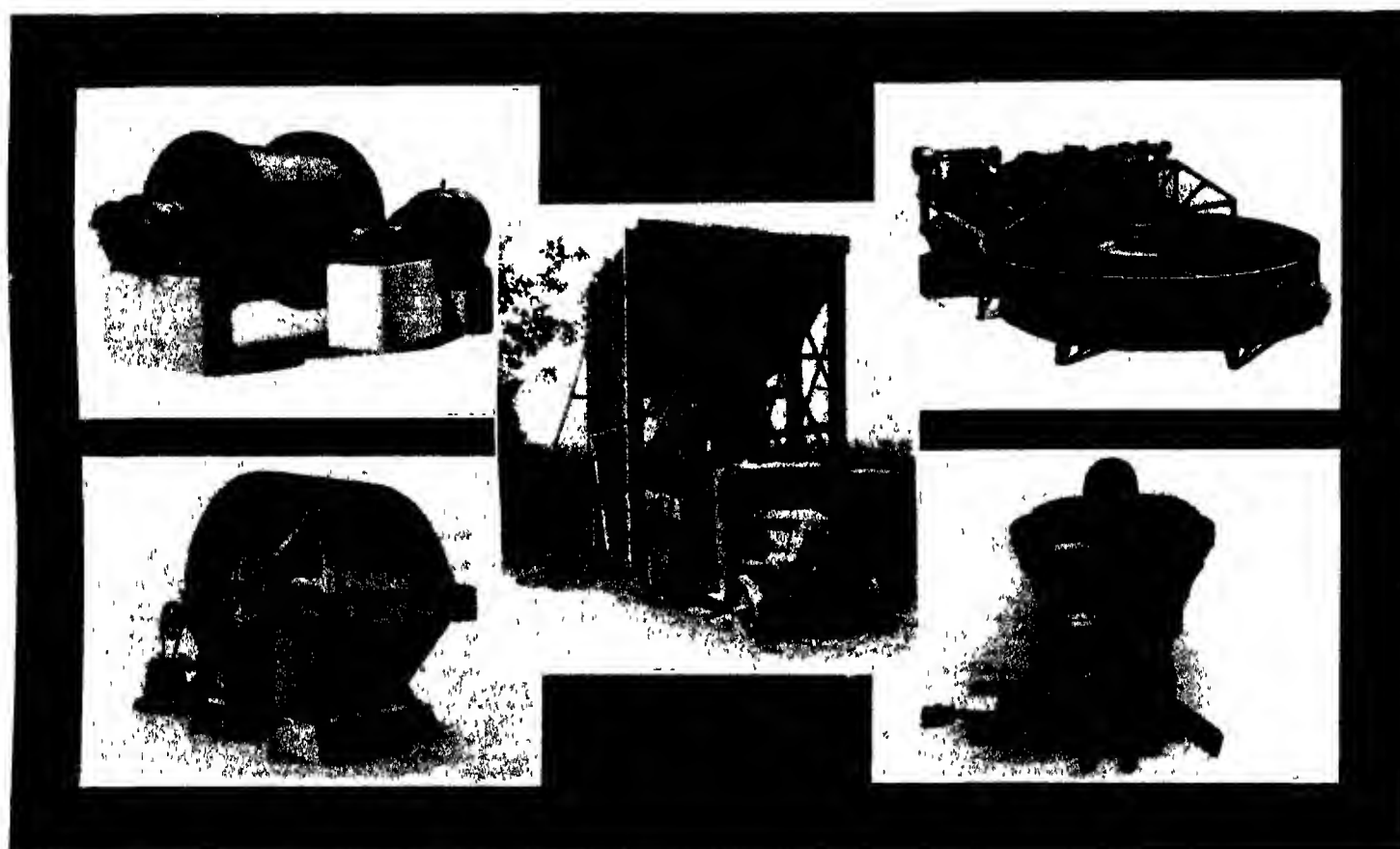
Improved, Western Union, Universal and Five Letter.

**Bankers.**—The National Bank of South Africa, Ltd.

#### G. H. LAngLER & CO. LTD.

**Inception.**—This firm, which was established in April 1918, was later converted into a limited company. Mr G H LAngler, the founder, prior to commencing on his own, was for eleven years connected with both Siemens Ltd and the British Westinghouse Electrical and Manufacturing Co in South Africa.

**Activities.**—These, which extend throughout the Union, Rhodesia and the Belgian Congo, embrace the supplying, installing and erecting of electrical plant of all descriptions, mechanical plant, mine ore hand-



EDWARD L. BATEMAN, Johannesburg.

1. Allis-Chalmers Ball Granulator.

Centre. Blaw-Knox Batchplant (Suspension bin type).

2. Filter with open Drum Heads and Paddle Agitator.

4. The Dorr Bowl Classifier.

5. Allis-Chalmers Rock and Ore Crusher.

in which year Mr Edward L. Bateman purchased a controlling interest in the enterprise. He came to Johannesburg in 1902 as South African manager for the Allis Chalmers Company, of Milwaukee, Wis., U.S.A., whose products were then handled by Mr Ainsworth, joining the latter in 1907 as engineer and manager of the business.

**Activities.**—The firm has been connected with the development of mining in the Transvaal since the earliest days of the industry, and has been responsible for the introduction of many improvements in machinery and methods, in which connection it introduced to South Africa steel cyanide tanks, gyratory ore crushers, Stirling water-tube boilers, tube mills, ball granulators,

cing Co, Link Belt Co, Manhattan Rubber Mfg Co, N V International Cement-Gun Co, Oliver Continuous Filter Co, Osgood Company, Power Specialty Co, T. L. Smith Co (Richards & Hirschfeld), and the Stromberg-Carlson Telephone Mfg Co.

All agencies held are covered for the whole of the Union of South Africa and Northern and Southern Rhodesia, while there are also sub-agents of standing in Capetown, East London, Durban, Beira, Salisbury and Bulawayo, in order to keep in touch with local requirements.

**Head Office.**—Corner House, Commissioner and Simmonds Street, Johannesburg. Cables: "Founders", Codes: Allis Chalmers, A.B.C. 5th Improved, Bentley's

ling and grading plant, also all classes of coal grading and handling plant.

**Installations.**—Among the principal installations carried out are complete battery of 250 b.h.p. electric motors to the Geduld Proprietary Mines (manufacturers "Heemaf," Holland) (see illustration, page 141), 1,300 b.h.p. squirrel cage motors for driving high lift pumps to the Crown Mines and New Modderfontein Mine, 1,200 k.w. turbines for the Cape electrification by the South African Railways (manufacturers, James Howden & Co, Glasgow); a large battery of Hummer electrically vibrated screens for the Union Minier du Hout Katanga, Belgian Congo (manufacturers, W. S. Tyler & Co., Cleveland, U.S.A.);

big battery of tube mill motors, 200 h.p. each, as well as crusher motors and pump motors for the Modderfontein East Gold Mining Co. (manufacturers, "Heemaf," Holland).

**Representations.**—S. H. Tyler & Co., Cleveland, U.S.A.; Jas. Howden & Co., Glasgow; "Heemaf," Hengelo, Holland; Rowson, Drew & Clydesdale, Ltd., London; Thos. Broadbent & Sons, Huddersfield, England; Everlasting Valve Co., New Jersey, U.S.A.; Guthridge & Co., Sydney, Australia; H. H. Roberts & Co., Ellesmere Port, England; Howden Ljungström Preheaters (Land) Ltd., Glasgow.

**Stocks.**—The amount carried by the company is valued at approximately £30,000, and comprises all electrical machinery, Hammer grading equipments, screen testing equipments, screening, ore concentrators, Everlasting valves, etc.

**Warehouse.**—This is one mile from the head office, and comprises a fine brick building with concrete floor, a 10-ton travelling crane and a floor space of roughly 18,000 square feet.

**Distribution.**—Handled by six travellers with motor cars, who keep in continuous touch with clients.

**Branch.**—G. H. Langley & Co. (Natal) Ltd., Club Arcade, Durban. This branch does an extensive business in sugar and coal mining machinery. The company also has a representative in Capetown.

**Head Office.**—Consolidated Buildings, corner Fox and Harrison Streets, Johannesburg. Managing Director, Mr. G. H. Langley.

**Bankers.**—Standard Bank of South Africa, Ltd.

**Cables.**—"Temps," Johannesburg.

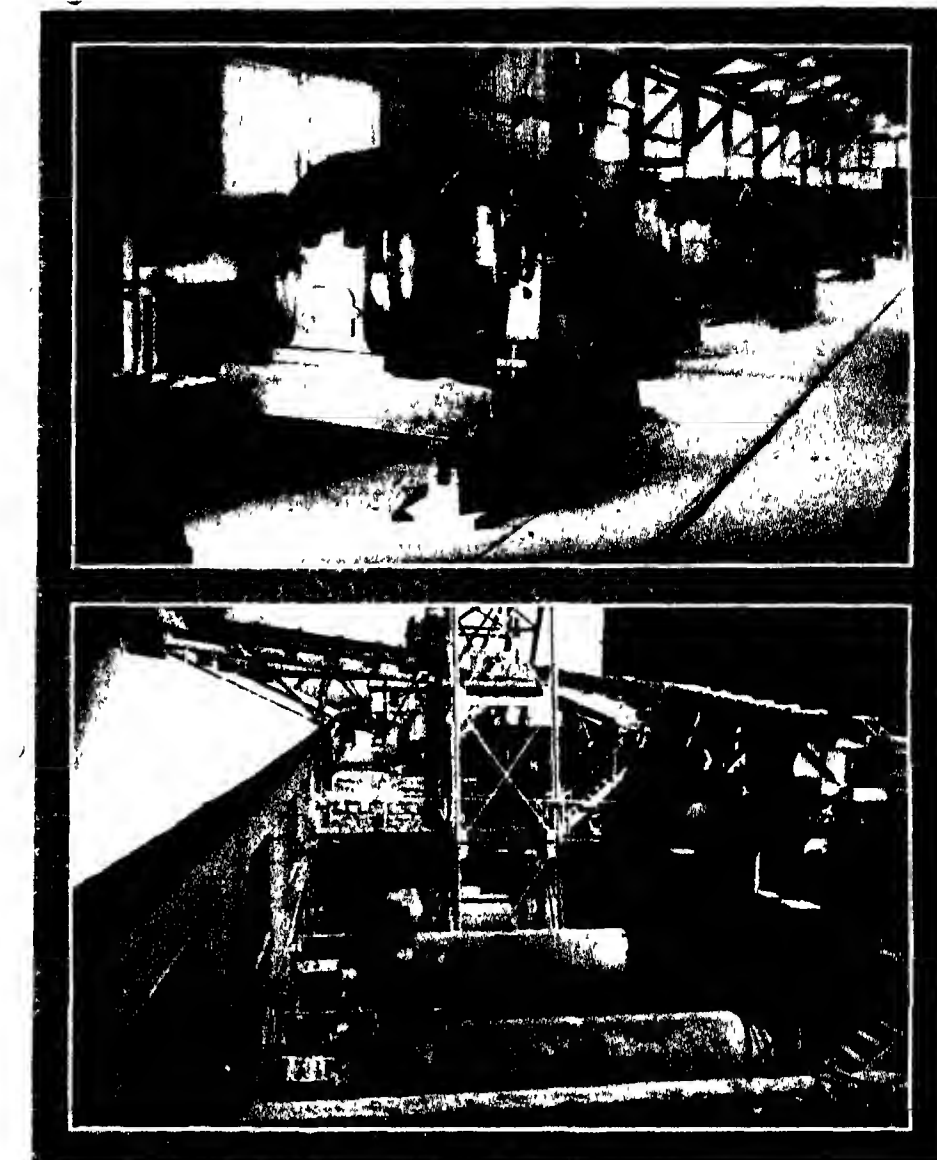
#### **BARTLE & COMPANY LIMITED.**

**Inception.**—This company was founded by Mr. J. O. Bartle at Johannesburg in 1903.

**Development.**—The offices, showroom and stockroom at the outset occupied but two small rooms in the New Club Buildings, Mr. Bartle being his own manager, salesman and office boy, but in 1906 he was joined by Mr. A. R. Callow, now managing director of the firm. Business progressed rapidly and many valuable agencies were acquired, while extensive yards and storerooms were secured, enabling the firm to carry larger stocks than had hitherto been possible. The present offices of the company were purchased in 1910, and in the following year the business was converted into a limited company under the present title, with Mr. Bartle and Mr. Callow as directors. Mr. J. M. Jackson, who had represented the firm for many years on the Reef, was elected a director at a later date.

**Activities.**—These embrace mechanical and electrical engineering, mining and railway supplies, woodworking and metal machinery, tools and hardware, and motor engineering.

**Motor Organization.**—Soon after the formation of the company it interested itself in the motoring business, and secured some important agencies in this connection. It was soon found necessary, however, to control these undertakings as a distinct side of the business, and within a few years direct branch establishments for the handling of motor and allied lines were successfully launched in the leading centres of the country. The companies which comprise the Bartle Motor Organization are: In Johannesburg, Consolidated Motors, Ltd.; in Capetown, Southern Motor & Supplies, Ltd.; in Durban, African Motors, Ltd.; in Bloemfontein, The Younger Motor Co. Ltd.;



G. H. LANGLEY & CO., LTD., Johannesburg

1. An installation made by the firm at The Geduld Proprietary Mines—Complete Battery of 250 h.p. Electric Motors
2. The Tube Mill Driven by the Motors.

in Kimberley, Bartle & Co. (Kimberley) Ltd.; in Maritzburg, African Motors, Ltd.; in Port Elizabeth, Southern Motors & Supplies, Ltd.; and in East London, Southern Motors & Supplies (East London) Ltd.

**General Agencies.**—Amongst many others, these include Sanderson Bros. & Newbould Ltd., F. Reddaway & Co. Ltd., Johnson & Phillips Ltd., John Birch & Co. Ltd., Muntz Metal Co., J. W. Roberts Ltd., Gimson & Co. Ltd., Western Electrical Instrument Co., S. Smith & Sons, Oster Manfg. Co., Sebastian Lathe Co., Skinner Chuck Co., United Incandescent Lamps & Electrical Co. Ltd., and L. M. Ericsson & Co.

**Motor Agencies.**—Hudson Motor Co., Fodens Ltd., Karrier Motors, Highway Trailer Co., The Prest-O-Lite Co. Inc., Matthew Wells & Co. Ltd., Fanbanks Co., Harley Davidson Motor Co. and Wayne Tank & Pump Co.

**Stores and Yards.**—These are situated at Marshall, Mooi and Polly Streets, Johannes-

burg, and the value of stocks carried runs to hundreds of thousands of pounds. Large stocks are also held at the Kimberley and Durban branches.

**Head Office.**—Loveday House, corner of Loveday and Marshall Streets, Johannesburg.

**Branches.**—Durban, Kimberley, Pretoria, etc.

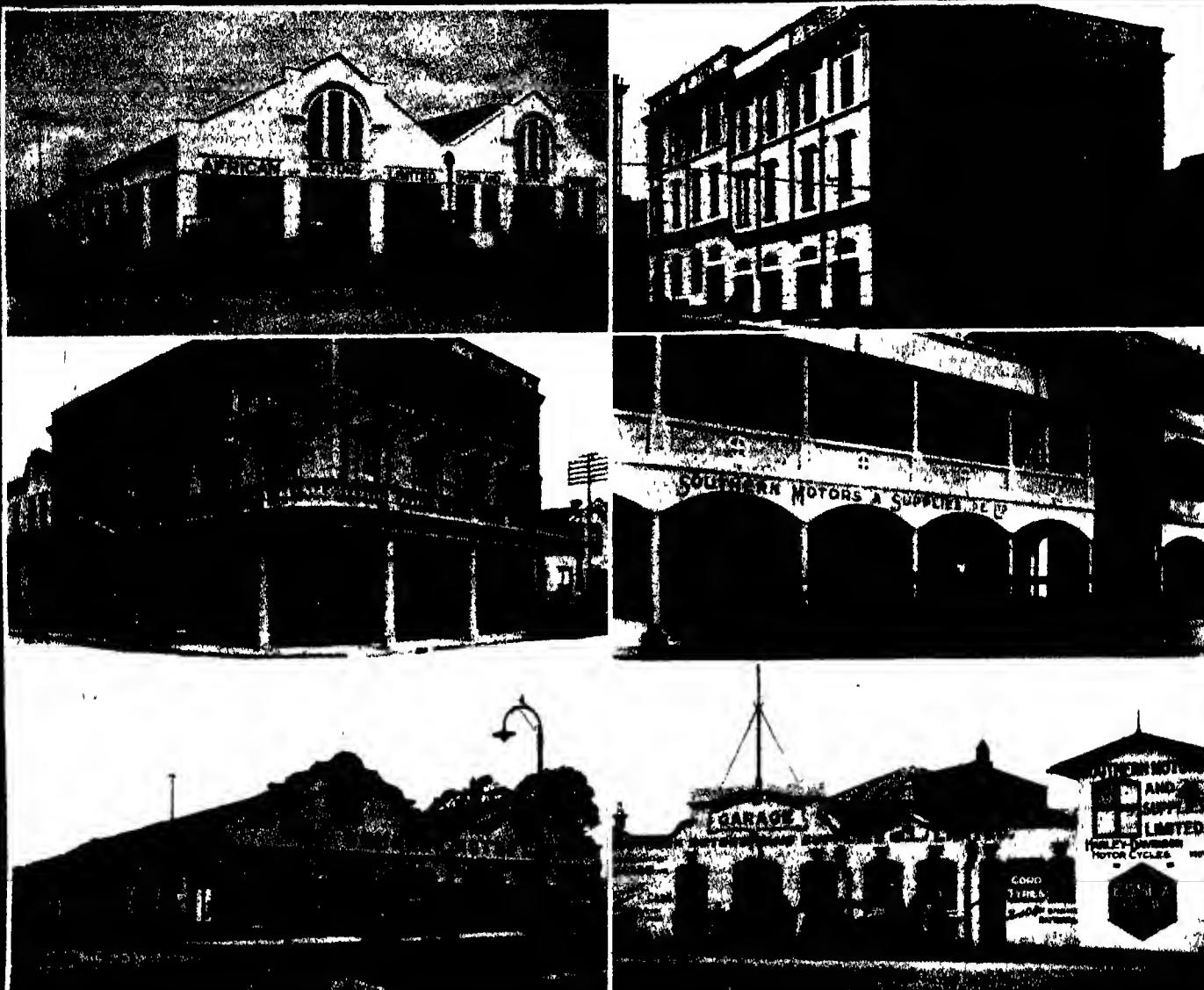
**Cables.**—"Faggot."

(See also illustration, page 142.)

#### **W. H. ALLEN, SONS & COMPANY LTD.**

**Inception.**—This firm, of Queen's Engineering Works, Bedford, England, opened its own offices in South Africa in February 1922. Previously the company had been represented by agents, its connection with the South African market dating back to 1903.

**Activities.**—Messrs. Allen Sons & Co. are manufacturers of high speed, totally enclosed, forced lubrication engines, vertical crude oil



BARTLE & CO LTD., Johannesburg.  
Six of the Company's many Branches throughout Africa.

1. Premises of Organisation at Durban.
2. Loveday House: Premises of Organisation at Johannesburg.
3. Premises of Organisation at Bloemfontein.
4. Premises of Organisation at Capetown.
5. Premises of Organisation at Port Elizabeth.
6. Premises of Organisation at East London.

(See *Letterpress*, page 141.)

engines of the 2 stroke type, condensing plants, steam turbines, centrifugal pumps, Diesel oil engines, continuous current dynamos and motors, fans, etc

**Installations.** Important installations have been supplied to the leading mines and municipalities and other bodies throughout South Africa, among which are High speed engines—Nourse Mines, Wolhuter G M Co., Village Main Reef, etc., and various municipalities. Condensing plants—Van Ryn Deep G.M. Co., Premier Diamond Mining Co., Rand Water Board, Consolidated Goldfields of S.A. Ltd., etc. Steam turbines—Bloemfontein Municipality, Rand Water Board and the Victoria Falls & Transvaal Power Co. Ltd. Centrifugal pumps—Simmer & Jack Prop Mines, City & Suburban G.M. Co., Randfontein Ests., Transvaal G.M. Ests., and others. Centrifugal sand pumps—

Over 300 pumps of varying sizes have been supplied to the mines on the Rand and in Rhodesia. Crude oil engines—New Amantshu Mine, Shongweni Dam, several municipalities, etc.

**Pumping and Condensing Machinery.** Many important pumping installations have been supplied to various water boards throughout South Africa, and two of the largest high lift centrifugal sets have been furnished to the Simmer & Jack Prop Mines, each of which is capable of delivering 100,000 galls per hour against a 2,000 feet head. Two 3,000 k.w. sets, comprising the firm's turbines with condensing plants, are on order by the Bloemfontein Corpn., and the Johannesburg municipality is being supplied with a condensing plant for working in conjunction with a 10,000 k.w. turbo generating set. The company's centrifugal

sand pumps are in use on many gold mines, and are looked upon as most efficient and reliable.

**Representative for South Africa.**—Mr A Cyril Webber

**Address.**—Oceana Buildings, Simmonds Street, Johannesburg. Cables "Pump," Johannesburg.

(See illustration, page 143.)

#### C. KELLY & PARTNERS.

**Activities.**—This firm of mechanical and electrical engineers represents in South Africa a number of important English and American factories, and has branches and representatives in all the important centres of the Union. The company sells largely to Government Departments, municipalities and the bigger gold mining companies, from whom it has secured extensive contracts covering the installations of entire systems, and has

been instrumental on many occasions in introducing entirely new types of machinery to South Africa.

**Agencies.** C. Kelly & Partners are South African representatives for the following British manufacturers: F. & A. Parkinson, Ltd., George Ellison, Yarrow & Co. (1922) Ltd., The British Electric Plant Co. Ltd., The British Sangamo Co. Ltd., The British Steel Piling Co. Ltd., Joseph Booth & Bros. Ltd., Macintosh Cable Co. Ltd., and Alexander Jack & Co. Ltd. They also represent the following American manufacturers: Packard Electric Co., Electric Power Equipment Corporation, Electric Service Supplies Co. Ltd., American Road

**Cables.**—“Yellek,” Johannesburg.

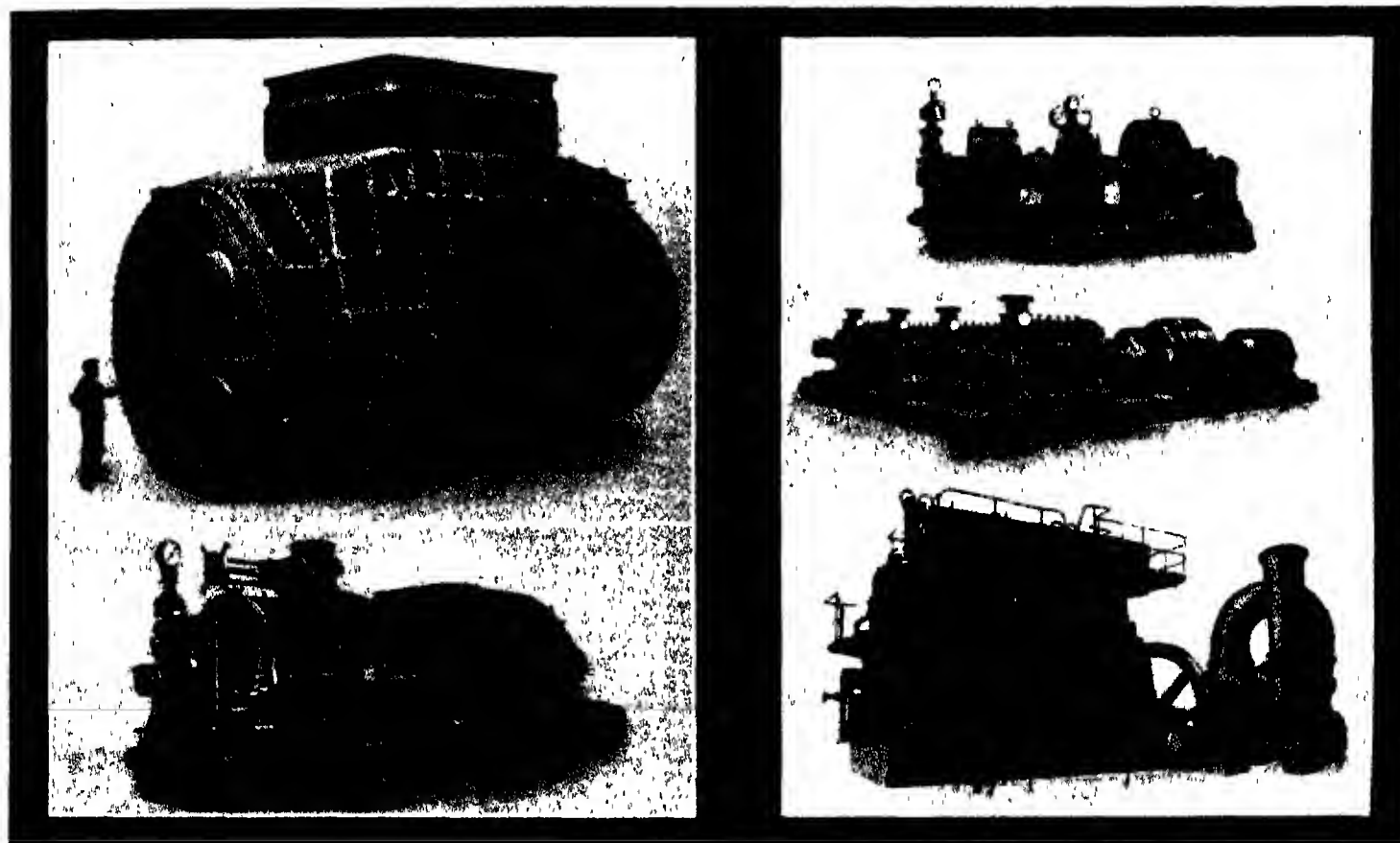
**Bankers.** Standard Bank of South Africa, Ltd., London and Johannesburg (See also illustration, page 144.)

#### INGERSOLL-RAND COMPANY (SOUTH AFRICA) LTD.

**Inception.**—Although, from the earliest days of the Rand, Ingersoll-Rand air compressors and rock-drills have operated continuously, it was not until December 1922 that it became advisable to form the Ingersoll-Rand Company (South Africa) Ltd. and it was incorporated to keep in touch with and supply the ever increasing demand for the up-to-date plant of this very important organisation.

metal propositions throughout the Continent, also to the great sugar enterprises in Mauritius, its chief products embracing the following: All types of pneumatic mining and industrial machinery, air compressors of every style, type and size, air receivers, intercoolers and aftercoolers, condensing plants, vacuum (ameron) centrifugal and direct acting pumps, rock drills of every description, drill sharpening machines, portable hoists, stone channellers, and stone carving tools. The company also supplies the Ingersoll “Sandvikens” Swedish drill steel made up in all sections.

Apart from the comprehensive production of machinery directed purely to mining operations, a very important feature of the



W. H. ALLEN, SONS & CO. LTD., Johannesburg.

1. 35,000 Square Feet Surface Condenser
2. High Pressure Direct Coupled Turbo-Alternator, 2,500 k.w.
3. Typical Geared Turbo Generator for Out-Puts from 100 k.w. to 150 k.w.
4. Four Series High-Lift Pumps, 1,980 ft. Head, 350 h.p. (Supplied to a Mine)
5. One of three Engines and Pumps, each of 1,000 h.p., constructed for Irrigation Scheme.

(See *Litterpress*, page 141.)

Machinery Co., Ideal Concrete Machinery Co., Charles Hvass & Co., and Charter Gas Engine and Werf Conrad of Haarlem, Holland.

**Correspondence.**—Messrs. Kelly & Partners invite correspondence from manufacturers of electrical or mechanical machinery not covered by the above mentioned factories.

**Partners.**—Messrs. Cedric Kelly (managing partner at the head office in Johannesburg), William Kelly (London partner), and F. B. Grinham.

**Head Office.**—137, Collman Building, Johannesburg. Mr. Harold E. Bell is a departmental manager particularly interested in the American side of the business.

**Development.**—The company has materially assisted in developing the enormous mineral wealth of the country, indeed the profitable working of the great mining concerns has been made possible largely by means of its efficient plant, and it may be said that there is scarcely a mining property of any importance that does not rely, to some extent at least, on Ingersoll-Rand drills or other machinery of the great enterprise under notice, whose well-known “Jackhammers” have revolutionised the standard of drilling efficiency in the South African fields.

**Activities.**—To-day the company's activities extend to diamond and gold mines and base

firm's manufacture is its range of modern air tools, such as riveters, chipping hammers, metal and wood boreis, grinders and saws, which to-day are to be found constantly employed in railway workshops, irrigation schemes and industrial plants throughout the country.

**Area of Operations.**—Besides their widespread adoption in Rhodesia proper and in Mauritius, the manufactures of the Ingersoll-Rand Company (South Africa) Ltd. have found particular favour throughout the Belgian Congo, Portuguese East and West Africa, and the South West Protectorate.

**Installations.**—A large electrically driven compressor has recently been supplied to the

New Modderfontein Gold Mining Co., and Ingersoll-Rand compressors of various types have been installed also in the Modderfontein B, Geduld, and Modderfontein Deep, to mention some among the deep levels of the Far East Rand. The plant at the Durban Graving Dock has been augmented by an electrically-operated compressor, which is again proving the reliability and efficiency of this firm's products.

**Service.**—A staff of expert technical men, engineers and demonstrators is maintained,

**Directorate.** R W Rusterholz (managing director and chairman), C H Davis, H F MacNay, the entire management of the company's South African affairs being in the hands of the first-named.

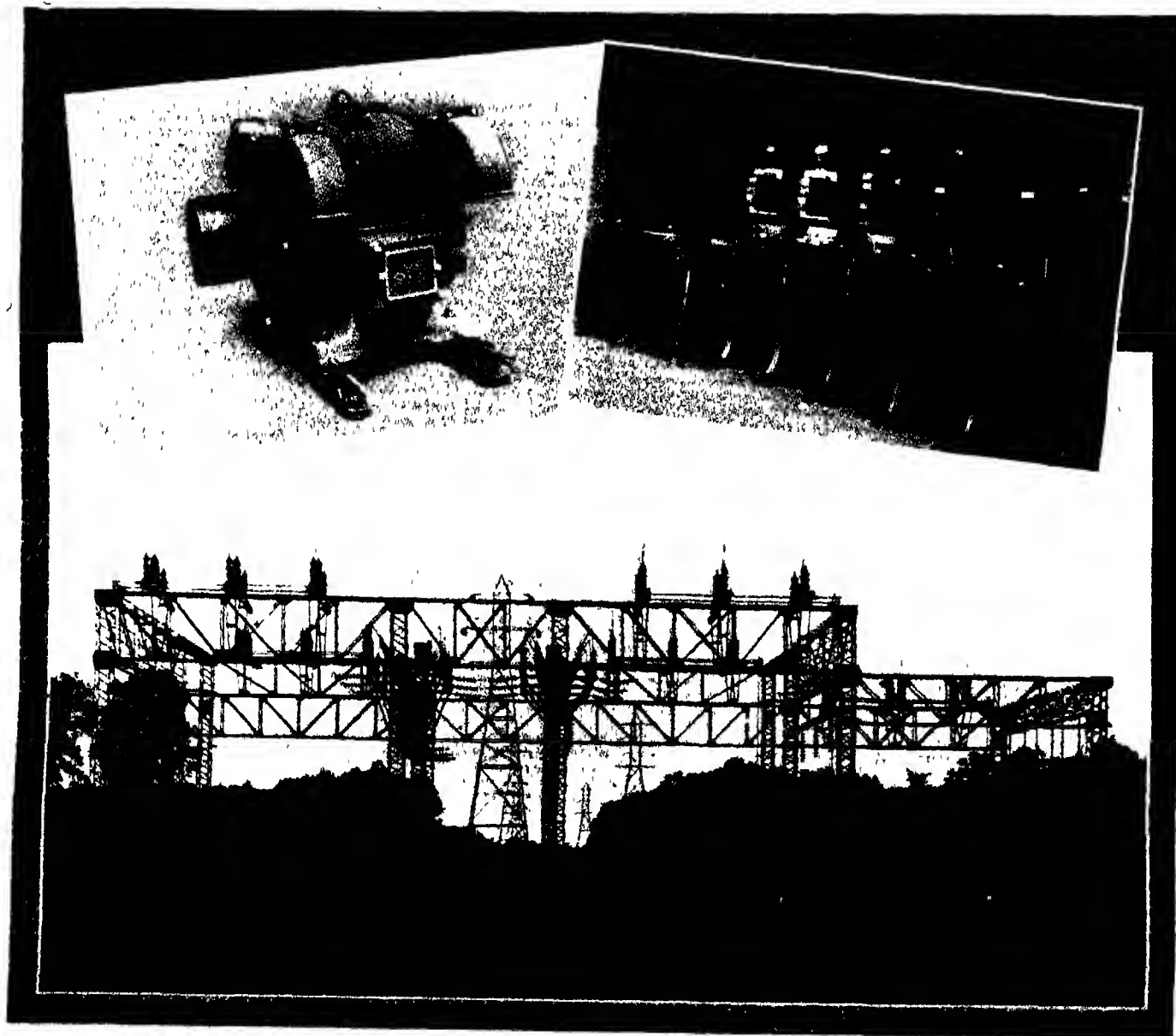
**Agents.** Messrs. Rogers-Jenkins & Co., in Capetown and Port Elizabeth, Messrs. Johnson & Fletcher, in Bulawayo, Salisbury and Gatooma.

**Head Office.**—Exploration Buildings, Commissioner Street, Johannesburg Branch Office, 45 and 70, Anglo-African House, Durban.

#### RICE & DIETHELM LTD.

**Inception.**—This company was founded in 1922 by the late Mr. Frank Peabody Rice and Mr. Charles Diethelm, the leading business connections both in Africa and Overseas having been already established for many years.

**Activities.** The principal activities of Rice & Diethelm Ltd. are the representation of the overseas manufacturing firms named subsequently and the supply and delivery of their products. The company is also



C. KELLY & PARTNERS, Johannesburg.

1 "Drip Proof Motor"

2. Underground Oil Switches.

3. A Modern Development in Out-Door Sub-Station Construction.

(See *letterpress*, pages 142-143.)

and their services are always at the disposal of those interested in matters connected with the company's products, to give advice and suggest methods to insure their highest efficiency in operation.

**Bankers.**—National Bank of South Africa, Ltd.—Natal Bank Branch in Johannesburg and Durban.

**Cables.**—"Outsider," Johannesburg. (See illustration, page 145.)

prepared to contract for the installation of the bigger lines in which it deals.

**Agencies.**—Sulzer Bros. Ltd., Winterthur, Switzerland. Centrifugal pumping plants, Diesel engines, ventilating fans, refrigerating



plants and steam and electric boilers, Ferranti, Ltd., Hollinwood, Lancashire electric transformers and meters, Twiss electric Transmission, Ltd., London electric transmission lines, Diamond State Fibre Co., Bridgeport, U.S.A., and Diamond Fibre Co., London vulcanised fibre of all kinds, Engineering and Lighting Equipment Co. Ltd., St. Albans, England electric fittings, Faylor Tunnichill & Co. Ltd., Hanley, Staffs., electric porcelain insulators, etc., Midland Electric Manufacturing Co. Ltd., Birmingham England Ironclad switchgear, National Meter Co., London "Empire" and "Nash" water meters, Sorecher & Schuh Co., Aarau, Switzerland

"Tantalum" Codes: Bentley's, A B C 5th and 6th Editions, Broomhall's, Western Union Engineering, and Lieber's

**Bankers.**—Standard Bank  
(See illustration, page 146)

**LOVE, J. MacG., AND CO. LTD.**—94 Main Street (Union Corporation Buildings), Johannesburg Mining material merchants Representations: Haggie, Son and Love Ltd., Jupiter Rope Works, Germiston, near Johannesburg, wire drawers and wire rope makers, David Colville & Sons Ltd., Motherwell, Scotland, manufacturers of steel plate, joists, channels, angles, etc., Greengate and Irwell Rubber Co. Ltd., Manchester, manu-

**SCOTTISH TUBE CO. (S.A.) LTD.**—Head office in South Africa 116-118 Callinan Buildings, Simmonds Street, Johannesburg Tube manufacturers General manager for the Union of South Africa John B. S. Barclay Branch manager for the Transvaal J. Staver Capetown office 1 and 2, Atlas Building, 52, St. George's Street (manager, W. J. Collins) Durban office Club Arcade, Smith Street (manager, A. Loudon) Port Elizabeth office 18, South Street (manager, A. Howat) East London office 22, Union Street (managers A. Brown and A. Fox) Cables "Scotubeco," Johannesburg



INGERSOLL-RAND CO. (SOUTH AFRICA) LTD., Johannesburg

1. One of the Company's Compressed-Air Road Breakers in Operation.
2. Installation of IR-5 Leyner Ingersoll Drill Sharpener Machines at the Robinson Deep, Johannesburg.

3. Ingersoll-Rand X-70 Drifter, operating at the Brakpan Mines, Transvaal.
4. 18" x 11" x 14" XRE 1,022 cub ft Compressor at S.A. Railway New Graving Dock, Durban, with 175 h.p. Metropolitan-Vickers 416 volt, 3 Phase 50 Period Synchronous Motor.

5. A Crew of Drill Operators with their DCRW-23 Ingersoll Jackhammers at the Crown Mines, Johannesburg

(See letterpress, page 143)

L.T.H.T. and E.H.T. electrical switchgear, Maag Gear Wheel Co. Ltd., Zurich, Switzerland Maag patent gear wheels and pinions and gear cutting machines, Henry Wiggin & Co. Ltd., Birmingham Resistance material, Frank Baker & Sons, Birmingham, England enamel iron plates, badges, nameplates, etc. Birkbys, Liversedge, Yorks Overhead tramway material and E.I.O. insulation, Goodell Pratt & Co., Greenfields, Mass., U.S.A.: hand and bench tools, Pritchett & Gold & E.P.S. Co. Ltd., London, lead and nickel iron storage batteries

**Directors.**—Messrs Charles Diethelm (managing director), J. V. Stanton, and H. Perks.

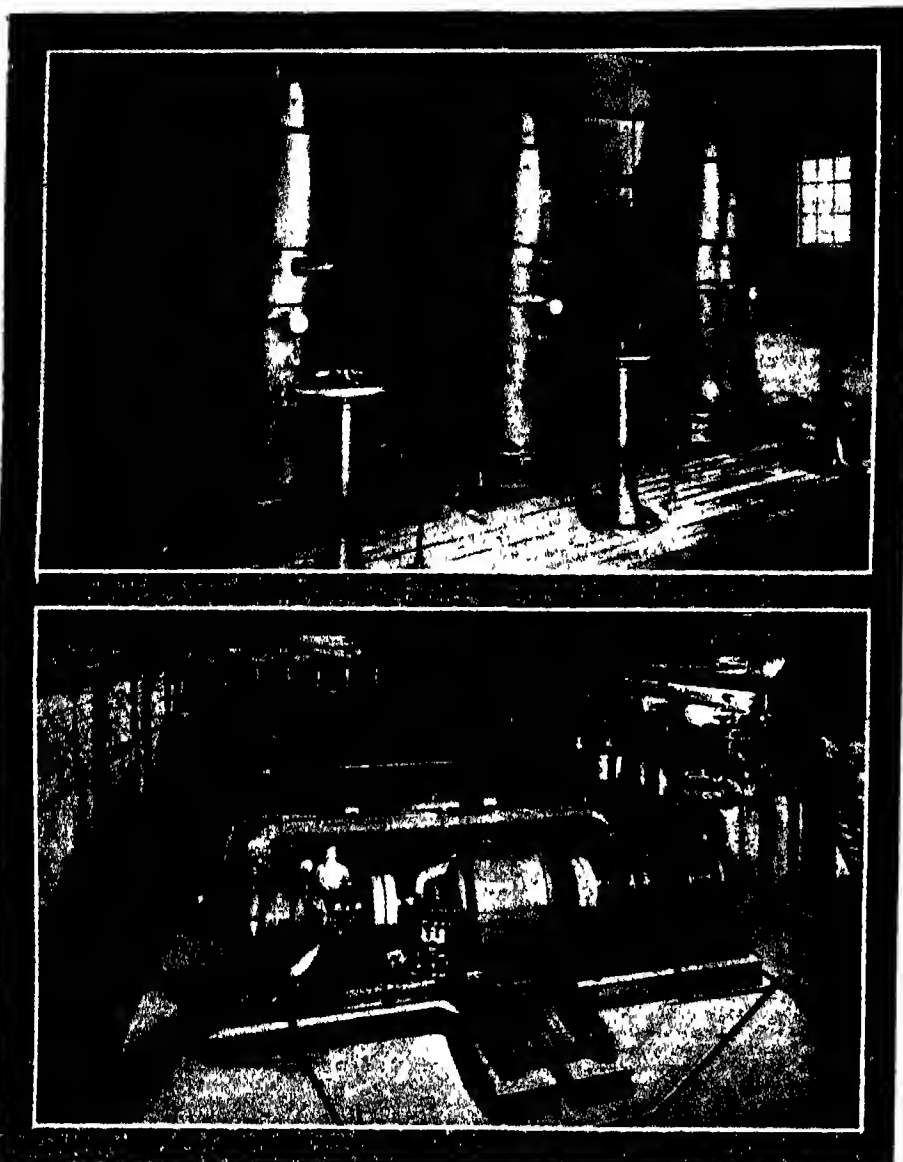
**Offices.**—86, Standard Bank Chambers' Commissioner Street, Johannesburg Cables.

facturers of "E.I.R." rubber conveyors, "Lanco" Balata belting, "Britto" rubber impregnated belting, hoses, etc., Laird & Son Ltd., Irvine, Scotland, engineers, manufacturers of trucks, light forgings and drop stampings, Getting-Jonas-Titan, St. Denis, Paris, manufacturers of "Titan" laminated leather belting, Wolsley Motors Ltd., Adderley Park, Birmingham, manufacturers of "Wolsley" motor cars, British Timken Ltd., Ward End, Birmingham, manufacturers of "Timken" tapered roller bearings, Shultz Belting Co., St. Louis, manufacturers of "Sable" and "Viking" waterproof leather belting, cement, etc. Cables "Hardhood," Johannesburg Codes A B C (5th Edition) and Bentley's Postal address, P.O. Box 890 Telephone, Central 6612 (2 lines).

#### DELFO LTD.

**Inception.**—This firm of manufacturing engineers, which conducts one of the oldest industrial enterprises in South Africa, was founded before the Boer War by Mr C. F. Delfos, who holds the position of chairman of the company.

**Development.** Originally the firm specialised in electrical work, but in order to keep the gold mines operating during the War, it went in for the manufacture of rock-drill spurs, which were then practically unobtainable. It also experimented with a view to the manufacture of complete rock-drills in South Africa, with the result that rock-drills now form a considerable bulk of the company's business.



RICE & DIETHELM LTD., Johannesburg

1. Three Vertical Sulzer Centrifugal Pumps, Borehole Type, Rand Mines Pumping Station, Roeherville Dam, near Johannesburg. Total capacity about 5 Million Imperial Gallons per 24 hours, 350 ft. Head, 200 h.p. Motors, 1,500 r.p.m.
2. Central Mine Drainage Plant, Randfontein Central Gold Mining Co. Ltd. (Witwatersrand) Four Sulzer High-Lift Centrifugal Pumps; total capacity, 8 Million Imperial Gallons per 24 hours, 2,600 ft. Manometric Head; Electric Motors 1,750 h.p. each, 1,500 r.p.m.

(See letterpress, page 144)

**Plant.**—The factory is well equipped with first-class machinery, including automatic machinery, and its products compete very successfully with goods imported from the leading overseas manufacturers. The floor space of the different shops approximates to 20,000 square feet. The various departments of the factory comprise the blacksmith's shop, machine shops, grinding shop, hardening shop, motor and compressor room, tool and general store, gauging room, etc.

**Laboratories.**—The experimental and testing departments of the company include mechanical, metallurgical and chemical laboratories, and these are quite up to any European or American standards, the firm being the first in South Africa to realise the importance of scientific research in connection with steel treatment.

**Directorate.**—Mr C F Delfos, Pretoria, chairman, Mr Jack Reunert, Johannesburg, vice-chairman, Mr Charles Maggs, Pretoria, Mr G Bergstrom, Johannesburg, managing director, Mr J Postmus, general manager, Netherlands Bank, Pretoria (alternate for Mr Delfos)

**Management.**—Local manager (vacant), works secretary, Mr A S Thompson, metallurgist, Mr A. Rubin. Distributing agents—Messrs Reunert and Lenz Ltd, Johannesburg, who also act as secretaries for the company, telegraphic address, "Rockdrill," Johannesburg

**Company's Address.**—264-268, Vermeulen Street, Pretoria.

**Bankers.**—Netherlands Bank of South Africa, Ltd.

## OTHER HARDWARE AND MACHINERY ENTERPRISES

**AFRICAN INDENT MERCHANTS.**—20, Harrison Street, Maxwell Buildings, Johannesburg. Importers of hardware, mining and builders' supplies, painters' and general brushware, belting, etc. Cables "Aim," Johannesburg

**AFRICAN IRON AND STEEL PRODUCTS LTD.**—180, Main Street, Johannesburg. Private company. Capital, £11,250. Tube mill lines specialists and founders. Cable and telegraphic address "Maubrown," Johannesburg

**BRECKENRIDGE, R., AND SON.**—224, Main Street, Johannesburg. Engineering and welding works, erect all classes of mechanical appliances, oxy acetylene welders and cutters. Telephone Central 1582, Johannesburg

**CLYDE TRADING CO. LTD.**—Howard Buildings, corner Main and Loveday Streets, Johannesburg. Private company. Capital, £10,000. Mining and building material merchants. Cables and telegrams "Clytraco," Johannesburg

**FOREST AND HUGHES LTD.**—Johannesburg. Private company. Capital, £30,000. Builders' hardware, household, ironmongery, and glassware merchants. Stores and works. Commissioner, Fox and Berea Streets, city and suburban. Cables "Parquet," Johannesburg.

**HAGGIE, SON AND LOVE LTD.**—94, Main Street, Johannesburg. Private company. Capital, £105,200. Wire drawers and wire rope makers. Works Jupiter Rope Works, Cleveland. Box 72. Telephone 269. Germiston. Cables "Hardihood," Johannesburg

**HARVEY AND RUSSELL LTD.**—Central House, Simmonds Street, Johannesburg. Private company. Capital, £10,000. Mining material merchants. Telephone 4004. Cables and telegrams "Harusco," Johannesburg

**HIRTZEL, C. H., AND CO.**—7, A B C Chambers, Johannesburg. Mining material merchants and contractors for painting and boiler covering. Cables and telegrams "Chirtzel," Johannesburg

**MAYFAIR TIN MANUFACTURERS LTD.**—Corner Crown and May Roads, Fordsburg. Private company. Capital, £10,000. Manufacturers of tinware of every description and of steel cabin trunks. Cables and telegrams "Maytin," Johannesburg

**REUNERT AND LENZ LTD.**—Consolidated Building, Fox Street, Johannesburg. Capital, £100,000. Mechanical and electrical engineers and contractors. Branch at 140 Long Street, Capetown. Cables and telegrams "Rockdrill," Johannesburg

**ROBINS CONVEYORS (S.A.) LTD.**—Reid Brothers' Building, Harrison and Main Streets, Johannesburg. Capital, £10,000. Conveying, screening and hoisting machinery. Branch 349, Smith Street, Durban. Cables "Rocobeco," Johannesburg

**ROFF, W. G., AND CO. LTD.**—Eloff and Harries Streets, Johannesburg. Mining and general machinery merchants. Managing director: I F. Bailes. General manager: F. Thurston. Telephones, 1883 and 5449. Telegraphic address: "Requisites," Johannesburg

**ROSE (MARK) AND COUSIN.**—138-140, President Street, Johannesburg. Mining and



**DLFOS LTD, Pretoria.**  
View of Plant  
(See *Illustration*, page 115 b)

engineering materials. Partners: Mark Rose and Walter J. Abrahams. Telephone 2011. Cables and telegrams: "Longscrew," Johannesburg.

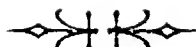
**ROWE, JEWELL AND CO. LTD.** Corner Main and West Streets, Johannesburg. Engineers, iron, brass and semi-steel foundries. Directorate: W. A. Nellist (managing director), J. A. Dunie (general manager), J. Gill and C. M. Polmeat (business manager). Branch at Brakpan, Industrial Stands.

**SAALER AND FRANKS LTD.**—Trust Buildings, Fox Street, Johannesburg. Contractors for complete electric power stations. Importers of machinery of all kinds. Capital, £8,300. Director: J. W. Saaler, M.I.E.E., chartered electrical engineer. Telephone, 955. Cables and telegrams: "Threephase," Johannesburg.

**SANDYCROFT LTD.** Reid Brothers' Building (third floor), corner Main and Harrison Streets, Johannesburg. Mining, mechanical and electrical engineers. Telephone 2794. Cables and telegrams: "Sancroft," Johannesburg.

**SCHNEIER AND LONDON LTD.** 103, Bice Street, Newtown, Johannesburg. Capital £50,000. Timber, iron and mining material merchants. Directors: Samuel Schneier and Solomon London. Telephones 5130 and 5311. Cables and telegrams: "Nodnolsh," Johannesburg.

**SOUTH AFRICAN RUBBER MANUFACTURING CO. LTD.**—8, Winchester House, Main Street, Johannesburg. Associated with Spencer, Moulton & Co. Ltd and Wood Milne Ltd. Capital, £150,000. Manufacturers of rubber goods of all descriptions. Works: Induna Mills, Howick, Natal. Cables: "Sarmcol," Johannesburg.



# PROVINCE OF THE CAPE OF GOOD HOPE

**T**HE Province of the Cape of Good Hope the first British colony to be established in South Africa, forms the extreme south of the African Continent. It is by far the largest Province of the Union, having an area of 276,966 square miles, which is more than twice the size of the United Kingdom, but not quite so large as the State of New South Wales. The greatest breadth of the territory in a straight line east and west is about 750 miles, and its greatest length some 600 miles. On the north west the province is bounded by South-West Africa, while its northern boundary touches those of the three sister provinces and Basutoland, its coastline, facing west, south, and east, extends for about 1,300 miles, much of this being curiously inaccessible and devoid of natural harbours. Inland, the most noticeable feature of the Province is the series of mountains which under the names of Kamiesbergen, Langebergen, Kamiskow, Bokkeveld, Roggeveld, Nieuwveld, Sneeuwbergen, and Stormberg respectively eventually become the Quathlamba or Drakensberg Mountains, the best defined range in South Africa, whose course is due north-east, strictly parallel to the coast, and which forms the inner boundary of the easternmost districts of Cape Province and of Natal, and the outer boundary of Basutoland and the Orange Free State. The greatest river system in Cape Province is that of the Orange River, which with its tributaries drains an estimated area of 300,000 square miles, the other rivers are of small importance. The climate varies, but is in many parts, and notably in Capetown, of a mild English character, on the Karoo the typical South African climate is experienced very dry and bracing, and with a far greater difference of temperature between day and night than is the case on the lower levels.

**ADMINISTRATION.**—The functions of the Colonial Parliament which prior to the Union legislated for the Cape are now divided in practical working between the Parliament of the Union and the Provincial Council of the Cape. This latter body, within the sphere marked out for it by the South Africa Act, is practically allowed considerable freedom from interference either by the over-riding power of the Parliament or the refusal of assent to legislation. The Provincial Council numbers 51 members, each elected for one constituency, on a male adult franchise, and there is no disqualification for colour, except that the holding of land by a mere tribal or communal tenure does not constitute a qualification within the property clause of the tenure. Furthermore, men of colour can sit on the Provincial Council, though excluded by the requirement of European descent from the Parliament of the Union. The administration of provincial services is entrusted to an Executive Committee of four members elected by the Council and an Administrator appointed by the Union Government. The present Administrator is the Hon A. P. J. Fourie.

**LAW AND JUSTICE.**—The law of the Province is Roman-Dutch, modified by Acts

passed by the Colonial Legislature and, since 1910, by Ordinances of the Provincial Council and Acts of the Union. In the districts to the east of the Kei River a special Native Territories Penal Code is in force. These territories are grouped under one Chief Native Commissioner with headquarters at Umtata, under whom there are 27 magistrates who are officers of the Native Affairs Department. In British Bechuanaland native law is administered by native chiefs, subject to appeal to the ordinary courts. The Provincial Division of the Supreme Court consists of a Judge President and eight Puisne Judges. Minor cases are brought before the courts of the Resident Magistrates and of paid Justices of the Peace, from whose decisions appeals lie to the Supreme Court.

**LOCAL GOVERNMENT.**—The province is divided into 119 magisterial districts, and the colony proper, including British Bechuanaland, but exclusive of the Transkei territories, into 86 fiscal divisions. In each division there is a Civil Commissioner, who is, in all cases where the fiscal and magisterial areas coincide, also the Resident Magistrate. Each division has a Council of at least six members, elected triennially by the owners or occupiers of immovable property. These councils look after roads, boundaries and beacons, return three members to the Licensing Court, and perform other local duties. In 1923 there were 129 municipalities.

**AGRICULTURE.** Early in the development of Cape Colony the south-western coastal districts became recognised as the granary of South Africa because of their climate. At the present time they produce 30 per cent of the wheat crop and larger proportions of other cereals. Maize and Kaffir corn are extensively grown, especially in the Transkei, potatoes are a most important crop, being raised especially at Humansdorp and Stellenbosch, and the Province is second only to the Transvaal as a tobacco-growing country. At one time wine was the best-known product of the Cape, and the vineyards of Constantia, Stellenbosch, Paarl, Malmesbury, Worcester, and Robertson have always been famous. Fruit of every kind grows well, the principal varieties exported from the province being peaches, pears, plums, apricots, nectarines, oranges, naartjes, pineapples, melons, and grapes. In the George, Knysna, and Humansdorp divisions there is a valuable forest region.

The following table gives in detail the production of the leading crops of the Province in 1923-24.—Wheat, 1,525,281 bags, oats, 1,346,745 bags, barley, 320,351 bags, rye 176,369 bags; maize, 538,080 bags, potatoes, 387,741 bags, Turkish tobacco, 816,099 lb, other tobacco, 3,426,716 lb; cotton, 260,169 lb. (See also general articles on "Agriculture," "Cotton," "Maize," and "Tobacco.")

**COMMERCE.**—See general article elsewhere.

**FINANCE.**—The total revenue of Cape Province, exclusive of the Union Government

subsidy of £1,560,800, amounted in the last year for which figures are available to £1,121,638. The main sources of revenue were General licences, £519,460, transfer duty, £224,701, Provincial property tax, £202,378, and departmental receipts, £140,692. Expenditure totalled £3,260,923, distributed as follows: Education, £2,514,412, roads, bridges, and works, £281,032, hospitals and poor relief, £252,804, and general administration, £212,675. Capital expenditure from loans amounted to £160,222, of which £104,993 was spent on school buildings.

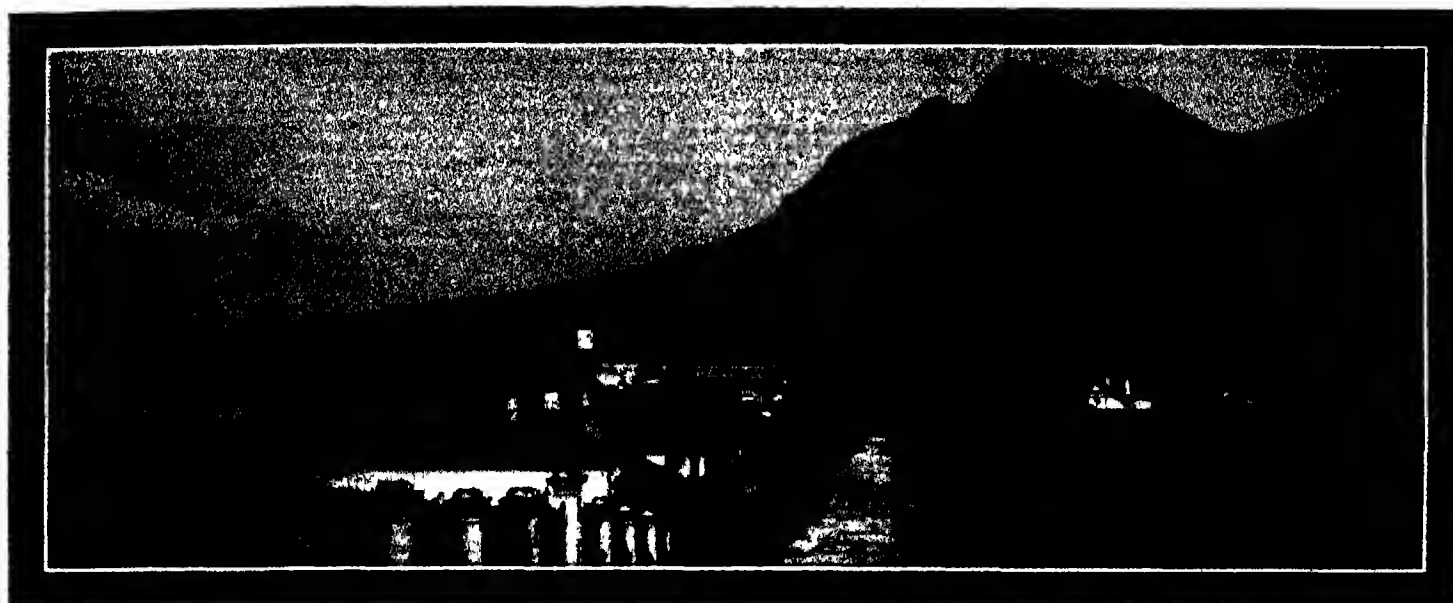
**INDUSTRIAL PRODUCTION.**—In 1923-24 there were 3,017 factories in Cape Province, a slight increase on the figure of 2,975 for the preceding year. Of these, 916 were connected with food and drink, 382 with clothing and textiles, 339 with vehicles, 297 with metals and engineering, 294 with building and contracting, and 137 with leather and leatherware. The gross value of the production of these factories amounted in 1923-24 to £29,126,311, compared with £26,562,111 in 1922-23.

**LIVE STOCK.**—The plains of the Karoo contain enormous pastoral possibilities, and the Cape has always led in the production of wool, the Fraserburg, Beaufort West, and Victoria divisions being typical sheep-farming districts. The sheep are mainly of the merino breed, more valuable as wool producers than the old type of Cape sheep, which is dying out, except among the natives. Cattle are extensively reared, and dairy farming is being extended. Ostrich farming is a speciality of the Province, though the number of birds has steadily declined since the war-slump in feathers.

Following are the figures of live stock of the province for 1923-24: Sheep, 17,428,545, cattle, 2,744,950, goats, 4,284,297, horses, 346,048, and ostriches, 204,388. The production of wool in the same year amounted to 67,095,122 lb, compared with 72,045,812 lb in 1922-23. The production of other pastoral products was as follows: Butter, 4,835,272 lb, cheese, 232,553 lb, bacon and ham, 824,561 lb, mohair, 7,558,759 lb; ostrich feathers, 201,900 lb.

**MINERAL PRODUCTION.**—Of the minerals found within the range of Cape Province, the diamonds of Kimberley district take first place, the total production in the province up to December 31, 1925, being valued at nearly £214,000,000. Copper, which is peculiar to Namaqualand, takes second place, coal is found and mined to the north of Queenstown in the north-eastern districts, at Indwe, Guba, and Miltene. A little gold has been won in the Knysna division on the southern coast. The total value of the mineral production of Cape Province in 1924 was over £6,000,000, of which diamonds accounted for nearly £5,500,000, copper for £183,000, asbestos for £50,000, lime for £90,000, and salt for £60,000. (See also articles on "Mining and Minerals" and "Diamonds.")

**TRANSPORT.**—See general articles on "Shipping," "Railways," and "Port of Capetown."



GENERAL VIEW OF CAPETOWN.

The Picturesque Factory Buildings of the United Tobacco Companies (South) Ltd. can be seen in centre of the illustration.

## CITY AND PORT OF CAPETOWN

### CITY

**T**HE story of South Africa was for nearly two hundred years the history of Cape Colony, and for a great part of that time the latter was but an extension of Capetown, the original settlement planted in 1652 by Jan Van Riebeeck. From the town into which the settlement developed, comprised as it was in the early days within the area between the face of Table Mountain and the sea, has expanded the present city, occupying not only some miles of the ocean-front, but broadening out across the Cape Flats and extending along the further slopes of the mountain through Wynberg to the suburbs of Muizenberg and St James on the shores of False Bay.

From Capetown went those adventurous settlers who, by the end of the 18th century, had spread themselves throughout the colony, and from and through Capetown, in the century which followed, passed the greater number of those who in the other states and territories have played their part in the building up of South Africa. Capetown saw the first efforts towards an educational system in that country, was the seat of the first Parliament, became the first organised Municipality, and was therefore justly selected as the Legislative Capital of the Union in 1909. The oldest, it is, next to Johannesburg, the largest city in the Union, its position being due not only to almost unique natural advantages, but to its position as a port and the very considerable extent of its industries and trade.

**ART.**—The South African Art Gallery is at present housed in an annexe of the

Museum, and contains many good examples of modern painting and sculpture. It is intended to erect the new National Art Gallery of South Africa on a site near the foot of the Avenue. A small but charming collection of Flemish and Dutch paintings, the Max Michaelis Collection, is to be found in the Old Town House on the southern side of the Square, itself one of the finest examples of early colonial architecture.

**BATHS.**—The Municipal Baths are situated in Overbeck Square, at the top of Long Street. They were opened in 1908, and consist of a swimming pond, 100 ft by 45 ft, with a depth of from 3 ft 6 in. to 7 ft 6 in., in addition to hot and cold private baths and showers. The gallery to the swimming bath, with accommodation for 800 spectators, provides an excellent view of the whole water-level, and galas and water-polo contests are a great attraction during the summer season. There is also an open-air swimming bath in Hanover Street.

**BUILDINGS.**—First in importance, but by no means in appearance, is Government House, the town residence of the Governor-General. The oldest part of the building, which adjoins the Houses of Parliament on the left-hand side of Government Avenue, dates from 1740, but constant additions have been made since without any regard to architectural fitness or beauty. The result is a rather heavy mass of incongruous buildings, which, however, are surrounded by most beautiful trees and gardens. There is a scheme to erect a new Government House, probably at or near Rondebosch.

The former Houses of Parliament, now used by the Provincial Council, were completed in 1886, being built of red brick upon Paarl granite. In 1910 a new wing was added for the use of the Union Parliament. The Municipal Buildings, facing the Parade ground, are built in the Italian Renaissance style and have a clock tower and belfry 200 feet in height. The grand City Hall contains a large organ and can seat 2,000 people, or accommodate up to 6,000 for mass meetings. The building is in three storeys, the portion facing on Darling Street rising to a height of over 80 feet. Besides the usual Municipal Offices, there are a large Council Chamber, Councillors' Library, Banqueting Hall, etc. Opposite the main portico a statue of King Edward VII, by Sir W. Goscombe John, has been erected.

Other noteworthy public buildings include the Opera House in Darling Street, the Public Library with a fine Grecian façade, the handsome head office of the Standard Bank of South Africa, and the General Post and Telegraph Offices in Adderley Street, a symmetrical pile of buildings faced with stone brought from Saldanha Bay. It is in front of the Post Office that the attractive Flower Market is held on Wednesdays and Saturdays.

**CASTLE.**—The Castle of Capetown was built in 1666 by the Dutch East India Company, and is still in a state of perfect preservation. It stands at the lower end of Darling Street, at the far side of the Parade. The castle is a strong stone fortress with five massive bastions in the form of a pentagon, and was designed after the systems



of Vauban and Coehorn, the most eminent authorities on fortifications of that age. It possesses many features of great antiquarian interest and is a relic of the historic past of which the city is justly proud and careful.

**CHURCHES.**—Capetown has two cathedrals and a number of fine churches. St George's, the Anglican Cathedral, with a striking Grecian front and a memorial cross to the memory of Bishop Gray, stands at the upper end of St George's Street, but this will before long be superseded by the new Cathedral, the foundation stone of which was laid by the present King, when Duke of Cornwall, on August 22, 1901. The cost is expected to exceed £200,000. At present only the Sanctuary and Chancel, the Sacristy, the Centre of the Transepts, and part of the Nave are completed. The Roman Catholic Cathedral is dedicated to St Mary, and from its elevated position near Government House is a conspicuous object in any view of the city. Another handsome church is the Metropolitan Wesleyan Church, of Gothic style, whose graceful spire is a

country, and to the attractions of an almost perfect climate are added the great natural beauties of the Peninsula and its neighbourhood.

**CLUBS.**—The leading clubs in Capetown are the Capetown, the City, and the Civil Service, all of which have very comfortable and extensive accommodation and a large membership. There are also the Alexandria Club, for ladies, the Owl, the Jewish, and many clubs connected with the sporting activities of the city.

**EDUCATIONAL FACILITIES.**—Capetown may be justly called the leading educational centre in South Africa. With an old and well equipped University, its teaching and training colleges, its schools of art and music, its technical and vocational institutes and its excellent primary and secondary schools for boys and girls, it offers educational facilities of the highest order in all branches of learning and research. The University is specially dealt with later, of the remaining educational institutions it may suffice to make mention of the South African

embracing rare exotic as well as indigenous examples. Here, for instance, may be seen the oak, maple, lime, elm and pine of England growing side by side with the graceful deodar of the Himalayas, the camphor tree of Sumatra, or the towering araucaria of Norfolk Island. English fruit trees are present, olives and mulberries from the Mediterranean, mangos and alligator pears from the West Indies, while under the sunny sky of the Cape bloom the flowers of Europe and Africa alike. In these gardens stands a marble statue of Sir George Grey, a former Governor.

The National Botanical Gardens at Kirstenbosch, a part of the Groote Schuur Estate, were established in 1913, and are controlled by a Board of Trustees acting through a Director, who is one of the two Professors of Botany in the University of Capetown. These gardens, which occupy a site of exceptional beauty, are intended primarily for the cultivation and scientific study of South African flora, a large part being treated as a Nature Reserve.



1. VAN RIEBEECK'S STATUE, Capetown, looking towards Table Mountain.

2. "GROOTE SCHUUR," Capetown. The Home of the late Right Hon. Cecil John Rhodes, and left by him to the People of South Africa.

prominent feature. The Dutch Reformed Church, in Adderley Street, with its vane-topped Flemish spire, is noticeable for its lack of any external embellishment, but its interior is remarkable for the immense span of roof (80 ft. wide), unsupported by prop or pillar, and also for its wood-carved pulpit, the work of a German artist. The Congregational, Presbyterian, Lutheran, Free Protestant, Seventh Day Adventist Churches, and the Jewish Synagogue are among the other sacred edifices of the city.

**CLIMATE.**—Capetown is highly favoured in regard to climate, having an average of nearly 3,000 hours of bright sunshine per year, and the temperature is very equable, there being no great extremes of heat or cold. The Cape Peninsula is in the area of winter rainfall, but occasional showers occur throughout the year. The humidity is only moderate. The mean yearly temperature is 62.6 deg. Fahr., and the average rainfall 25.64 inches. The parts of the municipality on the seaboard are much frequented by holiday-makers from other portions of the

College, which was established in 1829 and is the oldest University College in South Africa, St George's Grammar School, the Normal College, the Training College, the Good Hope Seminary for Girls; and the Dominican Convent High School.

**GARDENS.**—The Government Gardens form perhaps the most striking ornament of Capetown. They are a legacy from olden times, for which the city may thank the Dutch East India Company. Originally planted more for use than ornament—to shelter the vegetables and fruits grown for the purpose of supplying passing ships—they now afford a grateful shade and pleasant place of resort for the inhabitants, and are especially appreciated by visitors. The central walk extends for nearly three-quarters of a mile through an avenue of old oaks, with the grounds of Government House on one side and the Botanic Gardens on the other. The latter, now under the care of the City Council, are laid out with grass plots, shrubberies, and conservatories, and contain a variety of trees and plants

**GROOTE SCHUUR.**—Groote Schuur ("Great Barn"), the official residence of the Premier of the Union of South Africa, occupies a beautiful site at Rondebosch. It was originally the residence of the late Right Hon Cecil J. Rhodes, Premier of Cape Colony and founder of Rhodesia, the handsome modern building having been built on the foundations of Van Riebeeck's great grain barn. By his will Rhodes left the entire property to the Premier of a united South Africa, when the consummation to which he had devoted his greatest energies should come to pass. Part of the beautiful grounds has been converted into a Zoo, where wild animals from lions downwards are housed, and from near the lion houses a road leads in about 20 minutes to the Rhodes Memorial, of which the mounted figure in the foreground, with its face turned towards the Matopo Hills in Southern Rhodesia, where the great Empire Builder's body rests, is a reproduction of the famous "Physical Energy" by Watts. An inscription reads: "To the Spirit and Life-work of Cecil John

Rhodes, who loved and served South Africa " The lower slopes of the Groote Schuur estate have been set apart for the New University, which is now in process of construction. (See later " University ")

**INDUSTRIES.**—See article following

**INFORMATION BUREAU.**—All visitors to Capetown should call at the Information Bureau, to be found in Adderley Street, below Strand Street. The Visitors' Bureau, which is another name for the same institution, is conducted by the Cape Peninsula Publicity Association for the convenience of visitors and tourists. Here reliable information of a varied order may be obtained: the programme of the season's attractions, etc.—and everything is done by the secretary and staff to facilitate the movements of visitors in the Peninsula.

**LIBRARIES.**—The South African Public Library, in the Avenue, is a national institution, and is the oldest and largest library in the Union, having been founded in 1818. It contains the Dessimian, Grey, Hofmeyr, and Wessels Collections, being especially rich in literature relating to South Africa and in sets of scientific serial publications. The library now has about 150,000 volumes of every variety of literature, and the average monthly circulation of books exceeds 10,000.

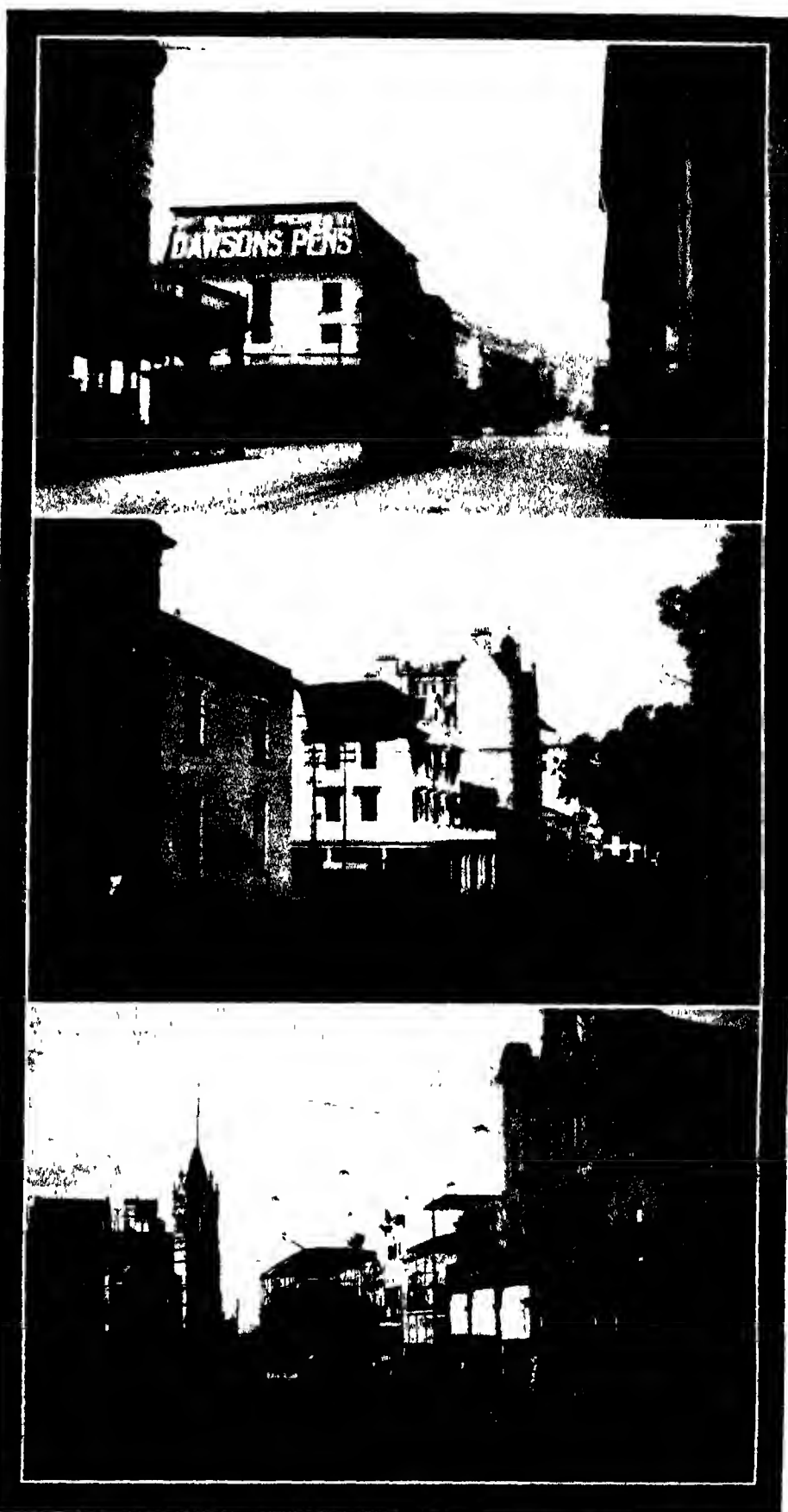
**MUSEUMS.**—The South African Museum, near the Municipal Botanical Gardens, was erected at a cost of £10,000 and opened in 1897. A handsome building, there is within it a varied and valuable assortment of historical and ethnographical relics and curios of the country. At the entrance is arranged a series of " Post Office " Stones, beneath which captains of ships touching at the Cape used to place their letters when outward bound for conveyance home by returning vessels. These stones date back to 1614. The anthropological and ethnographical room contains a unique collection of South African stone age implements, rock paintings, incisions, etc. Two other rooms hold interesting collections of South African birds, reptiles, fishes, and mammals.

In Strand Street a South African National Museum, illustrating the conditions of life of the early Dutch settlers in South Africa, is housed in the Koopmans de Wet House, one of the few very old Dutch buildings now standing. This house is the property of the nation, and admission to it is free.

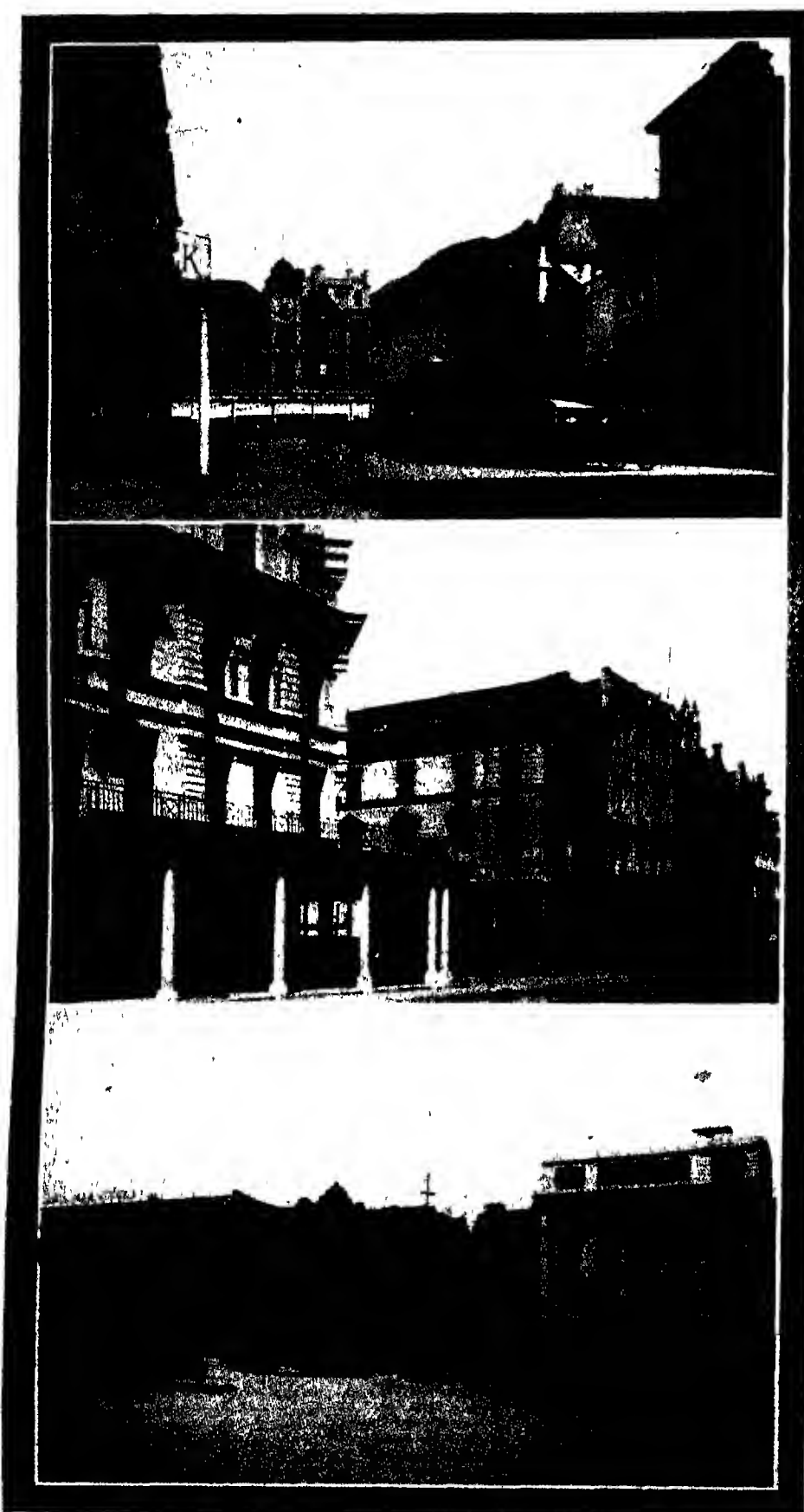
**MUSIC.**—In addition to the organ recitals which are given at regular intervals in the City Hall, the City Council maintains an orchestra of over 30 performers, which gives performances on the Pier, in the City Hall, and elsewhere.

**OBSERVATORY.**—The Royal Observatory is the oldest in South Africa, having been instituted by an Order in Council in 1820. It is under the control of the Admiralty, and is housed in a group of buildings erected on grounds covering 27 acres. The Cape Observatory has been famous in astronomical circles ever since, in 1882, the idea of employing the telescope for the determination of actual star positions by means of stellar photography took practical shape there. The development of this resulted in (1) the Cape Photographic Durchmusterung, a photographic catalogue of nearly 400,000 stars, and (2) the international survey of the heavens, in which many of the principal observatories of the world are co-operating.

**POPULATION.**—The population of Capetown at the last census of 1921 was returned at 207,404. Of this number, 113,303 were Europeans, 4,680 natives, 2,435 Asiatics, and 86,986 mixed and various. It will be



1. CORNER OF STRAND AND LONG STREET, Capetown. Note the evidence of an excellent tram service.
2. WALE STREET, looking towards Adderley Street Junction, Capetown, with Syfret's Trust Building in centre.
3. PLEIN STREET, Capetown. Note again the evidence of the excellent tram service.



1. EXCHANGE PLACE, Capetown. Messrs. Garlick & Co.'s fine Store in the left foreground.
2. JUNCTION OF ST. GEORGE'S STREET & STRAND ROAD, Capetown. The Yorkshire Insurance Company's Building in left foreground.
3. GREENMARKET SQUARE, Capetown. J. H. Stark & Co.'s Building on left.

seen that the two white races predominate, and that the non-European class consists principally of what are termed "coloured people." The Asiatic population is composed largely of Malays, who are Mohammedans, and whose quarter is situated at the extreme end of the mountain-side of the city. The native population, who are employed mostly as dock labourers and on road construction work, are housed in a special municipal location some miles outside the city.

**PUBLIC HEALTH.**—From the point of view of public health, Capetown definitely belongs to the temperate zone, and tropical diseases are conspicuously absent. The state of health and the mortality statistics of the European part of the population are much the same as in a healthy European town. The non-Europeans constitute 43 per cent of the population, and present much less favourable health statistics than the Europeans. The birth rate in 1923-24 was for Europeans 21.92, for non-Europeans 52.66, and for all classes 35.21 per 1,000; the death rate for the same period was for Europeans 17.21, for non-Europeans 31.09, and for all classes 20.07 per 1,000.

**SEWERAGE.** Capetown was the first city in South Africa to be provided with a complete water carriage system of sewage disposal, which justifies its claim to be as well equipped from a sanitary standpoint as any city in the world. This system is supplemented by a separate one of storm-water sewers. The sewage outlet is in the tidal way beyond Green Point Light. The length of sewers in 1924 was 86½ miles, of storm water sewers, 45½ miles. Additional drainage works are under construction.

**SPORT.** Capetown and indeed the whole Cape Peninsula offers to the resident and tourist alike every variety of sport and recreation. At the capital, the Kenilworth and Milnerton jaccouses have meetings almost every week under the auspices of the South African Turf Club, while during the winter months weekly meetings of the Cape Hunt Club are held. In the way of games, the matches of the Senior Rugby Football League on the famous playing fields of Newlands are the favourite attraction for Cape sportsmen, Capetown and the Western Province having always been the nursery grounds of this national game. Association football is also keenly followed, the headquarters of this game being at Hantleyvale. In the summer, cricket has its votaries, the Newlands grounds being the headquarters of the Senior Cricket League of the Western Province. At Wynberg, Mowbray, Green Point, Rapenburg and Clovelly are excellent golf-courses.

Surfing is just as popular at Muizenberg as at the more famous Manly Beach, in Australia, and all along False Bay the sport of sea-fishing is widely practised. Lastly, the Cape Mountain Club has an ever growing membership of enthusiastic climbers, to whom Table Mountain offers endless opportunities to test their skill before proceeding to try the more hazardous ascents which lie further afield.

**STREETS.**—The streets of Capetown present to the stranger a wonderful blend of the old and the new, though the former is, of course, rapidly giving way to the latter. Adderley Street, the main thoroughfare and heart of the city, has no great length, but a very spacious breadth, and within its confines most of the finest buildings and shops are to be found. In Dutch times it was known as "The Herengracht." It is a great contrast to pass from the turmoil of the traffic of Adderley Street into the cool shade and restfulness of the Van der Stels Avenue,

which leads up to the region of the Gardens and Orangezicht under Table Mountain. The Avenue has already been mentioned as the site of many Government Buildings and the beautiful Botanical Gardens. Plein Street, Long Street, and Loop Street are also busy business areas, while St. George's Street, which is the headquarters of the two principal Capetown newspapers, is likewise an important business thoroughfare.

**SUBURBS.**—The suburbs of Capetown extend many miles eastward and westward. The western suburbs have a free and open outlook on to the ocean, and they enjoy the sunniest weather experienced in any part of the Peninsula. Many of the most charming modern residences in South Africa are to be found at Green Point, Three Anchor Bay, Sea Point, Clifton-on-Sea, and Camps Bay. The last named bears a strong resemblance to Biarritz, and is remarkable for the range of mountains immediately behind it, which is known as the Twelve Apostles. The suburbs to the east of the city and behind Table Mountain extend from Woodstock to Lakeside, a distance of about 12 miles. Generally, their climate is rather less bracing than that of the western suburbs, and they are more heavily wooded and vegetated. Woodstock is now an important commercial and industrial centre. The pretty suburbs of Mowbray, Rosebank and Rondebosch, with no visible line of division between them, are set under the fireclad heights of the rugged Devil's Peak.

Groote Schuur has already been described. The suburbs of Newlands, Claremont, Kenilworth and Wynberg, continuous areas of settlement, follow in succession after Rondebosch, and contain some of the oldest and most beautiful homesteads and estates in Cape Province. Near Kenilworth and Wynberg stations is the beautifully situated racecourse of the South African Turf Club. Beyond Wynberg, the eastern suburbs extend a further distance of seven or eight miles in the direction of False Bay, the order of position being Plumstead, Diep River, Heathfield, Retreat, and Lakeside. This area is rapidly becoming settled, the whole district being well watered and suited to market gardening and farming on a small scale.

**TABLE MOUNTAIN.**—The unique feature of the scenery of Capetown and the city's great charm, entitling it to rank with Naples, Rio de Janeiro, and San Francisco as one of the most beautifully situated sea-ports of the world, is the magnificent mountain which rises behind it in a sheer precipice to the height of 3,582 feet. Two deep gorges cleave the mountain from summit to base, one of these, the Platteklip Gorge, providing the favourite means of ascent. On either side and rather in advance of Table Mountain are two lesser peaks, forming the horse-shoe valley in which Capetown lies. On the left the Devil's Peak rises to a height of 3,300 ft., while the mountain on the right is known as the Lion's Head (1,800 ft.). Both of these hills command extensive views, but they are not to be compared with the magnificent panorama which lies open before the visitor who ascends to the summit of Table Mountain, below which the city lies embroidered in green, with the blue waters of the bay and the fertile plains of the Koeberg district beyond it. Southwards, the view embraces the whole of Cape Peninsula as far as the Hottentots-Holland range of mountains. The slopes of the mountain, clothed with beautiful foliage and flowers, are broken by charming glens, valleys, and streams. The attractive Table Mountain orchid and the graceful silver trees are here found in profusion.

**TRAMWAYS.**—The public tramways of Capetown are not controlled by the municipality, but are owned by the Cape Electric Tramways Company Limited, and date from 1896. They are constructed to a gauge of 4 ft 8½ in., and in 1925 had a route length of 23.24 miles, the total extent of track being 27½ miles. During the year just named the number of passengers carried was 26,527,185, and the total of car miles run, 2,302,600. Revenue amounted to £323,108, and expenditure to £237,880. (See also Company's article following)

up-to-date educational institution in the country, and will have cost about one and a half millions sterling. The new University will provide for the training of nearly a thousand students. It confers degrees in the faculties of arts, science, engineering, law, commerce, music, and medicine, and diplomas and certificates in teaching, music, commerce and public health. The degrees and diplomas of the Medical School are recognised for purposes of registration throughout the Union and Southern Rhodesia, and the degrees in law are accepted for admission

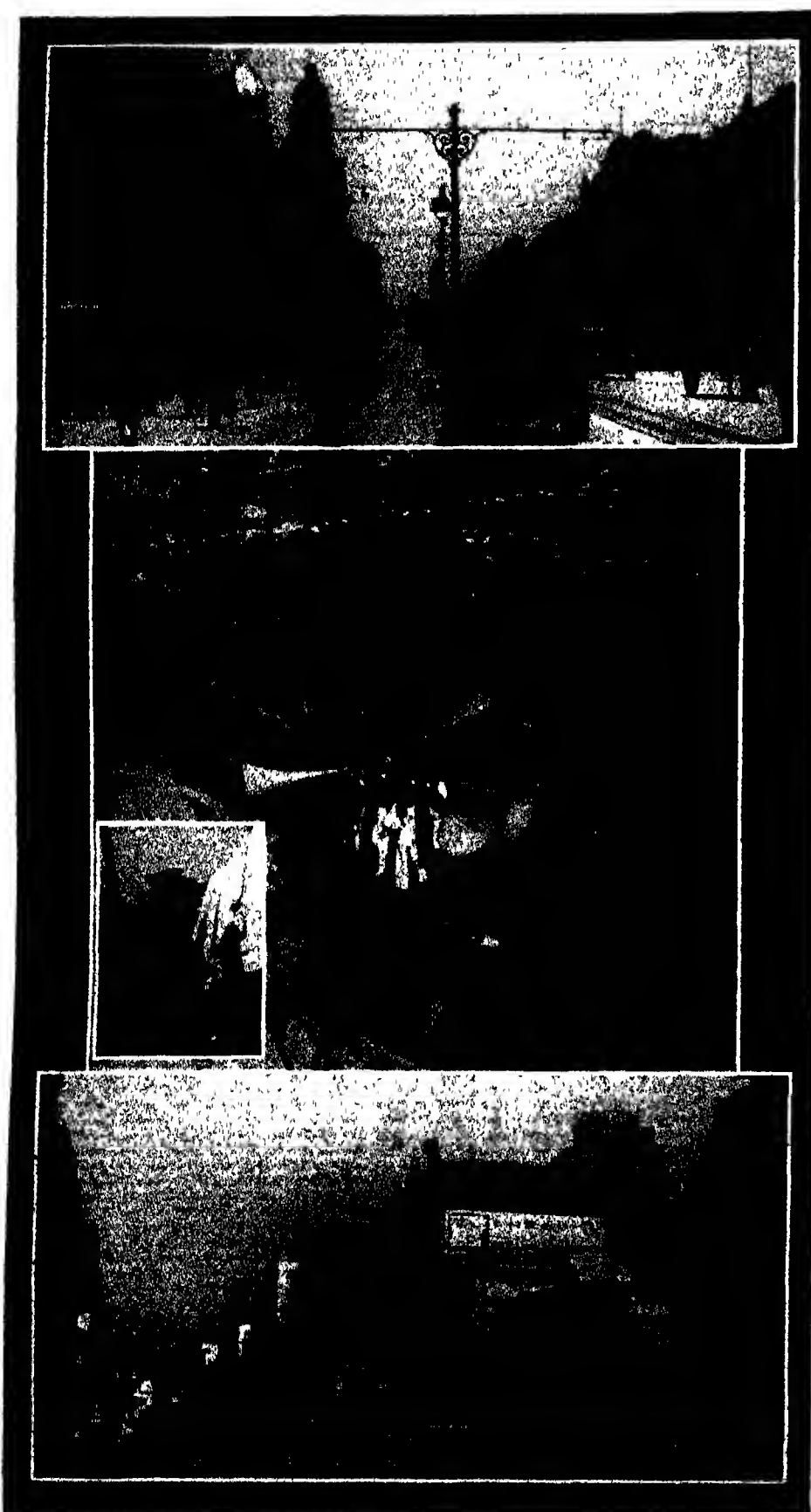


ADDERLEY STREET, CAPETOWN. GENERAL POST OFFICE, with latest type of Double-Decker Tram Car in foreground.

**UNIVERSITY.**—The University of Capetown dates from 1916, when an Act of Parliament provided for the incorporation of the South African College (which had been founded in 1829) as a University on April 2, 1918. The imposing pile of buildings which are nearing completion stand on the lower slopes of the Groote Schuur Estate, and commemorate one of the many ambitions of Cecil John Rhodes. When finished, they will house what is intended to be the most

to the Bar. There is also attached to the University a school of African life and languages for the special study of native languages and customs.

**WATER SUPPLY.**—Prior to 1913, the year in which the City of Capetown Unification Ordinance was promulgated, the waterworks system of the Peninsula consisted of six reservoirs which supplied the city, the Hely Hutchinson and Molteno Reservoirs being the largest, a reservoir at Newlands



1. ADDERLEY STREET, Capetown. The Tower indicates location of Garlick's Store.
2. UNVEILING OF THE CAPETOWN WAR MEMORIAL by the Governor-General, August 3, 1924. The picture shows the Western Electric Public Address System in use.
3. ADDERLEY STREET, Capetown. Showing site for Clegburn & Harris' new Premises, right foreground, behind tram.

and the Albion and Kommetje Springs, which supplied the Southern suburbs; and a reservoir at Kalk Bay. It had long been apparent that a considerable increase of the water supply was needed, and in 1915 a Board of Engineers was appointed to examine and report upon the extent to which the present and other sources of supply within the Cape Peninsula could be developed, also upon certain sources of water supply outside the Peninsula. The Board came to the conclusion that it would be necessary for Capetown to go outside the limits of the Peninsula for an adequate supply of water, and recommended that the Steenbras Scheme should be carried out as quickly as possible. This scheme was accordingly adopted by the City Council in 1917, a loan of £850,000 being authorised. The first part of the scheme was completed and officially inaugurated by H. R. H. Prince Arthur of Connaught in 1921.

The Steenbras Valley is situated in the Caledon Division, 40 miles from Capetown. The whole of the catchment area, 23½ square miles, together with the land on either side of the river to the sea, is owned either by the Government or the Council. The works consist of (1) a wall built above the entrance to the gorge, to impound the waters of the two rivers Kogel Berg and Steenbras, which unite a few hundred yards above the site of the dam, (2) a tunnel, 2,700 ft in length, through the Hottentots-Holland range of mountains, and (3) a cast iron pipe to Capetown, 40 miles in length. The present reservoir is designed to hold 600,000,000 gallons of water, sufficient to distribute 5,000,000 gallons per day, but the Steenbras Valley is capable of providing up to a daily supply of 20,000,000 gallons of water when required.

In 1923 the Council decided to proceed with the enlargement of the Steenbras scheme, the additional works now in course of construction being (1) the extension of the existing dam by widening and raising it 40 ft, so as to impound 6,000,000,000 gallons—the maximum depth of the water will then be 90 ft, and when the reservoir is full the surface area will be about 827 acres, (2) the construction of a new outlet tower, and (3) the provision of a 33 inch cement lined steel wrapped pipe line to Newlands Reservoir, having a capacity of 10,000,000 gallons per day. The estimated cost of these works is £1,000,000, and it is expected that the additional supply will be available for the summer season of 1927-28.

### VISITORS' GUIDE

**CLUBS.**—Bachelors—Maynard Road, Capetown—8, Darling Street, City—18, Queen Victoria Street, Civil Service—9, Church Square; Junior Civil Service—Greenmarket Square, Jockey—6, Darling Street, Owl—35, Wale Street; Royal Automobile—13, Church Square, South African Turf—41, St. George's Street.

**CONSULATES.**—Argentina Republic—63, Shortmarket Street; France—21, Sir George Grey Street; Germany—73, St. George's Street; Greece—68, Shortmarket Street, Japan—Watson's Buildings; Netherlands—52, St. George's Street; Portugal—Portugal Buildings, Riebeeck Street; Siam—106, Adderley Street; Spain—53, Church Street; Sweden—National Mutual Buildings, Church Square; Switzerland—56, Church Street; United States—African Life Buildings, St. George's Street.

**HOTELS.**—Belgrave—Strand Street; Cadarga—Mill Street; Central—Shortmarket Street; City Mansion's—Hope Street; Grand—corner of Adderley and



Strand Streets, Grosvenor—Long Street, International—Mill Street, Manchester—Strand Street, Metropole—Long Street, Mount Nelson—Government Avenue, Royal—Plein Street, St George's—St George's Street, White House—Strand Street.

**SUBURBAN HOTELS.**—Avenue—Claremont, Arthur's Seat—Sea Point,

Clifton-on-Sea—Sea Point, Coghill's—Wynberg, Crown—Claremont, Majestic—Kalk Bay, Marine—Camp's Bay, Palace—Kenilworth, Queen's—Sea Point, Ronwkap—Rondebosch, Royal—Wynberg, Vineyard Newlands.

**POST OFFICE.**—The General Post Office is in Adderley Street, near the Railway

Station. The Poste Restante is open from 8 a.m. to 6 p.m.

**TELEGRAPH OFFICES.**—In the General Post Office, and in Sir Lowry Road, Stal Street, Hanover Street, Mill Street, Kloof Street, Caledon Street, and Docks.

**THEATRES.**—Alhambra, Opera House, Tivoli, and several cinema theatres.

## PORT OF CAPETOWN

The Port of Capetown, known generally as Table Bay Harbour, is situated at the south-west extremity of the African Continent in latitude 33° 54' S, longitude 18° 26' E. No port in the Empire has a finer position, the large expanse of Table Bay being backed by the noble mass of Table Mountain, which, ever since the days of the early Spanish and Portuguese navigators, has been one of the principal signposts on a great highway of trade. It was from the first settlement at Table Bay, then only a place of temporary anchorage for ships using the "Grand Trade Route," that the colonisation and development of South Africa proceeded, it was as a

register can enter the docks and berth at the quays.

Running parallel with the breakwater is a quay wall, with projecting jetties, and the East Pier, 786 ft in length, is at right angles to the breakwater. The Victoria Basin has about 3,200 ft of quayage and jetty space. No. 1 Quay, South Pier, is 1,970 ft long with 27 to 30 ft depth, and No. 3 Pier, Elbow (outer berth), 700 ft, with 32 ft depth of water.

The total length of berthage is about 2½ miles, and the docks have a water area of 76 acres.

point out. All expenses connected therewith are borne by the vessel, and ballast landed becomes the property of the Board. (See also under "Port Charges.")

**BUNKERING.**—The port has a rapidly increasing bunkering trade, and, by means of ample coal storage accommodation and modern fast-working appliances for both shore and waterside operations, can give vessels expeditious despatch. The coal storage capacity at the port is over 100,000 tons. There is also a complete oil fuel storage service of 30,000 tons capacity, fitted with pumping plant and service pipes to quays. Loading and trimming are per-



1. VIEW OF CAPETOWN HARBOUR, Messrs. Gearing's Works are seen in convenient location for Shipping Repairs.

2. LOOP STREET, Capetown, with Messrs. Rutherford's Building in right foreground.

port that Capetown first became known, and to-day the name once given to it—the "Tavern of the Seas"—is more applicable than ever, the number of vessels entered having increased from 989 in 1910 to 1,769 in 1925, and the tonnage from 2,910,625 to 6,916,697 tons.

**ACCOMMODATION.**—The Table Bay Docks, sheltered by a massive breakwater (4,700 ft long), provide deep-water quays fitted with every modern facility for the rapid handling of passenger and cargo traffic, as well as for coal and oil bunkering, for the largest vessels voyaging in the Southern Hemisphere. Ships of 20,000 tons gross

**ANCHORAGE.**—The outer anchorage at Table Bay is safe, when the wind is blowing from the south vessels arriving at night may with advantage, anchor north of the breakwater in from 9 to 10 fathoms, where they will be in a good position for dropping into the inner anchorage on the wind falling.

**APPROACH.**—The entrance to the harbour is 250 ft wide, between two piers, and access is easy. The depth at entrance is 40 ft at low water ordinary spring tides.

**BALLAST.**—No ballast may be landed or shipped at the docks or basins except by permission of the Secretary of the Harbour Board, and only at such places as he may

formed by the Administration, the charges being 1s 6d per ton in dock (2s 6d per ton overtime), and the same in the Bay, plus 1s 3d per ton lighterage.

**CARGO HANDLING.**—The quays at Capetown are equipped with cargo sheds having a total floor area of 446,883 square feet and a capacity of 4,515,837 cubic feet. They are served by extensive railway sidings directly connected with the main and branch line railway service throughout South and South-West Africa, Rhodesia, and the Congo. A large number of electric cranes of from 1½ to 15 tons' lifting capacity facilitate the rapid discharge and loading of cargo. Thus

the direct loading of goods into railway trucks for transit to any part of the railway system can be effected at the ship's side.

**CHILLING CHAMBERS.**—A feature of the shed and storage accommodation at Capetown Harbour is the 12 chilling chambers equalling 73,900 cubic feet capacity, which provide accommodation for over 900 tons of fruit pre-cooling at one time.

**DOCKING FACILITIES.**—A modern graving dock affords first-class facilities for repairs of the heaviest nature, and can be emptied in three hours. Its dimensions are: Length on keel blocks, 500 ft., depth on sill at high water, 25 ft., width at coping, 90 ft., at entrance top, 68 ft., at bottom keel block height, 50 ft. 6 in. The lifting power of the dock is 500 tons. There is also (a patent ship with cradle for craft up to 500

the following. Ships of war and steamers under 2,500 tons gross reg. £2, of 2,500 tons and over, £3. 7s. 6d. Sailing ships under 500 tons, £1, of 500 and under 1,000 tons, £1 10s., of 1,000 and under 2,000 tons, £2; of 2,000 tons and over, £3. For shifting in either dock or bay the same amount is again payable. For pilotage in and out of the port, if from within the limits of the jurisdiction of the Administration, to a safe anchorage, or, vice versa, the charge is the same as for docking or undocking, for every mile beyond the above limits, 10s. per mile, with special rates for special services.

**PORT CHARGES.**—Following are the principal dues and charges payable at the port of Capetown, many of these being common to all Union ports.—

**BALLAST.**—Ballast is supplied by the Administration during working hours at the

being allowed for the second and following hoists, provided that the heaviest weight shall be considered as the first hoist for the purpose of the tariff. Double rates are charged for Sundays and public holidays, and after ordinary working hours.

**HARBOUR DUES.**—These are uniform for all Union ports. Vessels which enter an inner harbour, dock, or river, or come alongside a wharf, jetty, or quay, are charged dues as follow. For each registered ton net up to 3,000 tons, 8d., over 3,000 tons, 3d. For each day after ten days in the case of steamers, and 21 days in the case of sailing ships, one-tenth of the above. Reductions up to 60 per cent are made in the case of vessels leaving within 60 hours of their entrance, as well as for vessels re-entering within 21 days (after having visited another port).



1. ADDERLEY STREET, Capetown. Premises of Messrs. L. Pinn & Co. (representing Mappin & Webb) in right foreground.

2. ST. GEORGE'S STREET, Capetown. Showing location of handsome Southern Life Buildings.

tons, and with accommodation for two vessels at a time.

**GRAIN ELEVATOR.**—In 1924 a large elevator of the latest type was completed in time for the handling of a portion of that year's maize crop. The elevator includes silo storage and quay galleries, and has a storage capacity of 30,000 tons.

**LIGHTERAGE.**—Lighters are used for coaling. Before any cargo is lightered, permission must be obtained from the Secretary to the Harbour Board, from whom lighters may be hired at rates to be agreed upon.

**PILOTAGE.**—This is compulsory. The charges for pilotage in or out of the docks or basins, or to the anchorage, must not exceed

following rates. Alongside ship at wharf, jetty, or quay, 4s. per ton; on board ship at wharf, jetty, or quay, 5s. per ton; alongside ship in roadstead, 7s. per ton.

**CRANE HIRE.**—At those quays where electric cranes are installed, the masters or agents of all vessels desiring to discharge or ship cargo must, if required by the Dock Traffic Manager, use these cranes exclusively for loading or unloading their vessels. For the use of each crane or transporter the charge is 9s. per hour during ordinary working hours and 12s. per hour otherwise, the minimum charge being £1. For the use of heavy lifts the charge ranges from 5s. to 15s. per ton, a reduction of 25 per cent.

The harbour dues for vessels calling for the sole purpose of taking bunker or cargo coal are 8d. per ton on the actual quantity of coal taken up to 1,000 tons and 4d. for each ton over. Minimum charge, £20, unless the full ordinary port dues amount to less, and the maximum charge not to exceed one half the ordinary port dues, calculated at full tariff rates.

Vessels calling for orders only, or for medical assistance, or for the sole purpose of dry docking for examination, cleaning or painting, are charged one half the ordinary port dues, with a maximum charge of £20.

**LIGHT DUES.**—These are payable at the first port of call for each voyage for the

whole coast of the Union of South Africa, a voyage being reckoned from the first port of call to destination and back, provided, however, that the ship does not proceed beyond the limits of the Union or more than once in each direction. For each net register ton, 2d.

Vessels calling for bunker or cargo coal, 1d per registered ton, for orders, or medical assistance, exempt.

**RINT AND STORAGE**—After 72 hours, for 7 days, 3d per ton per day, afterwards, 1s. On open spaces, one-half, on cargo transhipped—first 14 days, 3d per ton in store, one-half in open.

**SORTING**—Deals and galvanized iron, 1s 6d per ton, boards, 3s 6d to 5s per ton, other cargo, 2s 6d per ton.

**TOWAGE**—In or out of the harbour within a radius of three miles from the entrance or anchorage, including mooring and unmooring at anchorage and at jetty, wharf, or quay—

	£	s	d
500 tons and under	750 tons	*16	0 0
750 " " "	1,000 " "	19	0 0
1,000 " " "	1,500 " "	21	10 0
1,500 " " "	2,000 " "	24	0 0
2,000 " " "	over	27	0 0

\*Net register.

Assistance to vessels under their own steam in or out of the harbour as above, for each tug employed, £6 15s 0d, attendance in or out of the harbour, £3 7s 6d.

All steamers exceeding 500 tons net register are subject to a charge for assistance or attendance as above, provided, however, that the charge shall only apply to steamers entering or leaving the inner harbour, dock, or river, or mooring at a jetty, wharf, quay, or buoy.

**TRANSHIPPING**—Direct ship to ship, 5s per ton, when landed and stored before transshipment, 7s per ton, bullion and specie, 1s per box (without responsibility).

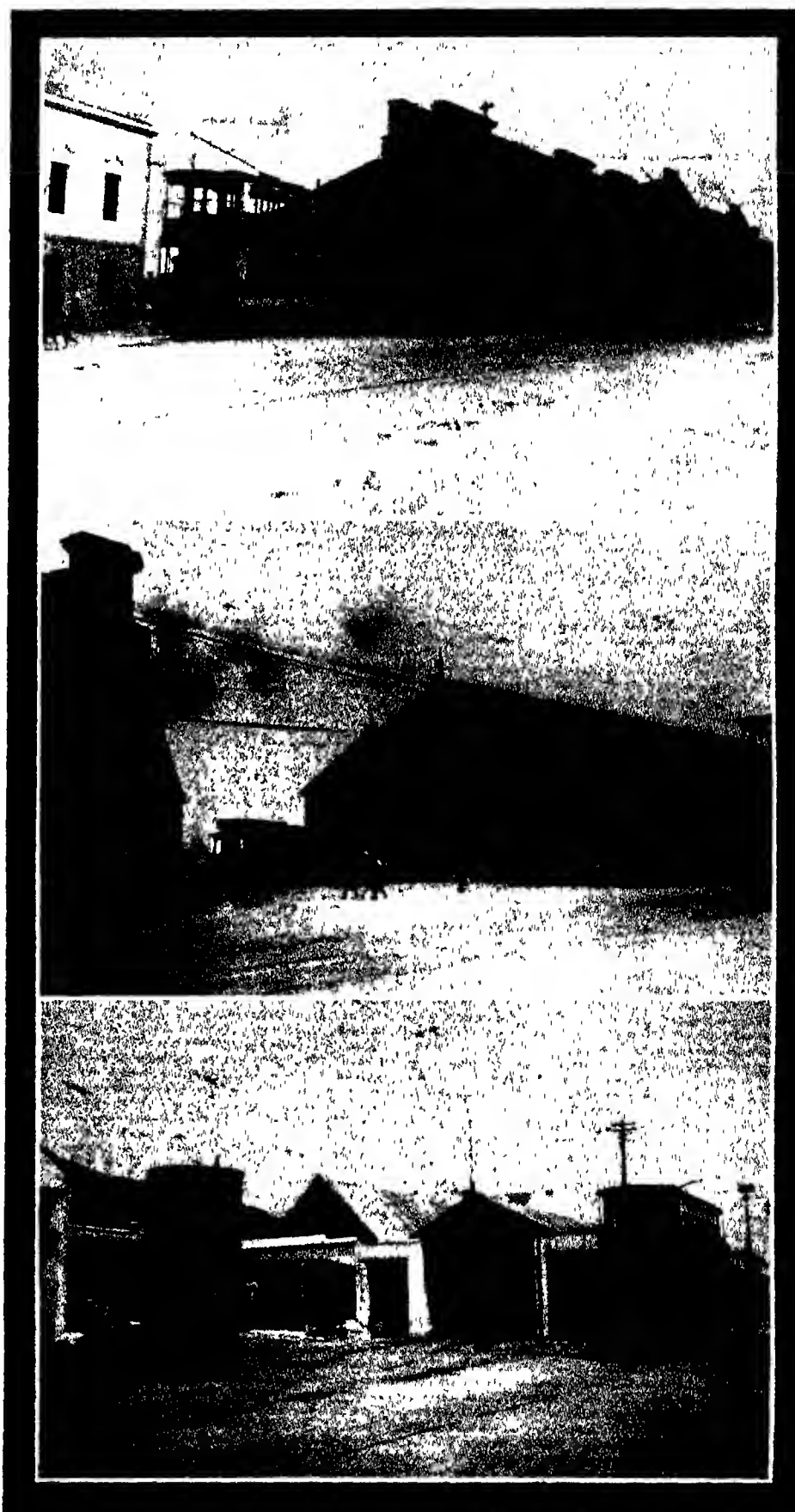
**WAREHOUSING**—Cargo not exceeding 2 tons per package, 5s per ton, 2 to 5 tons, 6s 6d per ton.

**WATER**—Supplied direct to boats at the quay from mains, 7s 6d per 1,000 gallons. To vessels in the bay by tugs or water boats, 35s per 1,000 gallons. Minimum, 37s 6d.

**QUARANTINE**—If a vessel has a clean bill of health, the port captain gives pratique. If from an infected port, or having infectious or contagious disease on board, the Medical Officer makes examination, and his instructions must be obeyed under heavy penalty. In case of quarantine, passengers are landed and the ship disinfected. The master must furnish declaration of health on arrival.

**SHIPPING AND TRADE**—Under all the headings in the official "Comparative statement of vessels arriving and of goods landed, shipped, and transhipped at Table Bay Harbour" there was a substantial increase in the figures for 1925 over those for 1924, which was, for normal times, a record year. In 1924, British and foreign steamers arriving "with and for cargo or for bunkers only" numbered 1,551, with a gross tonnage of 6,474,398, the total including motor boats of all nationalities. In 1925, steamers arriving numbered 1,750, with a gross tonnage of 6,831,053, and motor vessels 19, of 85,644 tons gross, a total of 1,769 vessels of 6,916,697 tons, making an increase in favour of 1925 of 218 vessels and 442,299 tons gross.

The value of imports through the port rose from £12,400,000 in 1922 to £12,600,000 in 1923 and over £13,500,000 in 1924. In



CAPE ELECTRIC TRAMWAYS LIMITED, Capetown.  
Three Views of the Company's Car Sheds.  
(See letterpress, page 159)



CAPE ELECTRIC TRAMWAYS LIMITED, Capetown.  
View of the Company's Property at Principal Car Depot.

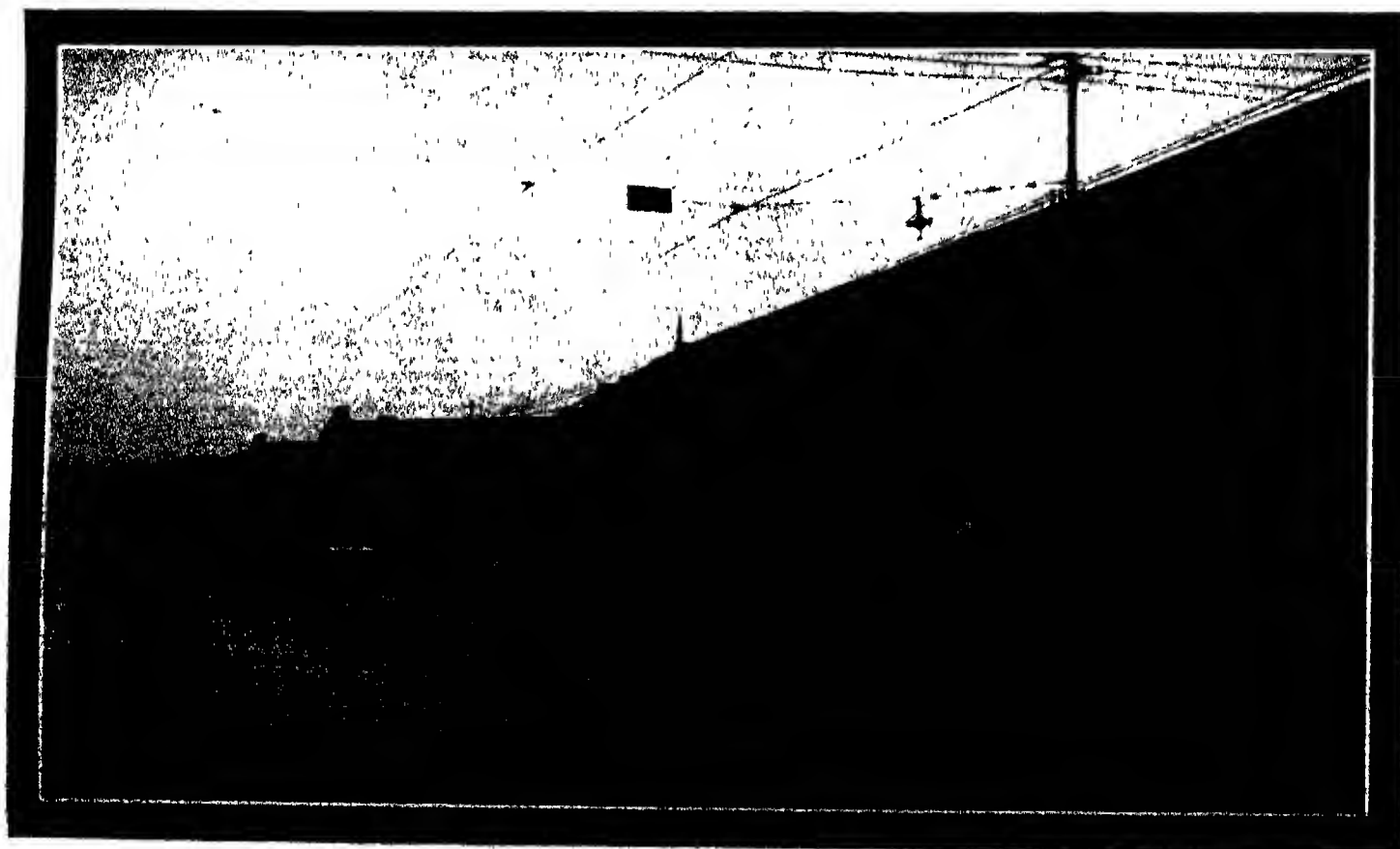
the last named year the imports trade of the port was about 22 per cent and the export trade 63 per cent of the total trade of the Union. Apart from bunker coal, the largest trade is done in maize and citrus fruits. In 1924-25 Capetown handled 394,179 tons of coal, of which 309,340 tons were for bunkers, 24,175 tons were coastal, and 604 tons were

export coal. The total quantity of goods handled during the year was 1,791,635 tons, an increase of 505,767 tons over 1924.

**TIME SIGNALS.**—A ball is dropped at noon, Cape Colony mean time, at Alford Docks, equal to 22 h 0 m 0 s Greenwich mean time, and 23 h 13 m 41 s local mean

time. A gun is also fired on Imhoff battery at the same time, equal to 23 h 13 m 0 s local mean time.

**TUGS.**—The port is equipped with three powerful tugs and two smaller craft. The three large tugs are fitted with modern salvage and fire appliances.



CAPE ELECTRIC TRAMWAYS LIMITED, Capetown.  
Car Sheds.

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### CAPE ELECTRIC TRAMWAYS, LIMITED.

**Inception.**—This company, which was registered in London on October 29, 1897, was established to carry into effect an agreement with Wernher Beit & Co., and to construct, lease, equip and work tramways or light railways in Cape Colony or elsewhere in South Africa.

**Capital.**—The authorised capital of the company is £500,000 in £1 shares, of which 491,222 have been issued (400,000 as paid). Debentures issued are 6 per cent (registered), repayable 1902-1925 (24 yearly drawings), at 6 per cent premium (less redeemed), £44,900, 5 per cent (registered), repayable at par on July 1, 1925, or at £100 before that date in circumstances specified in the Trust Deed, £140,000.

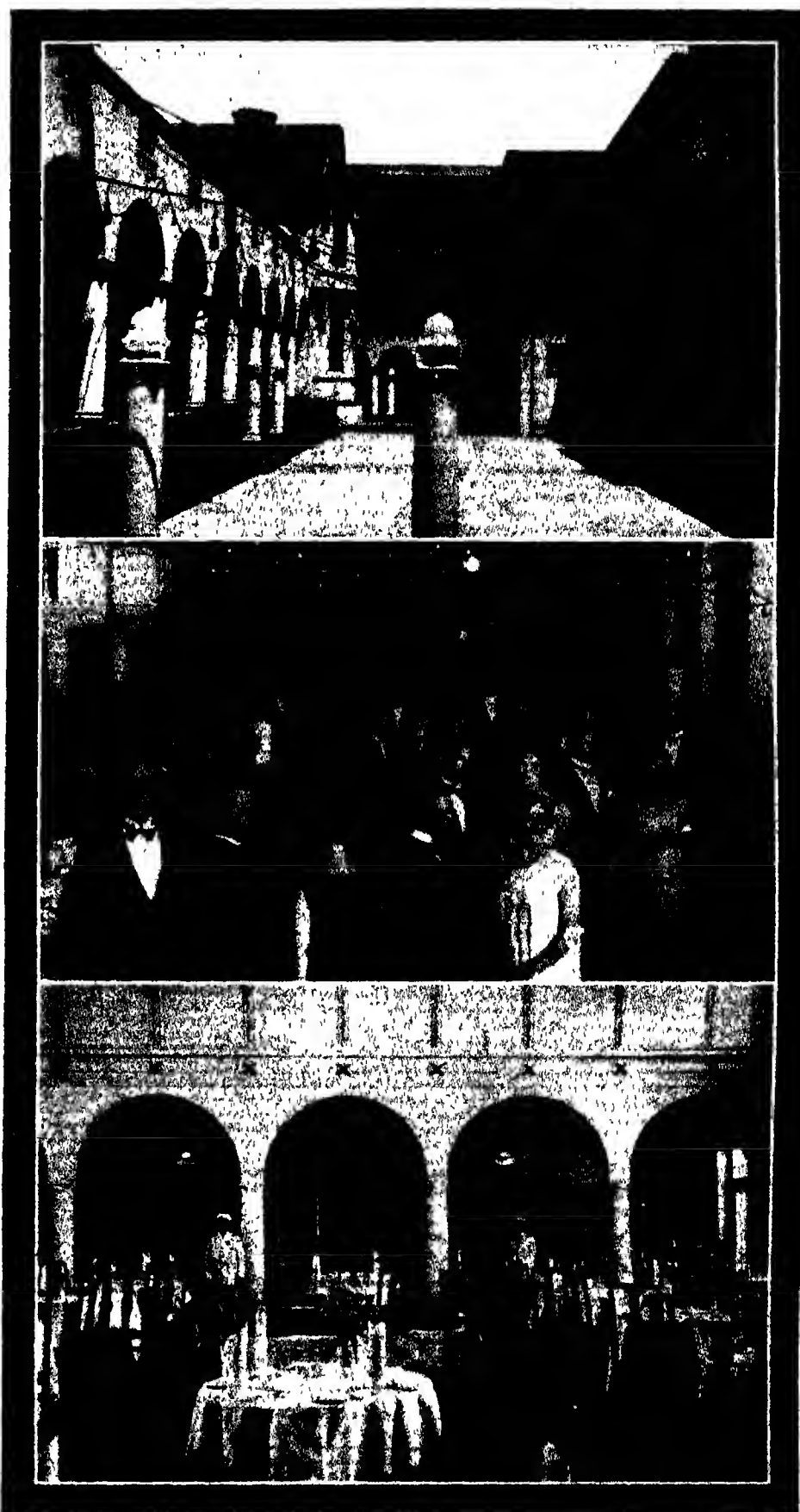
**Concessions.**—The company acquired the whole of the shares of the following undertakings: The City Tramways Co. of Capetown (concession to 1920), Metropolitan Tramways of Capetown (concession to 1920), Southern Suburbs of Capetown Tramways Co. (concession to 1926), and the whole of the share capital of the Port Elizabeth Tramways Co., whose line was first opened to traffic in 1897 (concession to 1925). In the two first named undertakings expropriation rights were not exercised by the Council, the concessions therefore ran on for periods of 5 years. The company also acquired the Suburban Railway (called the Sea Point Railway), subsequently expropriated by the Sea Point Municipality, which paid £41,200 in compensation. The purchase money for the above amounted to £830,000.

**Track.**—There are 27½ miles of single track in Capetown, the route length being 23.24 miles. In Port Elizabeth the single track measures 10.71 miles. The gauge throughout is 4 ft 8½ ins. Girder rails are 81 and 83 lbs and 85 and 95 lbs. The maximum gradient is 1 in 8, and the minimum curve 65 feet (Port Elizabeth), with 20 ft radius in Capetown. The overhead trolley system is adopted with overhead feeder cables. The voltage is 550 direct current.

**Power Houses.**—The Capetown power house consists of the following units: One Yates & Thoni 820 horse power engine, one Macintosh & Seymour 850 h.p. engine, three engines by the Philadelphia Engine Company of 370 h.p., coupled to one Dick Kerr 500 k.w., one 550 General Electric Company's, and three 200 k.w. Westinghouse generators respectively. Steam is supplied by four Babcock & Wilcox 250 h.p. boilers, and 4 Heine boilers of 300 h.p.

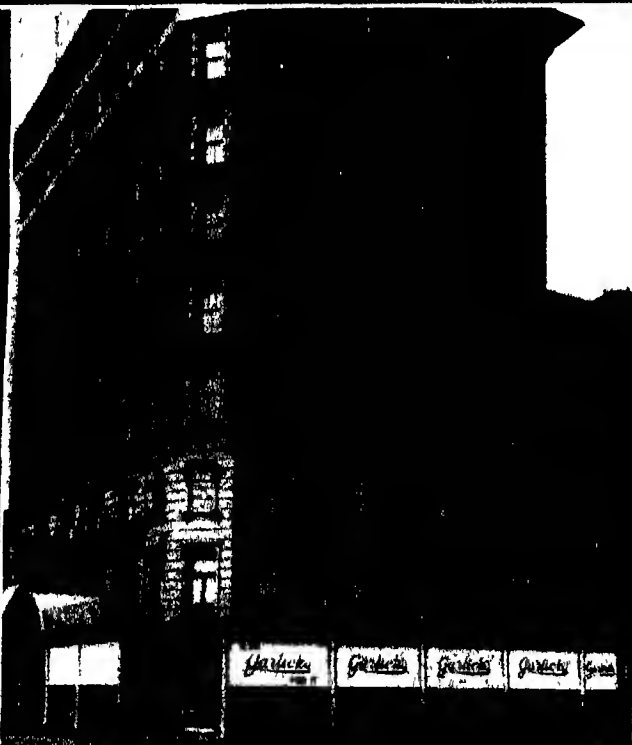
The Port Elizabeth power house contains: Two Belliss engines of 750 h.p., two Dick Kerr generators of 500 k.w. each, four Macintosh & Seymour engines, coupled to four 110 k.w. General Electric Company's dynamos, and six Babcock & Wilcox boilers fitted with Green's economisers. Worthington and Belliss condensers are installed. The company is now concluding an agreement to obtain all its power requirements from the Municipality power station.

**Rolling Stock.**—The Capetown rolling stock consists of 88 double and 20 single deck cars, of which 61 are with bogie trucks and 47 with single trucks. Equipments are by Dick Kerr, The General Electric Company and J. G. Brill. In Port Elizabeth the rolling stock comprises 15 double and 21 single deck cars and 1 trailer, all with hand, slipper and emergency brakes.



QUEEN'S HOTEL, Seapoint, Capetown.  
 1. View of Courtyard where Dances are held.  
 2. Scene during a Dance.  
 3. Portion of the Dining Room.  
 (See letterpress, page 160)





GARLICK LIMITED, Capetown.

1. Extensive Window Displays, Exchange Place.
2. Import Department.
3. Extensive Window Displays, Adderley Street.

**Financial.**—At June 30, 1925, the gross profits, plus sundry receipts, amounted to £110,598. After paying administration and general expenses, taxes, debenture interest, and making provision for debenture redemption, the net profits were £51,856, which sum, added to the balance from last account of £12,482, left a total of £64,338, which was appropriated as follows: special reserve, £20,000; 6 per cent dividend on shares (tax free), £29,473, leaving £14,865 to be carried forward.

**Dividends.**—These have ranged from 2½ per cent, which was paid in 1910-11 and 1914, to 15 per cent, which was disbursed in 1902-1903.

**Statistical.**—The following figures show the number of passengers carried, the car mileage run, receipts, costs, and average per car mile in pence for the years named.

	CAPETOWN		
Year ending, June 30	1919	1924	1925
Passengers carried	23,101,039	26,778,917	26,527,185
Car mileage	2,159,640	2,300,070	2,302,600
Receipts £	247,037	327,554	321,108
Costs £	158,851	242,011	237,880
Average per car mile	17 57d	25 19d	24 79d

	PORT ELIZABETH		
Passengers carried	4,892,337	5,015,230	4,975,170
Car mileage	426,008	727,751	858,937
Receipts £	54,754	71,342	71,202
Costs £	31,058	53,176	58,955
Average per car mile	11 42d	17 536d	16 486d

**Directorate.**—Messrs L. Breitmeyer (chairman), J. B. Taylor (alternate), W. B. Rommel (managing director), Lieut.-Col. H. S. Pollen, C.M.G., and Mr. L. Wagner. Voting power, one vote one share. Borrowing power, £700,000. Director's qualification, £500. Trustees for first debenture holders—Messrs L. Breitmeyer and H. A. Barton. Solicitors—Ashurst, Morris, Crisp & Co. Auditors—Deloitte, Plender, Griffiths & Co. Chairman of local board for Capetown—F. R. Syfret. General manager for Capetown—W. F. Long. General manager for Port Elizabeth—W. H. Freemantle. Consulting Engineer—Fearnside Irvine, M.I.E.E.

**Registered Offices.**—4, London Wall Buildings, London, E.C.2. Secretary—F. Hames.

**Bankers.**—The National Provincial Bank, Ltd.

(See also illustrations, pages 157, 158.)

#### QUEEN'S HOTEL.

**Situation.**—Ideally situated at the foot of Lion's Head, commanding unique views of both mountain and marine scenery, this hotel, standing in spacious grounds extending to the sea, is within three and a half miles by rail or tram of Capetown.

**Premises.**—The hotel has been recently rebuilt and modernised, with the result that the lounges, writing and sitting rooms are all spacious, and represent the last word in decoration and comfort. The dining room is very pleasing in design and well adapted to climatic conditions, while the cuisine leaves nothing to be desired.

**Accommodation.**—Beside the ample bedroom accommodation, a large proportion of the rooms having private bathrooms attached, there are many elegantly furnished suites, from all of which beautiful views are obtainable. Telephones are installed in every room, and nothing that can contribute to the comfort and well-being of the visitor, be he tourist or health seeker, has been overlooked.

**Palm Court.**—The illustration on page 159 of the open air dancing court, with its graceful palms—a special feature of the Queen's—will indicate under what charming and comfortable conditions the hotel dances are conducted, the dinner dance being held every Friday evening.

**Management.**—The management of the hotel is in the hands of Mr. Alexander, whose long and varied experience in hotel management is a guarantee that visitors will receive every attention and comfort at the Queen's, which justly ranks as one of the premier hotels in South Africa.

**Telegrams.**—For the hotel "Royalist, Sea Point." For visitors "Queen's, Sea Point." Telephones Central 5141 to 5150 (10 lines).  
(See illustration, page 159.)

#### GARLICK LIMITED.

**Inception.**—The founder of this business, Mr. John Garlick, was born in Lincolnshire, England, in 1852. He arrived in South Africa in 1872, and commenced business at the corner of Strand and Bree Streets in the year 1875.

**Location.**—As the visitor enters Table Bay he sees before him the large block of buildings in which the drapery and soft goods business of Garlick's has recently celebrated its jubilee. Established a little over fifty years ago, the name Garlick has become a household word throughout the Union of South Africa, the ramifications of the business extending to all the principal towns throughout the country, as also to Southern Rhodesia and beyond. With the headquarters of this immense business concern at Capetown are associated Garlick's Store and Garlick's Wholesale.

**Premises.**—Garlick's Store occupies an imposing building with a large frontage on Adderley Street, and also extends along the entire length of Exchange Place. It is essentially a retail drapery establishment, but in common with all modern emporiums of the kind it is an enterprise which meets the needs of every shopper, there being obtainable within its very substantial walls anything from a needle to a motor-car. In the accompanying illustrations several of the excellently appointed departments are portrayed, a capital view is also given of the spacious showroom, in which in appropriate season are displayed the latest feminine creations of the highest class, drawn from the principal markets of the world.

**Wholesale Block.**—Adjoining the retail premises is the huge towering building, consisting of no less than ten floors (including basement), which is given over entirely to the wholesale side of the business. This block is being extended to nearly double its present size, and it is anticipated that the work will be completed in 1927-1928.

**Head Offices.**—Exchange Place, Adderley Street, Capetown.

**Addresses.**—Retail Section, P.O. Box 63; Wholesale Department, P.O. Box 694. Garlick Ltd., P.O. Box 60. Telephone No. 214.

**Cables.**—"Garlim," Capetown.

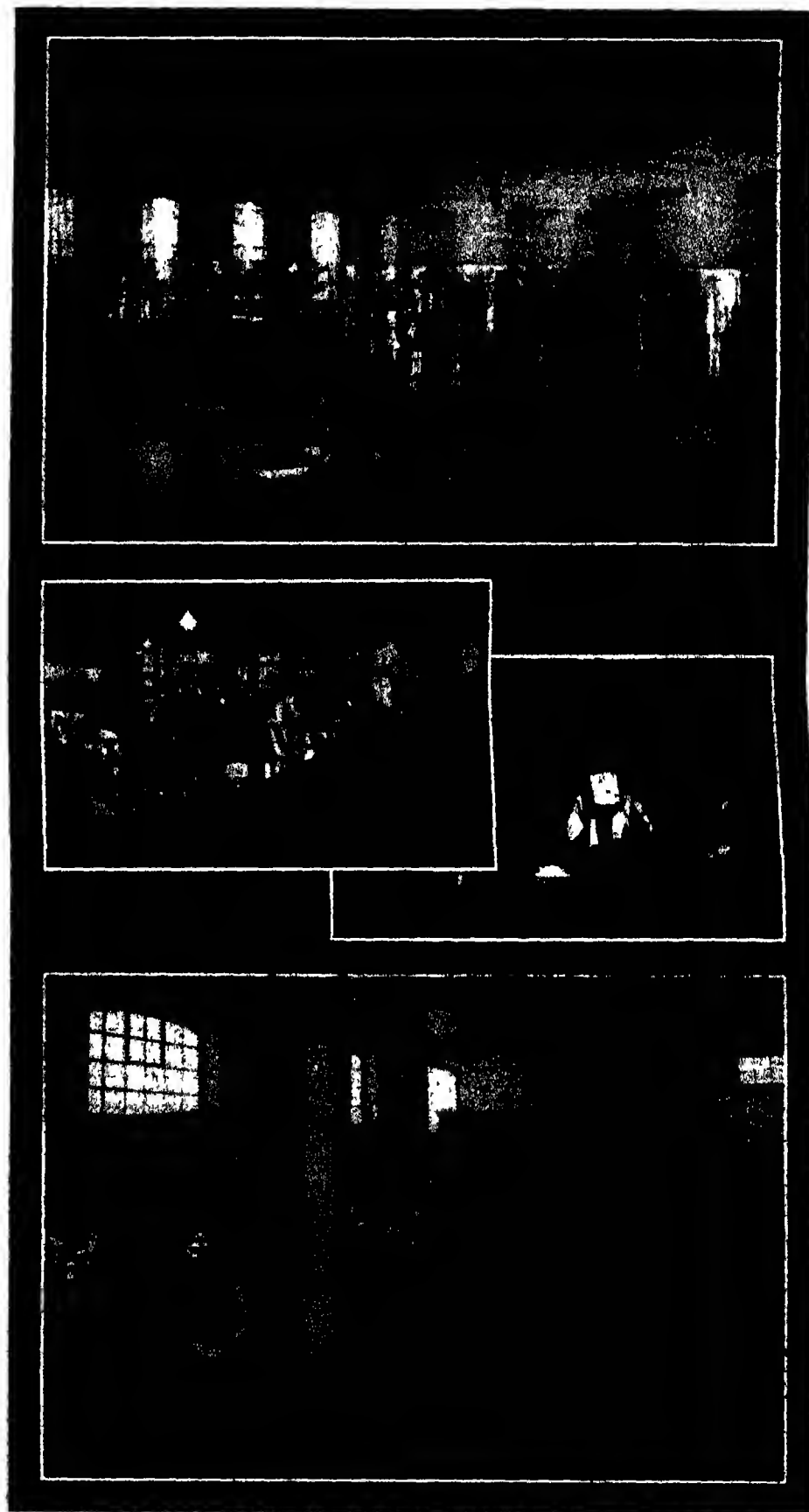
**London Offices.**—These are at 8/9 Barbican, London, E.C. 1, and are periodically visited, in common with the principal Continental and American markets, by one or other of the principals of the firm.

#### L. PINN & CO.

**Inception.**—This firm of gold and silver-smiths, expert watchmakers and jewellers was established in Capetown in 1893.

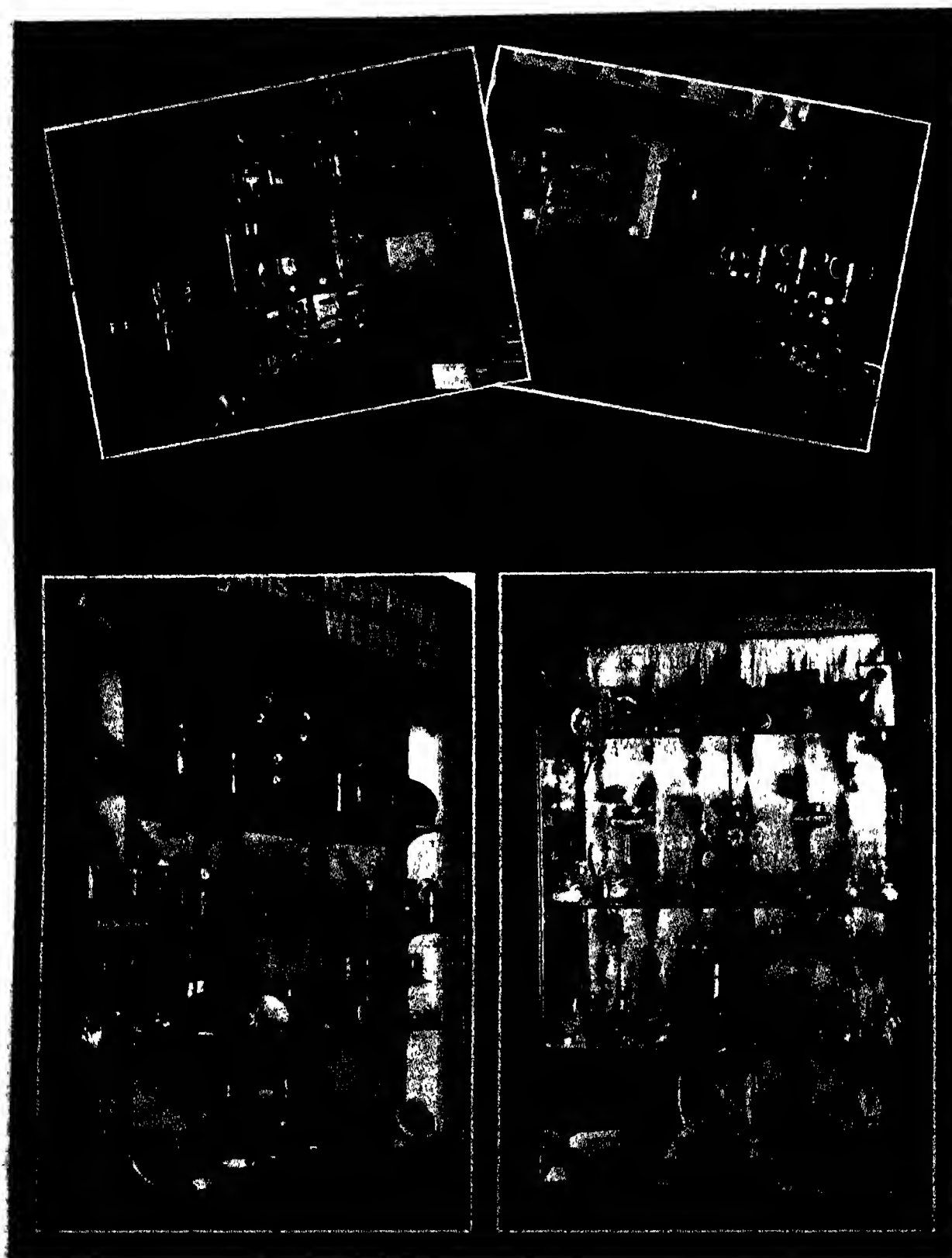
**Activities.**—Messrs. L. Pinn & Co., who are sole agents for the world renowned house of Mappin & Webb, are noted in South Africa for their extensive and high-class stocks of jewellery and other artistic articles usually associated with the trade.

**Departments.**—For the effective display of the firm's extensive stock, and to meet the



GARLICK LIMITED, Capetown.

1. Millinery Department.
2. Portion of the Ground Floor Showrooms.
3. Gentlemen's Outfitting Department.
4. Motor Car Department.



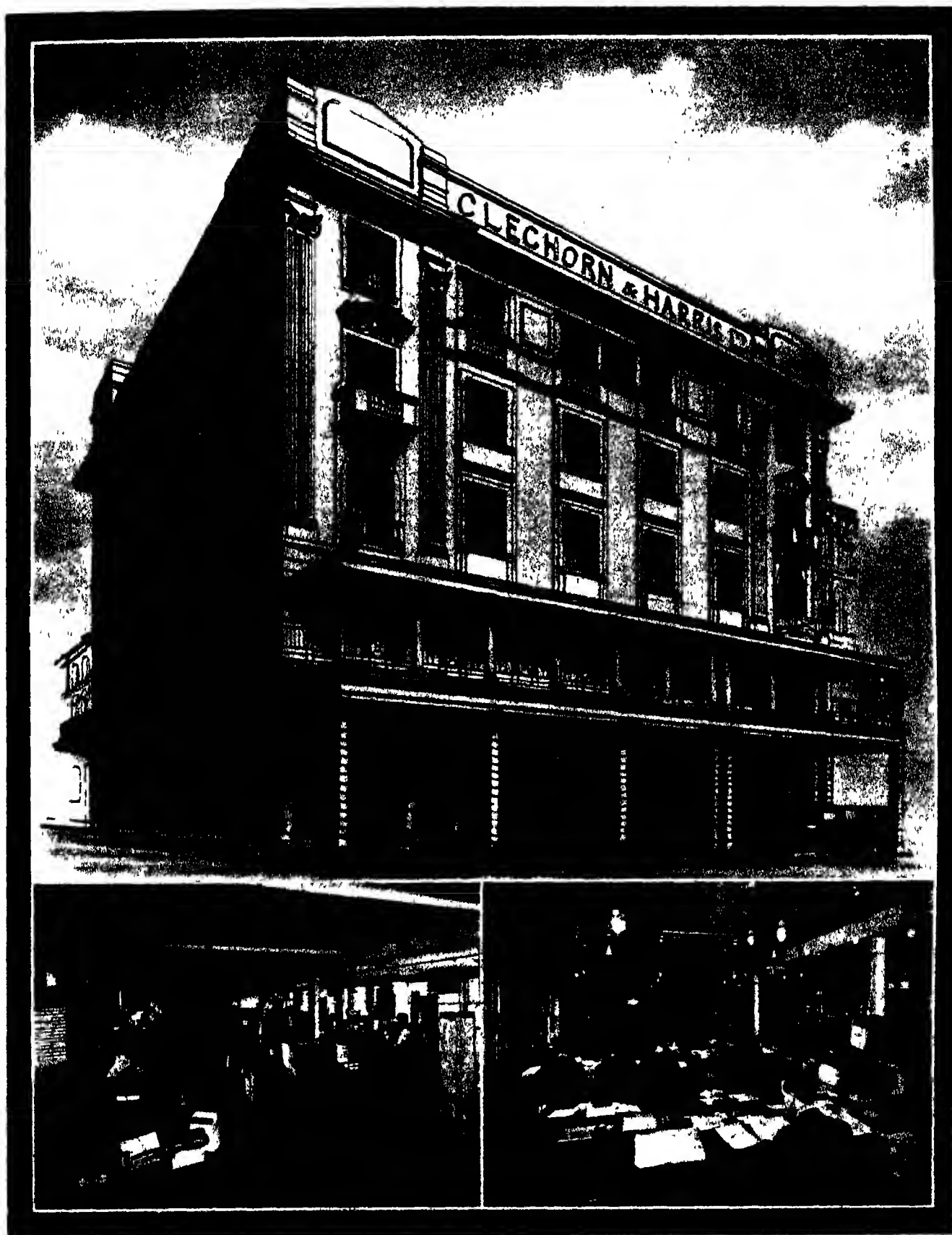
L. PINN & CO., Capetown.

1 & 2. Two interesting corners of the Store.

3. An attractive Window Display.

4. Type of handsome Interior Display Case.

(See *Illustrations*, pages 161, 164.)



CLEGHORN & HARRIS LTD., Capetown.

1. New Premises. Architect's Elevation.

2. Packing Department at the London Office.

3. A corner of the London Office.

(See letterpress, page 161)

convenience of its large body of customers, the establishment has its several departments, which are as follow.

**JEWELLERY**—In this department, one of the most attractive in the shop, are displayed beautiful rings set with diamonds and other precious stones, brooches, pendants, etc. Real pearls are also a feature of the section, and these are in profusion.

**WATCHES**—Messrs. L. Pinn & Co. are the sole proprietors of the famous "Good Hope Lever" watches, and they carry with them a twenty years' guarantee. These time keepers are famous throughout South Africa; they are noted for durability and accuracy, and can be obtained in gold, silver, and gold-filled cases. In this category are 9 carat, 14 carat and 18 carat gentlemen's pocket and presentation watches, ladies' wristlets in all the latest fancy straps, also platinum and diamonds.

**LOCKS**—In this department there is a fine display of Westminster chimes and gong clocks, in Grandfather's, wall and pieces for mantels. These clocks are a feature of the establishment, and are to be found in a special showroom.

**SILVERWARE**—Here are to be seen all the articles usually associated with such a department, and being in great variety they make an attractive show.

**ELECTROPLATE**—The chief feature of this section is Mappin & Webb's Prince's Plate, which is guaranteed to wear a life-time.

**CUTLERY**—In the cutlery department the productions of Messrs. Mappin & Webb are also prominent, there being handsonely fitted canterers and ware in the house.

**CUT GLASS**—In this division of the house is stocked Bohemian, English and American cut glass, the display being of wide range and of the highest quality.

**EARTHENWARE**—In the earthenware department are English Crown Ducal pots, rose bowls, vases (flower and other), etc.

**LEATHER GOODS**—The section given over to leather goods carries English, Austrian and Parisian hand bags, evening bags and

dance bags, moire silk and enamelled fronts. The latest French models in evening bags are received by the firm by every mail.

**Offices**—The offices and showrooms of Messrs. L. Pinn & Co. are at 43 & 45, Adderley Street, Capetown.

**Cables**—"L. Pinn," Capetown  
(See also illustration, page 162)

#### CLEGHORN AND HARRIS LTD.

**Inception.** This important firm was founded over 50 years ago by the late partners, Mr. John Cleghorn and Mr. John Harris, for the retailing of ladies' and men's wear and general household requirements.

**Capital.** After many years of successful trading, the organisation was converted into a limited liability company in 1903, with a capital of £400,000.

**Activities.** In addition to its extensive establishment in Capetown, the firm has other stores and large interests throughout Africa, as also its own buying office in London, which acts as buying agents to wholesalers and retailers throughout South Africa, Kenya Colony, Australia, New Zealand, etc. The London office is staffed with experienced buyers, all specialists in their respective departments, and the organisation throughout ensures to customers a complete service, including packing, shipping and insurance. Colonial and foreign houses requiring the company's services as buying agents should communicate with the office in Capetown, or at the London address. The company will only act as buying agents for one business of the same style in each town.

**Location.** Cleghorn's Departmental Store is one of five floors, and is conveniently situated in Adderley Street. It occupies a most valuable site, with an imposing frontage immediately opposite the Railway Station. There are also entrances on three other streets—Strand, Castle and St. George's.

**Departments.** The ground floor and the two first floors of this fine building are utilised for the business, and have accommodation for 50 separate departments, featuring every requirement for personal wear and

household use. The remaining floors are divided into suites of offices for commercial purposes.

**GROUND FLOOR**—The ground floor, with its main entrance in Adderley Street and a corner entrance at the junction with Castle Street, is very spacious and finely equipped with all modern show cases and shop fittings, giving an unobstructed view of the whole area. Within this space are the following departments displaying quality merchandise from all parts of the world, including ladies' and children's shoes, laces, ribbons, flowers, neckwear, gloves and hosiery, handkerchiefs and scarves, haberdashery, trimmings, art needlework and wools, foreign fancy goods, bags and trunks, perfumery and stationery, with a cosy corner for a confectionery and cake department. This floor also accommodates the silk, umbrella and sunshade department, the sections for cotton and woollen dress fabrics, and the linen and Manchester department.

**Extension**—There is an open extension through to St. George's Street on this floor, which provides for a large department containing the soft furnishing bureau and carpet sections. Leading off from this part a large space is devoted entirely to the gentlemen's outfitting and footwear department, which has its main entrance in Strand Street.

**FIRST FLOOR**—This is reached by a wide staircase or high speed elevator, has an area of approximately 12,000 square feet, and finds room for all the showroom departments, including ladies' and children's model and ready-to-wear millinery, ladies' coats, costumes and gowns, maids' and children's section, ladies' corset and lingerie department, with fitting rooms for each.

**Cafe**—On the last named floor is also a high class restaurant and cafe with every modern equipment. It has openings on to a wide covered balcony running the full length of the Adderley Street frontage, and is a popular rendezvous. The main entrance to the cafe is in Castle Street, and is served by a wide



REGENT FUR CO., Capetown.

1. Ostrich Feather Fan designed and made for Her Majesty The Queen of Holland by A. Sieradski, 23, St. George's St., Capetown.

2. Silver Jackal Karosse, designed and made for His Majesty The King of Norway by A. Sieradski, 23, St. George's Street, Capetown.

3. Ostrich Feather Fan designed and made for Her Majesty The Queen of Norway by A. Sieradski, 23, St. George's Street, Capetown.



marble staircase and high speed elevator which reaches all floors

Adjoining the cafe and also conveniently placed near the showroom are ladies' toilet and rest rooms, perfectly fitted. A private telephone is also installed.

**Extension.**—An open extension on this floor, with its windows overlooking St. George's Street, contains the crockery and glassware, household ironmongery, electro-plate and ready-for-service electrical goods. These departments are fully equipped to meet all requirements.

**SECOND FLOOR.**—The second floor accommodates the mail order and advertising service, millinery and dressmaking work-rooms, reserve stockrooms and office accommodation.

**Elevators and Telephones.**—All floors are served by high speed elevators, and each department has its own automatic telephone installation.

**Window Display.**—A feature of the store frontage is the fine unbroken line of large display windows, having a running length of 200 feet on Adderley and Castle Streets. The first floor balcony is also supplied with show windows.

**General.**—The store generally offers a wonderful assortment of high quality merchandise at popular prices, and, apart from being most conveniently situated in the shopping centre, affords accommodation and service second to none in the Union of South Africa.

**Addresses.**—Registered office—Adderley Street, Capetown. London buying office—12 Bunhill Row, E.C. 1.

**Directorate.** Messrs W. R. Cleghorn, chairman and managing director in London, W. D. Harris, vice-chairman and managing director in Capetown, S. A. Harvey and J. Walker (Capetown), and R. Islip (Johannesburg). Mr. A. A. Cook, secretary.

**Cables.** "Nachtmal" London, "Cleghorn's," Capetown. Codes A B C 5th Edition and Bentley's complete phrase. (See illustration, page 163.)

#### REGENT FUR COMPANY.

**Inception.** As ostrich feather and fur merchants this firm was established in Capetown by Mr. A. Sieradzki in the year 1889, the present proprietor being Mr. S. K. Sieradzki.

**Activities.** The company operates as dealers, retailers, manufacturers and exporters of both ostrich feathers and furs. It specialises in ostrich feather fans, of which specimens have been supplied to Royalty, and wraps of various kinds. Stoles and plumes are also prepared in large numbers. Of late years ostrich feathers have not been so sought after as was the case at one period, but they are now coming into favour again.

**Furs.**—Of the South African furs dealt in by the firm, small furs, fur coats and sets are made, as well as rugs; these are kept in stock in great variety and are also made to order, while the company undertakes, in addition, the remodelling and renovation of old sets. The Regent Fur Co. has won two gold medals, one at Johannesburg in 1897 and the other at Rosebank in 1913.

**Markets.**—The principal countries to which the products of the firm are exported are the United States of America, Australia and New Zealand, but the company is prepared to supply markets in any part of the world.

**Offices.**—Corner of Strand and St. George's Streets, Capetown. Cables "Furrierder," Capetown.

#### JOHNSON MOTOR CO. LTD.

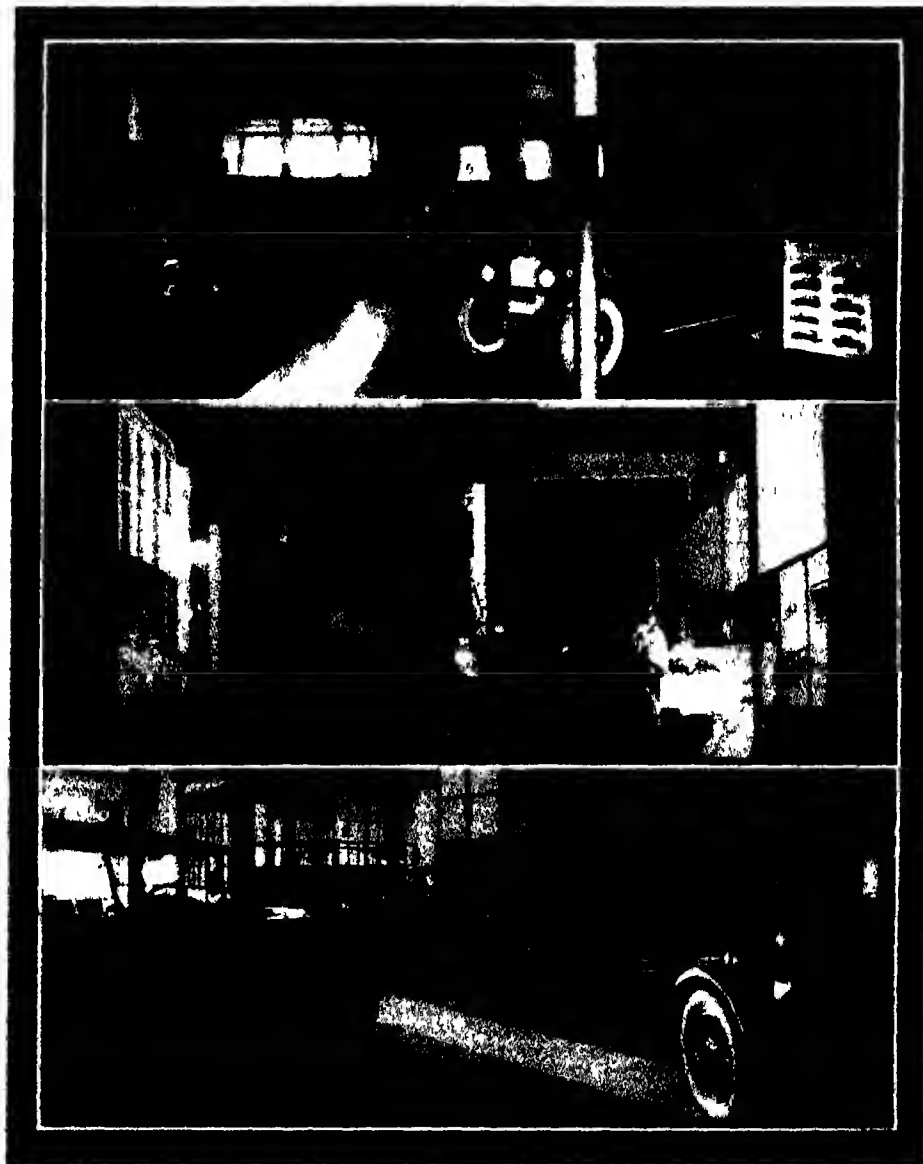
**Inception.** The oldest distributor in South Africa for the General Motors Corporation of New York, this firm has held that position for no less than 14 years, as also the representation of Buick cars and G.M.C. trucks for a like period, namely since 1912.

**Premises.**—The company has spacious showrooms and offices in Strand Street for the display of Buick cars of different models, accessories, tyres, oils, etc., and a garage, workshop and service station at the corner of Dock Road and Long Street, with a spare

and back axles and re-hung clutches and brakes. A special plant is also installed for over-hauling and repairing Delco starting and lighting units.

**Staff.**—The showroom staff, including demonstrators, salesmen and clerks, numbers 14, and mechanics, testers, etc., at the garage total 31. All the staff is specially trained, and the garage is equipped for Buick repairs only.

The territory held for representation comprises the whole of Cape Colony, except the East London district.



JOHNSON MOTOR CO. LTD., Capetown.  
Three Views of the Company's Fine Showrooms.

parts department attached, where spares are stocked for all Buick models from 1913 onwards.

**Operations.**—Painting and stove-enamelling, also upholstery work, such as the making of seat covers and hood tops, are done on the premises. There are plants, large and small, for the charging of electric vehicles and batteries, while the workshops are fully equipped for the building up of gears by electric welding, re-setting of springs and spring blades, together with up-to-date machines for quickly overhauling engines.

**Branches.**—There is a branch, with showroom and service station, at 22 Main Street, Port Elizabeth, and dealers are appointed in all the principal towns, equipped mainly for Buick service. Sales organisers, each operating in his own area from Capetown and Port Elizabeth, travel periodically through the country districts and keep in close touch with dealers.

**Offices.**—Head office: 48 Strand Street, Capetown. Cables "Jomoco," Capetown. Codes, Western Union, A B C 5th Edition and Bentley's.

**LEYLAND MOTORS (S.A.) LTD.**

**Inception.**—This company is a direct branch of the old established firm of Leyland Motors Ltd, which can be fairly described as a pioneer house, as it was established in the village of Leyland, Lancashire, Eng., in 1895, in which year it secured the first public award of any consequence offered by the Royal Agricultural Society. Awarded the silver medal for self-moving vehicles, the following year it secured a prize of £100 as a result of the famous trials held by the Liverpool Self-propelled Traffic Association. This success was followed by other awards, and the company's progress has since been continuous. In 1912 the Leyland motor was the first machine to be subsidised by the War Office as a result of some very severe tests, and the company has the distinction as motor lorry manufacturers of holding the Royal Warrant of Appointment to the King.

**Capetown Branch.**—The local company in Capetown not only has always in stock a complete range of chassis from two to six tons,

but also a comprehensive supply of spare parts. The latest product of the firm is the Trojan car and van, many of which are now to be seen in the town and country districts, being particularly suitable for use on bad roads. These vehicles have been designed solely with a view to utility, and with the object of doing away with those component parts so likely to give trouble. They can be used either with solid or pneumatic tyres, at the owner's choice, and the price has been kept as low as possible consistent with high-grade quality and production. The list of users of Leyland and Trojan cars includes the Union Government, municipalities in various centres, the railways, tramways and a large number of the more important industrial concerns in South Africa.

**Offices and Works.**—Head office and works: Leyland, Lancs. England. Trojan works: Kingston-on-Thames, London. office: 17, New Kent Road, S.E. 1. South African office: 72-74 Strand Street, Capetown.

**Cables.**—"Leymotors," Capetown.

**WILLIAMS, HUNT & JOHNSTON LTD.**

**Inception.**—Originally founded in the year 1921 as Williams, Hunt & Co., this firm, which is now a limited liability company, assumed its present title in 1925.

**Activities.**—The company imports motor cars and accessories, and possesses workshops equipped with up-to-date machinery for all kinds of repairs and service under the supervision of skilled mechanics. These workshops are housed, with the showrooms and offices, in a two-storeyed building covering an area of 12,000 sq. feet and cost £20,000. The workshops will shortly be equipped with special machinery by General Motors Inc.

**Departments.**—These are as follows: spare parts, carrying stock to the value of £5,500, assembly plant, and showrooms for automobiles and motor cycles, also for second-hand cars.

**Financial.**—This limited liability company, with a capital of £20,000, disposes of 40 automobiles a month, and has a monthly turnover of £17,000.

**Agencies.**—Chevrolet motor cars, Indian and Matchless motor cycles, Alenute lubricants and accessories, and Gilbert & Barker petrol pumps.

**Administration.**—Managing director: Mr C. S. Johnston, A.M.I.A.E.E.

**Agents and Shippers.**—Lozer, Kemsley & Millbourn Ltd., London and New York.

**Bankers.**—National Bank of South Africa, Ltd.

**Address.**—77, Strand Street, Capetown. Cables: "Powerplus," Codes: Bentley's and A.B.C. 5th Edition.

**GUY MOTORS (S.A.) LTD.**

**Inception.**—This company, whose organisation covers the whole of the South African territory, was founded in 1919.

**Activities.**—A service station is maintained with a complete range of spare parts to the value of £3,000, and agents for the Guy Motors lorries, so well and favourably known, have been appointed throughout South Africa. Amongst those who have purchased these British-made automobiles are the Johannesburg Municipality, Benoni Municipality, Natal Provincial Council (12 lorries during recent years), Capetown Municipality, and the Divisional Council, etc.

**Administration.**—Manager: Mr C. S. Johnston, A.M.I.A.E.E.

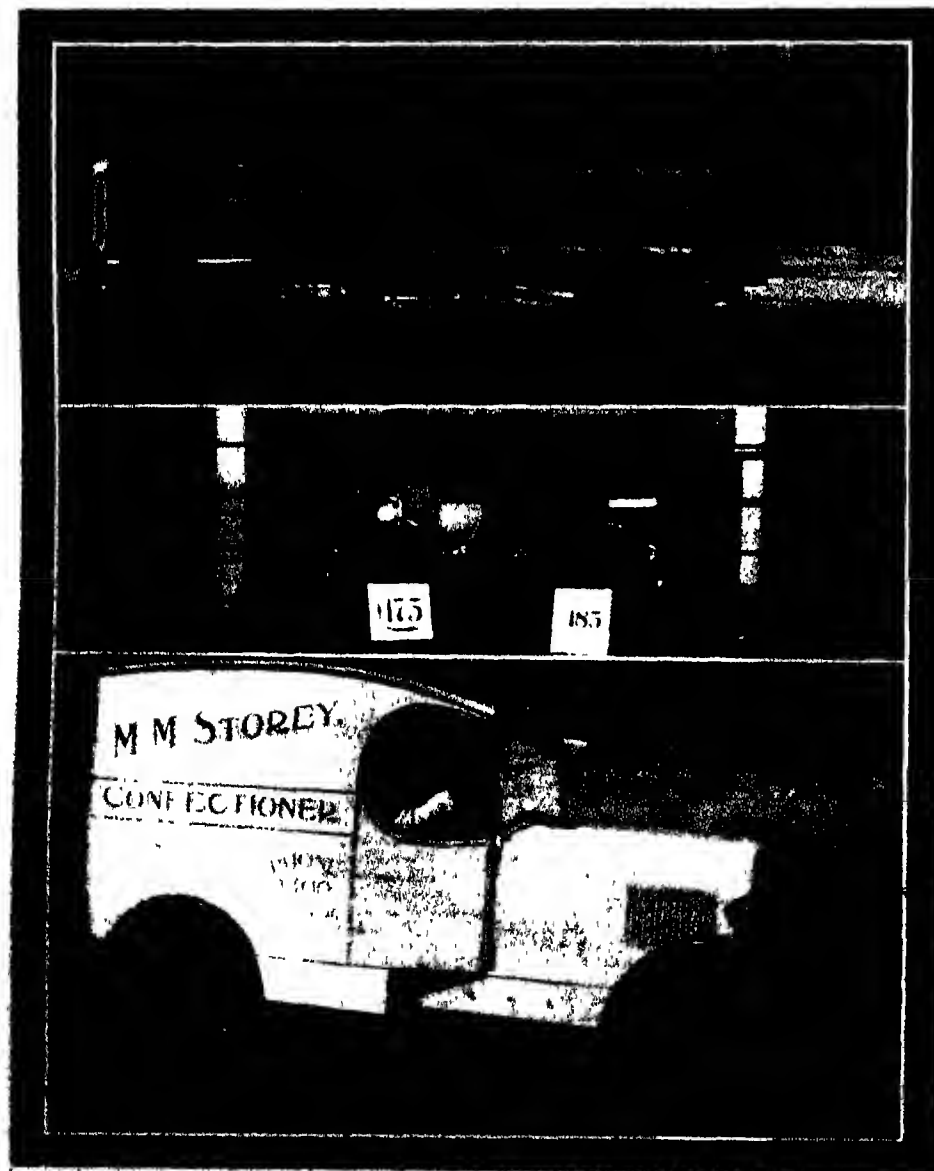
**Address.**—77, Strand Street, Capetown. Cables: "Gnymo."

**GRAND HOTEL (THE SOUTH AFRICAN HOTELS LTD.).**

**Situation.**—The Grand Hotel, which was established in the year 1893, is in a particularly convenient position for travellers, being in the centre of the town and just opposite the Railway Station in Adderley Street, the principal thoroughfare of the city. It is therefore near all the most important offices and buildings, and at the same time is but a short distance away from the Docks, so that its position could scarcely be bettered.

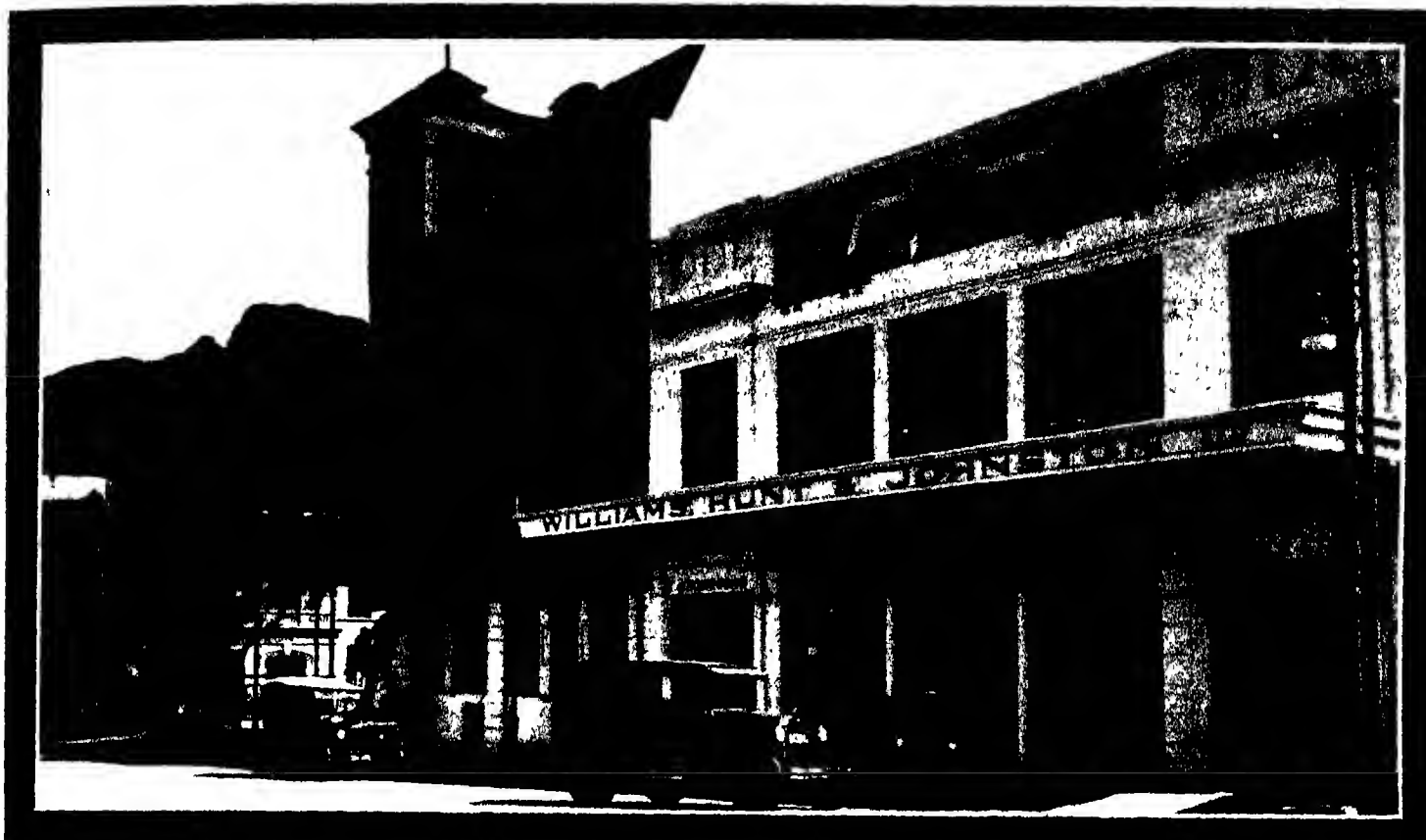
**Premises.**—The accommodation, which comprises the usual public rooms, includes a dining room having a seating capacity for 140 persons, 75 bedrooms and 12 bathrooms, all floors being served by an electric lift. The building itself is large and well designed, with a spacious verandah on the first floor running the whole length of the structure. The hotel is fully licensed, and the charges are moderate, ranging from 16s 6d to 18s a day, including early morning and afternoon tea as well as the usual meals and attendance.

**Management.**—The manager is Mr Chas. Finch, who has had 27 years' experience in



LEYLAND MOTORS (S.A.) LTD., Capetown.

1. Leyland Lorry.
2. View of Showrooms.
3. Trojan Delivery Van.



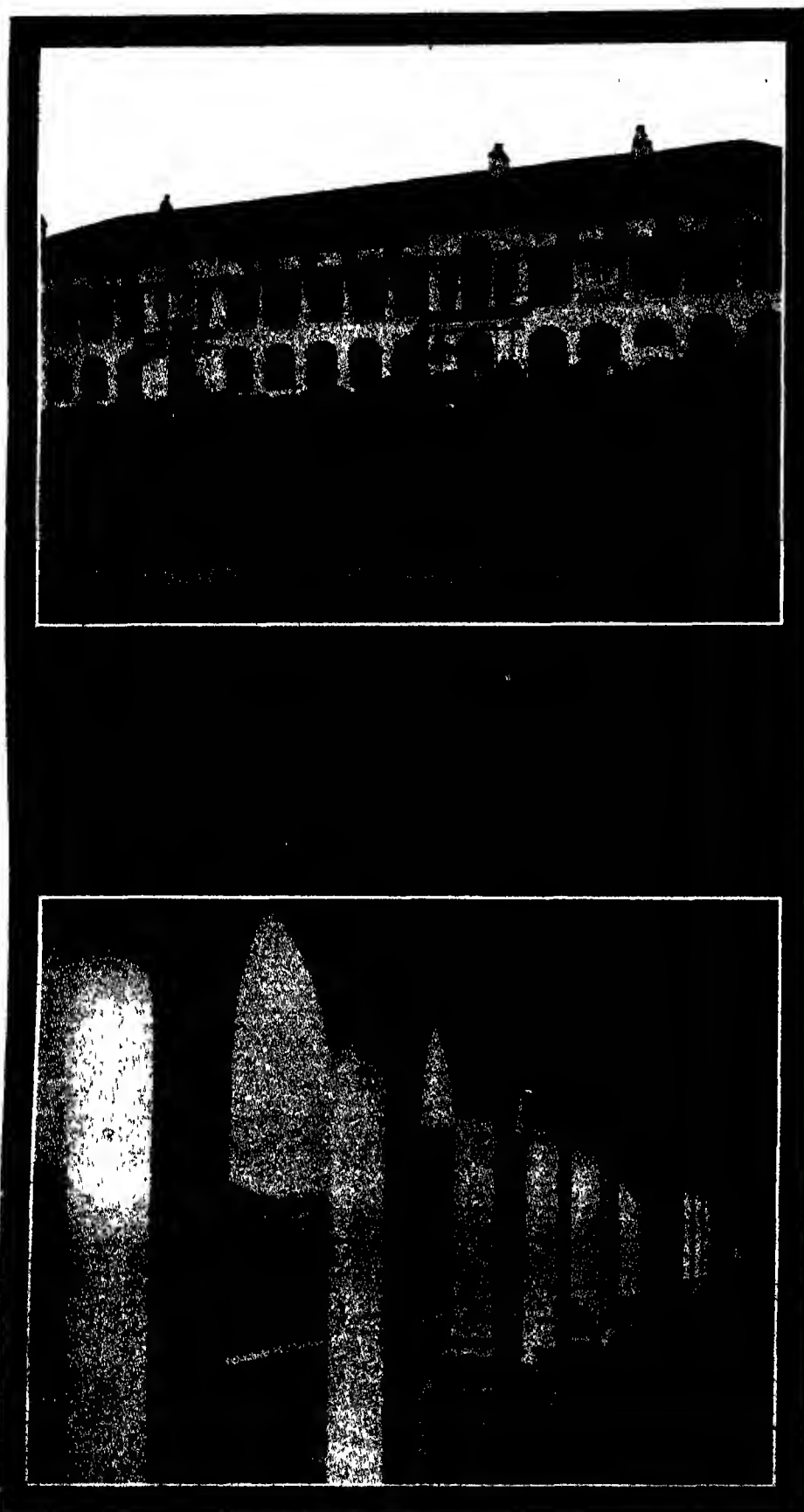
WILLIAMS, HUNT &amp; JOHNSTON LTD. Showrooms at Capetown

the hotel and catering business in Natal, while the cuisine is under the direction of a French chef. The hotel makes a speciality of catering for overseas guests and those travelling on business, while uniformed porters meet all trains and vessels.

**Address.**—Strand Street, Capetown  
Cables "Grand," Capetown

**J. SOLOMON & SON.**—41, St George Street, Capetown. Founded over 37 years ago by Mr J. Solomon, who was at one time chairman of the British Manufacturers' Representatives Association. Since 1915 the firm of Messrs J. Solomon & Son, who are general manufacturers' representatives, has been under the management of Mr R. Solomon. Travellers call upon retailers throughout the country to ensure that they are well served and to give assistance where required as to the display of goods. Messrs J. Solomon & Son also employ travellers to call upon all wholesalers in large centres and the surrounding districts, such as Transkei, Durban, Port Elizabeth, Johannesburg, East London, Mossel Bay and Bulawayo. The staff employed numbers 20. Representations held are as follow: Tate & Lyle Ltd, London; Norton, Megaw & Co Ltd, Rio; John Mackintosh & Sons Ltd, Halifax; The Salt Union, Liverpool; United Glass Bottle Manufacturers Ltd, Liverpool; Duckworth & Co, London; Kraft, McLaren Cheese Co, Canada; A & R. Scott, Ltd., Colinton, Scotland. Yearly turnover, £230,000. Branches: Mossel Bay, Port Elizabeth, East London, Durban, Johannesburg, Bulawayo and Kimberley. Bankers: Standard Bank of South Africa, Ltd. Cables "Eatable," Capetown. Codes: A.B.C. 5th Edition, Bentley's, Western Union, etc.

GRAND HOTEL (THE SOUTH AFRICAN HOTELS LTD.) Capetown.  
View of the Building.



MAJESTIC HOTEL (KALK BAY HOTELS CO. LTD.), Capetown.

1. Imposing View of the Building.
2. The Verandah.

#### MAJESTIC HOTEL (KALK BAY HOTELS CO. LTD.).

**Situation.**—This hotel is situated in the finest position on the False Bay coast, about 17 miles from Capetown, and is so located as to be absolutely free from troublesome winds. There is a splendid service of trains from Capetown, also an excellent motor road; while private lock-up garages are provided for the convenience of guests.

**Premises.**—The hotel contains 57 bedrooms and 6 suites, comprising sitting, bed, dressing and bath rooms, with hot and cold running water; in all, there are 21 bathrooms in the building. The handsome dining hall has seating capacity for 200 guests, while the lounges, writing room and billiard room are all decorated with taste and arranged with a due regard to the comfort of patrons. An electric lift serves all floors.

**Other Features.**—One of the most notable features of the hotel is the "steep," which runs the whole length of the building, the restfulness of which is enhanced by the hotel gardens surrounding the entire premises. The cuisine, which leaves nothing to be desired, is under the supervision of a Continental chef. Dances are held periodically, and excellent fishing and bathing are to be enjoyed in the immediate vicinity.

**Tariff.**—This is moderate, ranging from 18s 6d per week. Monthly terms may be arranged, and these vary from £14 14s in the winter to £22 10s during the summer months.

**Staff.**—This numbers 50.

**Proprietors.** The Kalk Bay Hotels Co. Ltd.

**Cables.**—"Majestic."

#### HILDASIME HOTELS LTD.

**Situation.** The residential hotel of this company, standing in its own grounds of 2½ acres, on Beach Road, Sea Point, commands fine views of both land and sea, and is adjacent to the electric car service to Capetown, which is only twenty minutes distant.

**Premises.**—These contain 130 bedrooms, a handsome reception lounge, drawing room, library, smoking room, and a large and lofty dining room.

**Recreation.**—The hotel caters largely for those interested in sport, and has on its grounds two tennis courts, a croquet lawn, putting green and a quail terrace. For indoor amusement, there is an excellent billiard room. The hotel has recently been appointed as R.A.C. headquarters for Sea Point.

For those seeking relaxation, or for invalids recuperating their strength, the air of Sea Point is world famous, the mean average temperature being about 63 degrees F.

**Management.**—This is under the direction of Mr W. E. Hopwood, the managing director, who has had over 25 years' experience of hotel management. The staff numbers 40.

**Terms.**—These range from 12s 6d per day, single room; 10s each person double. Special terms are quoted for the early and late seasons.

**Addresses.**—Telegrams "Hopwood," Sea Point, Capetown. Cables, "Hokshoren" (Reuter). Telephones, 30 and 34 Sea Point.

#### J. H. STURK & CO.

**Inception.**—Established in the year 1793, this firm conducts the oldest wholesale tobacco business in South Africa.

**Development.**—In 1876 the enterprise was acquired by the family of the present owners, Messrs. H. A. C. and T. O. W. Becker. For a long time the interests of the firm were confined to the importation of all the well-



HILDASIME HOTELS LTD., Seapoint, Capetown.  
The Hotel from the Bowling Green.

known brands of cigars, tobaccos, cigarettes and pipes, but with the opening up of the country other lines were added, and to-day it deals in many kinds of goods, including household hardware, aluminum ware, enamel ware, crockery, glass, toys and stationery. The staff now numbers 52.

**Financial.** The company carries stocks to the value of £40,000 and the annual turnover is between £150,000 and £160,000.

**Premises.**—The premises, which are the property of the firm, include the office, a four-storey building 150 ft. by 100 ft., and two warehouses, one of two-storeys measuring 48 by 100 ft., and the other of three-storeys 150 by 100 ft.

**Activities.** The firm is the sole distributor of "Pin Head" cigarettes, and manufacturer of the "City Mixture," pipe tobacco of S. A.

leaf also of Sturk's snuffs. In addition to the importation of tobacco, it is also engaged in the exportation of South African leaf tobacco, and acts as agent for Schussler's Tissue Remedies (Margaraf's) and Versfeld's roll tobacco.

**Buyers.** In London, Messrs J. W. Anderson & Co., 94 St. Mary Axe, E.C. 3, in New York, American Trading Co. Inc., 25 Broad Street.

**Shippers & Agents.**—Hamburg G. Vogtmann & Co., 16 Glockengiesserwall.

**Offices.**—52, Shortmarket Street, Capetown. Cables "Sturks," Capetown. Code A B C 5th Edition.

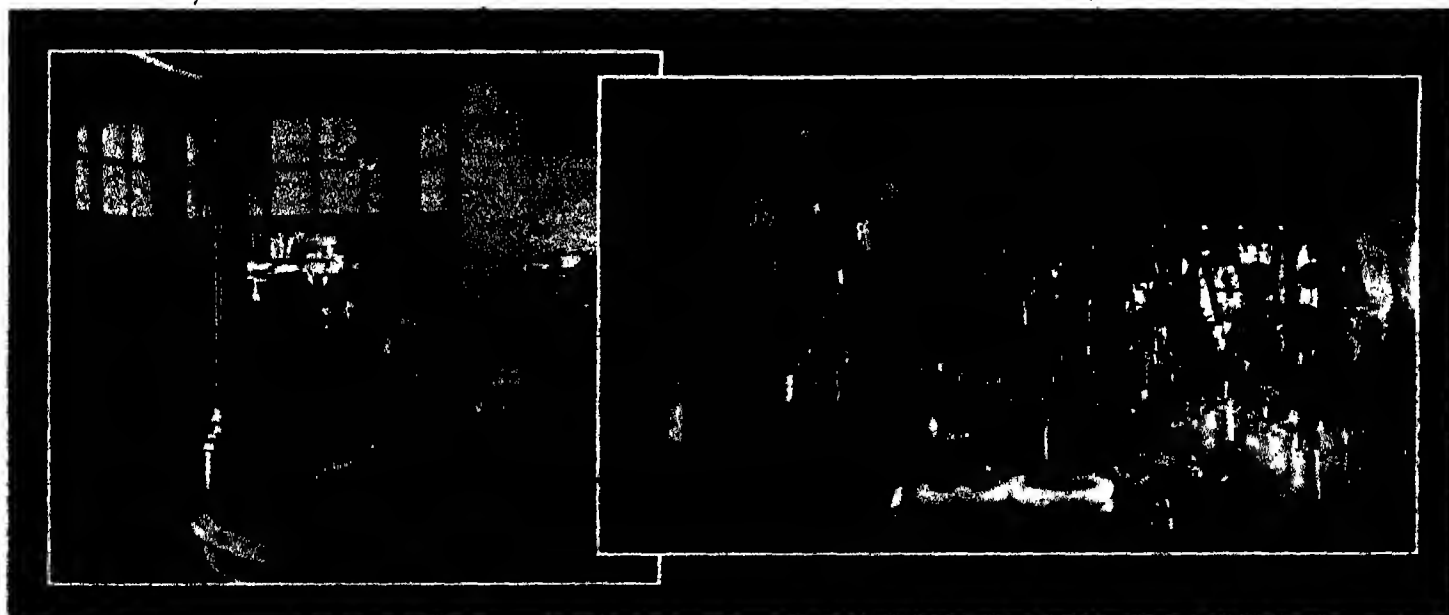
**Manager.**—Mr. A. Wakelin.

**Bankers.**—Standard Bank of South Africa Ltd. Long Street branch.

## THE GROWTH OF CAPETOWN

Recent developments at the port of Capetown and the almost yearly extension of the shipping facilities afforded have been to some considerable extent brought about by a remarkable increase in the city's industrial productivity and trade since the beginning of the present century. There is no doubt that industrially Capetown has a great future, and the steady increase in factories during recent years shows that business men have not been slow to appreciate the fact.

There are at present within Greater Capetown boot and shoe factories, breweries, clothing factories, butter and cheese factories, coach and wagon works, cement and lime works, grain mills, jam and fruit preserving factories, sawmills, tanneries, tobacco



1. General Office.

J. H. STURK & CO., Capetown.

2. Corner of Sample Room.





MURRAY AND STEWART, Capetown.

Some of the Firm's Important Contracts: See particulars page 171.

factories, soap factories, sweet factories, wool washeries, brush and broom factories, biscuit factories, etc.

The growth of Capetown, however, has not been confined to its industrial side. The excellence of the railway service to and from the suburbs makes it convenient for the business men of the city to live much further out than would otherwise be possible, and so the attractive residential suburbs stretch as far as Mmzenberg, which is 15 miles distant from the centre of the town and can be reached in 27 minutes, or to Lakeside, which is 14 miles distant and a mile only from the False Bay coast.

**BUILDING BOOM.**—Some striking figures reflecting the building boom which took place within the Capetown municipality during 1925 are furnished by the City Engineer's Department. In the ten months ended October 31, 1925, no fewer than 756 plans of new buildings were passed, representing a total estimated value of £1,204,935, while in regard to alterations to existing structures during the same period 1,097 plans were approved, representing £325,535. So far as completed buildings were concerned, in the 11 months ended November 30, 1925, the total number of dwelling-houses completed was 279, representing a total estimated value of £293,350, as against 328 and 1,354,170 for the whole of 1924 and 396 and £420,550 for 1923. Other buildings completed during the same period of 1925 totalled 339, representing £140,420. The corresponding totals for 1924 were 398 and £186,405.

### REPRESENTATIVE BUILDERS AND CONTRACTORS, ETC.

#### MURRAY & STEWART.

**Inception.**—As engineers and public works contractors, this firm was founded in February 1902 by Messrs J. G. Murray (the senior partner) and J. Dempster Stewart, both of whom were trained in Scotland, passing from there to the City Engineer's Department at Capetown.

**Activities.**—Commencing on a modest scale, amongst the earlier works of the firm were some drainage contracts for the City of Capetown, and subsequently street construction for the same corporation. Other drainage contracts followed, Sans Souci new road and bridge being built in 1904, while Mr. J. D. Stewart carried out two terra-cotta constructions in East London, "Lloyds Buildings" (costing £10,000), and the "Bank of Africa" (now the National Bank), costing £20,000. Owing to illness, Mr. Stewart retired from the firm in 1908, and since that date the business has been carried on solely by Mr. J. G. Murray.

**Later Constructions.**—In 1908 the Kloof Wek Reservoir, one of the first reinforced concrete constructions in the country, was completed, and in 1909 the last railway built for the old Cape Government, a section of the Natal Cape Line, was undertaken by the firm. In the ensuing years many large bridges were erected, and the Caledon-Sandfontein section of the South African Railways was built, as also the Sea Point Pavilion and Sea Wall, while in 1918 the firm commenced operations in Port Elizabeth with the construction of the main intercepting sewer for the new drainage scheme. Thereafter many municipal contracts were carried out in that town.

**Present Day Operations.**—At the present time the firm is completing the last section of the Humewood promenade and the new

reinforced concrete Wool Market for the Port Elizabeth Council, while other contracts in hand are a new mill and grain silos for the South African Milling Co., with railway sidings, etc., at Salt River, silos for Messrs. Pyott Ltd., at Woodstock, the firm being responsible for the whole design and construction, a reservoir for Stellenbosch Municipality at Jonkers Hock, and a sewage disposal scheme and complete town drainage system for the same municipality, at a cost of £70,000. Altogether the firm now has on hand work to the value of about £250,000.

**Contracts Illustrated.**—Among the contracts carried out by Messrs. Murray & Stewart, and portrayed in the accompanying illustrations, are the reinforced concrete road bridge at Cradock, built on rock foundations in 1912-13 for double traffic, reinforced concrete bridge for double traffic over the Great Fish River at Cradock, built to the order of the Union Government in 1912-13, at a cost of £20,000, completed piers and staging for concrete spans of 50 feet each for De Jagers Drift bridge over the Buffalo River, built in 1920-21, costing £150,000, reinforced concrete mill and construction of silo at Salt River, near Capetown, for the S.A. Milling Co. Ltd., to store 11,000 tons, Wilge River bridge, near Frankfort, built in 1920-21 for the Union Public Works Department, one of the four filter beds at the Stellenbosch sewage disposal works, the whole scheme costing £70,000, South African road bridge, built in 1919-20 over the Buffalo River, early construction stages of the concrete grain silo and Mill for the S.A. Milling Co. Ltd. at Salt River, costing £125,000, and reinforced concrete reservoir for Stellenbosch Municipality in Jonkers Hock Valley.

**Offices and Branches.** Head office, 142 Longmarket Street, Capetown. Branches at Port Elizabeth, Salt River, Stellenbosch and other towns throughout the Union. Cables: "Must," Capetown, Port Elizabeth and Salt River.

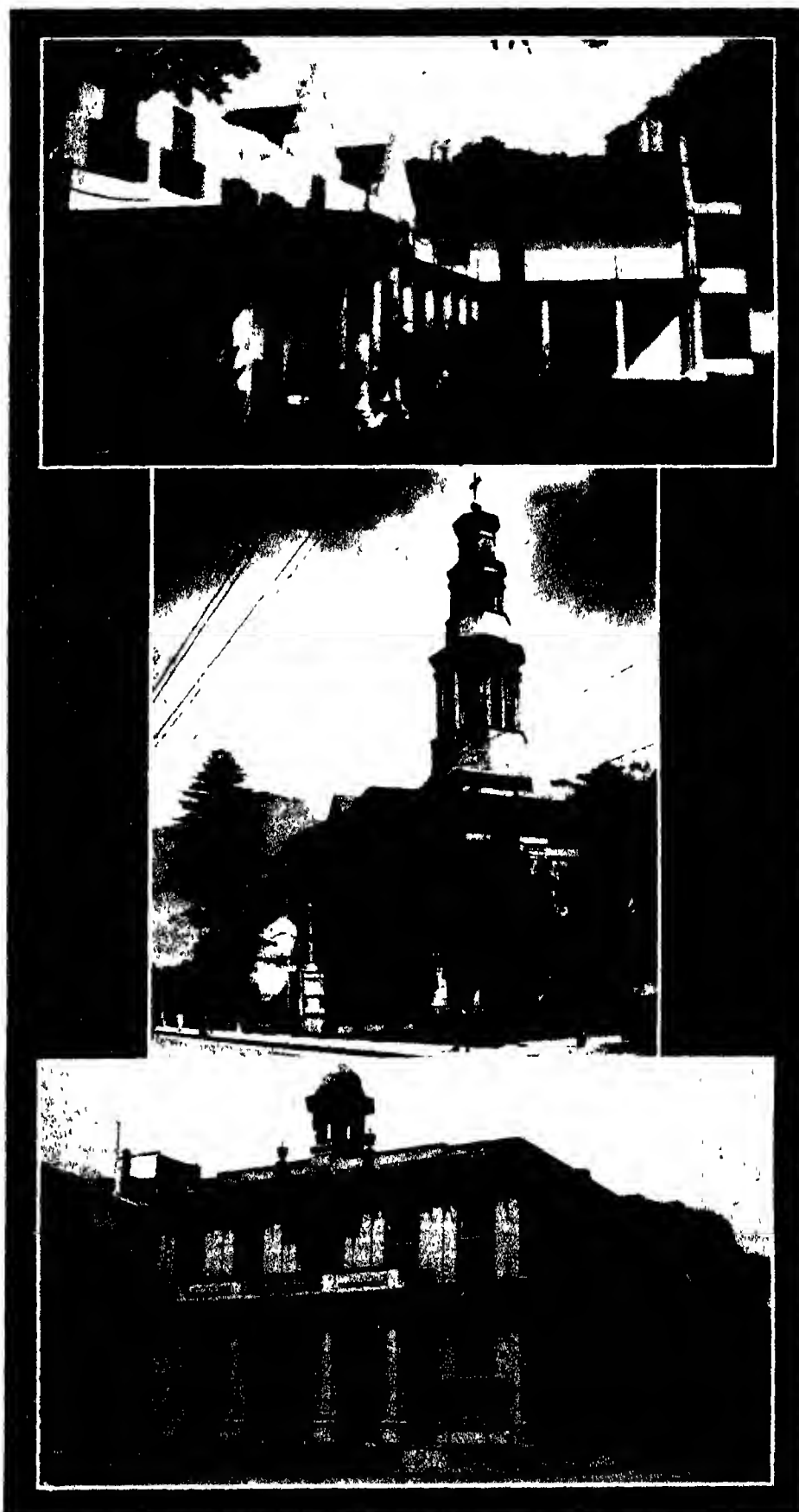
#### A. B. REID & CO.

**Inception.** This private company was founded in 1890 at Capetown by Mr. A. B. Reid, who still controls the business.

**Activities.**—Besides being builders and contractors, the firm manufactures all kinds of joinery, cabinet work and furniture, and imports every description of building materials, mostly from the United Kingdom.

**Constructions.**—Messrs. A. B. Reid & Co. have always been associated with Mr. Herbert Baker, the well known South African architect, whose work has attained an international reputation. Among the many famous edifices in the country for which the firm has been responsible may be mentioned Groot-Schuur, the residence of the late Mr. Cecil Rhodes, which was bequeathed to the nation (the company also manufacturing at its works the bulk of the furniture which adorns that building), the new Cathedral at Capetown, the South African Association's Building in Church Square; the University Buildings, the additions to the Mount Nelson Hotel, (which cost £100,000), the Majestic Hotel at Kalk Bay, and many private residences, notably those of Messrs. J. W. Jagger and W. A. Webster.

**Reconstruction, Etc.**—The reconstruction of "The Old Town House," now Michaelis Art Gallery, was undertaken by Messrs. Reid & Co., who were also responsible for the fine panelling and fittings therein. This work was of peculiar interest as the building is reputed to be the oldest in Capetown, and is rich in historical associations. The firm fitted out the Royal suite used by the present



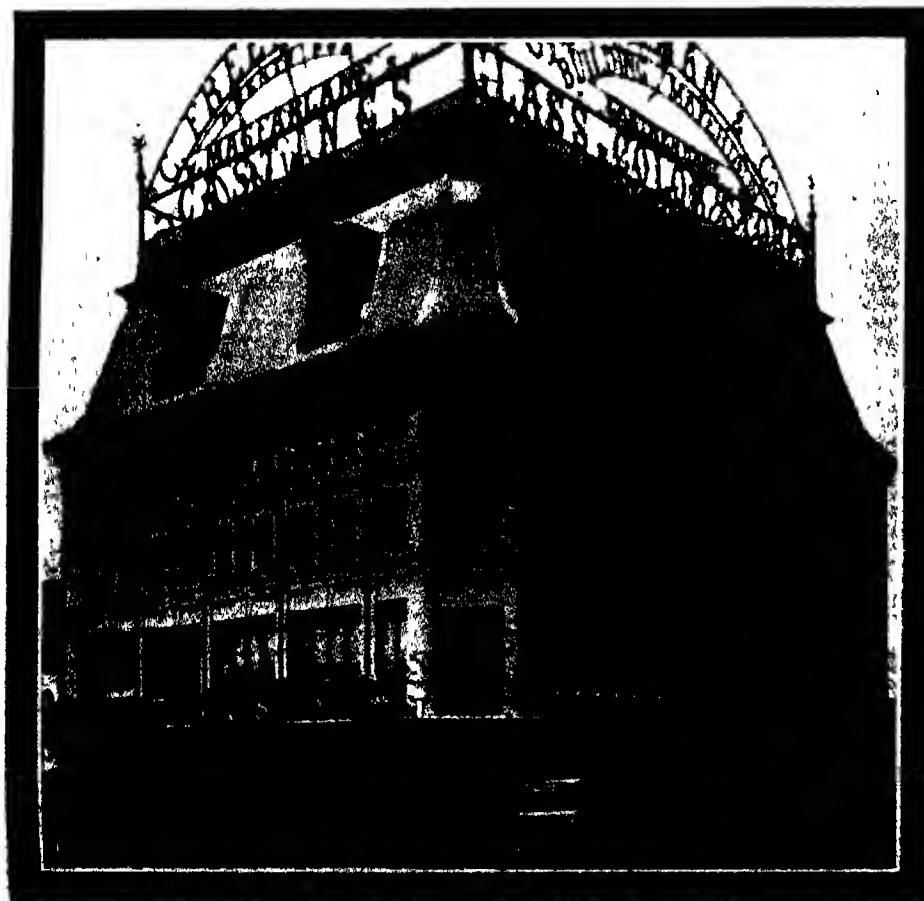
A. B. REID & CO., Capetown.

1. "Groote Schuur" The late Right Hon. Cecil Rhodes' favourite porch.
2. Capetown Cathedral.
3. Michaelis Gallery, Capetown.



ANDREW CARR, Capetown.

1. Ladies' Hostels and Dining Hall, Rhodes University College.  
 Building constructed by A. Carr. 3. A Corridor, Rhodes University College.



C. FREEMAN &amp; CO. Premises at Capetown.

King when he visited Africa in 1901 as the Duke of York, and was responsible for the erection of more than half of the buildings of which photographs were exhibited at the Wembley Exhibition in the Capetown section.

**Workshops.**—These are situated in the same building as the head office. They are equipped with all the most modern machinery and labour saving devices, power being derived from either a 50-60 horse power steam engine or many individual electric motors aggregating 35 h p. The staff numbers 250.

**Yards.**—These are situated at Mowbray, and cover an area of 62,000 sq. ft.

**Transport.** The company's transport is effected by two 5-ton lorries, respectively a Thornycroft and a Packard, an Albion capable of loading 3 tons, and a 30-cwt Guy lorry, besides the necessary horse waggons.

**Awards.**—The firm is justly proud of three first prizes, a diploma and gold medal awarded to it at the Capetown Exhibition of 1904-5, for joinery work, etc., in competition with overseas firms.

**Personal.**—Mr. Reid represented the Mowbray ward of the Municipality for 12 years, and has been twice Mayor of the town. He has been a councillor for 25 years, and has also held the position of President of the Federated Master Builders' Association of South Africa.

**Head Office.**—Strand and Rose Streets, Capetown. Cables, "Builder," Code. Reuter's.

**Agents.**—Messrs. Keep Bros., 119-20, London Wall, London, E.C.2 and 35-36, Great Charles Street, Birmingham.

**Bankers.**—The Standard Bank of South Africa, Ltd.

(See illustration, page 171.)

**ANDREW CARR.**

**Inception.**—Mr Andrew Carr, who conducts a business as builder and contractor, arrived at Capetown about twenty years ago from Aberdeen, Scotland.

**Development.**—After remaining at the Cape some five years, Mr Carr went to Grahamstown, where he carried out a large number of contracts, including much work for Rhodes' College, St Andrew's College and the Training College. The Ladies' Hostels and Dining Hall, of which an illustration is here reproduced, gives some idea of the importance of the constructions undertaken by the firm at that period. This was only one of the contracts executed during the time spent at Grahamstown.

**Capetown Contracts.**—In 1923 Mr Carr returned to Capetown, where, since that date, he has been engaged upon the large and imposing General Estate Building in Adderley Street, which has cost upwards of £45,000, the architects being Messrs Black and Fagg. A new building for Messrs Cleghorn & Harris in Adderley Street, costing approximately £60,000, has just been completed by the firm.

**Address.**—General Estate and Orphan Chambers, 130, Adderley Street, Capetown P.O. Box 2555.

**Telegrams.**—"Carndrew."

**C. FREEMAN & CO.**

**Inception.** This firm was founded by Mr C Freeman over 50 years ago.

**Development.**—In the earlier days of the company's history, Mr Freeman, an architect by profession, was responsible for many of the large buildings in Capetown, notably the Standard Bank Building in Adderley Street, the Wesleyan Church in Greenmarket Square, and many of the larger commercial emporiums. The firm is now entirely controlled by Mr J Freeman, and the staff numbers 50.

**Activities.**—Messrs C Freeman & Co act as importers of general hardware, cement, plaster, paints and oils, colour and varnishes, stoneware pipes, sheet, plate and fancy glass, and all building materials.

**Premises.**—The fine block at the corner of Strand and Rose Streets, with a frontage to both thoroughfares of 150 feet, is the firm's headquarters in Capetown.

**Departments.**—There are three main departments—glass, hardware, lime and cement.

**Agencies.**—The company is agent for "Burham" Brick, Lime and Cement Co., The Consolidated Rand Brick and Pottery Co., and Williams & Williams, manufacturers of steel windows. It is also sole agent in South Africa for Walter Macfarlane & Co., of Glasgow.

**London Agents.**—William Dunn & Co Ltd, Broad Street Avenue, F.C.

**Address.**—P.O. Box 1238, Capetown.

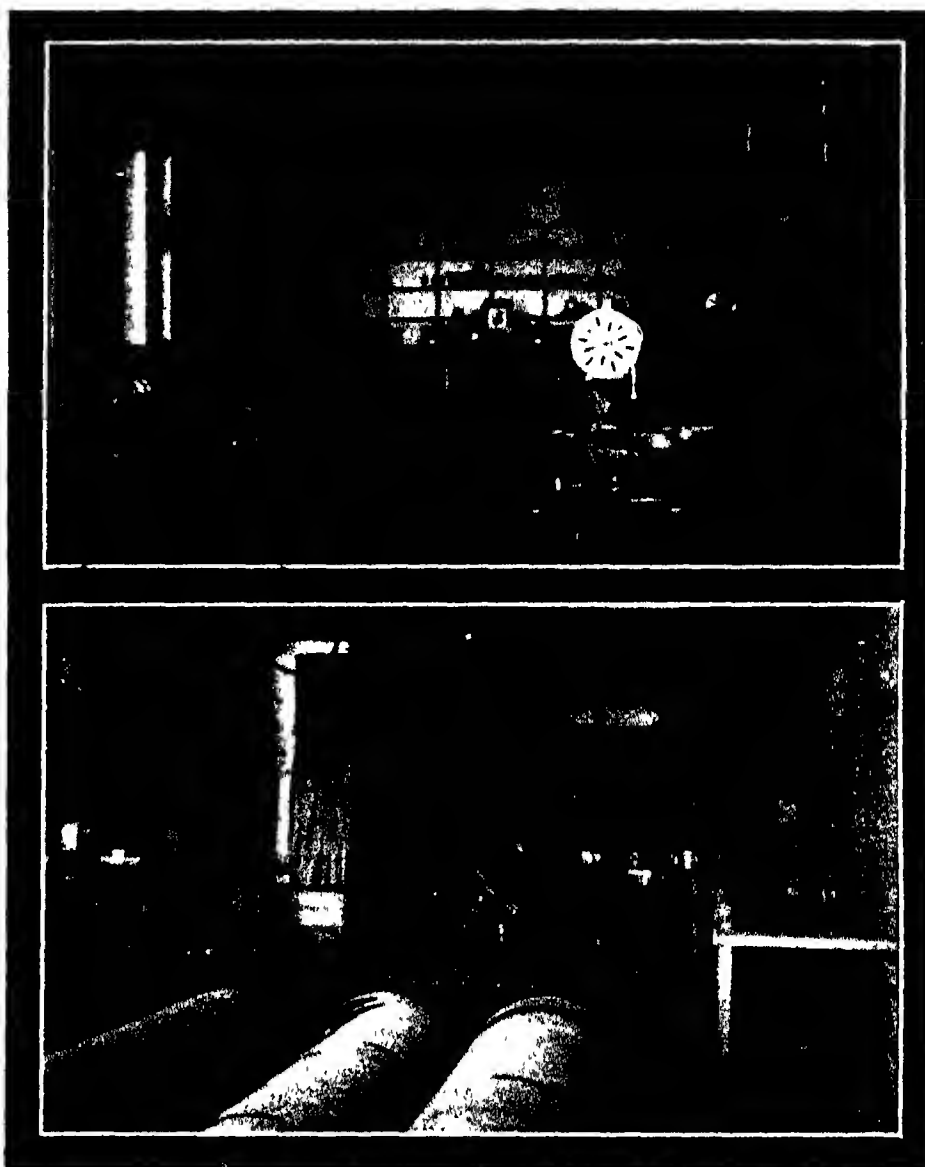
**Cables.**—"Manfreeco" Codes A B C 5th Edition and Bentley's.

**Bankers.**—The Standard Bank of South Africa, Ltd.

**RUTHERFORD, LIMITED.**

**Inception.**—The business carried on by this firm was established in Capetown by Mr A E Rutherford in the year 1912.

**Development.**—In 1919 the enterprise was converted into a limited liability company, of which Mr. Rutherford was the chief shareholder, but in 1924 Mr Rutherford's interests were acquired by Mr. Herbert E Gearing, who had been associated with Messrs. Gearing Ltd., the well-known engineers, for some seventeen years, and the firm under notice is now managed by Mr Gearing.



RUTHERFORD, LTD., Capetown  
Two Interior Views of the Firm's Stores.

**Activities.** The company deals in general engineering supplies and machine tools of every description, and has large stores and a showroom in Capetown, being the sole agent in the Province for many celebrated British engineering houses. The firm is always ready to correspond with any manufacturer's desirous of efficient representation in the Union whose products do not conflict with connections already held.

**Agencies.**—Among the representations held are the following: Messrs J H Andrew & Co Ltd, "Toledo" Steel Works, Sheffield; Barrow, Hepburn & Gale Ltd (bolting manufacturers), London; Barwells Ltd (bolt and nut manufacturers), Birmingham; Baynes, Chas. & Co (hacksaws), Blackburn; Cookson, Jos. Ltd (waste), Manchester; Cradley Boiler Co Ltd, Birmingham; The Chalmers-Edina Co. Ltd (concrete mixers, etc.), Scotland; Dampney, John & Co Ltd. (paints), London; Fraser Douglas & Co. (transmission machinery), Scotland; Gleniffer Motors, Ltd (marine motors), Glasgow; Hoffman Mfg. Co. Ltd (ball bearings), Chelmsford; Rochdale Asbestos Co Ltd. (packing of all descriptions), Rochdale;

Tangyes Ltd, Cornwall Works, Birmingham; Wadkin & Co (woodworking machinery), Leicester.

**Offices.**—76, Bree Street, Capetown. Cables: "Martlet," Capetown. Codes: A B C 5th and 6th Editions, Marconi International, and Bentley's.

**OTHER COMMERCIAL ENTERPRISES**

**CHAMBERLAIN'S LTD., AFRICA.**—P.O. Box 1718, Capetown. Established 1872. Company manufactures such well-known proprietary medicines as Chamberlain's Cough Remedy and Chamberlain's Pain Balm. Capetown factory was erected in 1912. Head office, Des Moines, Iowa, U.S.A. Factory produces colic, diarrhoea, cough, pain, stomach and liver remedies and tablets.

**DICKINSON, JOHN, & CO. (AFRICA) LTD.**—Croxley House, Wale Street, Capetown. Paper makers, manufacturing stationers, envelope makers, etc. Branches at Johannesburg, Durban and East London.

London House 65, Old Bailey, E.C. 4  
Cables "Croxley" Codes A B C and Bentley's.

**ELLERMAN & BUCKNALL STEAMSHIP CO. LTD.**—Ellerman House, 26, Strand Street, Capetown. Controlled by Ellerman Lines Ltd. Cargo and passenger service S.A. and U.K. and Continent, cargo S.A. and America and S.A. and Australia. Many agencies. Head office 104, 6, Leadenhall Street, London, E.C. 3. Cables "Buccaneer," Capetown. Codes Bentley's, Standard and Scott's 10th Edition.

**FRY, J. S., & SONS (AFRICA) LTD.**—36, Castle Street, Capetown. Parent company established in 1728 at Bristol, England. London offices, Botolph House, 10 & 12, Eastcheap, E.C. 3. Manufacturers of breakfast cocoa, Caracas chocolate powder cream tablets, chocolates, and chocolate confectionery of all kinds. Cables "Fry's," Capetown. South African manager, Mr F. E. Maggs.

**GRESHAM LIFE ASSURANCE SOCIETY LTD.**—40-42, St. George's Street, Capetown. Founded 1848. South African branch established 1889. Life assurance business only transacted. Head office 188-190, Fleet Street, London, E.C. 4. Cables "Gresham," Capetown. Manager for South Africa Reginald A. Beckett.

**GUARDIAN ASSURANCE CO. LTD.**—Capetown, Johannesburg and Durban. Life, fire, marine, accident, etc. business transacted. Subscribed capital, £2,015,000, paid up, £1,015,000. Head office 68, King William Street, London, E.C. 4. Branch manager at Capetown, Mr H. Emmuns.

**JAGGER, J. W., & CO.**—Established in 1883 at Capetown. Have branches at Johannesburg, Port Elizabeth, and Durban. Manufacture all leather goods, and have set up their own tannery the surplus output from which is marketed in the Union.

**LINOTYPE AND MACHINERY (S.A.) LTD.**—86, Bree Street, Capetown. Branch of Linotype & Machinery Ltd., of 9 Kingsway, London, manufacturers of linotype composing machines, printing presses, lithographic and offset presses, etc. Branch in Africa stocks linotypes and presses, also spare parts.

**NECTAR TEA AND COFFEE CO. LTD.**—Nectar Factory, Observatory, Capetown. Proprietors of Nectar tea and Van Ysendyk's coffee. Import, blend, and pack tea, coffee,

and chicory. London office 20 Market Place, Oxford Circus, W.1. Johannesburg: 147 President Street. Cables "Nectar," Observatory. Code Bentley's.

**NORWICH UNION MUTUAL LIFE OFFICE.**—Norwich Union Buildings, St. George's Street, Capetown. Founded in England 1808. Funds £10,000,000. Claims paid £25,000,000. All forms of life and endowment insurance. Branches Johannesburg, Durban, Bloemfontein, Port Elizabeth, East London, Kimberley. Agents throughout South Africa. General manager for South Africa, Mr T. Akcock Dockrall.

**POPPE, SCHUNHOFF & GUTTERY.**—P.O. Box 132, Capetown. Established 1862. Exporters of wool and grain, agents in Capetown and Port Elizabeth for all German steamship lines to South Africa. Partners Messrs H. F. Weimig and K. A. Spillhaus. Cables "Woolship" Codes A B C 5th and 6th Editions and Bentley's.

**ROYAL INSURANCE CO. LTD.**—Royal Insurance Building, St. George's Street, Capetown. Transacts various classes of insurance in South Africa. Manager for the Union of South Africa, Rhodesia and Portuguese East Africa, Mr A. P. W. Blencowe. Head office Liverpool, England. Cables "Princely," Capetown.

**RYLANDS & SONS (COLONIAL) LTD.**—17 St. George's Street, Capetown. A subsidiary company to Rylands & Sons Ltd., of London, Manchester, Liverpool, etc. Established 50 years ago in South Africa. General soft goods manufacturers and warehousemen. London office 55 Wood Street, E.C. 2. Cables "Dacca," Capetown.

**SOUTH AFRICAN MUTUAL LIFE ASSURANCE SOCIETY.**—P.O. Box No 66, Capetown. Instituted in 1845. Cables "Mutual."

**SOUTH AFRICAN NATIONAL LIFE ASSURANCE CO. LTD. & SOUTH AFRICAN NATIONAL TRUST & ASSURANCE CO. LTD.**—Trust Buildings 15 Adderley Street, Capetown. Founded 1918, known generally as S.A.N.T.A.M. and S.A.N.L.A.M. Formerly transacts life assurance, the latter fire, accident, etc., business. Branch offices, Johannesburg and Bloemfontein. General manager Mr G. F. de Vilhiers.

**SOUTH AFRICAN WOOLLEN MILLS LTD.**—Woodstock, Cape Province. Established, 20 years. Manufactures blankets and rugs

for local consumption. Newly-erected premises at Mowbray cover an area of four acres. Bankers National Bank of South Africa Ltd. Cables "Blankets," Woodstock.

**STANSFIELD RATCLIFFE & CO. LTD.**—8, Waterkant Street, Capetown. Inc. in Cape Province. Represent B.S.A. Co. Ltd., Daimler Co. Ltd., Eley Bros. Ltd., Hadley and Shothouse, King's Norton Metal Co. Ltd., Kynoch Ltd., Lighting Trades Ltd., Joseph Lucas Ltd., Nobel Industries Ltd. Cables "Smallarms," Capetown. Manager Mr E. Stansfield Ratcliffe. Bankers, National Bank of S.A. Ltd.

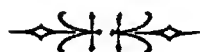
**STEYTLER, J. G., & CO.**—66-68, Strand Street, Capetown. Carries on business as general merchants, produce dealers and importers and has subsidiary stores at Roeland Street, Marine and Sea Street, and Prestwich Street. Cables "Selenium" Codes Bentley's complete phrase, A B C 5th Edition, and A1 telegraphic.

**THE 1820 MEMORIAL, SETTLERS' ASSOCIATION.**—An organisation established to perpetuate and commemorate the memory of the 3,500 British pioneers of 1820 by judicious and properly conducted immigration to South Africa. Mayor-General the Rt. Hon. the Earl of Athlone, G.C.B., G.C.M.G., Governor-General, and Lieut. General the Rt. Hon. J. C. Smuts, C.H., K.C., M.L.A., are honorary presidents.

**VAN RYN WINE AND SPIRIT CO. LTD.**—Head office and cellars, 101, Waterkant Street, distilleries at French Hoek, Cape Province. Maintains offices and depôt at 11 New Club Buildings, 99 Main Street, Johannesburg. An old established house, carrying large stocks of wines, brandies, liqueurs.

**WIRELESS TELEGRAPH CO. OF SOUTH AFRICA LTD.**—Kodak House, Shortmarket Street, Capetown. Owns and controls the station erected under the agreement between the Government of the Union of South Africa and Marconi's Wireless Telegraph Co. Ltd. Wireless transmission to all countries, transmitting station, Klipheuwel.

**WOLF BROTHERS.**—34, Adderley Street, and 44 St. George's Street, Capetown. Has a large mail-order jewellery business. Manufactures all the lines it sells in diamond and other gem rings, wedding rings, bangles, brooches, etc.







MAIN STREET, PORT ELIZABETH, PREMISES OF MESSRS CLEGHORN & HARRIS LTD IN LEFT FOREGROUND.

## PORT ELIZABETH CITY AND PORT

**S**ITUATED on the shores of Algoa Bay, Cape of Good Hope Province, Port Elizabeth owes its origin to a small band of British settlers who arrived in 1820. From the few huts and a military blockhouse of those distant days, the city has grown steadily in size and importance until it now has not only the second largest total of inhabitants in Cape Province, but has attained a commercial and industrial position of great importance. The population at the census of 1921 was in all 46,094, of whom 25,982 were white and 20,112 coloured.

**BUILDINGS.**—The many handsome public buildings of Port Elizabeth include the City Hall, erected at a cost of £26,000, the Magistrates' Offices, the Post Office, which cost £62,000, the Public Library, on the west side of Market Square, which was erected in 1902 and houses a magnificent collection of South African books and pamphlets, St. Mary's and St. Paul's Churches, and St. George's Club. The Provincial Hospital

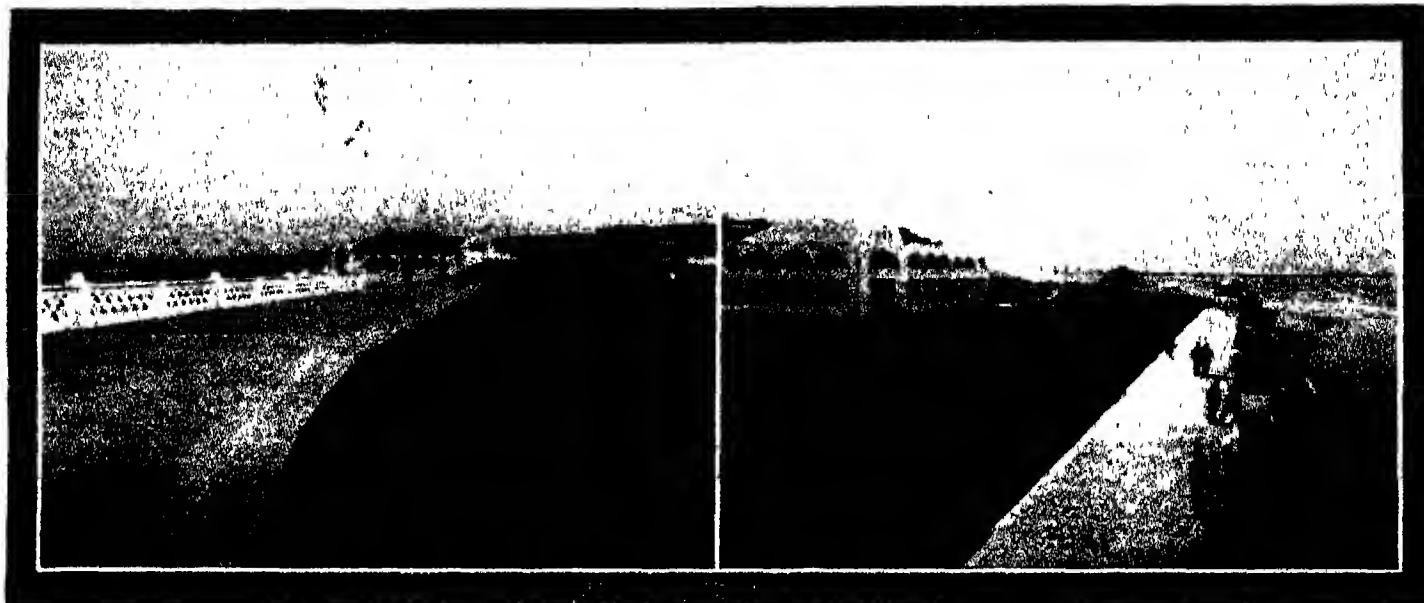
stands to the north of the main road to Capetown, and near by are the fine buildings of the Grey High School.

**INDUSTRIES.**—The temperate and even climate of Port Elizabeth is particularly suited and eminently advantageous for the establishment of industries. A great development of the tanning and leather making enterprises has taken place during the present century, and foodstuffs, furniture making, tobacco curing, and fruit canning also play a large part in the industrial activity of the city. Port Elizabeth was recently selected as the best possible site in South Africa for the Ford Car Company's assembly factory.

**MUNICIPAL MARKETS.**—At Port Elizabeth is the chief of the produce markets of the country, and the Municipality owns the large and handsome buildings which form the first civic market ever built in South Africa. Sales are held almost daily, and each year shows a considerable increase in the quantity of wool displayed for buyers (who come from almost every country in

the world) and sold by municipal auctioneers. Although large quantities of wool are disposed of out of hand through commission agents, or sent overseas for sale, yet the Municipality has wisely afforded a favourable method for the auctioning of such produce, keen competition being shown and record prices paid for the best quality wool. Catalogue sales of wool are held every Friday, while skins and hides catalogue sales are conducted every Thursday.

**MUSEUM.**—The Museum collection, which is one of the largest and most interesting in South Africa, was recently transferred to new premises in Bird Street. This collection represents every branch of South African natural history, botany, geology, ethnology, etc. The grounds, which are well laid out, contain an aviary and the famous snake park, under the curatorship of Mr F. W. Fitzsimons, the well-known authority on South African fauna. Here is one of the most interesting sights in South Africa.



The recently completed Princess Esplanade, Humewood (Contractors, Murray & Stewart), showing the Municipal Baths in centre of picture.

Looking towards Port Elizabeth, taken from the Municipal Baths.

**PARKS.**—St George's Park, well laid out with shady avenues, lawns, and conservatories, is worthy of notice, much of its soil having been carted to the spot. In the park, forming an ornamental centre to a large circular reservoir, is a memorial to members of the Prince Alfred's Guard who lost their lives when on active service. Adjoining the park are cricket and football grounds with pavilions attached, tennis grounds, running grounds, bowling greens and croquet lawns, etc. To the north of the town is Prince Alfred's Park, with tennis courts and bowling greens, and a lake of nearly 100 acres.

**WATER SUPPLY.**—The water supply, brought 27 miles from Van Staden's, 30 miles from Bulk, and 47 miles from the Sand Rivers at a cost of £600,000, is excellent and has been the means of greatly improving the city. The dams hold 30,000,000, 124,000,000, and 183,000,000 gallons respectively, and the daily consumption is about 1,800,000 gallons. The sewerage scheme recently completed cost £500,000.

#### PORT

Port Elizabeth harbour, which is on the western end of Algoa Bay, is now being developed. The new breakwater, to be 8,500 ft long when finished, is to cost £1,500,000, and

will afford the necessary protection to admit of the work of the port being carried out by lighterage in quiet water at all periods. At the same time it will form a portion of the general scheme for berthage of ocean going ships along the quay, whenever this becomes necessary.

**ACCOMMODATION.**—There are three iron jetties—Don Pedro jetty, 1,400 ft by 105 ft, depth alongside 13 to 24 ft, North jetty, 1,204 ft by 84 ft, depth alongside 9 to 24 ft, and South jetty, 1,162 ft long by 108 ft wide. These jetties are fully equipped with modern hydraulic cranes and railway sidings for the direct transfer



1. Mr. J. HIRSCH.  
President Port Elizabeth Chamber of Commerce (1925).

2. Mr. H. O. FRIELINGHAUS  
Chairman (1928), Produce Association, Port Elizabeth.

of cargo between lighters and railway trucks. There is a shipway capable of carrying craft of 100 tons dead weight, and drawing from 9 to 14 ft.

**ANCHORAGE.** — The roadstead has excellent holding ground, where vessels can ride with absolute safety if properly found with tackle. The prevailing winds are westerly, with intermissions from the south-east, and it is to the latter that the port is most exposed. When signals to prepare for foul weather are made from the post office, sailing vessels with doubtful ground tackle should get under way, making their first task towards St. Croix Island.

**BURNING.** — To prevent injury to the jetties by vessels drifting upon them during south-east gales, no sailing vessel is permitted to lie south of a line from the Hill Lighthouse through the North Malay Mosque, and should any vessel anchor south of this line, she must shift her berth to north as soon as circumstances permit.

Steamers must anchor to south of above line.

**PILOTAGE.** Pilotage is not compulsory at Algoa Bay, and the Harbour Board is not responsible for any accidents which may occur to vessels while in charge of its pilots or tugs. Sailing vessels engaging pilots beyond a three miles' radius from the Port Elizabeth Hill lighthouse are charged 12s. 6d. per 100 tons gross reg. with a minimum charge of £5 10s. 0d. Within a three miles' radius the charge is £2 15s. 0d. Steamers engaging pilots within a three miles' radius are charged 15 10s. 0d. for inward pilotage, and an additional £2 15s. 0d. if outward pilotage services are rendered. To and from the jetty the charge is for steamers 45s. and for sailing vessels £4 10s. 0d.

**PORT CHARGES.** — Harbour and light dues are as at Capetown.

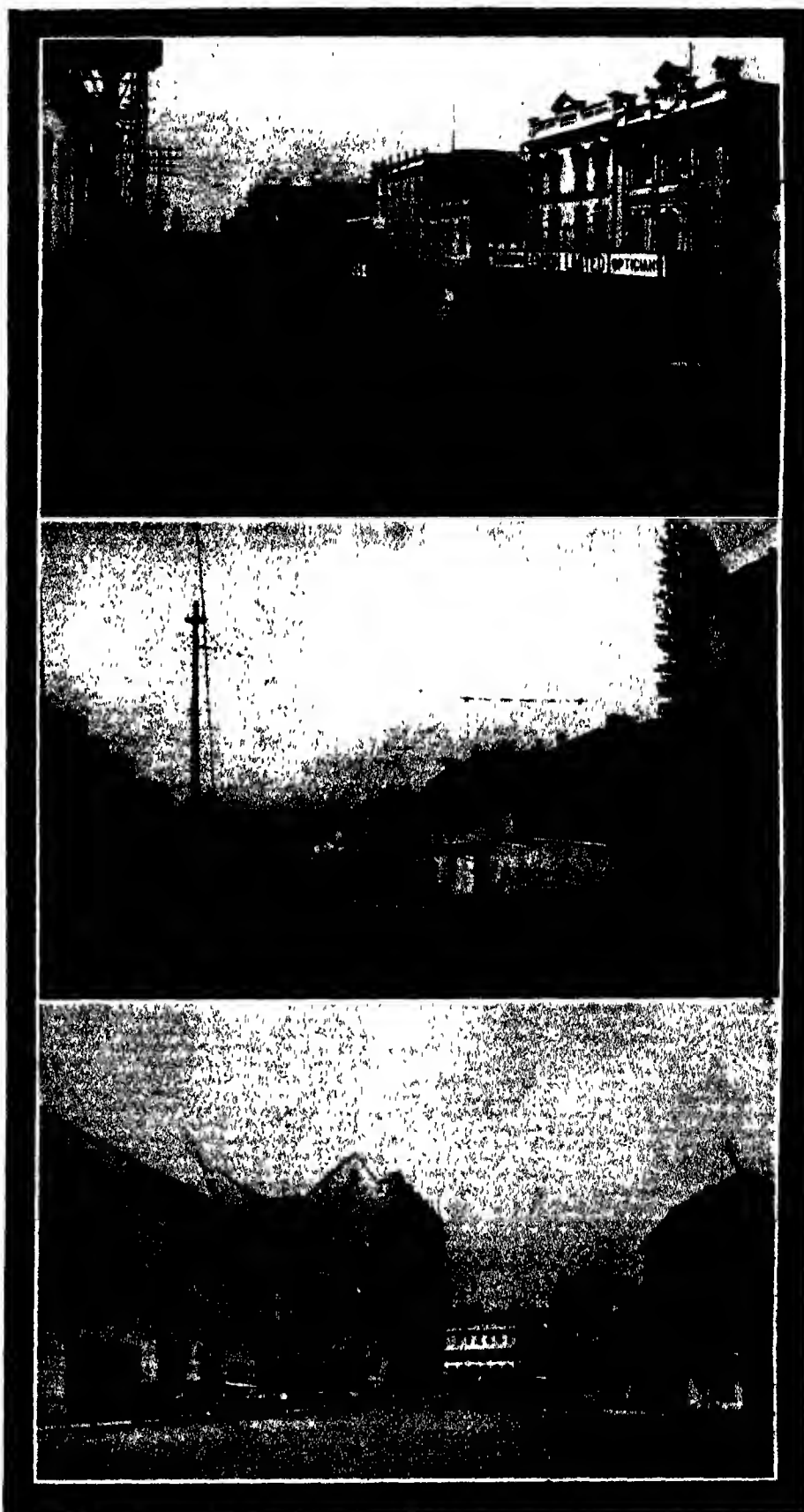
**LANDING CHARGES.** — For receiving from ship in roadsteads and lighterage, landing, and loading into railway trucks in transit. General cargo not exceeding two tons in weight, for any one package, 2s. per ton and in addition 1s. 3d. per ton, 1s. 6d. per ton and 10s. 8d. per cent ad valorem wharfage charge. For receiving as above and delivery by road in Port Elizabeth within the recognised cartage radius general cargo not exceeding two tons in weight for any one package, 4s. 6d. per ton, and in addition 1s. 3d. per ton, 1s. 6d. per ton, and 10s. 8d. per cent ad valorem wharfage charge.

**LOADING CHARGES.** — For general cargo received by rail and delivered to ship in roadstead, not exceeding two tons in weight, 3s. 3d. per ton and an additional 10 per cent ad valorem wharfage charge. For general cargo not exceeding two tons in weight collected from shippers stores and delivered to ship in roadstead, 5s. 9d. per ton, and an additional 10 per cent ad valorem wharfage charge.

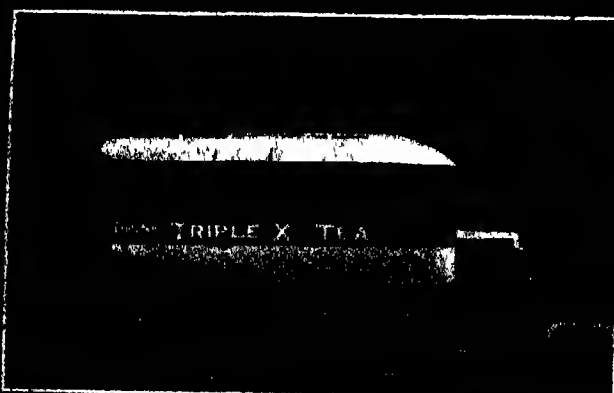
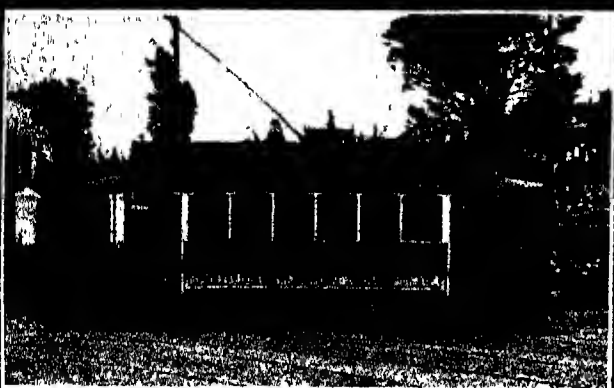
**TOWAGE.** — Charges are as at Capetown. Boat to and from ship, £1 maximum per trip.

**WATER.** — At wharf, jetty, or quay direct from mains, 7s. 6d. per 1,000 gallons, supplied by tugs or water boats, 25s. per 1,000 gallons. Maximum charge, 37s. 6d.

**SHIPPING AND TRADE.** — The number of vessels entered at Port Elizabeth in 1924 was 561, compared with 548 in 1923, and their tonnage 2,252,773, as against 2,143,453 tons. British vessels entered during 1924 were 420, and foreign vessels 120. The total tonnage of cargo landed was 398,648, compared with 332,160 tons in 1923, and of cargo shipped 127,893, compared with 162,825 tons.



1. MAIN STREET, PORT ELIZABETH. Lennon's Retail Store in right foreground.
2. WHITE'S ROAD, PORT ELIZABETH. Grand Hotel in right foreground.
3. JETTY STREET, PORT ELIZABETH. L. H. Shapiro & Co.'s Premises in left foreground.



PORT ELIZABETH ELECTRIC TRAMWAYS CO.

1. Car Shed.
2. Single Deck Car.
3. Double Decker.
4. Type of Motor Bus.

5. Power Plant.
6. Engine.
7. Machine Shop

During the first six months of 1925, vessels entered totalled 298, compared with 276 during the corresponding period of 1924, their tonnage aggregating 1,162,244 and 1,114,531 tons respectively. During the same period the cargo landed totalled 207,120 tons, as against 136,211 tons.

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### PORT ELIZABETH ELECTRIC TRAMWAYS COMPANY.

**Inception.** This company started operations in November 1896 with two lines, one from Market Square to North End, the other from Market Square to South End, 2.4 and 1.2 miles in length respectively.

**Development.** In 1897 two more routes were opened to Cape Road, one via White's Road, the other via Russell Road. These routes joined at the junction of Russell Road and Rink Street and continued to the end of Cape Road. In 1902 a line was opened to Hunnewood, the local seaside resort, a distance of 1.8 miles. The system thus comprises five main routes, all radiating from a central point, Market Square.

**Progress.** Some years later the majority of the routes were extended, the North End route to the Show Yard grounds, about half a mile, the Cape Road route to the local Golf Club house, thus recently being again extended to the Racecourse, the total length of line being now 3.18 miles. The South End route was extended in 1904 to the suburb of Walmer boundary, passing close to Victoria Park, its length now being 1.55 miles. In 1912 the Hunnewood route was continued to near the bathing houses and cafes, the distance being 2.1 miles, and work is now in hand to duplicate this track, which is at present a single one with four sidings.

**Places of Interest.** Those touched by the various routes are -

#### CAPE ROAD VIA WHITE'S ROAD

Some of the best hotels, local museum and Snake Park, Port Elizabeth and St. George's Clubs, St. George's Park, Provincial Hospital, the golf course and racecourse.

#### CAPE ROAD VIA RUSSELL ROAD

Provincial Hospital, golf course and racecourse. *North End Route* - Business and manufacturing centres, Prince Alfred's Park, a branch line to the Agricultural Society's show grounds. *South End Route* - The smaller and cheaper hotels, Victoria Park. *Hunnewood Route* - The seaside route where some of the finest hotels are to be found, and one of the best bathing beaches in the country.

**Concession.** - The company is operating the tramway system under a 30 years' lease, granted by the municipality, with extension periods of 10 years thereafter until the City Council is prepared to take over the concern.

**Properties.** - These include power station, car sheds, machine shops and stores in Valley Road, and a subsidiary car shed and extensive yard in Adderley Street, North End.

**Financial.** - The company has £236,000 invested in land and plant.

**Road Maintenance.** The company is responsible for the upkeep and maintenance of all roadway between tracks, as well as an 18 inch margin on either side. The rails are set in concrete girders fastened to anchors. There is in all a total of 16½ miles of single track.

**Rolling Stock.** - The passenger cars were manufactured by J. G. Brill & Co. and number 39. They comprise 17 closed double deckers

and 22 single deckers (12 closed, 2 open, 8 convertible), with a seating capacity of from 70 in the larger cars to 30 in the smaller. Besides the above, there are 1 freight car, 1 water sprinkler, and a prison trailer.

**Overhead Line and Power Plant.** The company maintains 18 miles of overhead line, of which 8 are span wire suspension and 2 are side bracket suspension. The power plant consists of 2 Belliss & Morcom triple expansion vertical engines of 750 h.p., direct coupled to 2 x 500 k.w., direct current generators of 550

being White's Road (Cape Road route), 1 in 8, Walmer Road (South End route), 1 in 10, and Russell Road (Cape Road route), 1 in 11.5.

**Buses.** - The company owns six buses, four on Clydesdale chassis and two on Reo, built, with the exception of two (which carry 25), to carry 21 passengers each. The buses are mostly run on the Hunnewood route.

**Statistics.** Passengers carried in 1898 numbered 1,800,000, in 1922, 5,850,000, and 1925, 4,975,000. The total miles run in



HEAD'S GRAND HOTEL, Port Elizabeth.

1. The Dining Room.
2. Portion of the Lounge.

(See letterpress, page 180.)

volts running at 300 r.p.m. Superheated steam is supplied from 2 B & W water tube marine type land boilers, equipped with electrically driven mechanical stokers, working at a pressure of 200 lbs per sq. inch. The company is about to add a 500 k.w. 550 volt direct current motor converter, to take power from the Municipal Electricity Supply Station.

**Gradients.** - Port Elizabeth being mostly built on the slopes of a very steep hill, the gradients are naturally severe, the heaviest

1925 was 860,000. Operations were started with 21 cars with a seating capacity of 738, to-day the company has 39 cars with a capacity of 1,850.

**Employees.** These total 166.

**Directors.** Messrs A. Gloag (chairman), W. H. Freemantle (managing director), A. J. Hazell and N. E. Harris.

**Head Office.** - Cape Electric Trams Ltd., 4, London Wall Buildings, Blomfield Street, London, E.C.2.

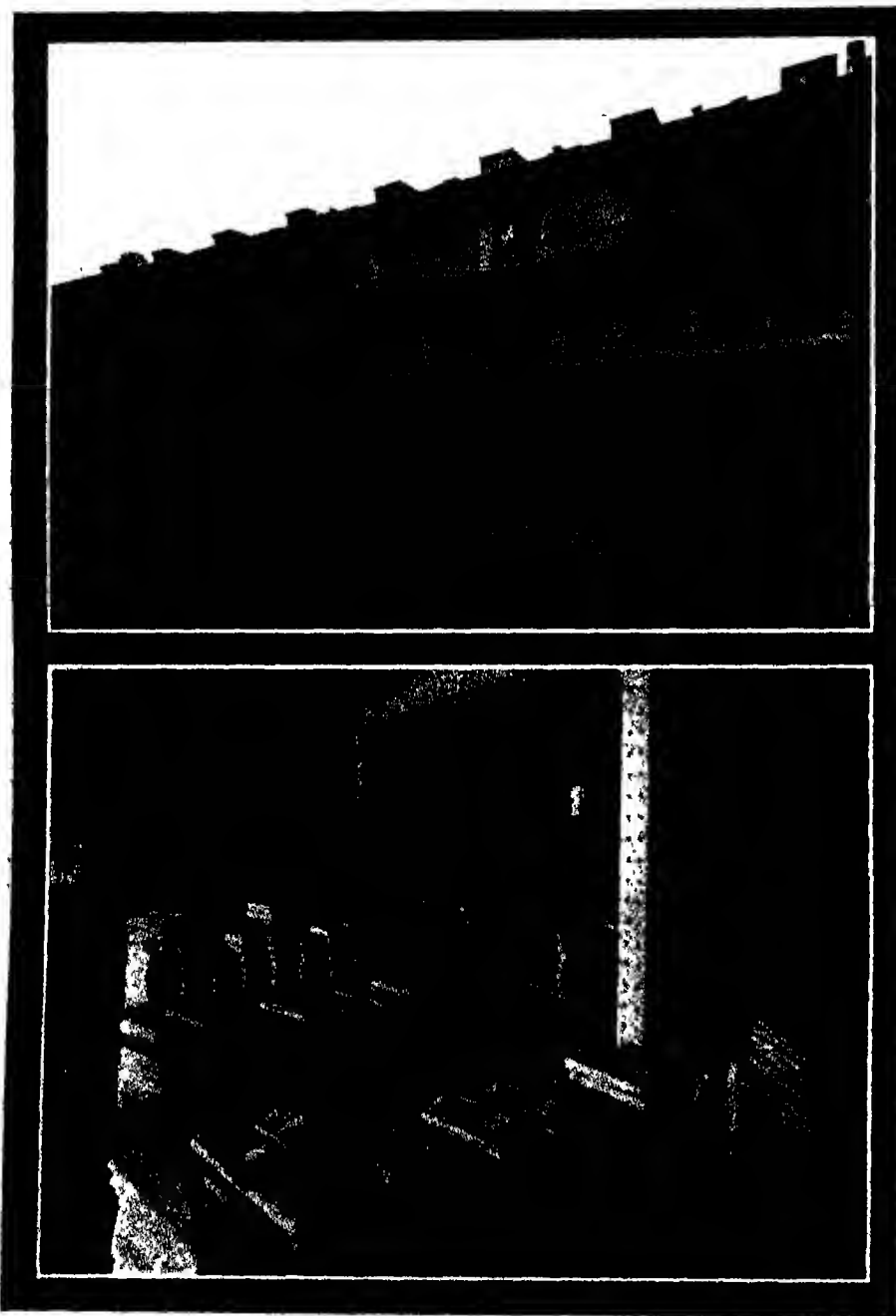


**HEAD'S GRAND HOTEL.**

**Situation.** The Grand Hotel is situated in the residential quarter on the hill which rises above the business centre of the town, and can be reached either on foot or by tram in a few minutes. A park on either side of the premises ensures uninterrupted views, and prevents the hotel being closed in by other structures.

room, from which an extensive and pleasing view of the bay may be obtained, can seat 200. Dances and other social functions are occasionally held in this room.

**Service and Cuisine.**—These are under the direct supervision of the proprietor, Mr W H Head. The service is carried out by a staff of well trained Indians.



**HIRSCH, LOUBSER & CO. LTD., Port Elizabeth.**  
1. Company's Premises in Strand Street.  
2. Showroom.

**Accommodation.**—This comprises 78 large, airy bedrooms and an adequate number of bathrooms with hot and cold water laid on, there being accommodation for 100 guests. The smoking and general lounges, the reading and writing rooms are all furnished and equipped with due regard for comfort and are decorated with much taste. The dining

**Facilities.**—The hotel porters and motor cars meet all boats and trains. Advance bookings can be arranged by letter or wire, and all bookings for steamers or trains can be effected by the hotel staff if necessary.

**Address.**—Head's Grand Hotel, P.O. Box 82, Port Elizabeth. Cables: "Grand," Port Elizabeth.

(See illustration, page 179.)

**HIRSCH, LOUBSER AND CO. LTD.**

**Inception.** This old established business was founded in Port Elizabeth in the year 1876 by the late August Hirsch and Mathew Michael Loubser.

**Development.**—During the ensuing thirty years it was conducted as a private concern, becoming incorporated as a limited liability company in 1906.

**Activities.**—The company carries on business as general merchants, shipping and commission agents, dealing principally in the following—Rough goods groceries, oilmen's stores, etc. Soft goods such as dress and piece goods, outfitting, clothing, boots and shoes. Hardware arms and ammunition, farming materials, etc. Produce wool, mohair, ostrich feathers, hides and skins, both for local and overseas markets. The firm is also a distributor for the famous Zwartkops Saltpan Company, producers of the best natural salt in South Africa.

**Branch.** The company has one branch, which is in Johannesburg.

**Directorate.**—Sir William Macintosh, M.L.A., chairman. Messrs. John Gauntlett Hirsch and Alexander Yule.

**Addresses.** 29, Strand Street, Port Elizabeth, P.O. Box 100 74, President Street Johannesburg, P.O. Box 1191.

**Cables.** "Hirlobco."

**DREYFUS & COMPANY LTD.**

**Inception.** The firm of Dreyfus & Co. is one of the oldest in South Africa, having been founded at Port Elizabeth in the early 'sixties by Mr. Theodore Dreyfus, who started as a wholesale merchant. Meeting with great success, he soon retired from the active direction of affairs, leaving the management to others, of whom the principal was his nephew, the late Mr. Julius Auerbach.

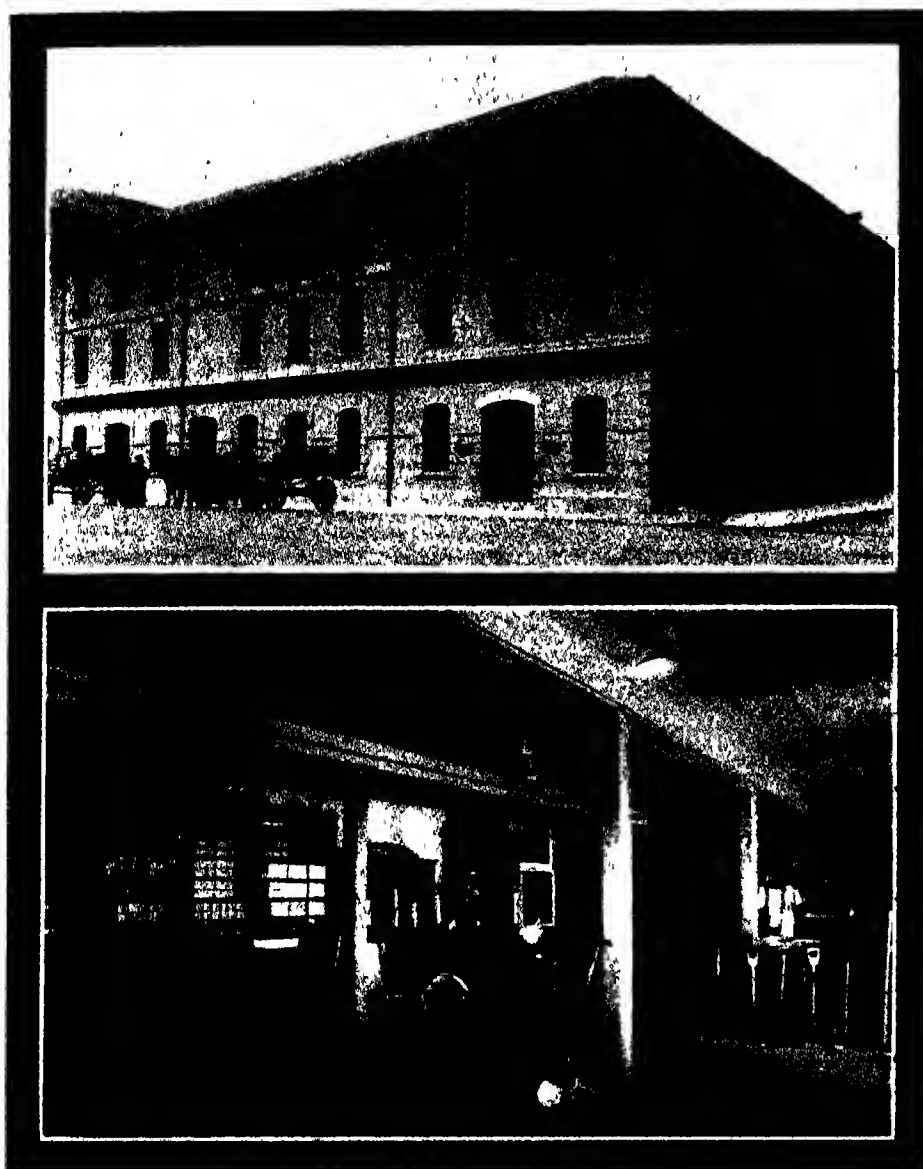
**Development.** As a result of the rapid increase of business, branches were opened in East London and King William's Town, and larger and more imposing offices were acquired in Strand Street, Port Elizabeth.

**Activities.** The firm's activities embrace every kind of merchandise. In groceries all types of provisions are stocked, including rice and coffee, of which the company is a large importer. In rough goods are included grain bags, woolpacks, and fencing materials, the sale of which has increased enormously. For timber the firm's yards are well known, while in the hardware section a large stock of crockery, glassware, brushware and general ironmongery is always on hand. It is only recently that the company has interested itself in skins and hides, but in these it has already established a great reputation.

**Produce Selling.**—In the important produce department Messrs. Dreyfus & Co. conduct a very large selling business, handling enormous quantities of wool, mohair and ostrich feathers. Wool and mohair are sent from up-country growers, and after display in the Alliance Warehouse, they are sold by the company's own auctioneers and shipped to all parts of the world. The warehouse, the premier produce store of South Africa, is situated in the main thoroughfare of Port Elizabeth, and has over 100,000 square feet of floor space. It is jointly owned by four of the leading Port Elizabeth firms, and is replete with every modern requirement for the display of goods.

**Head Office.**—101, Leadenhall Street, London, E.C.3.

**Directorate.**—Messrs. W. E. Hearson, (chairman), Sir William Bird, J.P., Arthur Auerbach, Major R. H. Lindsey-Renton, D.S.O., H. Samuelson, and E. Crage, the last-named being resident in South Africa, Secretary, Mr. H. Popple-Nunn.



**DREYFUS & COMPANY LTD.**  
 1. Office Premises at Port Elizabeth.  
 2. A Section of the Spacious Showrooms.

**Port Elizabeth Office.**—Manager, Mr James Tasker, assistant manager, Mr Frank E Gibson. Cables "Dreyfus."

**Bankers.**—The Standard Bank of South Africa, Ltd (See also page 190 "East London.")

#### **EARLE & CO.**

**Activities.**—This company, one of the largest wool buying concerns in South Africa, carries on business under its own name at Port Elizabeth, Durban, Capetown, and London, while at King William's Town and East London the firm bears the name of John Page and John Page & Co respectively.

**Head Office.**—The head office is at Port Elizabeth, where the whole work of the organization, including overseas correspondence, financial arrangements and cable communication, is centralised. It is from this office that all buying orders are sent out to the various branches according to their suitability for supplying the wool, and also to a great extent where the wool can be obtained with the least possible delay and at lowest cost. This is especially advantageous in cases where

wool is urgently required, as the order can be divided amongst the branches and executed in one day, whereas if confined to one port it might take many days to complete.

**London Office.**—Messrs Earle & Co soon found that the cable communication with London was not sufficient for their needs, consequently they opened up their own office in that city. This office is controlled by Mr A Frielinghaus, who is able to keep the company's South African houses supplied with information obtained from personal observation of existing conditions and the likely trend of the markets. The office is at 123, Wool Exchange, E.C. 2.

**Representations.**—Earle & Company represent the following wool firms: G & W. Townend Ltd, Bradford; Wenz & Co, Paris; Oelrichs & Co, New York; Gustav Ebell & Co, Berlin; and Mitsui Bussan Kaisha Ltd, of Tokio and Osaka. The company is likewise represented by the above-mentioned firms in their respective countries.

**Stocks.** Earle & Co buy direct for many of the largest mills in the consuming countries of the world, and in addition carry large stocks of all descriptions of raw wool, so that they are always able to supply mills, even if the season is closed.

**Partners.** The sole partners are Mr H. O. Frielinghaus, who controls the South African side of the business, and Mr A. Frielinghaus, who guides the buying activities from London. Mr John Page is an additional partner who studies the firm's interests at King William's Town and East London.

**Cables.**—"Earldom" Port Elizabeth  
 (See also illustration, page 182.)

#### **THE ALLIANCE WAREHOUSE CO. LTD.**

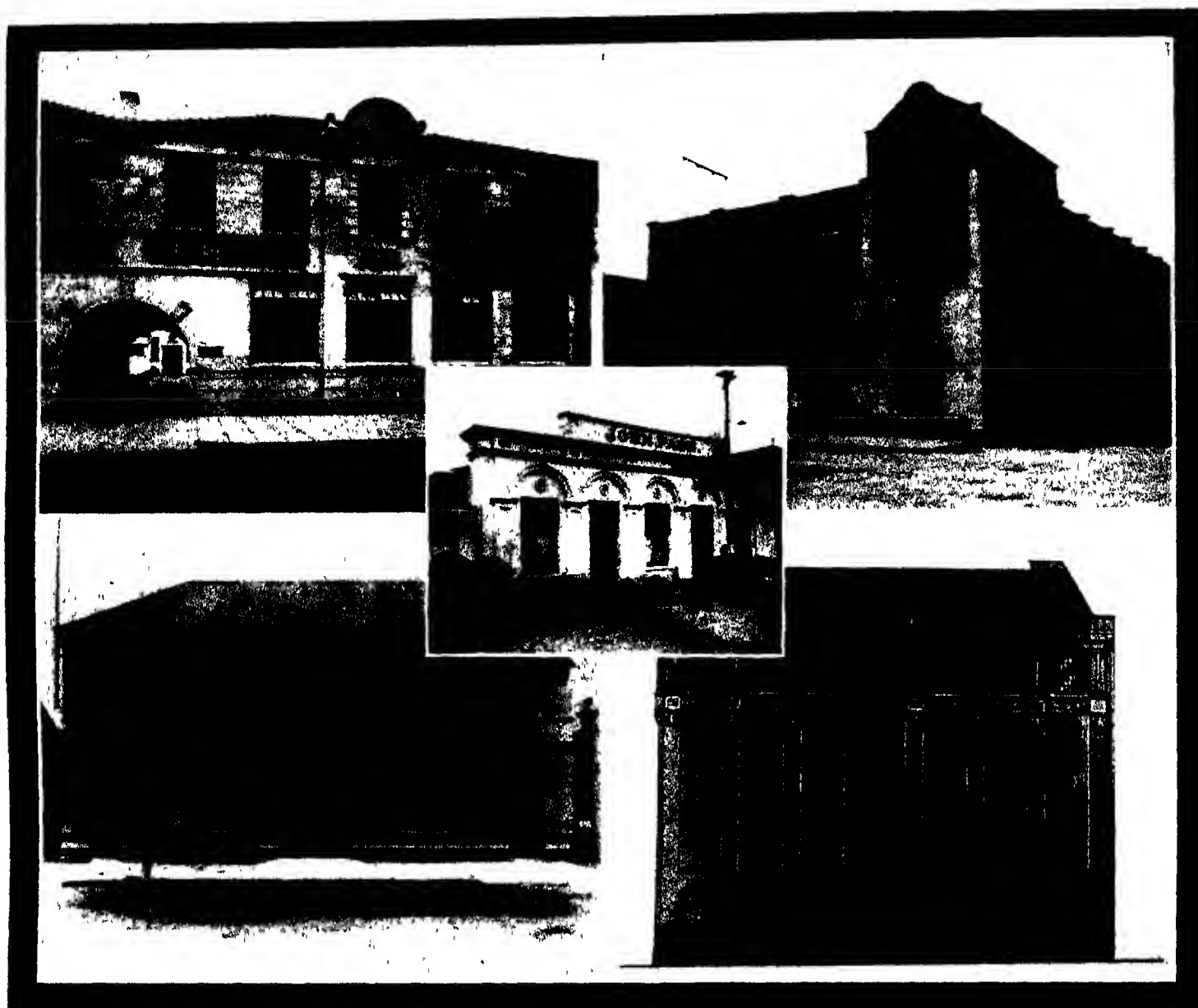
**Inception.** The decision to build this large warehouse for the classing and disposal of wool and mohair was arrived at in 1918, when it was found that there was insufficient accommodation in Port Elizabeth for the proper exhibition and sale of the produce which was annually arriving at the port.

**Proprietorship.**—Four firms of long standing in the produce trade of Port Elizabeth were the promoters of the company, viz, Dreyfus & Co Ltd, Hirsch, Loubser & Co Ltd, Hannam & Co Ltd, and Stephen Fraser & Co.

**Development.** Careful consideration and rejection of many other suggested sites for the warehouse preceded the selection of the present property on Adderley Street, the main thoroughfare of Port Elizabeth, and exactly two miles distant from the City Hall. The actual building covers an area of 2½ acres, with 102,816 square feet of floor space. In order to ensure the evenness of lighting so essential to the interior of a warehouse displaying wool and mohair, a single-storeyed building, scientifically lit by southward-facing overhead lights, was decided upon. The lights are disposed in a saw-toothed form of roof, the northern section of which is all iron, the southern aspect all glass. By this means light is evenly distributed throughout the store, ensuring complete elimination of shadows and uniform inspection conditions for all clips displayed. Such care is a reciprocation of the producer's efforts constantly to improve his flocks and honestly to class his wool.

**Control of Produce.** To ensure the utmost expedition in loading or unloading bales on wagons or railway trucks, the company has built a concrete platform some 450 feet in length on each side of the warehouse. In addition, there are 30 doorways for the reception and delivery of produce on the north and south sides, while in the front of the building 12 doorways are provided for handling odd lots for market. A private railway siding is established on the company's own property. With such avoidance of congestion or delay, buyers can rely on their purchases being pressed and ready for shipment within a few hours after sale.

**Sales.**—The comfortable and well-fitted sale-room has special accommodation for each of the 40 to 50 buyers. Sales are restricted to those who store in the warehouse, and each firm has its own auctioneer and selling staff. Public sales are generally held on Wednesdays, when all visitors desirous of attending are welcome. Full and keen competition is always assured on all produce offered under the ideal conditions existing. If market conditions are not satisfactory, wools are not put forward for sales at auction, as this would but emphasise the weakness of the market. If conditions are favourable, wools entered on the Alliance Catalogue Sales are so entered with intent to sell if full value is bid, every bale offered for sale having been carefully and expertly valued.



- EARLE & CO, Port Elizabeth.
1. Premises at Durban.
  2. Premises at Capetown
  - Centre. Premises at King William's Town.
  4. Premises at East London.
  5. Elevation of new Premises to be constructed for the Head Office at Port Elizabeth.
- (See letterpress, page 181)

**Extension.** The proprietors of the warehouse have secured enough ground space to double the present storage accommodation, should the need arise, without having to resort to building second or third storeys.

**General.**—The briefest summary has here been attempted of the advantages and conveniences of the Alliance Warehouse for the distribution, storage, display and disposal of wool and mohair entering Port Elizabeth, but inspection, cordially invited, is necessary for the proper appreciation of the ideal conditions maintained by this progressive joint company. The warehouse so operated is an improvement in accommodation commensurate with the advancement made by the country's wool and mohair producers. (See illustration, page 183)

#### KOHLER BROS.

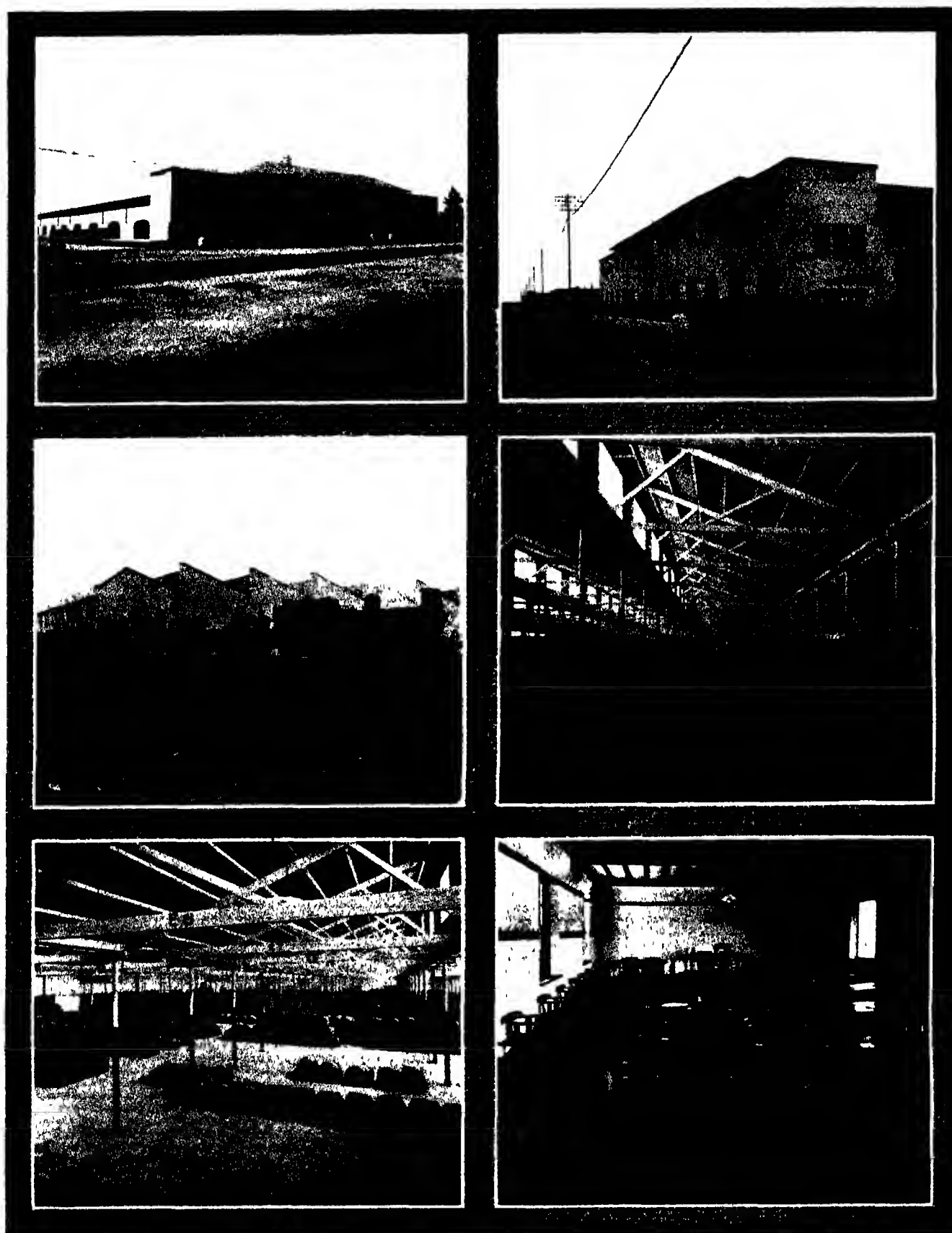
**Inception.** In 1880 the late Mr J Kohler commenced operations in Port Elizabeth as a joinery manufacturer, builder and contractor, amongst the most important buildings erected by him being the General Post Office, St Mary's Church, the National Bank of South Africa, the Harbour Board offices, Mosenthal Bros building, and the Union Castle Line offices.

**Development.**—The present business, which is an off-shoot of the original enterprise, is owned by Messrs George and Chas Kohler (twin brothers and the eldest sons of Mr J Kohler), and they commenced operations about 18 years ago as timber merchants and joinery manufacturers, dealing largely in Scandinavian and American timber, also

teak from Burma and jarrah from Australia. The firm now conducts the largest business of its kind in the eastern provinces.

**Activities.** Besides stocking all classes of timber, Messrs. Kohler Bros also deal largely in builders' materials, and their operations extend throughout the whole of the Union of South Africa, Rhodesia and the Belgian Congo. They have agents all over the country, who are visited periodically by the firm's travellers.

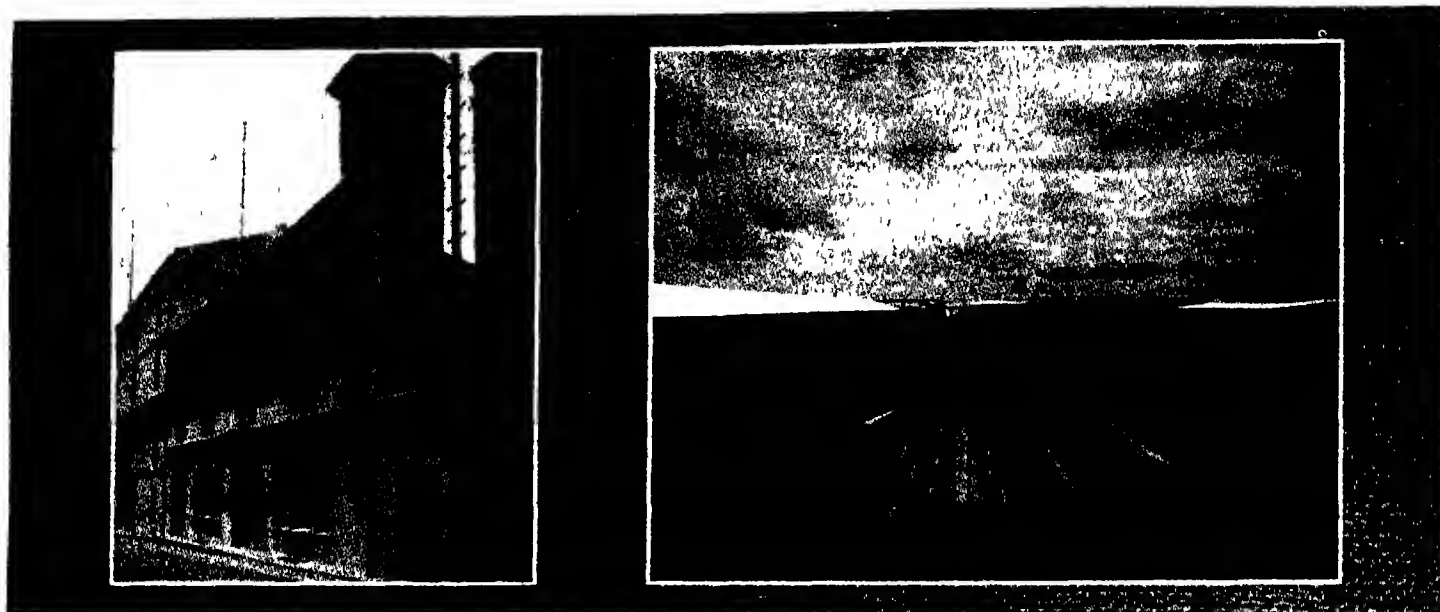
**Timber Yard.**—The company's yard covers an area of 208,000 square feet, and has its own siding, comprising two sets of lines extending the whole length of the yard. The timber is well protected from the weather. The firm is shortly erecting a new joinery factory, which will be fitted with all the most modern machinery.



ALLIANCE WAREHOUSE CO. LTD, Port Elizabeth.

1. General View of the Company's Premises, among the finest in South Africa.
2. Catalogue Sale Day, showing some of the Buyers' Cars.
3. A Train Load of Mohair leaving the Company's Private Railway Siding for Shipment Overseas.
4. Portion of the Interior, showing enormous floor space and excellent lighting.
5. Another portion of the Warehouse.
6. Company's Sale Room on its premises.

(See letterpress, page 181)



1. View of Office.

KOHLEB BROS., Port Elizabeth

(See letterpress, page 182)

2. The Firm's Timber Yard.

**Branch.**—Kohler Bros have a large timber yard with an approximate area of 140,800 square feet and a factory at Durban, also a wharf at Congella

**Partners.**—George Kohler (managing the Durban branch) and Charles Kohler (managing the Port Elizabeth branch)

**Offices.**—Head office—Grace Street, Port Elizabeth Durban office—Field Street Durban London office—Messrs Wright & Kerr & Co., 32, Fenchurch Street, London, E C 3. Cables—“Kohler,” Port Elizabeth and Durban

**Bankers.**—The Standard Bank of South Africa, Ltd

#### DUFF, MURRAY & CO.

**Inception.**—This company, which has been established for many years specialises in lubricating oils and tanning materials

**Activities.** Duff, Murray & Co occupy their own premises both at Port Elizabeth and at Capetown whence they distribute merchandise to the various centres of the Cape Province territory. The method of distribution is by means of travellers, who visit the various places at regular intervals, thus keeping in constant touch with customers.

**Representation.** The company's chief agency is that for the Standard Oil Company of New York, manufacturers of the famous Vulcan motor oils

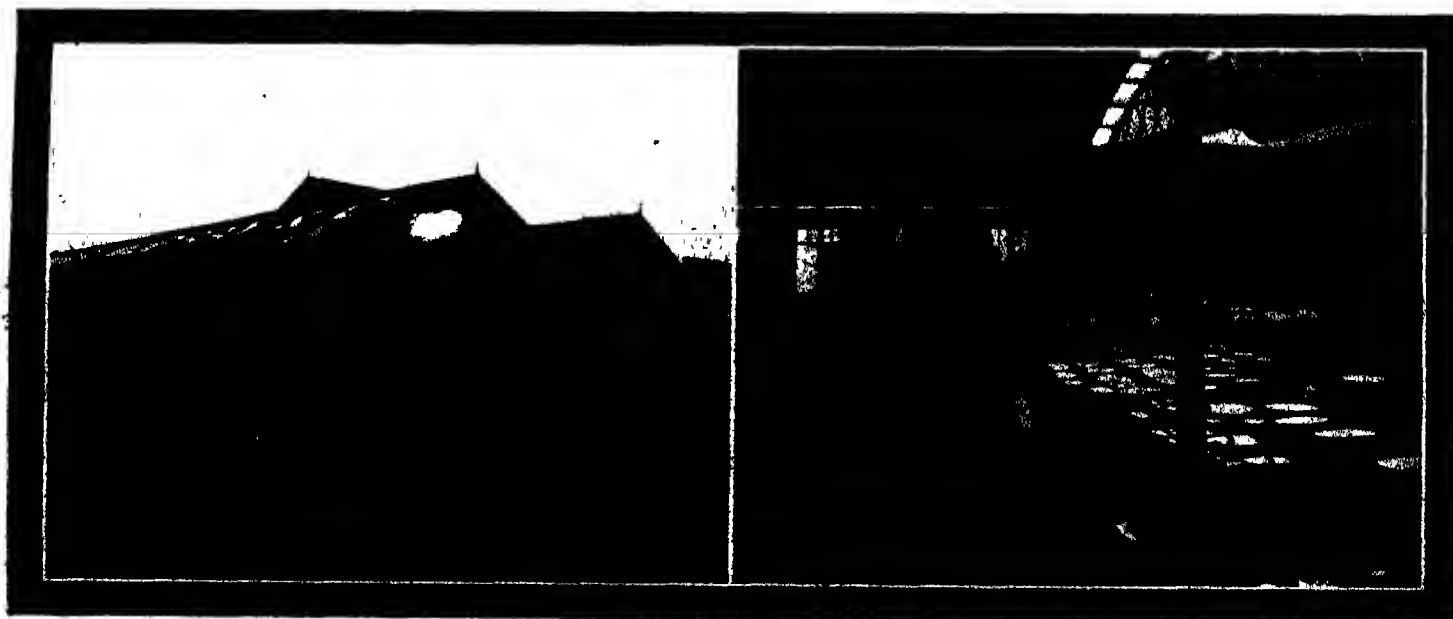
**Other Activities.** Messrs Duff, Murray & Co import quebracho extract and other tanning specialties from Brazil, etc and they will be pleased to assist manufacturers desiring representation in any lines or products which fit in with those already handled

**Directorate.** Mr Archibald is the managing director of the company

**Offices.** Head office, Broad Street, Port Elizabeth Branch office—1, Oak Street, Capetown, P.O. Box No 1923

**Cables.** “Lubricate,” Port Elizabeth, “Bestol,” Capetown

**Bankers.**—The Standard Bank of South Africa, Ltd



DUFF, MURRAY &amp; CO., Port Elizabeth.

1. Premises at Port Elizabeth: the Head Office.

2. Portion of Company's Store at Capetown.



**L. H. SHAPIRO & CO.**

**Development.**—This company has made rapid strides since its inception, and is now one of the leading motor car and cycle importers in Port Elizabeth.

The whole of the company's operations are under the control of Mr L. H. Shapiro, the proprietor and managing director, whose extensive experience in the motor world, coupled with his unrivalled knowledge of the country, has played an important part in the development and progress of the firm.

**Activities.** Besides the importation of motor cars and cycles, Messrs L. H. Shapiro & Co. deal in every type of motor accessories, garage work in all its branches is undertaken, and repairs of every description are carried out. Manufacturers desiring representation in South Africa or any portion thereof at present being operated by the company can approach the firm with the assurance that they will obtain an efficient and up-to-date organisation to act on their behalf.

**Premises.** The company's fine three-storeyed premises accommodate the work-shops, showrooms, garage, and accessory department. The workshop is situated on the top floor, thus giving the mechanics a better light to work by. There are extensive showrooms on the ground and first floors, and all cars are moved from one floor to another by an elevator which opens on the ground floor to the street or into the garage as desired.

**Staff.** This comprises a number of skilled mechanics, who are in charge of all repair and service work, and many expert salesmen who continually cover the territory allotted to the company for its various representations.

**Agencies.** Messrs L. H. Shapiro & Co. are sole distributing agents for the famous Studebaker car in Port Elizabeth, Mossel Bay, East London and the surrounding districts. They are also agents for the Leyland lorry, Stewart trucks, Mathis motor cars, Norton motor cycles, many well-known makes of tyres, accessories and benzine, etc., of all of which they carry large stocks.

**Address.** Jetty Street, Port Elizabeth.

**Bankers.** The Standard Bank of South Africa, Ltd.

**Cables.**—"Shappy," Port Elizabeth.

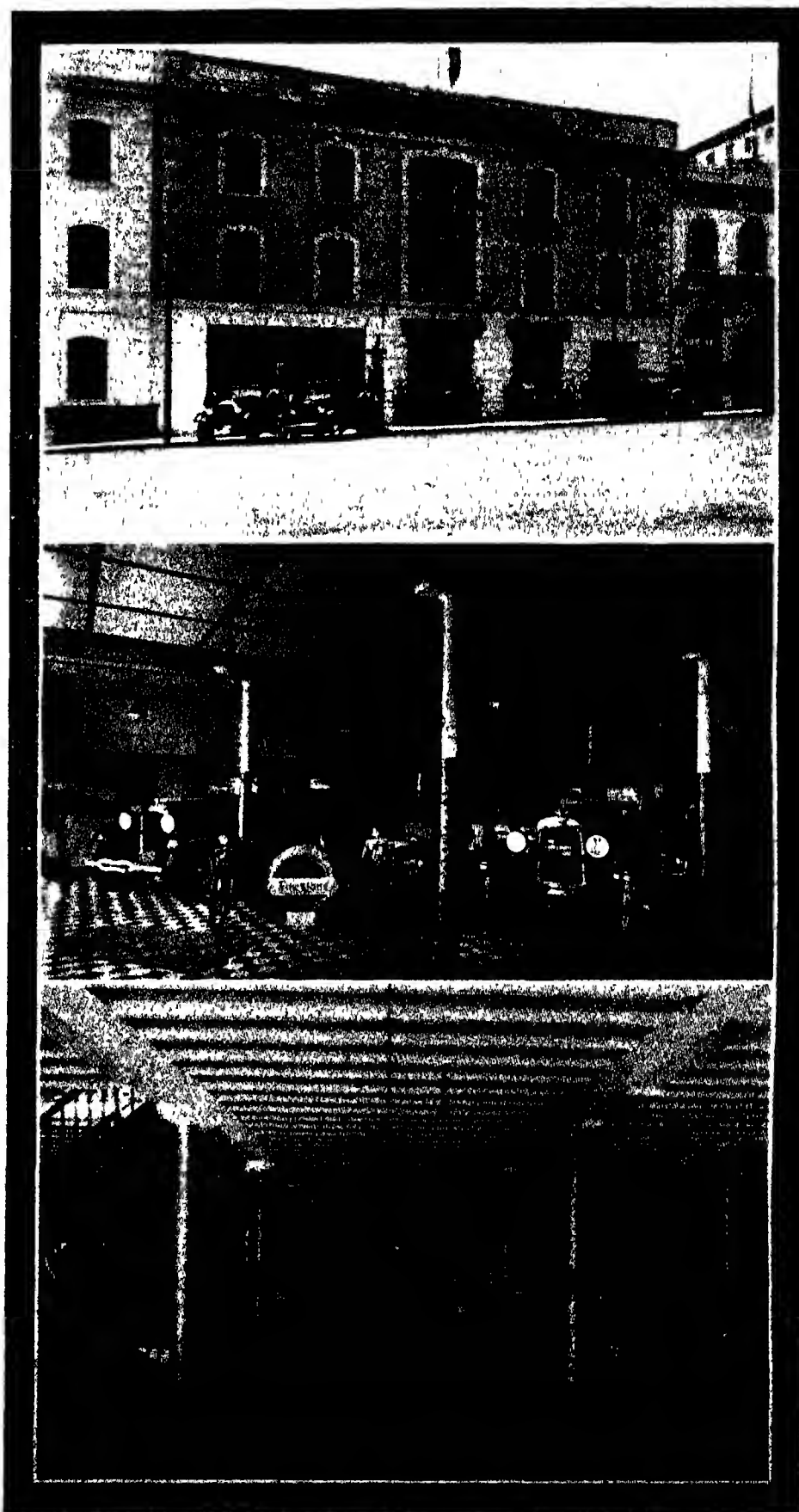
**MANGOLD BROTHERS LTD.**

**Inception.** Shortly after his arrival in the country in 1866, Mr J. C. Mangold opened a small smithy and repair shop, which was destined to become the large and thriving business known to-day throughout South Africa as that of Mangold Brothers Ltd. In five years the modest concern had progressed so well that new premises were acquired in Baakens Street, and on this site the head office of the company has ever since been located.

**Development.**—In 1874 Mr Mangold was joined by his brother, and the firm became known as Mangold Brothers. Operations have been extended, new enterprises have been undertaken, and business has increased from year to year. Four sons of the original founder were trained in the enterprise, which gradually spread to other parts of the country. In 1913 the firm was incorporated as a limited company, the sons becoming directors.

**Activities.**—Besides carrying on business as engineers, brass and iron founders, the firm specialises in agricultural and irrigation machinery, and has also acquired extensive interests in the timber industry, having established sawmills in the Taitzikama forest, the sawn timber from which is brought down to Port Elizabeth.

**Agencies.**—Crossley Bros Ltd.; Deering harvesting machinery, Ransomes, Sims & Jeffries; Challenge Windmill & Feedmill.



L. H. SHAPIRO & CO., Port Elizabeth.  
1. Fine Premises in Jetty Street.  
2. Ground Floor Showroom.  
3. Spacious Showroom on the First Floor.



## MANGOLD BROS LTD, Port Elizabeth

1. General View of Baakens River Stores and Workmen's Cottages, Port Elizabeth.  
3. Interior View of Johannesburg Branch.

2. Interior View of Bloemfontein Branch.  
4. View of Baakens River Stores.

(See letterpress page 185)

Co. Gandy Belt Manufacturing Co., Gwynnes Ltd., Henry Wells Oil Co., Goulds Manufacturing Co., Rifles hydraulic rams, "Keystone" Driller Co., Alfa-Laval cream separators, "Laster" oil engines, Eison's fertilisers, and the Keepsafe safe.

**Directors.** P. J. Mangold and C. A. Mangold (managing directors), F. W. Mangold, W. F. Mangold.

**Branches.** Oudtshoorn, Storms River Saw Mills, Bloemfontein, Potchefstroom, and Johannesburg. Agencies and sub-agencies are established throughout the country.

**Head Office.** -- Baakens Street, Port Elizabeth P.O. Box 311.

**Oversea Agents.** --Keep Brothers Ltd., London & Birmingham Arkell & Douglas (Inc.), New York.

**Cables.** --"Mangolds" Codes. Lieber's, Bentley's, A B C 5th and 6th Editions, A 1.

**Bankers.** -- The National Bank of South Africa, Ltd.

**ADOLPH MOSENTHAL & CO.** Established Port Elizabeth 1852. Deals in mohair wool, ostrich feathers, oranges, pineapples, and cotton. Has six large offices in the city. Connected with gold and diamond industries, senior partner being a director of Jagersfontein Diamond Company. Transacts fire, marine, and life assurance, acts as steamship and general agents.

**EDWORKS, LIMITED.** Adderley Street, Robert Street, and Gates Street North End, Port Elizabeth. Manufacturers high class boots, shoes, veldtschoens, harness, and saddlery and general merchants. London agents, Clarke & Cresswell, 4 Thames House, Queen Street Place. Cables, "Edworks," Port Elizabeth.

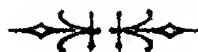
**MACKIE, DUNN & COMPANY.** -- Strand Street, Port Elizabeth, wholesale importers, wool brokers, shipping agents. Founded in 1840 by Sir William (then Mr.) Dunn, Bart. Holds agencies for following firms: Ellerman-Harrison, Elder-Dempster,

Price Line, Ellerman-Hall and Indian-African line. Local Lloyd's agent. London address, Wm. Dunn & Co. Ltd. Broad Street Avenue.

**MARSHALL'S.** Port Elizabeth. One of the largest departmental stores in South Africa. Its 26 departments cater for all requirements. Does a large mail order business all over the Union, B.E. Africa, Rhodesia, Belgian Congo, Nyasaland, Mauritius. Branch offices at London, Paris, New York.

**PALMER, WOMERSLEY & CO.** -- Agents for Clan line of steamships, forwarding and general commission agents, stevedores, etc., own bond and free stores. Cables, "Clan" Codes, Scott's, 10th Edition, and A B C Branch, East London.

**PAYNE BROS.** Fleming Street. Noted for prompt and efficient service as shipping, clearing, forwarding, baggage and storage agents. Cables, "Shipping" P.O. Box No. 493.





WHARVES ON BUFFALO RIVER, WEST BANK, EAST LONDON.

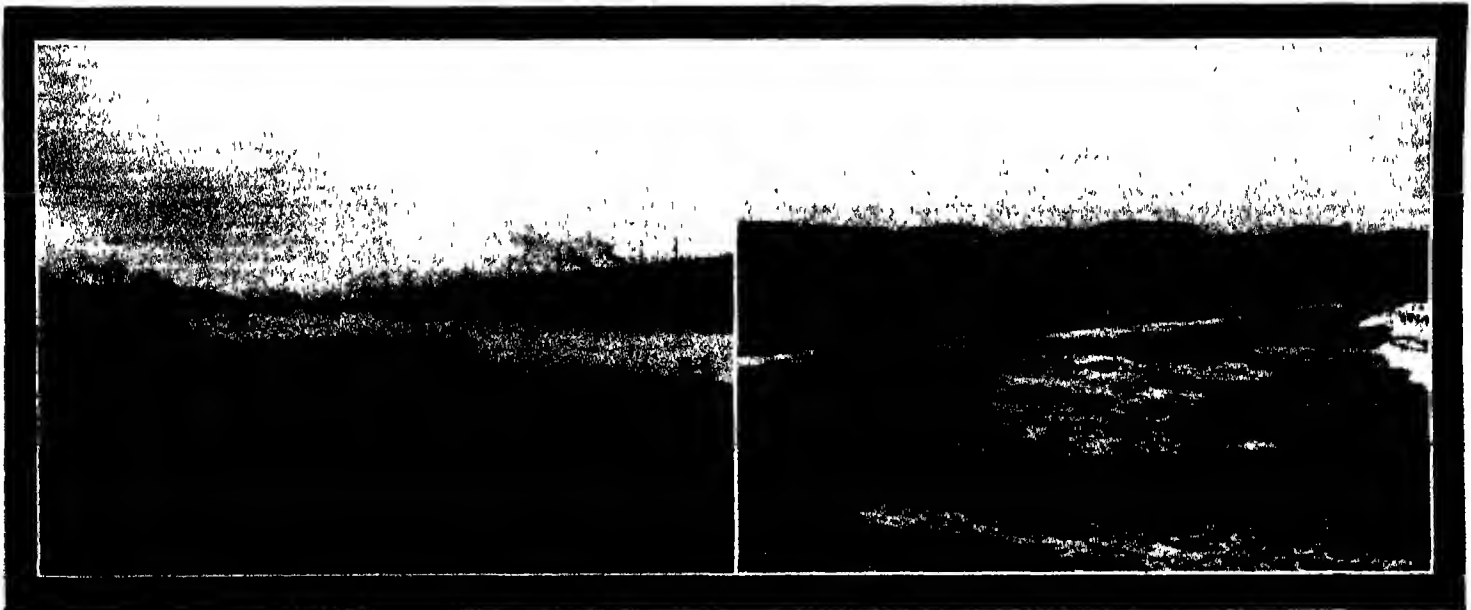
## EAST LONDON CITY

**T**HE city of East London the premier wool port of South Africa, originated in 1847, when Fort Glamorgan was erected at the mouth of the Buffalo River as an outpost against the incursions of the Kaffirs into the eastern districts of Cape Colony. Re-christened East London shortly afterwards, its progress was gradual but slow owing to the inability of shipping to enter the river.

With the building of the harbour and the immigration of a large number of German settlers in 1850 the importance of the town and port grew steadily, and East London is to-day, with a population of 31,073, the third largest city of Cape Province and in respect of European inhabitants the sixth largest of the Union.

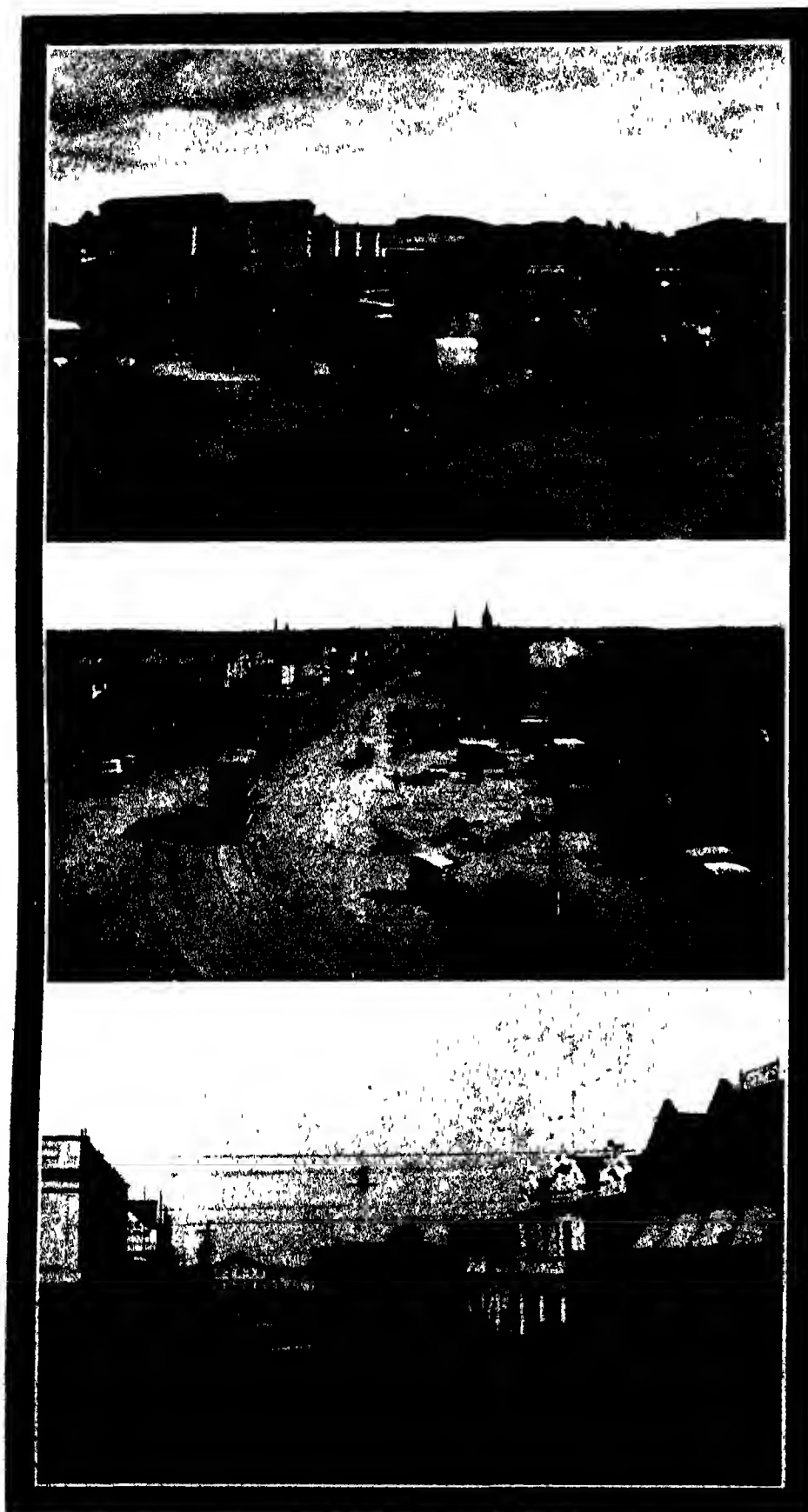
**BUILDINGS.** The finest of East London's public buildings are the City Hall, with

its handsome clock tower in Oxford Street and the Public Offices, which occupy a large embattled building near the Railway Station. In front of the City Hall is the South-African War Memorial, with a bronze equestrian figure 10 ft high. The Museum, near the City Hall, houses an interesting collection of exhibits and the Public Library, in Argyle Street, contains about 17,000 volumes. Other noteworthy buildings are the Frere



1. EAST BANK OF BUFFALO RIVER, EAST LONDON, LOOKING TOWARDS MOUTH.

2. ORIENT BEACH, EAST LONDON, WITH WINDSOR HOTEL IN CENTRE OF PICTURE.



1. MARKET SQUARE, EAST LONDON, with Municipal Market in left foreground.
2. LOOKING UP OXFORD ST., main business thoroughfare, East London.
3. TERMINUS ST., looking towards the Railway Station.

Hospital, an up-to-date and well-equipped institution containing over 140 beds, the East London Club, which has a membership of about 150 town and 50 country members, the Selborne College for boys, and the Girls' High School.

**CLIMATE.**—East London is noted for its equable climate, the winter months being generally the most perfect of the whole year. Even in mid-winter it is rarely too cold for sea-bathing to be pleasant, whilst winter days may be spent out of doors with complete enjoyment, brilliant sunshine being the rule. Because of this, East London is obtaining increased recognition as a charming health resort in winter.

**INDUSTRIES.**—As a manufacturing centre, East London is growing in importance, the chief industries at present being printing, flour milling, tailoring, wool-washing and pressing, engineering, and the manufacturing of confectionery, footwear, furniture, and tinware. Along the 180 mile seaboard of the East London division fish of many kinds abound: vast shoals of pilchards and other migratory fish of commercial value annually passing the shores. A busy fishing industry is in consequence carried on and developed.

**PARKS.**—The Queen's Park is one of the most noted pleasure parks in South Africa, possessing that grandeur and warmth of colour which is associated with tropical lands. Its natural beauties have been preserved, it is within five minutes' walk of the centre of the city, and is also easily accessible from the harbour. The Marine Park is a well patronised resort on the Esplanade, much in favour on account of the excellent music provided there.

**SPORT AND RECREATION.**—The sea-bathing at East London is of the best, and fine surf-board plunging is obtainable. After bathing, East London's premier sport is boating, the Buffalo River being navigable for light craft for over three miles. On the Zambesi, the Durban Lagoon, the Zwartkops River near Port Elizabeth, and the St John's River East London crews have beaten all comers, and hold a fine collection of challenge cups won on those waters, whilst their own trophy, the Buffalo Grand Challenge Cup, has left East London but twice, and has soon been regained. Fishing along the rocks that fringe the bay provides good sport at almost any season, cricket, football, tennis, hockey, and bowls are all played on the large Recreation Ground, and the new golf course behind the sandhills of the Eastern Beach is an example of everything golf links should be. The town is also the centre for many delightful motor-runs, in length varying from 10 to 50 miles.

### PORT

East London is the port for the Eastern Division of Cape Province, the extensive area being served by over one thousand miles of the South African Railways. The harbour, which was first constructed in 1856, greatly improved in 1871 and since, is situated at the mouth of the Buffalo River, and has a water area of 100 acres. Two breakwaters protect the port entrance, the one on the western side being 2,275 ft. long and affording shelter from seaward to vessels navigating the channel. Much has been accomplished by dredging, and vessels up to 8,000 tons gross register and drawing 26 ft. can now enter the river to discharge at the port, which is principally concerned in the wool export trade.

**ACCOMMODATION.**—The wharves and quays in the river berths give a total frontage of 3,745 ft., of which 1,981 ft. consist of quay

berths with depths alongside of 27 ft 9 in L.W.O.S.I. This deep-water accommodation is being extended through the replacement of timber wharves by concrete quays to a depth of 32 ft at low water. Commodious sheds and warehouses totalling 264,500 square feet floor area, and a modern installation of electric cranes from 3 to 20 tons lifting capacity, serve the quays, and ample railway siding connections enable food of all descriptions to be handled direct from ship to truck or vice-versa. The harbour is one of the port terminals of the South African Railway system, giving through connection to all parts of the Union, Rhodesia and the Congo. A storage area of 30 acres, equipped with a 30-ton electric gantry and with travelling cranes, is available for both open air and warehouse storage. A 50-ton steam crane is at the East Quay

and for shifting a vessel in the roadstead when it has not been moored by a pilot £2 2s. 0d.

**PORT CHARGES.**—These are the same as at Capetown, but, in the case of lighterage, plus 5s per ton on goods landed, and 15 6d per ton on goods shipped.

**SHIPPING AND TRADE.**—Vessels to the number of 605, tonnage 2,142,305, were entered at East London in 1924, compared with 490 of 2,004,572 tons in 1923. The tonnage of cargo landed was 217,599 in 1923 and 290,993 in 1924. In the latter year the tonnage of British vessels entering the port (490) was 1,643,448, landing 243,900 tons of cargo.

During the six months ended June 30, 1925, vessels entered numbered 327 (1,340,783 tons), compared with 286 (1,018,700 tons) in the corresponding period of 1924.

Its popularity among country readers is exceptional and is reflected to a marked degree in its clients' advertising returns.

**Advertising.** Both on account of its popularity and very wide circulation this journal is an excellent advertising medium, a fact that is clearly shown by the volume of letters received from country readers, evincing the eagerness with which its editorial news, and advertising columns are read by all alike.

**Offices.** The accompanying photograph illustrates the "Dispatch" main building, in which the various departments are grouped. Advertising clients will find in these offices a courteous and obliging staff, always ready to attend to their requirements.

**Printing.** This is done on a Hoe rotary machine. The other printing departments



EAST LONDON DAILY DISPATCH LTD.  
Company's Premises.

for dealing with heavy lifts and machinery direct from hold to truck.

**DOCKING FACILITIES.**—There is no dry dock at East London, but a patent slipway, with travelling cradle 200 ft in length, will take vessels up to 1,000 tons dead weight. The Harbour Board has extensive workshops fitted with the most modern machine tools for dealing with all classes of ships repairs, and every facility is given for effecting repairs to hull and machinery.

**PILOTAGE.**—Pilotage is compulsory, the fees for all vessels entering and leaving the Buffalo River ranging (by guineas) from 21s. for vessels below 151 tons to £7 7s. 0d. for vessels of 4,000 tons and over. For mooring vessels in roadstead—£2 2s. 0d.,

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### EAST LONDON DAILY DISPATCH, LTD.

**Inception.**—"The East London Daily Dispatch," which is an old-established and popular daily morning paper, was first issued on September 10, 1872.

It is printed and published at East London (South Africa's chief wool exporting port), and is the leading and most influential organ circulating over a wealthy territory some 50,000 sq. miles in area, with a European population numbering about 140,000.

**Circulation.**—One third of the "Dispatch" circulation is urban and two-thirds rural.

are divided into the hnotype, composing, and "make-up" section, also the stereotyping section.

**Daily Features.**—Mondays: Sporting page. Tuesdays: Farmers' page. Wednesdays: Ladies' and King William's Town pages. Thursdays: Wool and produce page. Fridays: Hotel page and visitors' guide. Saturdays: Motor page, London letter, Paris fashions. Fortnightly: Transkei page.

**London Agents.** The Argus South African Newspapers, Limited, 82-85, Fleet Street, London E.C. 4.

**Governing Director.**—Brigadier-General the Hon. Sir Charles Crewe, K.C.M.G., C.B.

**Editor-in-Chief.**—Mr. B. H. Dodd, M.A.

**Cables.**—"Dispatch," East London.



**DEAL'S CENTRAL HOTEL COMPANY LTD.**

**Inception.** The well-known hotel controlled by this company, and the oldest in East London, was established in the year 1876. The present managing director, Mr. G. G. Deal, who is known throughout the country as an excellent host has been proprietor for the past 34 years.

**Situation.** The hotel is situated in the heart of the business centre of the town, but being just off the principal thoroughfare it escapes any noise, and visitors may be assured of quietude. The railway station and landing jetty are within 5 minutes' car journey, and the beach can be reached in 10 minutes.

**Accommodation.** This comprises 70 bed rooms, a spacious lounge in the cool palm court, very comfortable reading and writing rooms, and a dining room capable of accommodating 250 people, considered to be one of the finest in South Africa. A great feature of the hotel is the Oak Room, furnished in oak of the early seventeenth century period.

**Facilities.** All trains and boats are met by the hotel cars and porters. Garage accommodation and facilities are provided for the use of visitors, and advance booking arrangements can be made by telegraph or cable.

**General.** East London, enjoying a healthy climate is a popular holiday resort. There are good golf links, a fine racecourse, and surfing on the Orient beach, which is a great attraction. The fact that visitors return year after year to the hotel speaks volumes for the comfort of the establishment.

**Address.** Terminus Street, East London.

**Cables.** "Deals," East London.

**DUNN & CO.**—Established in 1882 by the late Sir Wm Dunn, Bart. Dunn & Co. operate as general merchants, wool, shipping and insurance brokers, and conduct a large business in rough goods, building materials, hardware, agricultural machinery and the indenting of soft goods. The principal primary products of the country which the company sells on behalf of up-country clients are wool, mohair, skins and hides. Messrs

Dunn & Co. are agents for the London Assurance Corporation and Alliance Assurance Co. Ltd., and also represent the following steamship lines: Prince Line Ltd., Elder Dempster & Co., Thos. & Jas. Harrison, Andrew Weir & Co., Rio Cape Line Ltd., British India Steam Navigation Co. Ltd. The company's warehouses and stores are situated in Station Street, Market Square and Commissioner Street, and its timber and agricultural implement stores in Cemetery Road. London Office: Messrs Wm Dunn & Co. Ltd., Broad Street Avenue, E.C. Partners: Messrs David Dunlop Nisbet and Ronald Morrison Mackay, the latter being the managing director at East London. Address: Station Street, East London. Cables: "Dunn," East London. Codes: A 1, A B C. Scott's, Bentley's and Watkins' Bankers. The Standard Bank of South Africa, Ltd.

**DREYFUS AND CO. LTD.**

**Inception.** This firm was established at King William's Town in 1876 by the late Mr. Theodore Dreyfus, who previous to that date had been employed in his brother's office at Port Elizabeth. Six years later he opened the East London office.

**Development.** In the year 1889 his nephew, the late Mr. Julius Auerbach, acquired the whole concern, including the London and Port Elizabeth interests, and it was converted into a limited company in 1902.

**Activities.** In the early days of the company importations were naturally restricted, but to day, as general wholesale merchants it is able to deal with practically all South African requirements, such as timber, fencing materials, groceries, oilmen's stores, hardware, crockery, soft goods, glassware, furniture, confectionery, etc. In addition to the above, Messrs Dreyfus & Co. cater for a special indent business, and their extensive knowledge of the various markets enables them through their London office to meet all requirements.

**Shipping.** The East London branch, being agents for many well known steamship lines, is actively concerned in the shipping business, and also in the clearing and forwarding of goods for up country merchants.

**Insurance.** Messrs Dreyfus & Co. also represent many of the leading insurance companies, notably the North British & Mercantile and the Railway Passengers' Assurance Co.

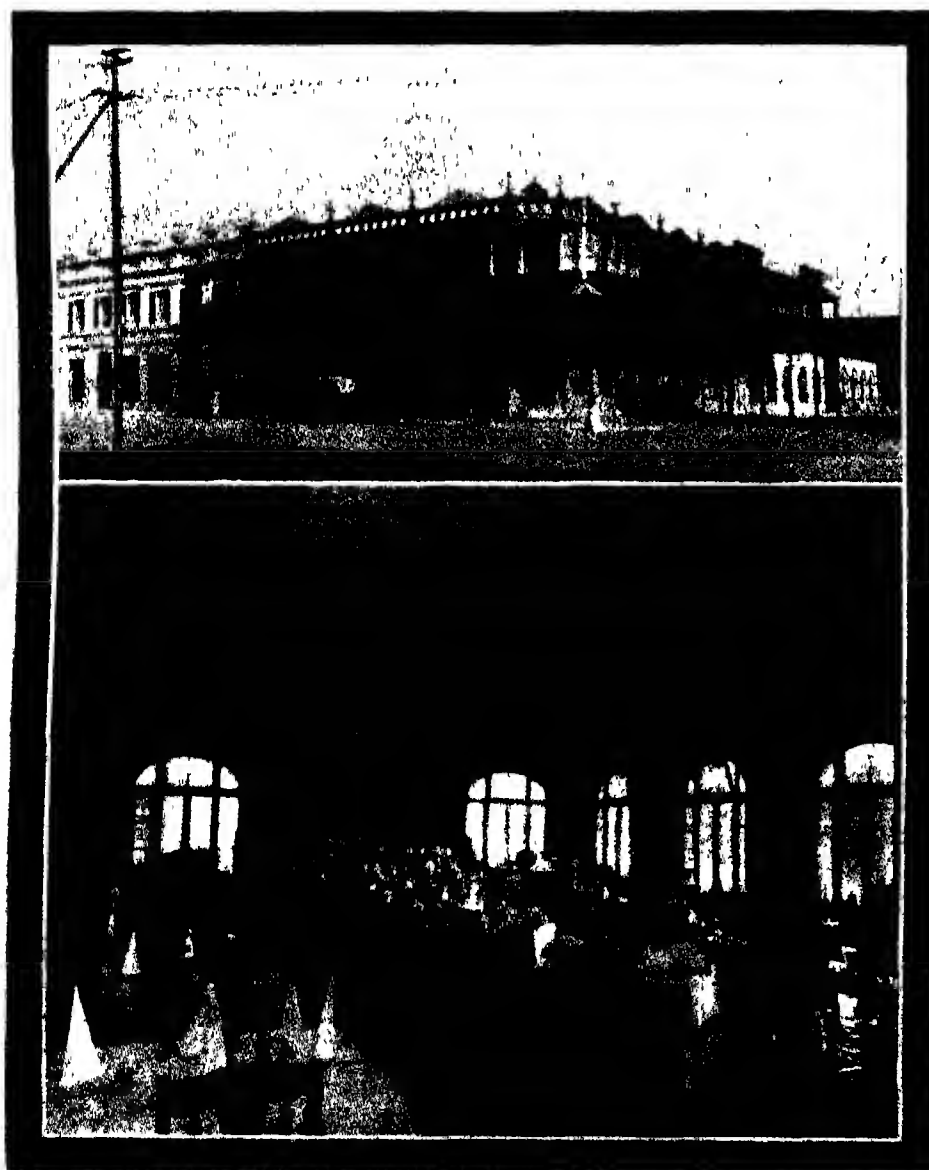
**Produce.** In addition to general merchandise, shipping and insurance, the company is largely interested in produce, and is a large shipper of all descriptions of hides and skins, also of wool. Its field of activities extends throughout the Cape and to the Natal border, the Orange Free State, the Transvaal and Rhodesia.

**Directorate.**—Mr. W. E. Hearson (chairman), Sir William Bird, Messrs R. L. Lindsey-Renton, H. Samuelson, and A. Auerbach.

**Staff.**—Mr. John J. Bombroffe, manager, Mr. H. Ker-Fox, assistant-manager, East London; Mr. A. Walker, manager, Mr. H. Schonewolf, assistant-manager, King William's Town.

**Head Office.**—Leadenhall House, 101 Leadenhall Street, London, E.C. 3.

**Cables.**—For general business, "Dreyfus," East London. For produce business, "Dreyprod," East London. For general business, "King William's Town," "Dreyfus." (See also page 180 "Port Elizabeth.")



DEAL'S CENTRAL HOTEL COMPANY LTD., East London

1. View of the Premises.
2. A Portion of the Dining Room

**WILSON & COMPANY LTD.**

**Inception.**—The business of Wilson & Co Ltd was established over 35 years ago. From humble beginnings, it has progressed steadily until to-day it ranks as one of the largest and best known industrial enterprises in the country.

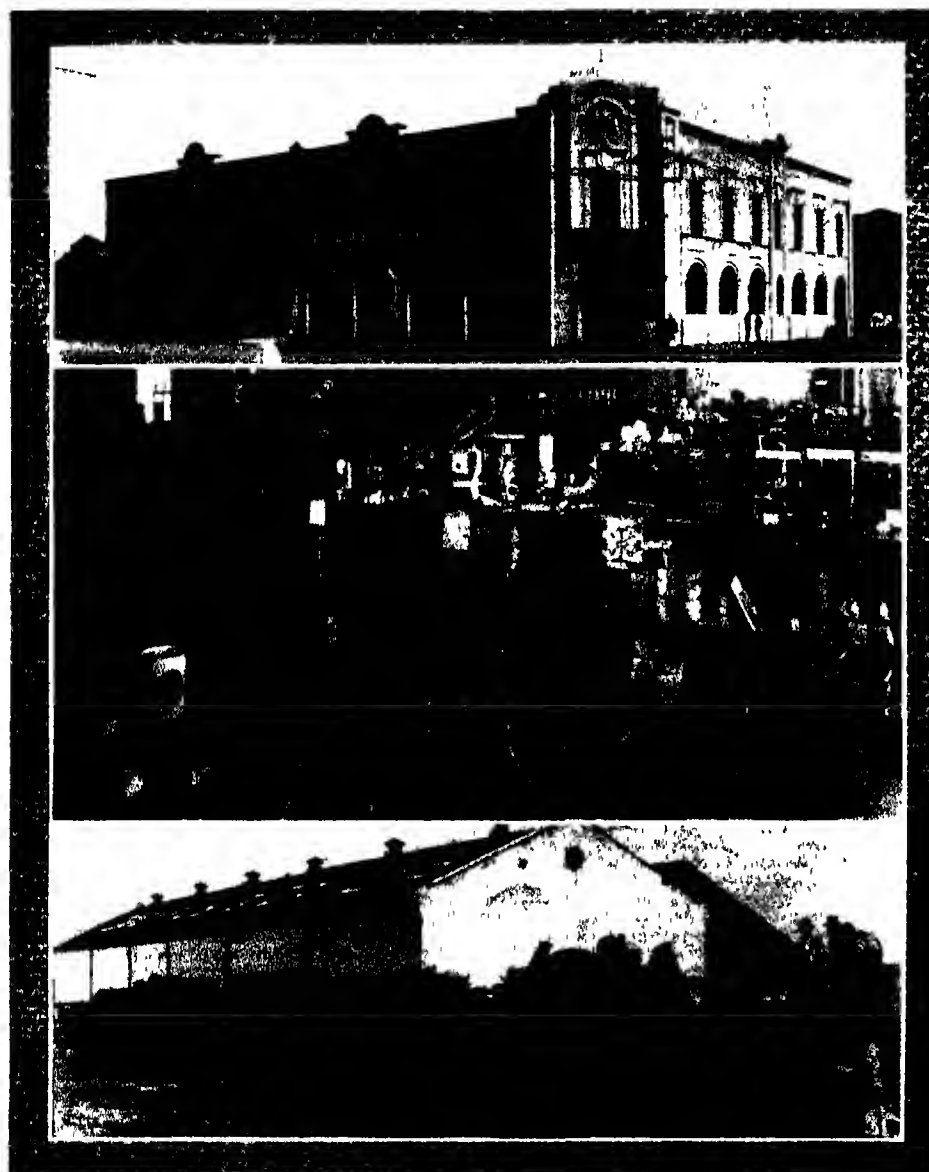
**Development.** As operations increased year by year new machinery was installed, additional departments were added, and buildings erected, no effort being spared to bring the establishment thoroughly up-to-date, the result being that the company can

success, and are already well known throughout the country.

**Field of Operations.** The company's manufactures are distributed by means of agents and travellers in every part of the sub-continent while an export trade has been developed with Madagascar and Mauritius.

**Buying Agents.** Messrs David Air & Co., of Dundee, are the company's buying agents for Great Britain.

**Head Office.** East London P.O. Box 140. Phones 125 and 550.



**DREYFUS & CO. LTD., East London.**

1. Main Offices and Store
2. Corner of Hardware Showroom.
3. Hides and Skin Warehouse at East London

legitimately claim that the articles which it produces, both in quality and attractiveness of package, bear comparison with the best lines of imported goods.

**Chocolates.**—Messrs Wilson & Co for many years interested themselves only in general confectionery, but recently they have taken up the manufacture of chocolates. For this purpose they erected a large building, installing therein the most modern type of machinery and appliances procurable. The products of the new factory met with instant

**Branch.** Durban P.O. Box 134. Phone 812.

**Telegraph and Cable Address.** "Mixtures," for both East London and Durban. Codes A B C 5th Edition, Bentley's and Lieber's (See illustration, page 192.)

**WOOL GROWERS' AUCTIONS LTD.**—East London Capital, £30,000. Has one of the largest, most central, and best equipped wool stores in the town. Also assists farmers with advice and information.

**D. M. BILLSON & CO.**

**Inception.**—Although Mr D. M. Billson the sole proprietor, has been associated with the wool and produce trade in East London for the past 25 years, the present company was only recently established.

**Development.** Thanks chiefly to Mr Billson's long connection with wool, mohair, hides and skins, and also to the services which the company offers to its clients, business has gradually grown until to-day the firm claims to be the largest handler of wool in the Union.

**Activities.** The company does not operate in a buying capacity, its entire and exclusive attention being devoted to the selling of wool, mohair, cotton, skins and hides by private treaty or public auction. Shipments are made to any part of the world and up-country consignments specially attended to. By means of their excellent cable service Messrs Billson & Co are kept in touch with the state of markets all over the world, as well as with the ruling local rates, customers are therefore always assured of reliable and up-to-date information. Mr Billson and his experienced staff give their personal attention to all consignments.

**Premises.** The company owns two of the finest well lit warehouses in South Africa, equipped with the latest machinery and appliances for the easy and efficient handling of all classes of produce. The floor space of the main warehouse covers approximately 71,000 square feet and the spacious show floors facilitate the exhibition of heavily soiled clippings to the satisfaction of the consignor and buyer.

**Agents.** These are located in all the principal wool producing centres throughout the Union.

**Overseas Representatives.** The company is represented in all the chief textile centres of the world.

**Offices and Main Wool Warehouses.**—These are situated at the corner of Terminus, Buffalo and Union Streets, with a secondary warehouse in Commissioner Street.

**Cables.** "Billsonco" East London.

**Bankers.** The National Bank of South Africa, Ltd.

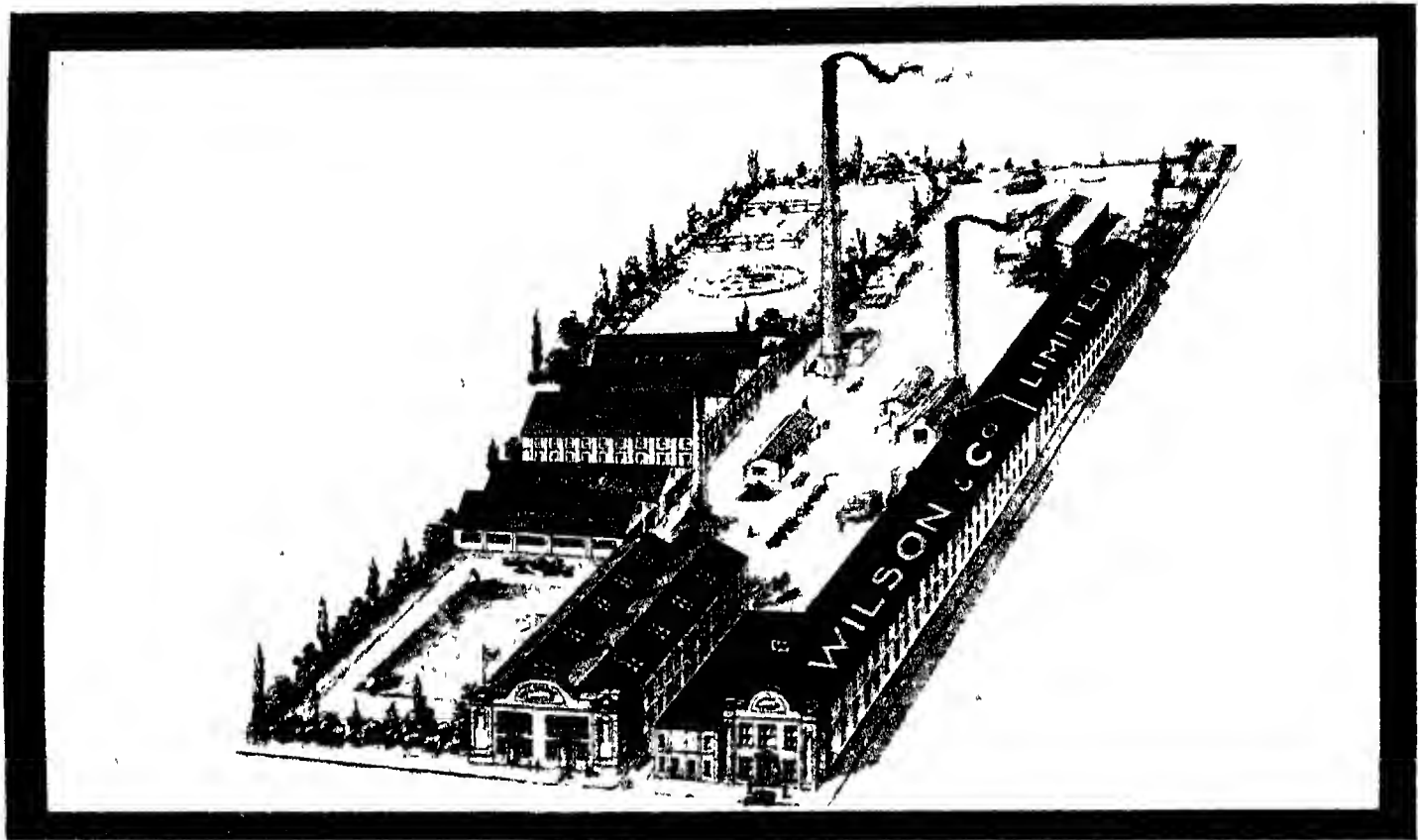
(See illustration page 192.)

**BEARD, ELLIS & BERLYN LTD.**—Dyer Street, East London. Manufacture all sorts of house, church and hall furniture. Have staff of 170 whites and 45 natives. Value of 1924 productions, £57,186. Factory and plant in which upwards of £10,000 have been invested, stand on 2½ acres. Cables, "Seasoned."

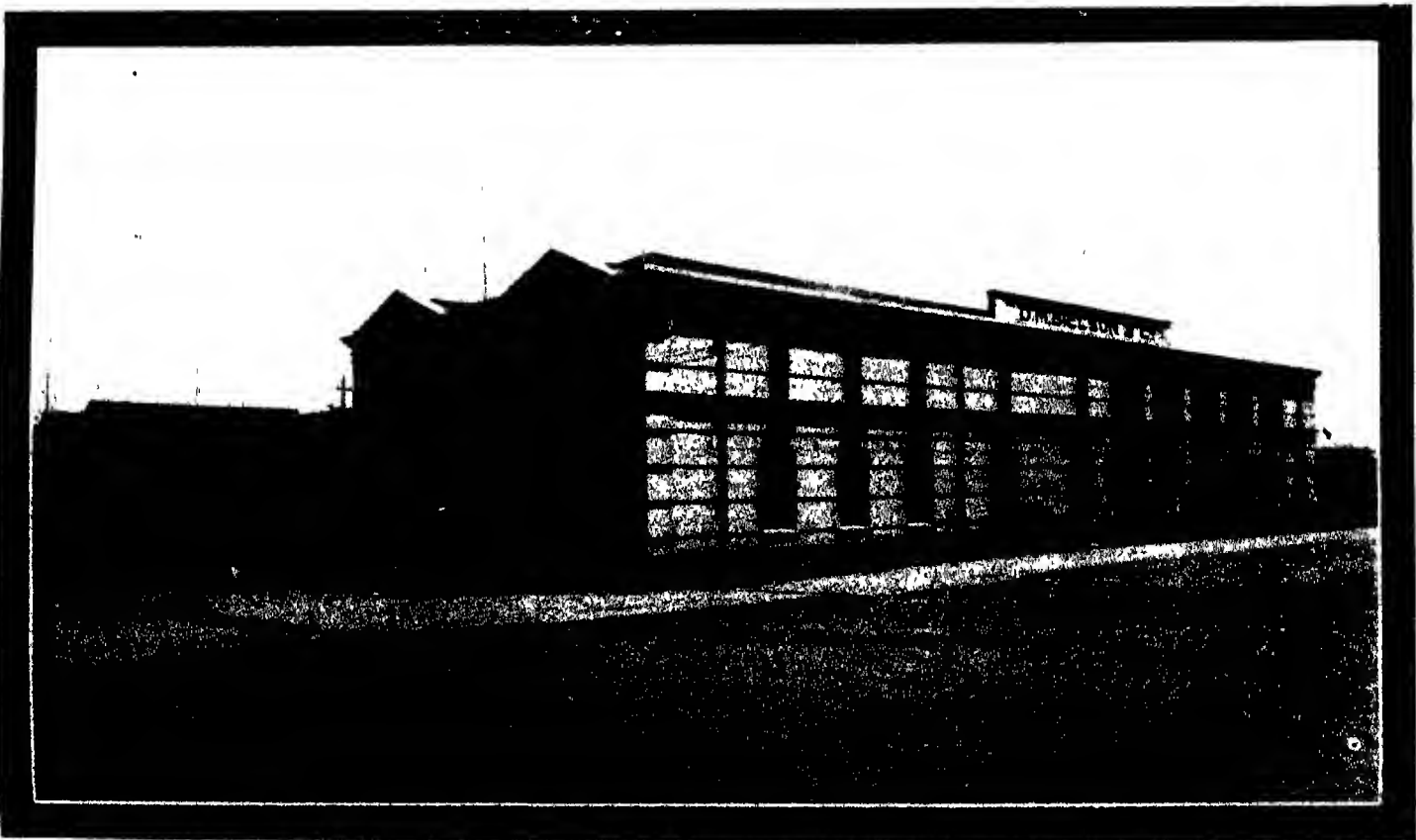
**EAST LONDON BOARD OF EXECUTORS AND TRUST CO. LTD.**—Est 1904. Undertakes all kinds of trust work, including executorship and trusteeship, administration, guardianship of infants, investment of monies on first mortgages, general estate agency work, valuation, and consular agencies. Capital, £20,000.

**MALCOMESS LTD.**—East London. Established 1870, branches Johannesburg, Durban, Port Elizabeth, King William's Town, Cathcart, Tarkastad. Agencies all principal towns. Manufacture deep well cylinders, pumps, pump fittings, windmill fittings. Departments devoted to agricultural implements, irrigation and power plant, trucks, batteries, hardware, &c. Cables, "Malcomido."

**VAUGHAN, HERBERT & CO.**—Terminus Street, East London. Deal extensively in agricultural machinery, implements, farming supplies, and dairy requisites. Also wool-brokers, with large connections at wool-producing centres of the Union.



WILSON AND CO. LTD.  
Chocolate and Confectionery Factory at East London.  
(See *litterpress*, page 191)



D. M. BILLSON & CO., East London.  
The Company's Main Premises.

## KIMBERLEY

**K**IMBERLEY, which now includes the former township of Beaconsfield West, is the most important city in Griqualand West. It was founded in 1871, and named after Lord Kimberley, then Colonial Secretary. In the previous year diamonds were first discovered on the farms of Du Toits Pan and Bultfontein, and the ensuing rush speedily created an extensive mining-camp, which, in the course of time, developed into the substantially-built city of to-day.

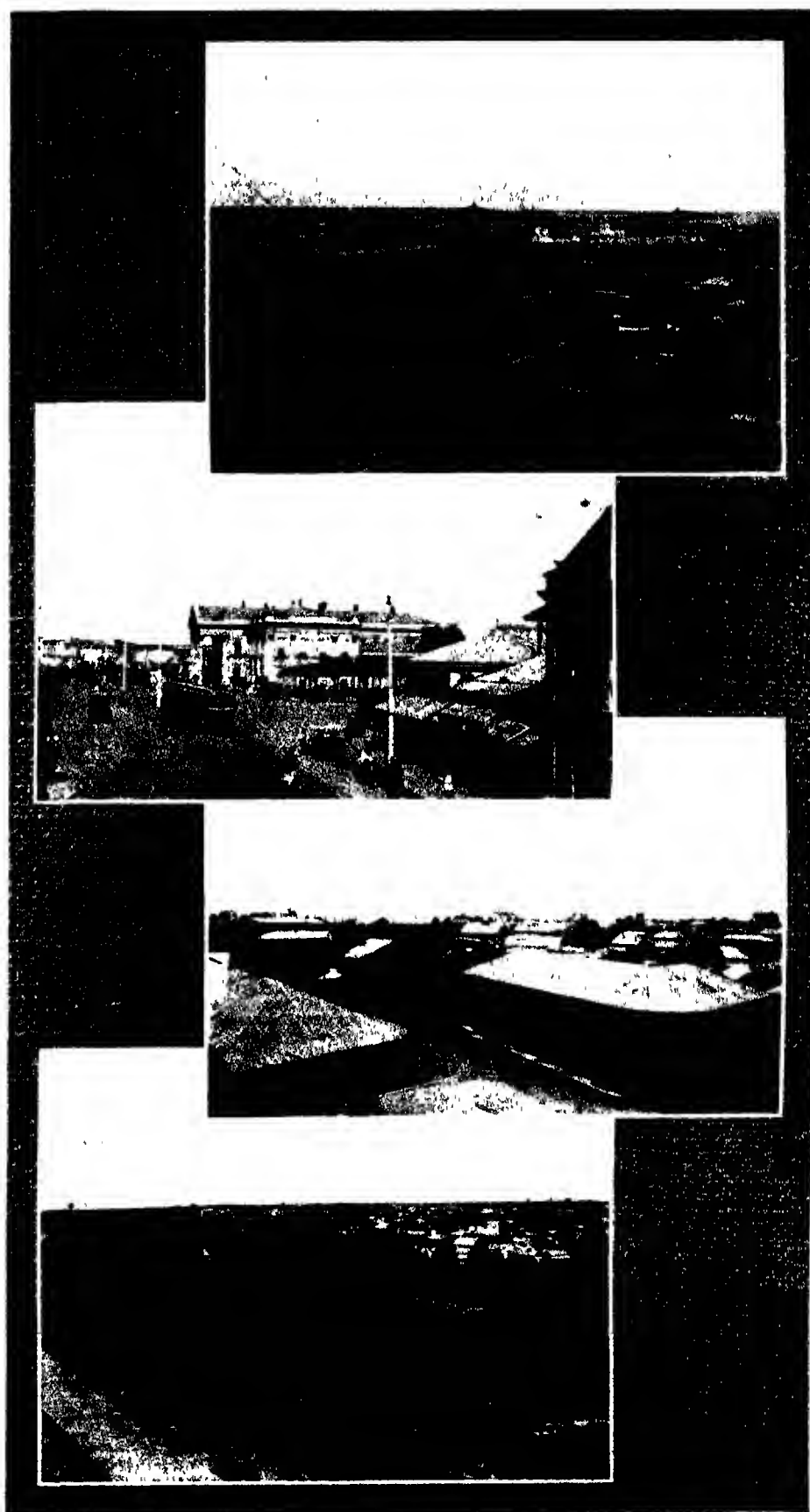
There is an air of romance about the place which has grown up around the famous Kimberley mine—that great hole in the floor of the world out of which almost fabulous riches have been taken, but which is now fenced in, silent and deserted, an object of interest only.

Kimberley, like all mining centres, has had its periods of prosperity and depression, though the De Beers Company's efforts towards amalgamation and concentration have all tended to secure a settled community. The slump in the diamond market caused a big set back during the years immediately following the European War, but Kimberley holds such a central position that by the diversion of its energies to agriculture and industries it may well be that a distributing and manufacturing business will be built up, to in course of time relegate the diamond industry to a comparatively modest position. (See also special article on "Diamond Mining.")

**BUILDINGS.**—The principal buildings of Kimberley are the High Court of Justice on the Market Square, and having a handsome clock tower, the Post and Telegraph Offices, on the same square, the City Hall adjoining, a handsome building in the Roman-Corinthian style, erected at a cost of £30,000, the Public Library, a striking building of different coloured bricks in the Du Toits Pan Road, and the Kimberley Club, in the same locality. The latter now possesses one of the best furnished and most commodious club houses in South Africa, the original building having been destroyed by fire in 1895. Other fine structures are those of the Grand Hotel, the Theatre (which cost £12,000), and the Hospital, which is one of the best in South Africa.

**CHURCHES.**—The Anglican Cathedral of St Cyprian is in the Du Toits Pan Road. The handsome Roman Catholic Cathedral has a convent and a Nazareth home for children and aged persons attached. The Jewish Synagogue was built at a cost of £8,000. There are other Anglican, Wesleyan, Presbyterian, Congregational, and Lutheran churches.

**INDUSTRIES.**—Kimberley, being almost equidistant from all ports and centrally situated as regards the three Native Protectorates, is unsurpassed as a distributing centre for manufactured goods. It is also an excellent site for woollen factories and the industries based thereon. Over 6,000,000 lb of wool pass through the place yearly, and reports from Government officials indicate that this is of the best quality suitable for manufacturing purposes. Within a few miles of the city is a tract of country wherein are found all the ingredients used in the manufacture of cement, valuable deposits of iron ore, and important clay deposits. An industry of recent introduction is the breeding of horses, for which the locality is particularly well suited. The De Beers Company has a stud farm midway between Kimberley and the Modder River.



VIEWS OF KIMBERLEY.

1. A Portion of the Town showing Railway Station and Goods Sheds, with some of the Diamond Mines in background.
2. Market Square, with Town Hall in Centre.
3. A Portion of the City from the Diamond Market end, showing the Griqualand West Board of Executors Building in left Centre.
4. The Town, showing a Diamond Mine's Native Compound in foreground.

**KING'S PARK.**—This park, known locally as "The Gardens," is a large piece of ground, some 30 acres in extent, containing excellent cricket and football fields and two pavilions. The absence of water for a long time made the laying out and maintenance of the grounds a matter of considerable difficulty, but under the careful management of the Gardens Committee of the City Council great success has been achieved, and the Gardens provide every facility for rest and recreation. In the Park are two memorials, one to Queen Victoria, and the other in honour of the members of the South African Police who fell during the 103 days' siege in 1899-1900. Adjoining the park is Kimberley's largest sports-ground, with racing, cycling, and running tracks, a bowling green, and cricket and football areas. The Kimberley Racecourse is on the Beaconsfield Road, where are also the golf links.

**MARKETS.**—The Municipal Markets, which are very successful, have entailed a capital expenditure of nearly £12,000. The annual sales, excluding wool and skins, average upwards of £100,000.

**MEMORIAL HILL.**—Situated on the Beaconsfield Road, Memorial Hill was laid out and the roads leading to it constructed during the siege of 1899-1900. The memorial to the "Honoured Dead" erected on the summit in memory of those who fell in the defence of Kimberley during the siege, 27 of whom lie in the vault beneath it, is 52 ft high and is built of red and white Rhodesia sandstone. It is modelled on the famous Nereid monument of the 4th century B.C., discovered at Xanthos, Asia Minor, and is of the Doric order of architecture. At the foot stands the famous gun "Long Cecil," which, constructed in

the De Beers Company's shops, did such excellent service during the siege.

**MUSEUM.**—The McGregor Museum, which was opened in 1907, is principally notable for the rich collection of Bushman art which it contains.

**POPULATION.**—The total population of Kimberley at the census of 1921 was 39,702, the European population numbering 18,288, the native 13,048, and Mixed, Asiatic and other 8,366.

**STREETS.**—Kimberley is the only important city of South Africa which was not built according to plan, with rectangular thoroughfares. For the most part the streets follow the lines of the old diggers' camps and are quite irregular, though of fair width and well-kept. In Old Main Street could be seen until quite recently some of the wooden huts formerly occupied by the early diamond merchants. The finest thoroughfare is the Du Toits Pan Road, and here are many of the prominent buildings of the city, others being on the Market Square.

**TRAMWAYS.**—Kimberley is provided with a good electric tramway service, owned and operated by the De Beers Consolidated Mines, Limited. The track laid and worked totalled 37 miles in 1924. Penny half-penny (1½d) fares are in vogue, these being the cheapest tram fares in South Africa.

**WATER SUPPLY, ETC.** The city is lit by electric light and supplied with water from the Vaal River, a distance of 17 miles. The difficulties of the latter undertaking were enhanced by the fact that Kimberley is nearly 500 ft above the river level. The storage reservoir has a capacity of 10,000,000 gallons and a second reservoir, at the halfway station, contains 300,000 gallons. The cost of the installation was £308,103.

**DE BEERS CONSOLIDATED MINES LTD.,** Head office Kimberley, Griqualand West. London office 15, St. Swinham's Lane, E.C. 4. Registered under Act 23 of 1861 and incorporated under Act 13 of 1888 in Cape Province. Authorised capital, £4,750,000, issued capital, £4,628,610. Bankers: The Standard Bank of South Africa, Ltd., Kimberley and London, and the National Provincial Bank, of London.

**GRIQUALAND WEST LOAN, TRUST AND AGENCY CO. LTD.** 15, Stockdale Street, Kimberley. Established for nearly 50 years, undertakes the administration of insolvent, assigned, testate and intestate estates, executorship, property inspection and valuation, and insurance in all its branches. Cables "Primrose," Kimberley.

**KIMBERLEY CHAMBER OF COMMERCE.** Secretary to the Chamber, Mr. J. Carstairs Rogers, M.B.F. Postal address P.O. Box 304, telephone number, 34, telegraphic address, "Collieries," Kimberley.

**SAVOY HOTEL,** Kimberley. Proprietor, Mr. L. Davis. Conveniently situated near the station and all parts of the town. The golf course is easily reached by trams passing the door. Accommodation consists of 66 bedrooms, up to date sanitary arrangements, hot and cold baths, drawing and dining rooms, and open-air palm court. Cables "Savoy," Kimberley.

**SOUTH AFRICAN PERMANENT MUTUAL BUILDING AND INVESTMENT SOCIETY.** 20, Stockdale Street, Kimberley. Established 1883. Branch offices at Johannesburg, Pretoria, Bloemfontein and Durban established subsequently. Bankers: The Standard Bank of South Africa, Ltd.

## OTHER CITIES AND PORTS

### ALIWAL NORTH

This town, which has grown considerably of recent years, has all the advantages of a conveniently situated residential centre and health resort. It is on the Orange River, and is an important railway junction. The place has good streets, handsome Government Buildings, a library, excellent schools, public gardens and recreation ground, golf-links, electric light and water supply. The celebrated Aliwal sulphur springs are a little over a mile from the town, and swimming and private baths have been erected here. Important alluvial diamond deposits were discovered in the neighbourhood about 10 years ago. Population, 6,297.

### BEAUFORT WEST

This is a growing town in the Cape midland section of the Karoo, and the centre of a large farming and apple growing district which is extensively irrigated, the Stoltz River Works having cost £30,000. The population at the last census was 6,204.

### CRADOCK

The chief town of the Midland Cape District, named after Sir John Cradock, Governor of Cape Colony over 100 years ago, Cradock is a busy centre and notable health resort, the latter largely on account of the sulphur baths and mineral springs in the vicinity. The country round Cradock was the first to be irrigated, as long ago as 1815. The population in 1921 was 6,807.

### DE AAR

Situated in the heart of the Karoo, De Aar, besides being one of the principal railway junctions in South Africa, is a centre for large live-stock fairs. The town, which has a population of some 3,000, is rapidly expanding.

### GEORGE

A cathedral city of some 5,500 inhabitants, George is beautifully situated near the Wilderness. (See "Tourist Resorts.")

### GRAAF REINET

The oldest and largest town of the Midland Districts of Cape Province, Graaf Reinet is built in the bend of the Sundays River, which rises among the Sneeuwberg Mountains. The place, which is in the centre of a rich farming district, has many fine old houses in the early colonial style, and a population of 9,279.

### GRAHAMSTOWN

The metropolis of Eastern Cape Province and a cathedral city; Grahamstown, originally a military outpost against native encroachments, is now one of the leading ecclesiastical and educational centres in South Africa. Population at the last census, 14,909.

### KING WILLIAMSTOWN

The history of King Williamstown is indissolubly bound up with that of British Kaffraria, of which, prior to the territory

being annexed to the Cape, it was the principal town, having been founded in 1834 as a result of the Kaffir war of that year. It is now a flourishing centre of some 10,000 inhabitants, with fine streets and handsome public buildings, of which the Government Buildings, the Town Hall, the Grey Hospital, the Public Library, the Museum, the Town Club, and the Border Club are the best known. The educational facilities are first-class, the Buffalo River affords an adequate and pure water supply, the beautiful Botanical Gardens are a notable feature of the place, and King Williamstown has always been noted for successes gained by its cricketers, footballers, golfers, and fishermen.

The industries of the town are chiefly concerned with agriculture, many important tanning, carriage building, and wool washing factories having been established. The Kaffrarian Chamber of Commerce was formed as far back as 1873, and has a strong membership.

### KNYSNA

The town of Knysna lies about 4 miles from the port of the same name, on the River Knysna. It was founded in 1858, and is the outlet for a large timber producing district. Saw milling and furniture making are the principal industries. There is an excellent public library, also several churches and schools, attractive river and sea fishing and a golf course.

The harbour is approached through a narrow entrance formed by the sandstone cliffs known as the Heads. On the bar



there is a depth at low water of 16 ft., but no vessel drawing more than 15 ft. should enter the port, as allowance must be made for the swell on the bar. On the left bank of the river is a concrete quay, 400 ft. in length, with 27 ft. of water alongside at high water, and 21 ft. at low water, as well as other wharves. Pilotage is compulsory, and is charged for at the rate of 45 6d. per foot draught of vessel. Wharfage and other port charges are as at Capetown. Exports in 1923 were valued at £4,900, compared with £2,983 in 1922.

#### MIDDELBURG

Middelburg lies some 250 miles from Port Elizabeth via Rosmead Junction, or 270 via Graaf Reinet. It is the centre of a large district producing corn and other cereals, with a flourishing Agricultural Society and show grounds. Ostrich farming is an important industry of the neighbourhood. At Grootfontein, formerly a British Military Cantonment, there is a large Government Agricultural College. The population of Middelburg, which has four churches, a library, good public schools, and several sports clubs, is 4,500.

#### MOSSEL BAY

The town of Mossel Bay, now a favourite sea-side resort, lies on the shore of the bay of that name and climbs steeply from the sea to the crown of a hill, where it spreads its suburbs over the plateau. The place is well built and laid out, with many beautiful gardens, a fine park and recreation grounds, a racecourse and golf course, and every facility for spending a healthful holiday. The municipality is a progressive one, and has developed admirable water supply, electric lighting, and drainage schemes. The most important public buildings are the Coronation Hall, the Wool Market, the Municipal Offices and Town Hall, the Public Library, High School, and General Hospital. The population at the census of 1921 was 5,720, rather less than half of whom were Europeans.

**PORT.**—Apart from its present-day importance as a commercial centre, the port of Mossel Bay is historically interesting as being the place where the Portuguese navigators of 1487 originally realised that the long sought for sea route to the East now lay open. First called the Bay of Heidsman, later the Bay of San Bras, the port received its present name early in the 17th century. It is now the centre of a large forwarding trade representing the produce of the great and wealthy district of Oudtshoorn and the adjacent areas, which are rich in wool, ostrich feathers, timber and other products. The Bay affords excellent shelter to vessels of any size, the handling of cargo is in the hands of the Mossel Bay Boating Company, and the port is well equipped with tugs, lighters and all necessary plant. Besides the two jetties, which are protected by a substantial breakwater and provided with seven steam cranes to lift 3 to 4 tons each, there are the quay walls, upon which is a 10-ton crane for dealing with heavy lifts. The jetties are served by lines of rail of the Government railway standard gauge, and connect direct with the main line for the purpose of facilitating the landing or shipping of goods direct from the trucks.

Pilotage is neither compulsory nor necessary for steamers. A pilot will meet any

ship signalling for him, the usual charge being 10s. per 100 tons gross register. Port charges are the same as at Capetown, but 1s. 3d. additional per ton is levied for lighterage on goods landed or shipped.

#### UDTSHOORN

The centre of the biggest ostrich farming district in South Africa, as well as of large horse and cattle breeding activities, Oudtshoorn is a town of some 11,000 inhabitants, situated about 60 miles north of Mossel Bay, on the banks of Grobbelaar's River. The place was constituted a municipality in 1863, and the municipal revenues, which in that year amounted to only £316, have since attained the figure of £43,700. Oudtshoorn has the reputation of being one of the cleanest and healthiest towns in Cape Province, and its climate is dry, clean, and invigorating. The municipality controls the electric lighting, drainage, and water supply, as well as a modern abattoir and a public laundry. The Royal South Western Hospital, the Public Library, several high-class schools, the Dutch Reformed Church, St. Jude's English Church and the Roman Catholic Church are the principal buildings.

Near Oudtshoorn are the famous Kamanassie Irrigation Works, the cost of which will probably total three quarters of a million. The irrigable area amounted in 1924 to 15,000 morgen (about 21 acre).

#### PAARL

A busy town of 12,398 inhabitants, Paarl is situated in the most fertile part of Western Cape Province, the Paarl Valley being noted for its vineyards. Tobacco also flourishes there.

#### PORT ALFRED

Situated at the mouth of the Kowie River, the harbour of Port Alfred, though once important, has not been used by shipping for many years. Port Alfred is now only famous for its golf links, on which noteworthy championship matches have been played.

#### PORT NOLLOTH

On the west coast of Cape Province, Port Nolloth has a population of about 2,000, and is the port of shipment for the produce of the Cape Copper Company's Mines at Nababeeb, Ookiep and Corcoria, from which points a private railway connects with the port. Steamers of 2,000 tons can discharge and load here at a reasonable rate. Vessels are well sheltered. Port charges are as at Capetown, native labour costing 3s. per day.

#### PORT ST. JOHN'S

Situated on the east coast of Cape Province, Port St. John's is nearly midway between Durban and East London, at the mouth of the St. John's River (known also as the Umzimvubu, which, translated, means "the home of the hippopotami"). The port is likely to be developed in the near future. The village of St. John's is beautifully situated, and is becoming popular as a holiday resort.

#### QUEENSTOWN

A comparatively modern and rapidly progressing town of 13,000 inhabitants, Queenstown is situated in a rich farming district, whilst it is also a trading centre for the Transkei.

#### ROBERTSON

This is a town of growing importance, being in the centre of a vine growing and agricultural district. Extensive irrigation schemes in the vicinity have contributed to the growth of Robertson, which has a population of 4,500.

#### SIMONSTOWN

Situated on a sheltered bay almost in the north-western angle of False Bay, on the Cape Peninsula, Simonstown is the naval base of the British Fleet in South African waters. The docks, which belong to the Admiralty, consist of a fine tidal deep-water dock and graving dock, the latter completed in 1911, with the necessary equipment for the refitting and repairing of men-of-war. The docks are not available for commercial purposes, and the harbour is of only minor importance as a commercial station. The town has a population of 5,409.

#### SOMERSET EAST

A prettily situated town at the foot of the Bochsberg Range and standing 2,500 ft. above sea level, Somerset East, which at the last census had a population of 5,068, is becoming a popular holiday resort. Gill College, a noted educational centre, is located here. The town is well kept, with an abundant water supply and electric lighting service, excellent facilities for sport of all kinds, and several fine public buildings. Charles Street is the principal thoroughfare, and there are many important industries, such as printing, tanning, a cheese factory, a boot and shoe factory, and a cold storage.

#### STELLENBOSCH

With the exception of Capetown, Stellenbosch is the oldest settlement in South Africa, having been laid out in 1680. The town, which at the last census had a population of 7,305, is beautifully situated, with many pleasant walks and drives in the vicinity, and is noted for its excellent trout fishing. In Stellenbosch many fine examples of early colonial architecture are to be seen.

#### UITENHAGE

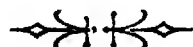
An important town of 14,214 inhabitants, Uitenhage has large wool washeries and the workshops of the South African Railways. There are beautiful Botanical Gardens, and the neighbourhood affords good shooting.

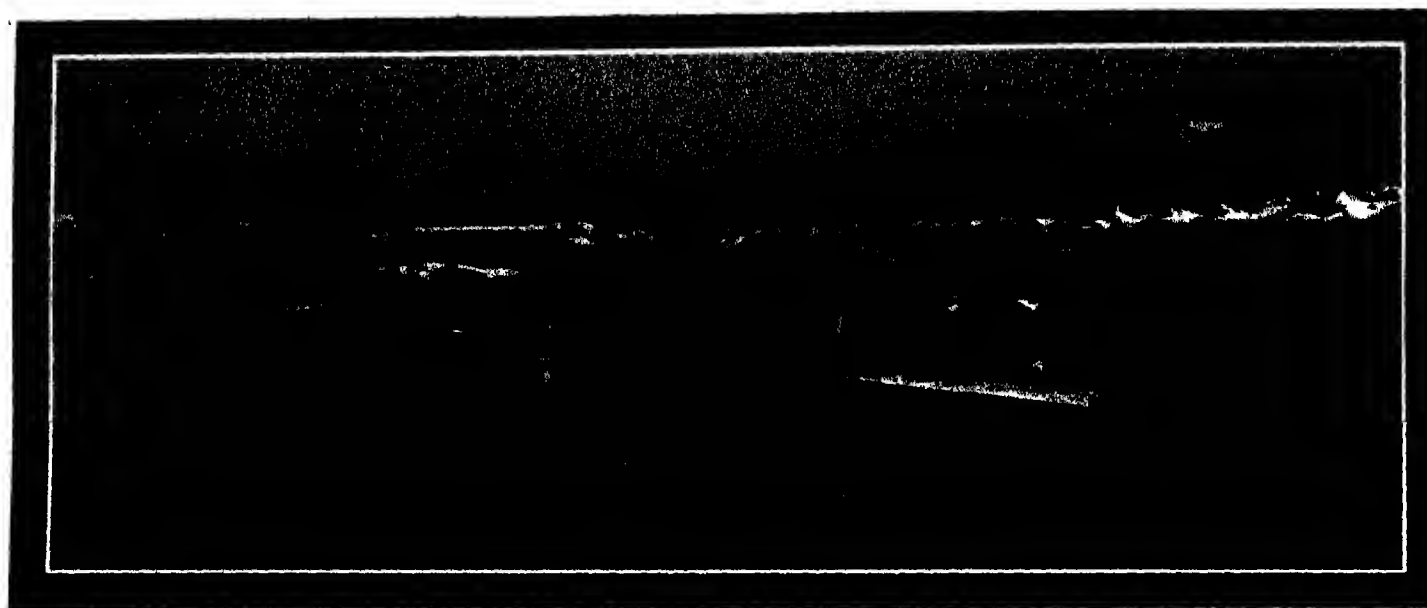
#### UMTATA

A progressive township situated on the Umtata River, 220 miles from East London, Umtata is the administrative centre for the Native Territories, and since 1876 has been the seat of an Anglican bishopric. The Cathedral, which cost £14,000, was dedicated in 1906. The handsome Town Hall dates from two years later, and the Hospital from 1916. Other prominent institutions in Umtata, which has a population of 3,800, are the Umtata Club, St. Bede's College, the High School, St. John's College, and a new market hall and abattoir. The Queen's Park covers an area of 19 acres, and the famous falls of Umtata are about three miles from the town, Tsitsa Falls, 375 ft. high, being 40 miles away.

#### WORCESTER

The terminus of the new Cape Central Railway, Worcester is the centre of a most fertile agricultural district. Population, 8,641.





SUGAR FOR DESPATCH, DURBAN.

## COMMERCE

### EXPORTS AND IMPORTS

#### GENERAL DATA

**A** STUDY of the volume of trade in South Africa for both 1924 and 1925, together with its development since 1910 (the time of Union), reveals some interesting facts. In the last named year the value of the total trade of the Union was £90,330,707, which worked out at £15 7s 5d per head of the whole population, or £71 10s per head of the European population, and the proportion per cent of exports to imports was 145.9. In 1924 the total trade had reached the sum of £141,741,004 after the period of economic depression following the War, these figures being increased in 1925 to £145,224,002, or more than £90 per head of the European population. It must, however, be remembered that, owing to the great changes in the prices of commodities that have taken place since the outbreak of the European War, comparisons of total values convey very little idea of the actual development that has taken place in trade. Generally speaking, the economic position of the Union is now sound, and the prospects from a trade point of view are very hopeful. It will be seen from what follows how much solid progress was made in 1924 despite a long and protracted drought in many parts of the country, a visitation of locusts, and the serious set back in the production of maize. The year 1925 was also one of distinct progress, aided, there can be little doubt, by the visit of H.R.H. the Prince of Wales, though later somewhat retarded by the unhappy shipping strike with its far-reaching consequences. There was a recovery in the maize crop and a considerable expansion in the Union's export trade, giving rise to the most favourable expectations for 1926.

*Copyright.—See Preface*

**BALANCE OF TRADE.**—In 1925 the balance of trade in favour of the Union was £10,941,206 as against £18,441,455 in 1924 and £22,232,654 in 1923.

**INSOLVENCIES.**—Insolvencies in the Union have largely declined since 1922, the year in which the post war economic depression was at its worst. From a total of 649 insolvencies in 1920, there were 2,203 in 1923, 1,941 in 1924, and 1,372 in 1925, the insolvents' statements of liabilities in the latter year totalling £2,983,000. A movement is on foot to tighten up the insolvency law. See also under "Constitution and Law."

**WEIGHTS AND MEASURES.**—English weights are in general use throughout the Union, but Dutch measures for land and bulk are commonly utilised. The more important of these are—

BULK MEASURES			
1 leaguer	152 Dutch gals	=	1204 English gals
1 pipe	110 "	=	912 "
1 aum	38 "	=	312 "
1 anker	94 "	=	71 "
	1 " "	=	7895 "
	1 2666 "	=	1 "
	912 Dutch lbs	=	100 English lbs
1 mud (mud) dry measure	= 1 " bag "	=	3 bushels = 24 gals
A "bag" of Indian corn (maize)	weighs 200 lbs nett,		
203 lbs gross			
LINEAL MEASURE			
1,000 Cape ft	= 1,033 English ft		
12 " "	= 1 Cape rood	= 12 396 English ft	
511 3 " "	= 425 944 " "	= 1 English mile	
SQUARE MEASURE			
144 sq Cape ft	= 1 sq Cape rood		
86,400 " "	= 600 " "	= 1 Cape morgen	
1 sq. mile (English)	= 2 11654 English acres		
1 hectare	= 2.471 acres	= 1 1675 morgen	
1 carat (diamond measure)	= 5 2/3 grains (about), actually		
	200 milligrammes.		

#### COMMODITIES

##### EXPORTS AND IMPORTS

**EXPORTS.**—Foremost among South Africa's exports is gold, upon which for many years the prosperity of the country was mainly built up. It is satisfactory, however, to note that wool is steadily improving its position as a source of wealth to the Union, and much is hoped for in the future as a result of the development of the country's pastoral and agricultural industries, for in an increased production of foodstuffs lies the Union's prospect of marked commercial expansion. Diamonds maintain their place as third in the list of revenue producing exports. Of other exports, maize, coal, hides and skins, wattle bark and extracts, mohair, ostrich feathers, and fruits are the most important.

**EXPORT VALUES.**—The total value of South African produce exported overseas during the twelve months ended December 31, 1925, was £77,424,686, as compared with £74,478,231 in 1924, an increase of £2,946,455. The principal exports according to value were—

	1924	1925
	£	£
Gold .. ..	40,190,380	34,337,506
Wool .. ..	15,763,953	15,095,446
Diamonds ..	8,605,525	8,605,525
Sheepskins ..	1 857,179	1,566,739
Coal .. ..	1,211,580	1,071,393
Mohair .. ..	1,142,012	836,328
Hides (ox & cow)	972,723	911,733
Wattle bark and extracts ..	840,772	1,109,161
Maize .. ..	492,001	5,669,405
Maize meal ..	386,746	819,820
Ostrich feathers	353,162	203,976

	1924 £	1925 £
Goat skins	329,210	343,164
Copper (bar) ..	416,510	294,011
Whale oil ..	264,742	471,119
Sugar ..	57,473	766,964
Cotton (raw) ..	170,781	350,005
Tin ore, etc	222,021	220,266
Eggs	160,525	177,703
Fruits (fresh) ..	137,582	729,918
Fruits (dried) ..	128,338	118,462
Lead (bar)	129,108	55,724
Meats (fresh and frozen) ..	100,309	265,348
Wines	58,028	45,831
Other products	1,820,437	3,359,070
<b>Totals</b>	<b>74,478,231</b>	<b>77,424,686</b>

The most notable increases were those in maize (a record), £5,117,104, sugar, £700,191, and fresh fruit, £502,330. Wool slightly decreased in value, though the quantity exported was larger in the case of greasy wool. Fresh and foreign meats, maize meal and whale oil also showed gratifying increases, but there was a decline in the cases of ostrich feathers, bar copper and mohair.

Exclusive of gold, the direction of exports of South African produce overseas in 1924 was as follows—

	£	PER CENT
United Kingdom	21,052,893	61.1
India	387,919	1.1
Australia	172,454	.5
Other British Possessions	1,218,221	3.6
Foreign Countries	11,447,364	33.4
<b>Totals</b>	<b>£34,278,851</b>	<b>100</b>

Of the British Dominions, the Straits Settlements were the best market for Union produce other than gold, taking in all £504,796 worth of goods. Of the share of £11,447,364 absorbed by foreign countries, Germany took 8.6 per cent, Belgium 1.8 per cent, Holland 1.6 per cent, and the United States 3.5 per cent.

**FOREIGN MARKETS.** See "Trade by Countries."

**IMPORT VALUES.**—In 1910, the first year of the Union, imports of all kinds (but excluding specie) had a value of £36,727,367. In 1920, the year of abnormal trade, they rose to £101,827,104, or more than double the highest figure recorded, but dropped again in 1921 to £57,800,316.

Exclusive of goods in transit, imports totalled £67,799,316 in 1925, compared with £65,894,781 in 1924 and £57,836,761 in 1923, and were made up as follows—

	1924 £	1925 £
Merchandise		
From Overseas	58,063,553	61,898,988
From other States in B.S.A.	1,557,449	1,186,797
Government Stores	6,194,515	4,704,813
Specie	79,264	8,718
<b>Totals</b>	<b>£65,894,781</b>	<b>£67,799,316</b>

The following table shows the comparative values of the different classes of imports in 1924 and 1925—

	1924 £	1925 £
Animals, agricultural and pastoral products ..	166,288	231,752
Foodstuffs ..	7,265,443	7,415,684
Alcs, wines, etc ..	595,252	647,648
Tobacco, etc ..	76,329	80,975
Textiles, apparel, yarns and fibres	17,394,445	18,684,208
Metals, metal manufactures, machinery and vehicles..	16,038,833	18,054,670

	1924 £	1925 £
Minerals, earthenware, glass and china ..	1,020,519	1,104,422
Oils, paints, etc	3,368,654	3,363,442
Drugs, chemicals, etc ..	2,352,997	2,144,568
Leather and rubber	2,270,589	2,294,394
Wood, cane and wicker manufactures	2,446,759	2,393,428
Jewellery and fancy goods	1,472,264	1,525,110
Books, paper and stationery	1,895,211	1,884,336
Miscellaneous articles	1,378,195	1,793,060
Articles and materials for industrial purposes	513,090	884,153

The principal increases in imports in 1925 were metals, metal manufactures, machinery and vehicles, £2,015,837, foodstuffs, £849,759, articles and material for industrial purposes, £341,063.

In individual articles the most conspicuous increase was in the number and value of motor cars imported, which advanced in total from 10151 in 1923 to 13552 in 1924 and 18396 in 1925 and in value from £1,721,183 to £2,460,087 and £3,131,961 in the same years. Noteworthy gains also were coal grain and sugar bags, £803,127, miscellaneous manufactures of iron and steel, £859,596, electrical material, £252,443, and materials imported for manufacturing purposes, £341,063.

**TRADE BY COUNTRIES.**—The following table shows the leading countries with whom the bulk of the Union's overseas trade is conducted, the export and import figures being for the years 1923 and 1924, and the former being for South African produce only, excluding specie and ships' stores—

	1923 £	1924 £
<b>Exports</b>		
United Kingdom	57,020,655	47,129,644
India	1,015,785	14,510,548
Germany	2,652,939	2,953,100
France	2,658,001	2,873,387
Netherlands	1,867,671	1,576,262
United States	1,998,843	1,276,481
<b>Imports</b>		
United Kingdom	28,111,180	29,225,891
United States	7,151,472	9,144,176
Germany	2,720,955	3,528,342
Australia	2,103,142	2,269,230
Canada	1,841,714	2,167,088
India	2,308,487	2,113,397
Sweden	1,114,729	1,255,399
France	1,922,155	1,146,966

In the export trade, South Africa's best customer is Great Britain, which increased its share of Union produce (gold, specie and ships' stores excluded) from 59.6 per cent. of the total in 1923 to 61.4 per cent in 1924. The reduced figures for 1924 in the table immediately preceding are due to considerably reduced exports of gold, the large increase in these to India being responsible for the latter country's place in the table.

Turning to imports of merchandise, an examination of the sources of supply reveals that of 102 countries trading with the Union during 1924, 18 accounted for merchandise to the value of £56,911,000 out of a total importation of £59,621,000. The value of imports from the United Kingdom showed an increase of nearly £815,000, but her proportion of the total value of merchandise imported fell from 52.1 per cent to 49 per cent. The United States more than maintained her place as principal foreign supplier, furnishing 14.7 per cent, as against 12.8 per cent in 1923. Germany took third

place with 5.4 per cent. Canada, Sweden, and Holland improved their positions, but India and Belgium showed a slight decline, France and Japan both recovered ground.

**AUSTRALIA.**—The balance of trade with Australia is distinctly in favour of the Commonwealth, imports exceeding exports by £1,332,355 in 1923 and £2,086,830 in 1924. In the latter year imports were of the value of £2,269,230, compared with £2,103,402 in 1923, the value of the wheat imported having risen from £847,324 to the record figure of £1,041,455. Exports to the Commonwealth declined from £748,073 in 1923 to £172,454 in 1924, principally due to a decline of £440,266 in maize and £67,990 in blasting compounds.

**BELGIUM.**—The chief items of Union export to Belgium, which in 1924 totalled £1,646,392, as against £1,303,739 in 1923, were wool (grease), £1,259,601, wool (scoured) £64,100, hides, £53,076, and diamonds £190,260. Imports from Belgium increased in value from £873,277 in 1923 to £907,708 in 1924, and comprised in the latter year textiles, £263,294, machinery and metal manufactures, £417,799, and earthenware and glassware, £93,926.

**BRAZIL.** From Brazil the Union imported merchandise to the value of £970,822 in 1924, as against £741,636 in 1923, imports of coffee having risen from £728,510 to £960,329. Exports to Brazil are negligible.

**CANADA.** Union exports to Canada were valued at £9,724 in 1924, compared with £27,042 in 1923, while imports during the same years rose from £1,841,714 to £2,167,088, the balance against the Union increasing from £1,814,672 to £2,157,364. Imports included motor cars (£692,230 in 1923 and £691,266 in 1924), motor chassis, which fell from £5,042 to £312, and wheat, which rose from £58,129 to £128,129.

**CEYLON.**—Imports from Ceylon to South Africa exceeded exports to that Colony by £342,663 in 1924, being of the value of £575,859 compared with £485,940 in 1923. Tea was responsible for nearly all this total, imports rising from £423,040 to £495,586. Exports to Ceylon were worth £233,196 in 1924, as against £191,509 in 1923.

**EGYPT.**—In 1924 exports from South Africa to Egypt were valued at only £13,657, compared with £106,432 in 1923, the falling off being due to the lessened exports of coal, which dropped in value from £100,016 to £5,295. Imports remained nearly stationary, being valued at £9,204 in 1923 and at £9,364 in 1924.

**FRANCE.**—France imported South African produce to the value of £2,873,387 in 1924, as against £2,658,601 in 1923, the principal items in the first-named year being: wool (grease), £1,785,077, hides, £147,418, sheep skins, £610,965, maize, £32,898, and crayfish, £159,764. Imports from France rose from £922,155 in 1923 to £1,146,966 in 1924, textiles being responsible for £605,575.

**GERMANY.**—In 1924 Germany replaced France as the Union's chief foreign customer, and, with the exception of the United Kingdom, was the largest buyer of wool. Exports of South African produce to Germany totalled £2,953,400 (compared with £2,652,939 in 1923) the principal items being wool (grease), £2,301,850, wool (scoured), £181,759, bark (wattle), £132,876, bark (extract), £69,121, hides, £100,221, and maize, £44,278. As a supplying country to the Union, Germany ranked third in 1924 to the United Kingdom and United States, her export trade amounting to £3,528,342, as against £2,729,955 in 1923, or an increase of £807,387. Leading imports from Germany

For latest statistics see "APPENDIX"

were metals and machinery, £1,601,295, textiles, etc., £401,251, jewellery and fancy goods, £404,150, earthenware and glassware, £203,568.

**GREAT BRITAIN**—The following table shows the balance of trade as between the Union and Great Britain in the years named

IMPORTS		1923	1924
		£	£
Merchandise ..	28,401,189	29,225,891	
S.A. Govt Stores	2,677,643	4,681,690	
Specie ..	22	—	
	£31,078,854	£33,907,581	
EXPORTS		1923	1924
		£	£
Bullion Gold ..	37,422,094	26,076,751	
Bunker coal ..	1,650,894	1,031,377	
Ships stores ..	152,374	147,931	
All other merchandise	19,850,218	21,346,916	
Specie ..	287,234	300	
	£59,302,814	£49,203,275	
Balance of trade in favour of Union ..	£28,283,960	£15,295,094	

1923, diamonds, £6,498,426, a decrease of £174,197, and hides and skins, £1,652,454, an increase of £497,705

**INDIA**—The total trade of the Union with India increased from £4,227,272 in 1923 to £16,623,945 in 1924. Whilst imports from India during those two years decreased from £2,308,487 to £2,113,397, exports jumped from £1,918,785 to £14,510,548, the rise being entirely due to the volume of bar gold exported, which was 3,324,749 fine oz., value £14,122,629 in 1924, as against 369,255 fine oz., value £1,568,495, in the preceding year. Imports from India are largely made up of jute and cotton goods, tea, and grains.

**ITALY**—Imports from Italy increased from £385,474 in 1923 to £566,889 in 1924, and exports to that country, which totalled £268,720 in 1923, rose to £667,935 in 1924, this decided improvement being due to largely increased shipments of beef, £92,057, as against £436.

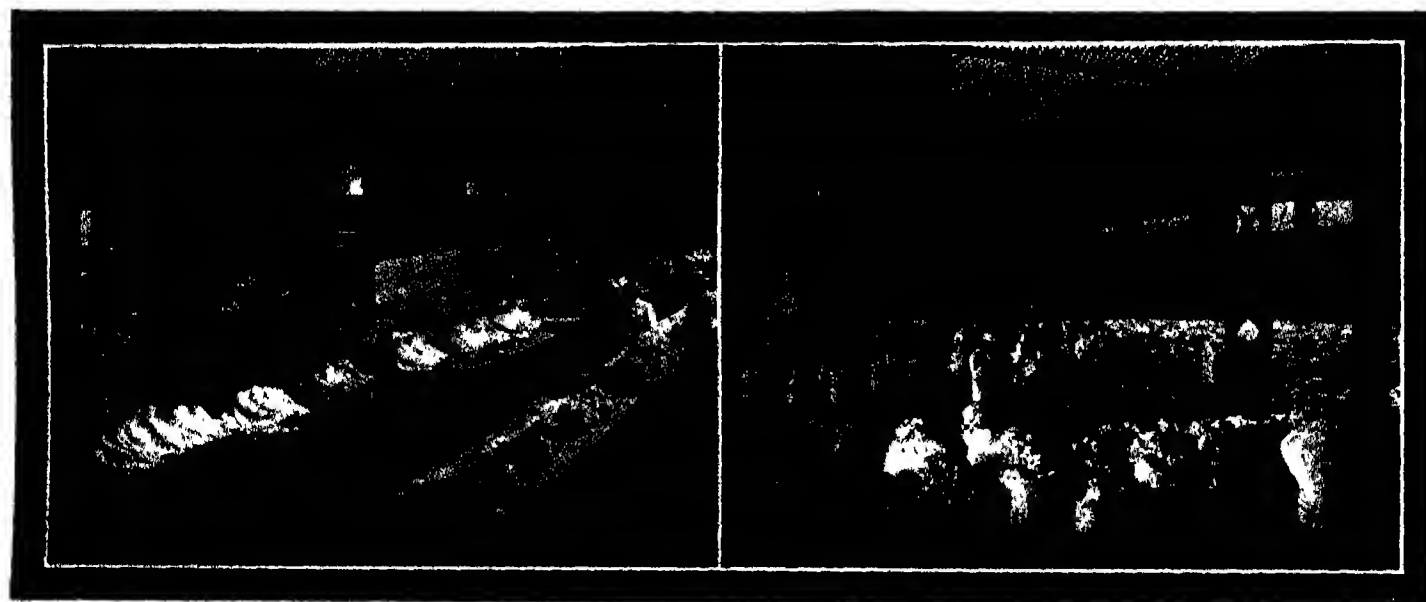
**JAPAN**—The total trade of the Union with Japan increased from £658,170 in 1923 to £846,487 in 1924, both imports and exports showing improved results. Of imports from Japan, which totalled £600,050 in 1924, as against £525,880 in the preceding year, textiles were by far the largest item

and stationery (£60,368) were the principal imports.

**NETHERLANDS EAST INDIES**—Imports from the Dutch East Indies were valued at £535,059, against £644,108 in 1923, motor spirit (£419,245) being by far the largest item. Tea to the value of £39,335 was also imported. Exports to the Indies were £14,454 in 1923 and £32,517 in 1924.

**PORTUGUESE EAST AFRICA**—The balance of the Union's trade with Portuguese East Africa is a favourable one, exports exceeding imports by £53,906 in 1923 and by £82,813 in 1924. In the latter year the Union exported £200,708 worth of goods, as against £167,096 in the preceding year, while goods to the value of £84,283 were imported, compared with £146,802.

**SOUTHERN RHODESIA**—In 1924 the Union's total trade with Southern Rhodesia was of the value of £2,419,256, compared with £2,052,737 in 1923. Exports of South African produce to the neighbouring colony declined from £807,908 to £807,184, while those of imported goods re-exported increased from £624,214 to £770,570. Imports of South African produce from Southern Rhodesia increased from £517,825 in 1923 to £738,291 in 1924, while imported goods



IN THE FEATHER MARKET, PORT ELIZABETH.

WOOL MARKET, PORT ELIZABETH.

The following table shows the trade in South African produce only from 1920 to 1924

	IMPORTS FROM GREAT BRITAIN	EXPORTS TO GREAT BRITAIN
	£	£
1920 ..	50,243,569	59,458,140
1921 ..	27,310,863	46,264,544
1922 ..	25,606,243	44,747,519
1923 ..	28,411,189	57,020,655
1924 ..	29,225,891	47,129,644

Leading imports from the United Kingdom in 1924 were, textiles, etc., £12,377,094 (71.5 per cent of total imports under that heading), metals, machinery, etc., £8,232,552 (45.4 per cent), leather and rubber manufactures, £1,300,013 (80.8 per cent), drugs, chemicals and fertilizers, £1,262,985 (60.5 per cent), foodstuffs, £896,662 (12.6 per cent.).

The principal items of export to the United Kingdom were Gold, £26,076,751, wool, £8,169,033, an increase of £2,592,161 over

Exports to Japan were worth £140,837 in 1924, as against £132,290 in 1923.

**KENYA COLONY**—Trade with Kenya Colony has shown a rising tendency during the last few years, but is adverse to the Union at present, imports being £99,743 in 1924 as against £95,760 in 1923, and exports £48,612 as against £21,950.

**NETHERLANDS**—The following are the figures of the Union's trade with the Netherlands in the years named.—

	1923	1924
	£	£
Exports to ..	1,867,671	1,576,262
Imports from ..	551,112	793,378
Total ..	£2,418,783	£2,369,640

It will be seen that exports to Holland fell in 1924 by nearly £300,000, shipments of maize having declined from £348,380 to £33,019. Foodstuffs (£224,551), drugs and chemicals (£131,282); and paper, books,

re-exported from the colony rose slightly from £102,790 to £103,211. The Union took over £260,000 worth of Rhodesian tobacco out of a total of £284,000 exported.

**SOUTH-WEST AFRICA**—The following table shows the value of the Union's trade with South-West Africa in the years named.—

	1924	1925
	£	£
EXPORTS		
South African Produce ..	498,181	526,475
Imported goods re-exported ..	593,828	694,230
Total ..	£1,092,009	£1,220,705
IMPORTS		
South African Produce ..	556,770	337,500
Imported goods re-exported ..	50,463	59,929
Total ..	£607,233	£397,429

The Union furnishes the greater proportion of the requirements of South-West Africa, viz. £1,065,606 out of a total of £1,000,632 imported in 1924 and £1,220,205 out of £2,104,352 in 1925. The principal articles of export to the Territory in 1925 were cereals, £111,738, confectionery, £11,003, jams and jellies, £13,040, sugar, £63,468, fresh vegetables, £12,933, and spirits (potable) £19,054. From South-West Africa the Union imported in the same year live animals, (value £210,000) and articles of food and drink (value, £102,682).

**STRAITS SETTLEMENTS**—Trade with the Straits Settlements reached a total figure of £554,078 in 1924, compared with £398,507 in 1923, exports rising from £356,124 to £504,796 and imports from £42,383 to £49,282.

**SWEDEN**—Statistics for 1924 show that Sweden increased her exports to the Union by £140,630 over 1923, the figures being respectively £1,114,729 and £1,255,399. In addition to timber, imports from Sweden include oil-engines, motors, machines and parts, drill steel, enamelled ware, stoves and ovens, cement, and paper. Exports from the Union to Sweden increased in value from £59,000 in 1923 to £68,000 in 1924.

**UNITED STATES**—If the Union's trade with the United States did not reach the high figure of 1920, when imports alone totalled £17,000,000, both exports and imports showed a rising tendency during the three years 1922-24. The following table gives particulars for the calendar years named—

	1923	1924
Exports to	1,998,843	1,279,481
Imports from	7,151,473	9,144,176

The fall in exports in 1924 was mainly due to smaller shipments of wool, hides and skins.

As regards imports, the United States now ranks second to Great Britain. By far the largest items are comprised under the heading of metals, machinery, and vehicles, and included in 1924 agricultural implements and machinery, £500,978, electrical machinery, £199,548, motor vehicles and accessories, £1,846,793, rubber tyres and tubes, £108,133, lubricating oil, £383,411, illuminating oil, £487,647, and motor spirits, £779,872.

Exports from the Union to U.S.A. were valued at £2,610,000 in the period January-November 30, 1925, compared with £1,450,000 in the corresponding period of 1924. Wool and copper were chiefly responsible for the increase.

**TRADE INSTITUTIONS.**—Following are the principal institutions and associations assisting in the furtherance and protection of South African trade and commerce—

**ASSOCIATION OF CHAMBERS OF COMMERCE OF SOUTH AFRICA**—This important Association was established at Capetown in 1896, and the value of the work which it has accomplished in 30 years may be judged by the fact that it has increased its membership during that period from six to 98 affiliated chambers. The Association has come to be the recognised mouthpiece of commerce in South Africa, and its influence during recent years has expanded enormously. It deals with questions of economic importance, legislation, railway and customs matters, wage problems, and innumerable other subjects. The valuable information and the considered views of experts obtained in this way are at the disposal of the executive of the Association—a highly representative and influential body.

In 1925 a re-organisation scheme was brought forward, the object of which is to place the Association in a position of greatly

increased usefulness to the commercial community of South Africa. In future there is to be a full-time organising secretary and staff, with headquarters at Capetown during Parliamentary session and in Johannesburg or Pretoria during the recess. In this way it is hoped to keep in constant touch with the Government, the various Government Departments, the Board of Trade and Industries, etc., and commercial interests will be more closely watched and protected than has hitherto been possible.

**BRITISH MANUFACTURERS' REPRESENTATIVES' ASSOCIATION OF SOUTH AFRICA**—This Association, which has a large membership of commercial firms and individuals representing British interests, has its offices in Remington Buildings, 86, St. George's Street, Capetown, with a branch office at Johannesburg (8, Standard Buildings). It exists for the furtherance and protection of agents and representatives' interests throughout the Union, its energies being constantly called into operation when questions of harsh or unfair taxation arise.

**CHAMBERS OF COMMERCE**—Each of the cities and larger towns of the Union has its Chamber of Commerce, the largest being those of Johannesburg, Capetown, Durban, Pretoria, Bloemfontein, Pietermaritzburg, East London, Port Elizabeth, Newcastle, Witbank, Boksburg, Germiston and Jagersfontein.

**TRADING METHODS.**—Marketing conditions in South Africa are almost invariably carried out between the wholesaler, the retailer and the customer. That is, the large wholesale firms import or buy locally their requirements, and they then send out their salesmen, who dispose of the goods to the smaller storekeepers, usually on a ninety-day basis, although credit facilities are now being somewhat restricted, and sixty or even thirty days terms are being insisted upon by the more important and stable wholesale houses. The retailer then sells to the consumer, and in towns the usual terms are monthly, by reason of the fact that salaries and wages in South Africa are, as a general rule, paid monthly. In the country, however, and when dealing with the farming community it is by no means unusual for the storekeeper to grant six or even twelve month terms.

Although trade in South Africa is largely in the hands of the wholesale houses, there is an increasing tendency for the larger retail storekeepers to import their requirements direct, and as time goes on and competition becomes keener there can be no doubt that this tendency will further grow.

**ADVERTISING**—In considering the placing of any proposition before the South African public by means of advertising, the fact that there are two distinct European races must be taken into consideration. So far as publicity is concerned, the native population may be dismissed for some time to come, though the coloured population of the Cape is probably worth careful attention.

To advertise successfully in South Africa requires first-hand and specialised knowledge, but two rules are of particular importance. "To reach the African population, advertise in Dutch", and "Aim at clearness rather than at cleverness." The Boer of the Transvaal and Orange Free State is said to be a slow thinker and a deliberate mover. Manufacturers and agents should, therefore, not be disappointed if an immediate response is not always secured. There is an important and influential Dutch press to be considered, in which judicious advertising may be carried out. Advertising in South African (English) papers is not unduly expensive, the rates for

the "Sunday Times" (Johannesburg), which has a very wide circulation, being 15/- per single column inch, while outside Johannesburg the contract rates for 52 insertions in a South African daily paper do not usually exceed 3/6 per single column inch. Oversea advertisers are recommended to use direct mail advertising in conjunction with direct press advertising provided the former be undertaken in the country.

**CATALOGUES**—Catalogues and price lists should be attractively got up, prepared (especially for the Transvaal and Orange Free State) in English and Dutch, be kept up-to-date, give a full description of the wares, and be easy of reference and well illustrated.

**COMMERCIAL TRAVELLERS' AND AGENTS' LICENCES**—Licence fees of South African firms which act as representatives of overseas houses, or, in other words, those firms which sell from samples on a purely commission basis, have been consolidated by a new Licences Consolidation Act, which became effective on January 1, 1926. Formerly, a firm of manufacturers' agents paid a separate licence fee for each Province in which it solicited business. In the Cape Province this amounted to £50 annually, with a 50 per cent reduction for those firms which had a prior residence of three years in the Province, in the Transvaal and Natal, £10 annually, and in the Orange Free State, £5 a quarter. The new measure provides for the licensing of trades, professions, and occupations within the Union of South Africa, and by its provisions agents of foreign firms, as distinct from firms which purchase goods from firms outside the Union for re-sale in the Union, are required to pay £75 for an annual licence. Agents who ordinarily have been resident within the Union for three years prior to taking out a licence pay half the regular rate, or £37 10s.

Provision is also made to cover travelling representatives of foreign firms. These are required to take out a licence at the comparatively high rate of £50, which entitles them to solicit orders for their principals for a period not exceeding three months. Should their stay be of longer duration, they must take out the ordinary annual licence. The licence is required of every person who in any way advertises or purports to be the authorised representative or agent of any manufacturing or trading establishment outside the Union, or who actually invites, solicits, canvasses, or accepts orders for the sale or supply of goods on behalf of a foreign firm. In addition to the £75 or £37 10s fee, whichever the case may be, the representative of an overseas firm is required to pay a licence fee of £15 for each salesman employed by him.

**IMPORTERS' LICENSING DUTY**—The Transvaal Importers' Licensing Ordinance, 1925, provides for the licensing, as from January 1, 1926, of all persons in the Transvaal who import for sale within the Province from beyond the borders of the Union goods exceeding £1,000 in value during the year 1926. The amount of duty to be paid during 1926 for an importers' licence is to be ascertained as follows—(a) In the case of any person who imported goods exceeding £1,000 in value during the year 1925, the amount payable for a licence shall be £5 for the first £1,000, plus 10s for each additional £100 or part thereof, subject to a maximum duty of £200. (b) In the case of any person who had not imported goods exceeding £1,000 in value during the year 1925, the amount payable for a licence shall be £15.

The amount of licence duty thus paid by any person during 1926 will be adjusted after the end of that year, so that he will eventually pay licence duty, at the rate specified in



(a) above, on the total declared value of goods imported by him during the year 1920.

**IMPORTERS' OBLIGATIONS.**—No importation of goods into the Union may be made without due entry and the payment of any customs dues. Every person carrying on business in the Union is required to keep within the Union reasonable and proper books or accounts of his transactions, and within two years after the date of any importation may be required to produce the bills of lading, invoices, and other documents relating to the goods. The particulars to be contained in invoices are prescribed by regulation. Any person offering goods for sale, or removing them, or having such goods entered in his books, may be required to produce proof as to the person from whom the goods were obtained, and, if he be the importer, as to the place where the import dues were paid.

**INVOICING.**—It is advisable that quotations to South Africa should be made in such manner as to give the importer and also as to the landed cost of goods. Further, it is desirable to show separately on invoices each item of cost, packing, freight and insurance. Too much attention also cannot be paid to the giving of the fullest particulars as to measurements and weights of cases (gross and net) and contents of packages. Particular care should be taken to include in invoices the exact descriptions of goods, special marks, or item numbers appearing on the indent or order.

In view of all calculations in South Africa being on the basis of 100 lb and multiples or parts thereof, invoices should show the total number of lbs, instead of tons, cwt or qrs. Exporters should obtain from the High Commissioner in London a copy of the Weights and Measures Act (No. 32) of 1922.

**PACKING.**—Exporters should reduce the sizes of cases and bales to the smallest possible compass compatible with safety to the contents. So large a proportion of the sea-borne trade being carried by measurement and not by weight, economy of space is very important. "Nesting" as a space reducer, where the goods allow of this being done, should be practised. The elimination of unnecessary packing material is also desirable. In packing provisions and "small" goods for places in the interior which require to be carried by porters, the weight of all packages should not exceed 60 lb gross, one man's load.

**SHIPPING DOCUMENTS.**—Appendix A of the Customs Regulations, published in Government Notice No. 1774 of 1922, is the form of invoice required by the Customs Authorities of the Commonwealth of Australia, New Zealand, the Union of South Africa, and Newfoundland, and such other parts of His Majesty's territories as may from time to time be notified in the Board of Trade Journal. On the back of the invoices must be written, typed, or printed the combined certificates of value and origin in respect of all goods, whether sold outright or shipped on consignment. The certificates of value and of origin will be required in respect of goods on which preferential tariff treatment is claimed, exported either from the United Kingdom or British possessions, and only the certificate of value in respect of exports from foreign countries or exports of foreign goods from the United Kingdom or British Possessions.

**TRADE COMMISSIONER SERVICES.**—The most important of these is that of the Trade Commissioner of the Union in London, who deals from the High Commissioner's Office in Trafalgar Square with all the matters relating to the export trade of South Africa. By means of an elaborate intelligence service the Union Department is advised by

cable weekly of the prices obtaining and of the general trend of markets, and this information forms a useful guide to the producer and shipper. Advice is also sent where the Trade Commissioner in his investigations discovers the likelihood of any developments affecting producers' interests. A useful function is also performed in bringing producers and consumers into touch with each other and in giving business introductions where such are necessary.

The Trade Commissioner also performs the important duty of inspecting and reporting upon consignments of Union produce, and organises exhibitions for propaganda purposes. He also represents the High Commissioner on various Boards and Committees, e.g. the Empire Cotton Growing Corporation, the South African Committee of the Imperial Institute, Refrigeration Association, Poultry Association, etc. He is likewise a member of the South African Section of the London Chamber of Commerce, and generally identifies himself with all trade movements in the United Kingdom which have a bearing on the trade interests of the Union.

**American Trade Commissioner.**—The American Trade Commissioner in Johannesburg represents the Bureau of Foreign and Domestic Commerce of the United States, which was established in 1912, the Johannesburg Office having been opened in 1920. The chief function of the Bureau is to give assistance to American commerce in its widest sense, and the activities of the Commissioner are mainly directed to the compilation of exhaustive and up-to-date reports, which are sent to Washington by cable and promptly disseminated. Assistance is also given to South African importers and others who are desirous of securing American agencies, or purchasing American products.

**Canadian Trade Commissioner.**—The Canadian Trade Commission Service was established in 1891, and a Trade Commissioner has been stationed in South Africa for many years. He promotes the sale of Canadian products and submits data to the Home Government in reference to South African markets. A steamship service has been subsidised by the Canadian Government to carry on trade between Canada and South Africa.

**Commissioner of Commerce in Europe.**—The office of the Commissioner of Commerce for the Union on the Continent of Europe was created in 1922. The offices are at 15 Coolsingel, Rotterdam.

**Honorary Trade Commissioners** for the Union have been appointed at Helsingfors and Berlin.

**H.M. Trade Commissioner.**—As a result of the Imperial Conference of 1907, the post of His Majesty's Trade Commissioner was created, and Commissioners were appointed to Cape-town, Melbourne, Montreal and Wellington in the following year. The primary object of the Trade Commissioner is to direct importers in South Africa, whether of finished manufactures, machinery for local production, or raw materials, to British sources of supply, and generally to work for the promotion of trade within the Empire. This obviously entails a close study of local requirements and of foreign competition in this market, as well as a knowledge of the capabilities of British producers and manufacturers overseas. It is also clear that there is almost unlimited scope for work in this field. The work is complementary and parallel to that of the Industries Section of the Union Department of Mines and Industries and of the Union Trade Commissioner in London, with whom the Department of Overseas Trade in London and the Trade Commissioners in South Africa are in constant touch.

## COMMODITIES

The values of the following commodities are taken from the Statistics of Trade and Shipping issued by the Department of Customs and Excise.

**AERATED WATERS.**—See "Beverages."

**ALES AND BEERS.**—See "Beverages."

**ANGORA WOOL.**—See "Mohair."

**ASBESTOS.**—Exports of crude asbestos were valued at £102,308 in 1925, compared with £110,710 in 1924, though there was an increase from 13,205,004 to 13,265,004 lbs. The United Kingdom took some 9,000,000 lbs and Australia the remainder.

**AUTOMOBILES.**—See "Motor Cars."

**BAGS AND SACKS.** Imports of jute bags and bagging increased in value from £954,480 in 1924 to £1,871,403 in 1925. The record export trade in maize accounted for this increase.

**BARK (WATTLE).**—Exports of wattle bark in 1925 rose from 203,000,000 lbs in 1924 to 223,000,000 lbs, the values being £583,972 and £781,003. Of bark extract, some 40,000,000 lbs valued at £328,068 were exported in 1925, as against 34,000,000 lbs valued at £256,800 in 1924.

**BEDSTEADS.**—Metal bedsteads to the value of £58,925 were imported in 1924, as against £53,024 in 1923, the United Kingdom being the leading country of origin. The 3 per cent tariff preference formerly granted to Great Britain on this class of goods has not been conceded under the Act of 1925.

**BEVERAGES.**—Following were the leading imports in the years named:

	1924	1925
	GALLONS	
Ales, beers, and stout	84,155	94,086
Brandy	16,947	18,596
Gin	28,171	31,681
Rum	2,035	2,687
Whisky	334,011	322,648
Wines	42,081	48,001
Aerated and mineral waters	17,108	15,601

The total value of all ales, spirits, wines and beverages imported in 1925 was £581,403, as against £535,416 in 1924. (See also "Wines.")

**BICYCLES.** There was a rise of £65,448 in the value of the Union's imports of bicycles and parts in 1925 as compared with 1924, the figures being £241,750 and £176,302 respectively. Great Britain is the principal source of supply.

**BLANKETS AND RUGS.**—Blankets and rugs of all kinds were valued at £966,617 in 1925, as against £1,273,655 in 1924.

**BOOTS AND SHOES.**—In 1924 the following importations of leather footwear were recorded: Men's, 466,964 pairs (£300,296), women's, 1,213,886 pairs (£631,109), children's, 242,309 pairs (£63,580), slippers, 139,691 pairs (£24,260); infants', 256,729 pairs (£30,041). In each case the United Kingdom was the chief exporting country. From Switzerland came 115,227 pairs of men's boots, valued at £71,345.

Imports of all footwear for 1925 were £1,029,787, compared with £1,193,791 for the corresponding period of 1924.

**BUTTER.**—In 1922 the quantity of butter imported by the Union was 196,025 lb., rising to 1,666,433 lb in 1923, and to 1,582,927 in 1924, the last year's imports being of the declared value of £100,962. There was an increased demand for Australian butter, over 700,000 lb. more being imported in 1924 than in the previous year; but decreased supplies were received from New Zealand. Margarine and other butter substitutes imported also increased con-

siderably, coming principally from the United Kingdom and Holland.

Imports of butter and butter substitutes in 1925 were valued at £103,017.

Exports of butter showed a welcome increase from £44,612 in 1924 to £58,620 in 1925, the United Kingdom having taken larger consignments.

**CANDLES.**—In 1924 imports of candles totalled 41,446 lb., value £905, rising to 18,796 lb., value £2,217, in 1925. Supplies from the United Kingdom have declined, whereas those from Holland have risen.

**CEMENT.**—Imports of building cement declined in value from £117,958 in 1923 to £93,952 in 1924, supplies from the United Kingdom and Belgium decreasing, while those from France increased by £12,854, and Sweden appeared for the first time as a supplying country with £10,383. In 1925 imports rose to £101,000.

**CHEESE.**—There was a large increase in cheese exports from the Union in 1924, the value being £7,208, as against £570 in 1923. Exports to the United Kingdom rose from £327 to £2,574, but those to Portuguese East Africa and Belgian Congo decreased slightly. Imports of cheese declined from £44,775 in 1923 to £29,870 in 1924, and to £16,132 in 1925, supplies coming mainly from Holland.

In 1925, cheese exports rose to £10,324.

**CIGARS AND CIGARETTES.**—See "Tobacco."

**CINEMA FILMS.**—The United States has always led in the supply of bioscope films to the Union, Great Britain being a poor second. The value of imported films was £100,972 in 1923 (U.S.A., £73,794), £107,024 in 1924 (U.S.A., £87,838), £100,675 in 1925.

**CLOCKS AND WATCHES.**—Imports of clocks increased in value from £35,536 in 1923 to £39,631 in 1924. Germany's share of the latter total being £24,237, and the United States' £8,158. Watches and parts thereof are supplied mainly by Switzerland, which was credited with £75,017 out of the total of £93,440 for 1924, compared with one of £100,230 for 1923.

The value of all timepieces imported in 1925 was £148,248.

**COAL.**—The total coal production of the Union for 1924 was 15,561,365 tons, as against 14,678,687 tons in 1923, while the quantities of cargo coal shipped during the same periods were 1,921,977 tons, value £1,211,580, and 1,903,717 tons, value £1,190,688 respectively. The above figures indicate that the steady progress in the Union's coal trade is being maintained. The tonnage exported in 1924 was the highest yet recorded. A decline in exportations to India, Egypt, and France in 1924 was more than compensated for by larger shipments to other countries, notably British Sudan, Straits Settlements, Aden and Ceylon.

A further export record was established in 1925, when 3,860,255 tons were shipped, of which 1,937,623 went to foreign markets.

**BUNKER COAL.**—South African coal bunkered in 1925 showed an increase of 147,186 tons in quantity—1,063,207 tons in 1925, as against 1,816,021 tons in 1924. The following comparative statement indicates the shares of the three leading ports in the bunkering trade in the years named—

Port.	1923 Tons	1924 Tons
Capetown ..	345,966	336,219
Durban ..	1,184,761	1,220,040
Delagoa Bay ..	268,530	245,183
Other Union Ports	8,714	8,579
Total	1,807,971	1,816,021

(See article "Coal Mining.")

**COFFEE.**—Almost all of the coffee imported by the Union comes from Brazil, whose share of the total value of all imports, £788,445 in 1923 and £1,027,720 in 1924, was £728,510 and £969,329 respectively. Supplies from Kenya Colony decreased in value from £40,538 to £28,060, while those from Tanganyika Territory increased from £4,255 to £11,928.

Imports for 1925 were valued at £1,198,180, but there was a decrease of 1,700,964 lb. in the quantity received.

**COPPER.**—Copper is one of South Africa's most valuable minerals, but exports, which had shown a large increase in 1924, fell from £499,098 to £350,238 in 1925.

**COPRA.**—The Union imported 5,069,450 lb. of copra in 1924, valued at £61,674, an increase of 689,125 lb. on the figure for 1923. Kenya, with 1,947,118 lb., and the Seychelles,

lands, saris and downies, piece dyed goods, black cashmerettes, sateens, casement cloth, bed ticking blankets, rings, and shawls. White shirtings are virtually a British monopoly, Hosiery being almost a household word. Great Britain also leads all other countries in the sale of prints and dyed goods. Italian exports have gained ground, but those from France, Japan and India have declined.

**COTTON (RAW).** Recent developments in the cotton industry of the Union are shown by the increase in the quantity and value of exports during 1925, when the raw cotton exported amounted to 6,981,213 lb., value £350,095, as against 3,279,388 lb., value £170,781, in 1924. All but a small fraction was taken by the United Kingdom, to which exports increased in value from £77,626 in 1923 to £150,590 in 1924.



FRUIT ARRIVING AT A COUNTRY STATION FOR SHIPMENT.

with 1,234,044 lb., were the principal supplying countries.

**COTTON PIECE GOODS.** The United Kingdom continues to be by far the largest supplier of cotton piece goods, though imports from the Mother Country declined slightly from £3,044,421 in 1924 to £2,063,605 in 1925. Total imports of cotton manufactures rose from £4,540,204 to £4,557,717. The United States exported 12,171,830 square yards of cotton cloth, valued at some £550,000, as against 7,794,412 square yards with a value of £400,000 in 1924.

The principal classes of cotton piece goods imported from Great Britain are Bleached goods, fancies, cretonnes, salempores, dhooties, handkerchiefs, poplins, and fou-

**CUTLERY.**—Imports of cutlery (not plated) were valued at £183,006 in 1924, against £105,224 in 1923, the United Kingdom being responsible in each year for about two-thirds of the total, and Germany coming next. Imports of plated cutlery during 1924 were valued at £6,223.

**CYCLES.** See "Bicycles" and "Motor Cycles."

**DAIRY UTENSILS.** See "Machinery."

**DIAMONDS.**—The Union's output of diamonds is about 70 per cent of the total world production, and amounted in 1925 to 2,433,280 carats, value £8,198,368, as against 2,443,347 carats, value £6,029,466, in 1924. The diamond being almost entirely an article of luxury, and there being enough diamonds

in the mines now working to satisfy the market for the next hundred years, it became necessary some years ago to regulate and restrict production as between the four chief producers in South Africa, viz., the De Beers, South-West Africa, Premier, and Jagersfontein mines, these four producers selling their diamonds at agreed-upon prices to the London Syndicate. A new five years' contract was made in 1925, to date from January 1, 1926, for the sale of these producers' diamonds to a new syndicate, a decision which is taken to mean continued stability to the diamond trade.

The average price of diamonds increased from £2 18s per carat in 1923 to £3 4s 10d in 1924, and £3 6s 8d in 1925, while exports increased from 2,190,177 carats, value £7 133,370, to 2,591,230 carats, value £8,605,515. In 1924 both the United Kingdom and the United States reduced their purchases from £6,072,623 to £6,498,426 and from £14,865 to £4,079 respectively. Shipments to Holland increased from £360,532 to £440,005, and to Belgium from £149,098 to £190,260. (See also under "Mining and Minerals.")

**DRUGS AND CHEMICALS.**—The main items under the heading of drugs, chemicals and fertilisers, the total imports of which were valued at £2,144,568 in 1925, compared with £2,352,997 in 1924, were in the first-named year as follow: Sohum compounds, £332,918, drugs and apothecaryware, £447,806, fertilisers, £351,670, perfumery and toilet preparations, £196,440, sulphur, £73,684, and other chemicals, £520,729.

**EARTHENWARE.**—Combined imports coming under the heading of earthenware and stoneware rose in value from £347,305 in 1923 to £352,566 in 1924. There was an increase in the value of china and porcelain imported (£19,806 to £25,437), while decreases were shown in miscellaneous earthenware (£222,649 and £222,510) and in pipes and piping (£5,896 and £3,521).

In 1925 imports of earthenware, etc., were valued at £371,316.

**EGGS.**—Imports of fresh eggs were valued at £11,768 in 1925, compared with £4,896 in 1924, exports from the Union, almost entirely to the United Kingdom, totalled £160,525 in 1924 and £177,763 in 1925.

**FEATHERS.**—See "Ostrich Feathers."

**FISH.**—Exports of fish (other than crayfish) fresh, dried, and preserved, were valued at £73,933 in 1925, as against £54,473 in 1924. Australia and Mauritius took the bulk of the dried and cured fish, and Australia almost all the fresh and frozen.

**CRAYFISH.**—One of the minor industries of the Union, at present adversely affected by the fall of the franc and the lack of a tariff understanding with the French Government, is the trade in canned crayfish. Exports increased from 2,997,436 lb. (£216,918) in 1923 to 3,565,698 lb. (£225,854) in 1924. In the latter year shipments to France totalled £159,764 and to the United Kingdom, £33,652.

In 1925 exports were valued at £234,637.

**FRUIT (DRIED).**—There was a drop in the quantity and value of exports of dried fruits from the Union in 1924, these totalling 8,835,369 lb. (£128,338), as against 10,638,741 lb. (£187,781) in 1923. The highest values in 1924 were those obtained for raisins (£93,144) and grapes (£12,814). Exports of preserved fruits increased in value from £44,132 in 1923 to £85,750 in 1924.

Exports of dried fruit in 1925 were of the value of £118,462 (a decrease of £9,876) and of preserved fruit, £72,895 (a decrease of £12,855).

**FRUIT (FRESH).**—The South African fresh-fruit industry is becoming an increasingly important factor in the world trade. The cultivation of citrus fruits has assumed commercial proportions during the past ten years, and there has been a decided increase in the production of deciduous and non-deciduous fruit for export. There has, for instance, been a very marked extension of orange acreage, particularly during 1924 and 1925, which should result in a great increase of the oranges available for commerce when such plantings come into bearing. It is predicted that within ten years the Union will be producing sufficient oranges to permit the export of 7,000,000 or 8,000,000 boxes each year—almost ten times the estimate of 800,000 boxes for 1925. South African fruit finds a ready market in Europe, as it arrives at a time when fruit from the Mediterranean countries and North America is not plentiful. About 80 per cent of the fruit grown is exported, the United Kingdom being the principal market, but by transshipment from English ports an increasing proportion of such exports finds its way to Continental Europe, where the products are rapidly growing in favour.

In 1925 exports of fresh fruit totalled 2,403,059 boxes, value £720,918 compared with 740,850 boxes, value £137,582 in 1924, the following being the items exported in 1925: citrus, 751,814 boxes (£351,800); grapes, 331,831 boxes (£94,301), and other, 71,206 boxes (£15,428). (See also special article on "Fruit Industry.")

**FURNITURE.**—Imports of all wooden furniture totalled £101,274 in 1925, as against £126,035 in 1924. The local furniture-making having been largely developed of recent years, imports in this class are likely still further to decrease.

**GLASSWARE.**—Glassware imported into the Union reached a value of £419,481 in 1924 and of £441,423 in 1925. From 1923 to 1924 bottles and jars (mainly from Germany and the United Kingdom) rose from £161,712 to £169,907, and plate glass from £56,819 to £90,902, the bulk coming from the United Kingdom. Window glass (which rose from £56,849 to £57,230) is supplied chiefly by Belgium.

**GLOVES.** The value of gloves (not leather) imported into the Union in 1923, was £19,979 and £20,508 in 1924. Leather gloves, chiefly from England, France, and Italy, totalled £21,807 in 1924, against £17,756 in 1923.

**GOLD.**—The value of the gold production of the Union, calculated at the standard rate of £4 24773 per fine oz., was £40,672,447 for the calendar year 1924, as against £38,862,794 for the year 1923. The total premium obtained was £4,067,190 in 1924, and £2,712,151 in 1923.

Whereas in former years almost all the gold produced was shipped to the United Kingdom, it is worthy of note that the exports to India increased from 336,255 fine oz. in 1923 to 3,324,749 fine oz. in 1924, with a corresponding decrease in the shipments to the United Kingdom. Gold to India is shipped through the port of Durban, and this accounts for the large increase in the value of exports through that port. The following table gives the exports of gold bars in the years named:

	1923		1924	
	FINE OZ.	£	FINE OZ.	£
United Kingdom	8,809,904	37,122,094	6,138,985	26,076,751
India	369,255	1,568,493	3,324,749	14,922,629

Owing to the loss of the gold premium, the total exports of gold fell to £34,337,506 in 1925.

(See also articles on "Mining.")

**GOVERNMENT STORES.**—Recently the South African Government announced that, so far as practicable, all of its purchases would be ordered locally, a decision which is expected greatly to benefit local industry, though for a considerable period to come the Union must in any case import a large share of its necessities. Previously all Government purchases were made through the High Commissioner in London, who invited tenders from a select list of firms. During the calendar year 1924 the imports of Government stores were valued at £6,194,515 as against £3,270,050 in 1923, an increase of 89.5 per cent, due mainly to large purchases of railway material. Of the 1924 total, Great Britain supplied roughly four-fifths, valued at £4,681,690.

The United States was the second largest source of supply, with a value of £358,673, Australia coming third, with £339,311, and Germany fourth, with £319,375. Stores imported for the use of the Union Government range from supplies for the Army to materials required for the electrification of railways. Railway material, consisting of rails, sleepers, locomotives, and rolling stock, constituted in 1924 about one-third of the total Government purchases. The second largest item was electrical machinery, chiefly for railways and the telegraph and telephone systems.

In 1925 the value of stores imported fell to £4,704,813.

**HABERDASHERY.**—Imports of haberdashery, millinery, and minor articles of attire reached a total value of £1,339,343 in 1925, compared with £1,312,643 in 1924. Leading items in 1924 were—Handkerchiefs, £122,216 (United Kingdom, £98,196), lace and embroidery, £155,567 (Switzerland, £78,709), minor articles of attire (ties, collars, etc.), £160,240 (United Kingdom, £117,034), umbrellas, parasols, and sunshades, £34,224 (United Kingdom, £26,677).

**HATS AND CAPS.**—In the three varieties of felt, straw and other (mainly caps) hats, Great Britain is the principal source of supply. Imports during 1923 and 1924 were felt hats, £233,409 and £205,053, straw hats, £157,322 and £151,516, and other, £164,890 and £144,257 respectively.

In 1925 imports totalled £549,980.

**HIDES AND SKINS.**—Compared with 1923, exports of sheep-skins showed a decrease in quantity of 2,568,909 lb., but an increase in value of £264,227, the average price of 1s 3d per lb. marking an advance of 26.8 per cent. over 1923 prices. A considerable increase in the quantity and value of ox hides exported was noted in 1924—viz., 30,000 lb., value £972,723.

Ox-hides and sheep-skins both declined in 1925, the one to £911,733 and the other to £1,566,739.

**HOPS.**—Not sufficient hops are grown in South Africa to supply the needs of the breweries, and in 1925 imports were worth £25,324, as against £20,288 in 1924. The United States, United Kingdom, Czechoslovakia and Germany are the leading countries of supply.

**HOSIERY.**—Imports of socks and stockings in 1924 were valued at £760,591, the United Kingdom's share of the trade being £482,286. In 1925 the value was £740,139.

**IRON AND STEEL PRODUCTS.**—Imports of iron and steel (raw and manufactured) totalled approximately £6,000,000 in 1925, compared with £5,500,000 in 1924, the following being the principal items listed:

	1924 £	1925 £
Sheet (galvanised and corrugated)	643,695	660,673
Wire fencing	582,811	465,032
Wire, other	544,923	507,437
Pipes (wrought iron and steel)	472,707	438,522
Bar, bolt and rod	333,655	292,654
Plate and sheet	301,819	315,422
Mechanics' tools	154,218	200,905
Angle iron, etc	57,383	128,496
Pipes (cast iron)	94,622	140,459
Nails, screws and washers	157,839	150,392
Other manufactures	715,272	1,574,868

**JEWELLERY.**—(Quite one-half of the imports of jewellery come from the United Kingdom, that country's share of the 1923 and 1924 totals of £107,345 and £129,836 being £50,600 and £63,307 respectively. In 1924 Japan was second with £20,949.

**LEAD.**—Exports of bar lead declined from 84,981 cwtals, value £130,337, in 1924, to 33,886 cwtals, value £55,724, in 1925.

**LIVESTOCK.**—In 1924 there were imported into the Union, 2 bulls, 22 cows and calves, 95 dogs, 81 horses, 1 pig, 297 ewes and lambs, and 449 rams, the total value of all livestock imported being £24,221. Livestock imports in 1925 totalled £49,000 in value.

Exports of livestock in 1924, valued in all at £23,411, included 26 bulls, 110 cows and calves, 2,030 goats, 93 horses, 479 mules, 7,324 head of poultry, and 158 sheep. Most of these went to Portuguese East Africa or to the Belgian Congo. The value of all livestock exported in 1925 was £41,545.

**MACHINERY.**—The value of all machinery (including domestic machines and typewriters) imported in 1924 amounted to £1,967,028, compared with £3,349,617 in 1923. The leading items in this total in 1924 were as follows (1923 figures in brackets): Mining machinery, £901,777 (£734,441); electrical machinery and parts, £1,078,114 (£668,958); ploughs and harrows, £550,997 (£312,901); miscellaneous machinery and parts, £459,087 (£202,314); miscellaneous agricultural implements, £240,995 (£297,741); electric motors, £160,567 (£225,179); sugar milling machinery, £180,683; printing and bookbinding machinery, £158,768 (£70,021).

In 1925, imports of all machinery amounted to £5,483,097 in value.

**AGRICULTURAL.**—Imports of agricultural implements into South Africa in 1924 amounted to £1,047,693, and exceeded by nearly 50 per cent those of 1923, which totalled £708,999. Although the imports in 1924 were unusually high, purchases were estimated to be even larger in 1925. The United States has regained its position of supremacy in this market, and in 1924 supplied nearly 50 per cent of the implements imported, the amount furnished being slightly more than double that imported from the United Kingdom. In 1922 the largest proportion of machinery came from Great Britain, and in 1923 the United States led by only a small margin. Imports of implements from the United States in 1924 were valued at £500,978, and those from the United Kingdom at £250,227. Comparing 1924 with 1923, American machinery registered an increase of £210,500, as against the small British gain of £26,365. Germany ranked third, and supplied machinery valued at £129,994, an increase over the value of £96,916 for 1923. Canada was fourth in 1924, supplying machinery valued at £126,170—an increase of more than 100 per cent. over the value in 1923.

Imports for 1925 were valued at £1,313,353.

**Binders, etc.** Imports of binders, reapers, and mowers totalled £92,159 in 1924, as against £28,459 in 1923, the United States furnishing the bulk, with values of £64,207 in 1924 and £20,782 in 1923.

**Dairy Utensils.**—The value of imported dairy utensils in 1924 was £45,065, of which cream separators were responsible for £26,516. Of this latter amount, £15,224 was credited to Sweden and £6,281 to Germany.

**Ploughs and Harrows.** Imports reached a total of £312,961 in 1923 and £550,997 in 1924. In the latter year the United States led with £262,869, the United Kingdom coming next with £104,997, and Canada following with £101,526.

**Threshing Machines.**—In 1924, out of a total value of £28,428, the United Kingdom supplied £20,973.

**Tractors.** During the year 1924, 167 tractors, valued at £31,602, were imported, of which 156 (valued at £26,910) were received from the United States. The revival of the tractor trade is due largely to the increase in cotton planting, the bulk of the business being done in Natal, Zululand, and the cotton-growing sections of the Transvaal.

**Electrical.**—In 1924 imports of all kinds of electrical machinery (other than Government stores) were valued at £1,078,114, as against £668,058. While imports of electric motors declined from £225,179 to £160,567, those of miscellaneous equipment rose from £168,958 to £554,016.

The figures of value for all electrical machinery for 1925 were £1,175,960.

**MINING.**—Mining machinery to a value of £991,777 was brought into the Union in 1924, compared with £826,472 in 1923. Included in the 1924 total were General mining machinery, £852,275; buckets and tip-trucks, £97,140; battery shoes and dies, £14,136; and tanks and vats, £6,092. Great Britain's share of this business (£486,640) was the largest, the United States following with £414,080.

In 1925, imports of mining machinery were valued at £899,918.

**PRINTING AND BOOKBINDING.**—The printing industry is exceeded by only three others in the Union, and competition in printing machinery and accessories is keen among British, American and German firms. Composing machines are chiefly of American manufacture, though a number of German machines have recently been sold. In the printing press trade British firms lead, as also in the offset machines. The following table shows the amount of printing and bookbinding machinery imported into the Union during the years named—

COUNTRY OF ORIGIN	1923 £	1924 £
United Kingdom	37,465	74,406
United States	27,807	59,119
Germany	3,102	21,502
Other Countries	1,647	3,741
Totals	70,021	158,768

**SUGAR MILLING.**—For this class of industrial machinery Great Britain is the leading source of supply, imports thence in 1924 amounting to £161,240, out of a total of £180,263.

**MAIZE.**—The most noteworthy feature of the Union's export trade in 1924 was the huge decline in maize exports, due to a prolonged drought in the early part of 1924 and to successive locust invasions. In 1923 exports totalled 1,128,314,250 lb, value £3,084,334, but in 1924 only 143,896,566 lb, value £492,001. In consequence of this serious decrease in production, shipments to all countries of destination were reduced, Great Britain taking only a value of £320,127,

compared with £1,801,716 in 1923. Australia, £22,257 (£462,523); Holland, £53,019 (£348,380); Germany, £44,278 (£132,961); and Belgium, £6,302 (£131,537).

There was a welcome reversal of these conditions in 1925, when the maize crop attained a record of 25,000,000 bags or 500,000,000 lbs. and exports jumped from the £492,001 just quoted to £5,069,405. No less than 11,000,000 bags were exported to the United Kingdom and the Continent (See "Agriculture").

**MATCHES.** Swedish wooden matches are largely imported, their value in 1924 being £3,258, out of a total of £3,620.

Imports in 1925 were valued at £3,691.

**MEAT (FRESH AND FROZEN.)**—There was an increase of £89,391 in the value of fresh and frozen meats exported from the Union in 1924, the total value of exports for that year being £100,309, as against £10,918 in 1923. A notable feature of the trade was the substantial increase in the exports of beef to Italy, which rose from 78,989 lb, value £436, in 1923, to 8,239,133 lb, value £92,057 in 1924.

There was a further substantial increase in the value of all exports under this head to £205,348 in 1925.

**MEDICINES, PATENT.**—See "Drugs and Chemicals."

**MOHAIR.**—Although there was a decrease of 1,321,726 lb in the quantity of mohair exported in 1924 (13,666,125 lb as against 14,997,851 lb in 1923), the value increased by £194,129 (£1,142,012 as against £947,883). In 1924 the United Kingdom took 12,240,277 lb valued at £990,504, and the United States 1,390,739 lb valued at £150,090. Exports further declined in 1925 to a value of £836,328.

**MOTOR CARS.**—A noteworthy feature of South African trade in both 1923 and 1924 was the increased imports of motor vehicles of all kinds. Motor cars, which in 1923 numbered 10,151, valued at £1,721,183, rose to 13,476 in 1924, valued at £2,469,087, the shares of the leading supplying countries in the latter year being: United States, £1,480,987; Canada, £691,266; United Kingdom, £195,795; Italy, £50,898; and France, £36,060. Chassis to the value of £2,695 were imported in 1924, as against £9,188 in 1923. Parts and accessories increased in value from £213,530 to £268,768.

In 1925 18,396 motor cars, value £3,131,964, were imported, and parts and chassis worth £401,276.

**MOTOR-CYCLES.**—Imports of motor cycles were 2,170, value £120,267, in 1923 and 3,246, value £167,927, in 1924, the United Kingdom supplying goods to the extent of £119,674 out of the latter total. In 1925 the number of cycles imported was 5,996 and the value, £262,422.

**MOTOR TRUCKS AND VANS (LORRIES).**

—In this branch Canada leads, her exports to the Union totalling 757 in 1924 valued at £65,483, out of a total of £185,911, which compared with £120,267 in 1923.

The number of power lorries imported in 1925 was 519, valued at £105,134, and of parts and chassis, 1,064, valued at £227,452.

**OILS (MINERAL).**—Imports of all mineral oils increased in value from £1,777,273 in 1923 to £2,179,937 in 1924, lubricating oils rising from £327,515 to £410,682, illuminating and burning oils from £340,466 to £490,402, and motor spirits (petrol and gasoline) from £1,081,170 to £1,199,457. Of the last named, imports from the United States increased during the two years under review from £523,194 to £779,872, while those from



Netherlands Indies declined from £555,765 to £419,245.

Imports of all mineral oils during 1925 were valued at £2,184,223.

**OSTRICH FEATHERS.** There was a further drop in the quantity and value of ostrich feather exports in 1925, the value for that year being £203,470, as against £353,162 in 1924.

The following table shows the destination of exports in 1924—

DESTINATION	QUANTITY Lb	VALUE, £
United Kingdom	279,353	252,439
United States	73,248	80,159
Australia	16,323	6,577
France	6,652	5,322
Kenya	5,397	5,242
Germany	2,547	3,108
New Zealand	464	242
Japan	19	74
	384,003	353,162

(See "Stockraising.")

**PAINTS.** The United Kingdom outdistances all competition in the supply of paints and varnishes to the Union, total imports of which were valued at £351,662 in 1925, as against £332,105 in 1924.

**PETROLEUM.** See "Oils (Mineral)." "

**PLOUGHS AND HARROWS.**—See "Machinery."

**RAILWAY MATERIAL.**—The value of railway material imported in 1924 increased by £92,478 over the 1923 figures, the following table showing the imports in detail for the two years:—

	1923 £	1924 £
Light rails	59,749	92,063
Heavy rails	13,139	38,333
Sleepers	9,708	14,031
Locomotives	39,609	31,373
Rolling stock	15,859	26,964
All other	36,094	63,872
Totals	174,158	266,636

Of the total of £92,063 in 1924 for light rails, it is noticeable that £44,879 was credited to Germany, against £19,530 to France and £14,813 to Great Britain. Germany also led in the supply of heavy rails (£17,808), iron sleepers (£5,721) and rolling stock (£14,682), while the United Kingdom held first place in locomotives (£23,130) and other material (£20,256).

Imports in 1925 declined to £236,045.

**RICE.**—Imports of rice increased in quantity from 75,919,072 lb (£501,784) in 1924 to 81,676,046 lb (£560,278) in 1925. In the former year India, supplied 57,435,980 lb, Cochin China, 8,605,118 lb, and Siam, 4,216,922 lb.

**RUBBER GOODS.**—The Union is one of the most important markets for rubber goods of almost every class, but especially for tyres, mechanical rubber articles, and rubber footwear. Possessing only the nucleus of a rubber industry—there is but one rubber manufacturing company there—the trade is still very largely supplied through imports, although the local industry is offering competition in the trade in rubber hose, belting, packing, and mechanical goods generally. Rubber manufactures are imported chiefly from the United Kingdom, Canada and the United States in the order named, although European firms also offer strong competition in the tyre trade and participate on a small scale in the trade in other lines. The United States is gradually losing in percentage of total South African trade in rubber goods, but is doing an increasing business in rubber sundries and specialties.

For latest statistics see "APPENDIX."

Statistics of the major classes of rubber products imported into the Union show that the trade in 1924 was heavier than in 1923 for rubber tyres and rubber footwear, but slightly lighter for mechanical rubber goods, proofed goods and clothing, the total value of imports increasing 6 per cent to £808,791 from £740,255. The value of the principal classes in 1923 and 1924, respectively, was as follows: Rubber tyres and tubes, £428,186 and £504,524; mechanical rubber goods (approximate total value of imports of rubber belting, hose, and packing—definite statistics not available), £155,342 and £135,379; rubber footwear, £68,837 and £84,935; waterproof piece goods and clothing, £19,604 and £45,861; other rubber manufactures, £38,286 and £38,092.

Imports of raw and manufactured rubber during 1925 were valued at £850,105, of which £675,728 represented tyres and tubes.

**SACKS.** See "Bags and Sacks."

**SEWING MACHINES.**—Great Britain supplied sewing machines to the value of £69,475 in 1924, as against £75,341 in 1923, out of totals of £83,209 and £82,863 respectively. Germany was her only competitor, the value of her exports being £6,783 in 1923 and £12,438 in 1924.

**SHIPS' STORES.** The value of all articles of merchandise shipped as stores at Union ports during 1925 was £2,349,512, as compared with £2,295,473 in 1924. The largest item in 1925 was bunker coal, £2,243,190.

**SILK PIECE GOODS.**—Imports of silk piece goods totalled £922,841 in 1924, as against £774,447 in 1923, Japan being the chief country of origin in each year with £375,817 and £219,578 respectively. She was, however, closely followed by Great Britain, imports from which rose from £211,056 in 1923 to £228,807 in 1924. France increased her exports during the same period from £146,774 to £190,815, and Switzerland from £49,763 to £66,350. Imports from China declined from £24,737 to £16,420.

In 1925 the total value of all silk manufactures (not apparel) imported was £1,003,645.

**SILVER.**—Bar silver to the value of £166,768 was exported in 1925, compared with £176,661 in 1924. Practically all went to India.

**SKINS.**—See "Hides and Skins."

**SOAP.**—Imports of common, household and laundry soap, which amounted to 2,057,899 lb, value £32,329 in 1923, declined to 1,701,788 lb, value £25,991, in 1924. The leading source of supply was Australia, with 1,072,840 lb, value £14,092 in 1923 and 862,207 lb, value £11,170, in 1924. In each year Great Britain was a close competitor. In toilet soaps and preparations, the United Kingdom has established a strong lead, the United States being her only serious rival. Imports in 1924 were valued at £53,007, of which Britain's share was £29,028.

The value of all soaps imported in 1925 was £96,227.

**SPECIE.**—Imports of specie in 1924 totalled £79,264, of which £79,231 was in silver, exports totalled £75,228, of which £52,017 was gold and £23,065 silver. Of the specie imported, £66,306 went to Southern Rhodesia, of that imported, £71,655 came from the Nyassaland Protectorate.

In 1925 imports of specie aggregated only £8,718, while exports totalled £84,297,886, of which £77,424,686 went overseas.

**STEEL.**—See "Iron and Steel."

**SUGAR.**—There was a notable decrease in the amount of sugar exported by the Union in 1924, shipments shrinking from 64,365,793 lb, value £656,100, in 1923 to 18,655,619 lb, value £178,762, in 1924. Of the latter total, 17,869,414 lb went to the United Kingdom, the Belgian Congo, Portuguese East Africa, and Tanganyika being the chief remaining customers. Both the quantity and value of sugar imported into the Union decreased in 1924, the one from 5,943,568 lb to 1,073,517 lb, and the other from £93,147 to £18,451.

In 1925 there was a phenomenal rise in both the quantity and value of exports, the figures being 119,907,715 lbs, value £766,961. Imports also increased to 11,891,158 lbs, value £94,815. (See article "Agriculture.")

**TALLOW.**—Australia was the chief source of supply for animal tallow in 1924 and 1925, imports of this and vegetable tallow increasing in value from £125,452 to £128,163.

**TEA.**—Importations of tea have shown a progressive increase during recent years, being valued at £439,169 in 1921, £556,102 in 1922, £693,952 in 1923, £771,951 in 1924, and £788,758 in 1925.

Nearly two-thirds of the imports come from Ceylon, her share of the 1923 and 1924 totals being £423,040 and £405,586 respectively. India's share was £219,241 in 1923 and £227,816 in 1924.

**TEXTILES.**—These (including apparel, yarns and fibres) form the largest item in the Union's import trade, goods under this heading having a declared value in 1925 of £18,684,208, or 29.6 per cent of the total value of merchandise imported. This total compares with that of £17,206,004 for 1924, imports in 1925 having increased by £1,477,304. The principal items under this heading are shown in the following comparative table for the years named:

	1924 £	1925 £
Wearing apparel	6,201,112	5,058,343
Jute bags, etc.	1,877,503	802,706
Blankets and rugs	906,617	1,273,655
Cotton manufactures (not apparel)	4,557,717	4,450,204
Haberdashery, millinery, etc.	1,339,343	1,312,643
Silk manufactures (not apparel)	1,093,045	966,699
Woollen manufactures	1,036,641	933,247
Textile manufactures not otherwise specified	506,207	200,546
Yarns and fibres	132,401	111,778

**TIMBER.**—In 1924 the Union imported unmanufactured timber to the value of £1,299,210, pine (£926,000), teak (£111,580) and oak (£105,775) being the principal varieties. The United States supplied oak to the value of £83,395 and pine to that of £229,184, the largest supplies of the latter timber coming from Sweden and Finland, with £293,932 and £205,705 respectively.

In 1925, imports of unmanufactured timber were valued at £1,281,000. (See "Flora" and "Agriculture.")

**TOBACCO PRODUCTS.**—There was a welcome increase in the value of tobacco exports from the Union in 1925, the figure being £54,422, as against £46,898 in 1924.

Unmanufactured tobacco goes chiefly to the United Kingdom and Holland, cigars to Holland, and cigarettes to the Belgian Congo.

Imports of all kinds of tobacco rose to £80,975 in 1925, from £76,329 in 1924. (See also article on "Tobacco.")

**TRACTORS.**—See "Machinery" (Agricultural).



**TYPEWRITERS.**—In the typewriter trade the United States has always taken first place, her exports to the Union being valued at £33,558 in 1923 and £48,353 in 1924, out of totals of £43,801 and £56,170 respectively.

**TYRES AND TUBES (RUBBER).**—Imports of rubber tyres and tubes for motor cars and cycles increased in value from £428,186 in 1923 to £504,524 in 1924 the United Kingdom and the United States being the chief countries of supply. Imports from France showed an increase.

A further increase was noted during 1925, imports totalling £675,728 in value.

**WATCHES.**—See "Clocks and Watches."

**WATTLE BARK.**—See "Bark."

**WHALE OIL.** Exports of whale oil rose in quantity from 2,142,478 gallons in 1924 to 3,924,138 gallons in 1925 and increased in value from £264,742 to £471,110, the United Kingdom succeeding Holland as the principal destination.

**WHEAT.** The wheat grown in the Union is not nearly sufficient for the country's requirements, and 347,861,737 lb., value £1,548,912 were imported in 1924, as against 285,246,179 lb., value £1,292,842, in 1923. Although importations from Argentina dropped nearly 7,000,000 lb., this was more than counterbalanced by record consignments received from Canada, India and Australia, the latter leading with 236,621,214 lb. No

flour was imported from Argentina during the year, Australia being the chief source of supply with 67,188,376 lb., out of a total of 85,034,644 lb. Canada increased her supplies by nearly 2,000,000 lb.

During 1925 imports of wheat were valued at £1,640,962, and of flour £150,644. (See also article on "Agriculture.")

**WHISKY.**—See "Beverages."

**WINES.** Exports of wine diminished in 1924 by 221,000 gallons, their value being £58,000. Mauritius (in recent years the Union's principal market for this commodity) reducing her purchases by nearly £50,000. The prices obtained for light wines fell from 3s. to 2s. 6d. and for heavy wines from 3s. 2d. to 2s. 8d. per gallon in 1924 as compared with 1923, while in 1922 the prices were 3s. 5d. and 3s. 7d. respectively. Clarets and other light wines went mostly to the United Kingdom, ports to Australia, sherry to the United Kingdom and Straits Settlements, and other heavy wines to Mauritius.

Exports of all wines fell still further during 1925 to £23,931 in value.

**WOOL.**—Wool ranks next to gold in the value of the Union's exports. It rose from £12,388,186 in 1923 to £15,763,953 in 1924, and the quantity from 164,487,578 lb. to 174,595,153 lb. Higher prices were obtained both for wool in the grease and scoured wool, those realised during 1924 averaging 1s. 8½d. per lb. for grease and 3s. 7d. for scoured,

ed, an increase on the previous year's prices of 3½d. and 9½d. respectively. With the exception of the abnormal prices obtained in 1920, those of 1924 were the highest ever realised. The following table shows the principal destinations of the wool exports in the years named—

COUNTRY	1923	1924
	£	£
United Kingdom	5,501,317	8,160,033
Germany	2,000,222	2,483,609
France	1,672,042	1,824,922
Belgium	911,658	1,323,701
Holland	993,234	814,364
United States	984,815	530,649
Italy	207,378	498,430
Other Countries	108,490	110,239
	112,388,186	15,763,953

The quantity of greasy wool (meino) exported in 1925 was 220,668,000 lbs., as compared with 166,000,000 lbs. in the preceding year, an increase of 54,668,000 lbs. To this must be added a further 7,900,000 lbs. of scoured wool. The total value of all wool exports for 1925 was £15,095,440. (See "Stockraising.")

**WOOLLEN GOODS.**—Imports of woollen piece goods, yarns and other manufactures in 1924 reached a total value of £933,257, against £943,319 in 1923, the United Kingdom's share being £800,904 and £884,113 respectively.

In 1925, imports totalled £1,003,645.

## CUSTOMS TARIFF

**3**N terms of section 136 of the South Africa Act, 1909, there is free trade throughout the Union. The application of Customs control, therefore, affects only the trade of the Union with other countries, carried on in the main with countries overseas. For statistical purposes the Protectorates of Basutoland, Swaziland, and Bechuanaland are regarded as integral parts of the Union.

**CUSTOMS TARIFF.** Proposals for an amendment of the Tariff involving substantial changes were introduced into Parliament in 1926. The Tariff of 1925 contains 372 separate headings, and has maximum and minimum columns, the United Kingdom enjoying the minimum column rates in respect of the items given below.

ARTICLE	MAXIMUM RATE OF DUTY	REBATE ON U.K. GOODS
Cotton piece-goods, for which price of which does not exceed 1/4 per yard	15% ad val.	5% ad val.
Hosiery		
Lace, lace containing, flouncing and embroidery		
Motor cycles and side cars, including spare parts		
Cutlery, not plated		
Enamelled ware and hollow ware		
Electric lamp bulbs, radiator type		
Down pipe and guttering, and cisterns		
Electric cooking and heating apparatus	20% ad val.	5% ad val.
Buckets, skips, trucks and tubs, and rails therefor, and metal shaft sets		
Electric lamp bulbs, projector type		
Cocks and taps, meters and pipe fittings, gas		
Electric machinery implements	5% ad val.	Whole duty

	MAXIMUM RATE OF DUTY	REBATE ON U.K. GOODS
Tools (mechanics')		
Wire, excepting electric wire		
Mining machinery and implements		
Iron and steel manufactured and industrial such as plates, sheets, angles, bars, ingots, drill and tool steel	3% ad val.	Whole duty
Lamp bulbs, electric		
Motor and motor cycle headlights	10% per 100	Whole duty
Motor and motor cycle tail and dashlights	5% per 100	Whole duty
Fishlights	2 6 per 100	Whole duty
Carbon filaments	5% per 100	Whole duty
Vacuum type		
Not exceeding 60 watts	5% per 100	Whole duty
Exceeding 60 watts	10% per 100	Whole duty
Grs. filled type		
Not exceeding 100 watts	10% per 100	Whole duty
Exceeding 100 watts	15% per 100	Whole duty
Electric meters		
Less than 50 amperes	2/6 each	Whole duty
From 50 to 100 amperes	5/ each	Whole duty
Exceeding 100 amperes	10/ each	Whole duty
Wrought iron and steel pipes and tubes	1/ per 100 lbs	Whole duty
Cast iron pipes and tubes	8d. per 100 lbs	Whole duty
Newsprint	30/ per 2 cwt. lbs	Whole duty
Water meters, not exceeding 1 inch piping	1/ each	Whole duty
Fish, tinned	1½d. per lb	4d. per lb
Glass, polished plate	7d. per sq. foot	1d. per sq. foot
Glass, sheet, plain clear	7/ per 100sq. ft.	1/ per 100sq. ft.
White lead		
Dry	7/ per 100 lbs.	1/ per 100 lbs.
Ground in oil, in packages containing 50 lbs. or over	10/ per 100 lbs.	1/ per 100 lbs.
In packages containing under 50 lbs.	11/ per 100 lbs.	2/ per 100 lbs.

	MAXIMUM RATE OF DUTY	REBATE ON U.K. GOODS
Rubber tyres	1/ per lb	
Rubber tubes, other than motor cycle tubes	7½d. per lb	1½d. per lb
Rubber tubes for motor cycles and cycles	1/ per lb	2d. per lb
Rubber tyres, solid	3d. per lb	1d. per lb

The following are some of the more important items scheduled, with the maximum and minimum rates of duty—

**AGRICULTURAL AND PASTORAL PRODUCTS.**—Baking powder—4d. per lb., butter—2½d. and 2d. per lb., cheese—30 and 25 per cent ad val., confectionery—3½d. per lb. or 35 per cent ad val., pickles and sauces—2½d. and 2d. per lb., sugar—6s. per 100 lb., tea (in packets or tins not exceeding 10 lb. in weight)—6d. per lb., in larger packets or tins—4d. per lb.

**ALCS, WINES, AND BEVERAGES.**—Per imperial gallon: Ale, beer, cider and perry—2s. 9d., stout—2s. 3d., perfumed spirits—30s., wines—8s. and 4s., sparkling wines 12s. 6d.

**BOOKS, LTC.**—Cards (playing)—9d. per pack and 20 per cent ad val., inks and ink powders—30 per cent ad val., account books, diaries, stationery and forms in books, pads, or loose—40 per cent ad val. or 6d. per lb., catalogues and price lists of Union firms printed abroad—40 per cent ad val. or 6d. per lb.

**DRUGS AND CHEMICALS.** Ammonia (in bulk)—3 per cent ad val., disinfectants—5 per cent ad val., drugs and apothecary ware—20 per cent ad val., medicines—25 per cent ad val., perfumery and toilet preparations—40 per cent ad val.

**JEWELLERY, ETC.** Clocks and watches—25 per cent ad val., gold and silver plate and ware—30 per cent ad val.,

jewellery—30 per cent ad val, sporting and athletic goods—20 per cent ad val

**LEATHER AND RUBBER** — Boots and shoes—30 per cent ad val, (infants' shoes—12 per cent), rubber hose—2½d and 1½d per lb, leather manufactures—25 per cent ad val, rubber tyres—15 and 10d per lb, tubes for motor vehicles other than motor cycles—7½d and 6d per lb, tubes for motor cycles and cycles—15 and 10d per lb.

**METALS, MACHINERY, ETC** —Bolts, nuts, rivets, screws, nails, and washers—3 per cent ad val and free, cash registers and machines—20 and 15 per cent ad val, cutlery—20 and 15 per cent ad val, enamel ware—20 and 15 per cent ad val, guns and rifles single, 20s, double, 15s per barrel, revolvers—5s, electric hand lamps and torches—20 per cent ad val, electrical machinery and apparatus—5 per cent ad val and free, iron and steel (ingots, pigs, plates, sheet, bar, rods, etc.)—3 per cent ad val and free, mining machinery—3 per cent ad val and free, motor cars—not exceeding £400 in value, 20 per cent ad val, over £400 and not exceeding £600, 22 per cent ad val, chassis—10 per cent ad val, spare parts and accessories—20 per cent ad val, motor trucks and vans—20 per cent ad val, sewing and knitting machines—15 per cent ad val, typewriters—20 and 15 per cent ad val, wireless telegraphy instruments and apparatus—3 per cent ad val and free

**MINERALS, ETC** —Bricks (except bath)—25 and 20 per cent ad val, cement—1s 3d and 1s per 400 lb, coal and patent fuel—3s per ton, glass ware—20 per cent ad val, lamp chimneys—25 and 20 per cent ad val, pipes (earthenware)—5 per cent ad val

**OILS, PAINTS, ETC** —Candles—4s 2d per 100 lb, motor spirit—3d per imp gall, oils (essential)—25 per cent ad val, oils (lubricating)—3d per imp gall in bulk, 15 per cent ad val not in bulk, oils (illuminating)—1d per imp gall, paints and colours—25 per cent ad val, polishes—20 per cent ad val, varnishes—2s 6d and 2s per imp gall

**TEXTILES, ETC** — Blankets, rugs, and sheets commonly known as Kaffir sheets—1s to 2s 6d per lb, or 25 per cent ad val, clothing (bespoke)—30 per cent ad val; clothing (ready made)—15 per cent ad val, furs—25 per cent ad val, gloves—15 and 10 per cent ad val, hats and caps—20 and 15 per cent ad val, hosiery—15 and 10 per cent ad val, piece goods (cotton)—15 and 10 per cent ad val, shirts, collars, and pyjamas—25 per cent ad val, threads, yarns, cottons, and silks—10 per cent ad val

**TOBACCO, ETC** — Cigars—8s 6d per lb plus 15 per cent ad val, cigarettes—6s per lb plus 15 per cent ad val, tobacco (manufactured)—5s per lb, tobacco (unmanufactured)—3s 6d per lb

**VARIOUS** —Cartridges—15 per cent ad val plus 6s per lb on gunpowder therein, cinematograph films—2s 6d per 100 ft. or 30 per cent ad val, matches (wooden) 2s 6d and 1s 9d per gross of boxes containing not more than 100, and 5s and 2s 6d per gross of boxes containing from 100 to 200, photographic apparatus and material—20 per cent ad val

**DECLARATION OF VALUE.**—For imported goods subject to an ad valorem duty, the value is the selling price for home consumption in the open market of similar articles in the principal markets of the country from which, and at the time at which, the goods were exported, plus the cost of packages, packing, and carriage to

port of shipment. For goods subject to a rated duty, or free of duty, the f.o.b. (free on board) values are given

**EXPORTS.**—For exports, the value of South African produce is that current at the time and place of shipment plus the cost of packages and packing. For re-exports from open stocks, the f.o.b. price is given, and in the case of exports from bond the value recorded is that at which the goods were originally warehoused

**EXCISE DUTIES.**—The following excise duties are imposed on spirits, beer, cigarettes, tobacco, etc. —

Wine brandy, per gallon, 12s 6d  
Grape brandy, per gallon, 17s 6d  
Dop brandy and spirits, per gallon, 22s 6d  
Beer per imp gallon 15s and 30s according to gravity  
Cigarettes manufactured in Union 3d per half ounce  
Cigarettes imported into the Union—3d per half ounce, in addition to the duty payable under the Customs Laws  
Tobacco (pipe) per lb 3½d  
Tobacco for cigarettes per lb 6d  
Tobacco in roll tobacco per lb 2d

There is a duty on Union sugar of 1s per lb, on matches of 1s per gross boxes, of not more than 100 matches, and on playing-cards of 3d per pack

**EXPORTATION OF GOODS.**—The exportation or carriage coastwise of arms, ammunition, military and naval stores, or goods capable of conversion into such stores, may be prohibited. Entry outwards has to be furnished in respect of every ship bound from the Union, delivery being made to the officer of Customs of a content of goods loaded in such ship with other particulars. Exporters are required to deliver a bill of entry, and export duty (if any) must be paid

Special provisions are made in respect of coasting trade between Union ports.

**FREE LIST.**—The list of imports admitted into the Union free of all duty includes the following:—Agricultural and industrial machinery, airships and aeroplanes, alum, aluminium, ambulance materials, asphalt and bitumen, bags and bagging for flour, gram, etc., battery shoes and dies, borax, brass, copper, and composition metal, cardboard, linoleum and millboard, chloride of platinum, copra, dairy utensils and machinery (other than milk cans and buckets), diamonds and other precious stones (rough), engravings and photographs, fencing material, fertilisers, films of an educational or scientific nature, glycerine, ice, laboratory glass and apparatus, lead, sheet and foil, materials for industrial purposes, nitrates (except nitrate of ammonia), oils, tar, and creosote in bulk, paintings and etchings, photographs, public stores, rope and cordage for drilling and boring purposes, school and hospital furniture and necessaries, surgical and dental instruments and appliances, sulphur, tallow, tar and pitch, zinc

Passengers' luggage, worn clothing, and personal jewellery enter free on the understanding that they are for the personal use of travellers. Unworn clothing, although the property of the traveller, is dutiable.

**PREFERENCE.**—Rebates of duty in favour of British manufactured goods were a feature of several Customs Union Conventions prior to the Union, and have since been continued in favour of the United Kingdom and those British Dominions which have afforded reciprocal treatment, viz., Canada, Australia, and New Zealand.

The British Parliament adopted the principle of Imperial Preference in 1919, a remission of one-sixth of the duty being granted on certain South African (and other Dominion and Colonial) products, and a rebate on alcoholic liquors. Further preferential treatment of Dominion products, proposed by the Imperial Conference of 1924, was refused by the British Government of the day, to the great disappointment of the Dominions, but was endorsed in 1925 by the Conservative Government which had returned to power

The new Customs Tariff, passed in 1925, was, from the point of view of Imperial Preference, a retrograde one, for while, under the old tariff, British manufacturers received a rebate of 3 per cent on practically all classes of goods, that flat rate has been withdrawn, and is replaced by a double column schedule of maximum and minimum rates, on only a few of which preference at the minimum rates has been granted to Great Britain. (For details see preceding paragraph "Customs Tariff")

**MOST FAVOURED NATION CLAUSE** — When the 1925 Tariff Bill was first drafted, it was declared to be the intention of the Union Government to reserve to itself the right to make Most Favoured Nation Treaties with any Foreign Power, quite irrespective of whether equal rights were afforded to the Mother Country. Under pressure this policy was considerably modified, and the Bill as finally passed enacted that Great Britain will in any circumstances retain Most Favoured Nation rights, and that she and the self-governing Dominions will be consulted as to any future treaty agreements made between South Africa and other countries

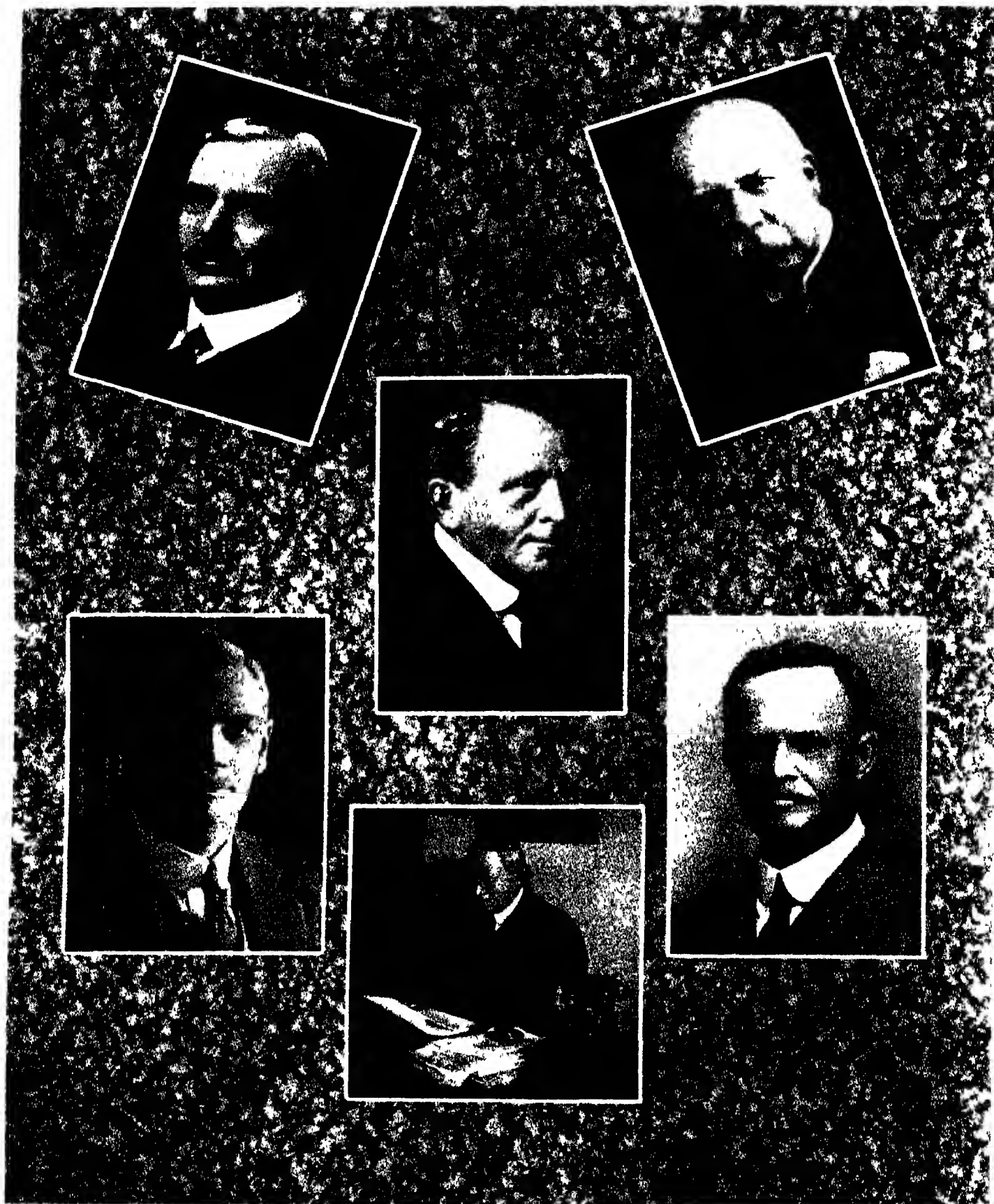
**PROHIBITED IMPORTS.** The usual prohibitions as to the importation of objectionable books, prints, and photographs, counterfeit coins, etc., apply to the Union. In addition, the following are prohibited:—(a) Goods which, being of foreign manufacture, bear the name, mark, or brands of manufacturers resident in the United Kingdom or any British possession, or which, being of foreign manufacture or not, bear marks contravening the provisions of any law in force in the Union relating to merchandise marks, (d) prison-made and penitentiary goods, (c) books or music which infringe copyright law, (d) second hand boots and shoes, (e) carbide of calcium which, when treated with water, yields less than 250 litres of gas from one kilogram, the gas being measured at 15°C under a pressure of 760 millimetres of mercury

As from November 17, 1925, the importation of cattle, sheep, goats, and pigs from the United Kingdom was prohibited

**REFUNDS.**—A refund of the duty originally paid is made on firearms, motor cars, etc., imported by bona-fide tourists for their use, convenience or comfort while in the Union, under the conditions that: (a) the goods or articles must be re-exported within a period of six months from the date of importation, (b) due notice must be given to the Collector of Customs at the port of shipment of the intention to re-export the articles on which a refund of duty will be claimed, and at the same time the owner must produce proof of the original payment of duty, (c) a certificate must be produced from a proper Officer of Customs that the goods referred to therein have been duly shipped.

**REVENUE.**—The revenue from Customs and Excise in 1923-24 amounted to £8,616,595, as against £7,544,967 in 1922-23.





**REPRESENTATIVE BUSINESS MEN IN SOUTH AFRICAN COMMERCE AND INDUSTRY.**

1. **WALTER GREENACRE, O.B.E., J.P.**  
(Chairman of Messrs Harvey, Greenacre  
and Co., Ltd., Durban)

2. **J. H. CROSBY** (General Manager of  
Johannesburg Consolidated Investment  
Co., Ltd.).

3. **ROBERT NIVEN** (Senior Partner of  
Messrs. J. & R. Niven, Ltd., Johannes-  
burg).

4. **F. G. CONNOCK** (President of South  
African Motor Traders' Association).

5. **E. ROWE** (President of Association of  
Chambers of Commerce of S.A. 1925-  
26; President of Capetown Chamber of  
Commerce, 1921-24)

6. **G. H. NORTH** (Managing Partner of  
Messrs. G. North & Son, Ltd.).







# INDUSTRIES

## GENERAL DATA

**W**HAT may be called the home industries of South Africa, as distinct from the primary industries (mineral, agricultural and pastoral) of the country have made a notable advance during the last few years. This is due in no small measure to the Union Government's definite and decisive policy of protection, the recent revision of the Customs Tariff having given many local industries substantial encouragement. There is a growing feeling that the development of manufacturing industries is especially essential to provide employment for that portion of the Union's increasing population which cannot be maintained in agriculture. The fact that during eight years (that is between 1916 and 1924) the number of factories in the Union increased from 3,098 to 7,029 provides conclusive evidence of the steady expansion of the Union's industrial activity.

### BOARD OF TRADE AND INDUSTRIES.

The Board of Trade and Industries, which was constituted in 1925, consists of a chairman and not more than three other members appointed by the Government of the Union for three years. The functions of the Board, which in many respects equal and almost surpass those of Parliament, are defined as follows: Subject to the direction of the Minister, the Board shall enquire into and advise the Government on all matters concerning the economic development of the natural resources of the Union and its industries and trade, and, in particular, on (a) the payment of bounties or other forms of state-aided industries, (b) the fiscal policy in so far as it bears on commerce and industry, (c) the recasting and revision of the Customs Tariff, (d) the adjustment from time to time of anomalies in the Customs and Excise Tariffs, (e) complaints or recommendations concerning the working of the Customs and Excise Tariffs, (f) combinations, trusts, monopolies, and restraints of trade tending to affect public interests injuriously, especially by restricting production or maintaining or raising prices, (g) dumping of imported goods whereby the Union's interests are likely to be unfavourably affected, (h) the supply of raw materials, labour, and technical knowledge for industry and the encouragement of the investment of capital in industry, (i) transport and markets for the requisites and products of industries, (j) the relation between factory, wholesale, and retail prices, (k) commercial legislation, and (l) such other matters as the Minister may refer to it.

**DEVELOPMENT OF INDUSTRIAL PRODUCTION.**—The following table shows the gross value of the factory production of the various classes of industry for the years 1922-23 and 1923-24, the figures for the last named year being preliminary (For the year 1921-22 the total was £40,342,039) —

CLASS OF INDUSTRY	1922-23 £	1923-24 £
Raw material ..	1,514,583	1,211,000
Stone, clay, etc ..	2,303,275	2,624,000
Wood ..	1,865,778	1,908,000
Metal, engineering, etc	13,238,061	13,054,000

CLASS OF INDUSTRY	1922-23 £	1923-24 £
Food, drink, etc	23,839,179	25,960,000
Clothing, textiles, etc	2,817,980	2,915,000
Books, printing, etc	3,820,714	3,880,000
Vehicles, etc	1,513,044	1,708,000
Shipbuilding, etc	52,647	48,000
Furniture, etc	1,386,320	1,550,000
Chemicals, etc	5,524,316	5,587,000
Surgical instruments, Jewellery, etc	154,742	154,000
Heat, light, and power	5,463,583	5,807,000
Leather and leather-wares	2,546,154	2,877,000
Building and contracting	7,801,126	9,857,000
Other industries	524,790	515,000
Total	174,486,292	179,664,000

During 1923-24 the greatest increases shown were in the classes of building and construction works and of food and drink — in both cases over £2,000,000. In the former class, building and contracting increased by £1,500,000, waterworks and railway construction by over a million and a half, while the construction of gram

## PRODUCTS

elevators decreased by £170,000. In the food and drink class the increase was chiefly due to the greater output of the sugar mills and tanneries, amounting to over £1,700,000; grain mills, £400,000; jam factories, £150,000; butter and cheese factories, £120,000, and there were smaller increases in aerated waters, bakeries and coffee roasting factories. Decreases occurred in the output of breweries, £140,000; tobacco, £80,000, and crayfish canning of nearly £140,000.

The output of bricks and tiles in 1923-24 constituted a record for the Union, as did the number of electric units sold or used by the electric light and power plants, and the quantity of boots and shoes produced. The production of the cement factories increased by a quarter of a million, and of the tanneries by over 1140,000, the quantity of leather produced by the latter being the largest on record. There was increased activity in cycle and motor repair work, and also, although in a less degree, in coach and wagon building. In the latter class a considerable increase was noticeable in furniture making.

**EMPLOYMENT.** Generally speaking, labour may be divided into three broad



WATTLE INDUSTRY, SHOWING BARK STRIPPING OPERATIONS.



classes—skilled, semi-skilled, and unskilled—but there is probably no other country where the workpeople are also so clearly divided as in South Africa. Skilled work in the Transvaal and Orange Free State is almost entirely in the hands of Europeans, semi-skilled work is principally done by coloured or native workers, and heavy unskilled work is almost exclusively performed by native labour. In Cape Province and Natal, on the contrary, a considerable portion of the skilled work is done by coloured people. In these Provinces no colour bar exists, and some of the trade unions catering for highly skilled craftsmen, such as the Amalgamated Engineers' Union, freely admit coloured workers to membership. Although in the Transvaal and Orange Free State practically all the skilled, and a large portion of the semi-skilled, work is performed by Europeans, there are a few occupations where coloured men and women, or even natives, do the work. The lower average efficiency of coloured or native workers is more than compensated for by the greatly reduced wage at which these workers can be employed. On skilled or semi-skilled work of a mechanical nature the efficiency of the coloured and native workers is very little indeed behind the European, and, on the whole, they make very excellent workmen.

The last industrial census taken in the Union showed the total number of factory employees to be 172,047, of which 110,751 were coloured and native and 61,296 Europeans. Non-European labour formed 61 per cent of the total in Cape Province, 71 per cent in Natal, 62 per cent in the Transvaal, and 57 per cent in the Orange Free State. In the same year the wages paid to Europeans in the factories of the Union amounted to £13,903,904, and to

natives and coloured £5,282,430, a total of £19,186,334, the European's average wage being £248 and the native's £48.

**NEW FACTORIES.**—Throughout South Africa there are signs of increased industrial activities and expansion. These are exemplified, not only by new factories and extensions to and rebuilding of old ones, but by the number of inquiries which have been made from overseas regarding the establishment of factories in the country. The latest available statistics show that during 1923 203 new factories were established in the Union. The labour returns of 241 factories which benefited through the tariff show an increase since July of the year just named.

THE UNITED TOBACCO COMPANIES (SOUTH) LTD.  
1, 2, 3. Diverse Aspects of the Fine Modern Factory Buildings at Capetown.  
(See *letterpress*, page 211.)

## PRODUCTS

**BOOTS AND SHOES.**—This industry shows a definitely expanding tendency, having been assisted by the heavier duty placed on imported footwear. Factories throughout the Union number over 140, and the yearly value of output, which in 1915 was only £500,000, is now considerably over £1,500,000.

**BRICKS, TILES, ETC.**—The Union's ceramic industry has expanded rapidly during the last five years, and this applies also to the cement industry. The attempts to build up a glass industry have, however, only met with small success. At present excellent bricks are made in Maritzburg

and Durban, in Pretoria and other Transvaal centres, at Heidelberg and Kimberley in Cape Province, and at Bloemfontein in the Free State. In some cases continuous kilns and up-to-date machinery are in operation. The manufacture of roofing tiles has made great strides during recent years owing to the abnormal price of corrugated iron. Tiles have become the chief roofing material in most South African inland towns, and South African tiles are equal in every respect to the best grades made in Europe. Of the fireclay and firebricks industry the chief centres are Durban, Vereeniging, Oifantsfontein, and Boksburg, all within 50 miles of Johannesburg.

At Durban the well-known Umbilo Brick and Tile Works of H. J. Stranack and

Company, which has a capital of £25,000, occupy 30 acres of land on the Umbilo River, in the centre of the city's industrial area, and turn out firebricks, drampipes, and building bricks of excellent quality. On the ground owned by the company there is said to be an almost inexhaustible supply of firebrick clay of first class quality. Silica bricks of good class are made at Vereeniging.

**CANNED GOODS.**—South Africa is a large exporter of fruits, both fresh and dried, canned fruits are not widely eaten by the people of the Union, who prefer fresh fruit and vegetables, which are quite easily obtainable. Canneries for fruit for export have been established at or on the coast, partly on account of the better supply

of suitable labour and also by reason of proximity to the fruit districts. The article produced is uniformly good, and has improved considerably during the last few years. The chief centres of the industry are Durban, Port Elizabeth and Capetown, with the Paarl and Worcester Districts of Cape Province. The output of all jam factories and fruit preserving works increased in value from £1,338,000 in 1922-23 to £1,488,000 in 1923-24. (See article "Fruit Industry.")

**CLOTHING.** This industry, so far as manufactured clothing is concerned, was severely hit by the post-war slump, and in 1924 had hardly recovered, though signs of distinct improvement were noted in 1925. The last Industrial Census for 1923-24 showed that under the heading of clothing, textiles, etc., the gross output amounted to £2,915,000, compared with £2,848,000 for the preceding year, an increase of £67,000 or 2.35 per cent.

#### COACH AND WAGON BUILDING.

This is an old established industry in South Africa, which has received an impetus since the War from the growing popularity of motor transport. The number of factories has risen to 350 from 200 in 1915, and the value of the annual output from £600,000 to £750,000 during the same time.

**ELECTRICAL EQUIPMENT.**—The increased application of electrical power is essentially a modern development, and in South Africa its importance has been given timely recognition by the passage of the Electricity Supply Act. In accordance with the terms of this Act, a permanent institution called the Electricity Supply Commission has been formed which as an independent body organises and controls the generation and distribution of electrical power throughout the Union. The policy of the commission is based on the develop-



ment of super-power schemes in Germany and the United States. By the application of similar schemes of centralised generation of power in South Africa a very high standard of industrial efficiency will be realised.

In view of the electrification of a large part of the Natal railways and of the Capetown-Simonstown line, as well as of the extension of telephone communications all over the Union, the importance of the manufacture of electrical equipment is obvious. There are at present mines in the country producing and exporting copper, though imports of copper total annually

**ENGINEERING.**—The production of steel is the key to nearly every other department of industrial activity in South Africa. Until recently local engineering firms have been seriously handicapped by the shortage and high cost of their raw material—pig iron. In spite of this, engineering activities have made big advances since the War and there has been a gratifying growth in the interest shown and help given by the Union Government, particularly in the throwing open to South African firms of the supply of Government stores. In 1924 it was estimated that the South African engineering

£6,000,000, while, adding over £7,000,000, the process of manufacture, to the value of those materials, the gross value of its output amounted to appreciably more than £13,000,000.

The amalgamation of the Union Steel Corporation and the Newcastle Iron Works in 1925 has greatly assisted and accelerated the development of the iron and steel industry by increasing the production of pig iron to an adequate point, while the contemplated extension of the Vereeniging Iron Works and the latest improvements in the plant and machinery of the Dunsward Iron and Steel Company are also factors of importance in the progress of the industry.

Another development of the local iron and steel industry is the establishment of a nut and bolt factory in Johannesburg which has an initial output capacity of 12 tons in an eight-hour day. Production started in 1926, and orders from the mines and railways already ensure constant work. South African steel is exclusively used. The Union Steel Corporation's chairman is also a director of this concern. Another associated enterprise is a wire mill which is now in course of erection at Vereeniging, near the Union Steel works.

**FISHERIES.**—See article following.

#### LEATHER AND LEATHERWARE.

There was an increase of £331,000 in the value of the gross output of the leather and leatherware industry of the Union in 1923-24, the amount being £2,877,000, as against £2,546,000 in 1922-23, the value of the materials used also rising from £1,412,000 to £1,680,000. The boot and shoe and tanning industries developed considerably during the War, and that development has continued, as has also the manufacture of bags and trunks. There is still considerable room for expansion in all these industries, particularly in the manufacture of light leathers which has not kept pace with the demand caused by the expansion of the footwear industry.

**MAIZE PRODUCTS.**—Economically, maize is the most important crop grown in the Union. Its by-products are many, and there are markets for all of them. Those that are being exported (for instance, starch) are sold in competition with overseas products, and there is no reason why, with the large quantity of raw material available, the by-products of maize should not be manufactured more extensively in South Africa. At present, starch for all uses and of the best grades is produced principally at Germiston, and oil press-cake, which makes a valuable cattle food, is being prepared to a large extent.

**SOAP AND CANDLES.**—The number of soap and candle factories in the Union at the last industrial census was 26, employing 1,993 hands, and returning a total annual output of the value of £1,927,000.

**TANNERIES.**—Most of the chemicals required for the tanning of leather are available in South Africa, though some are entirely imported products. Vegetable tan is available in the form of wattle bark or wattle extract, one of the Union's most valuable products. Mineral tans are all imported; there were, at the last industrial census, 24 tanneries in the Union, having a yearly output valued at about £750,000.

**TEXTILES.**—The textile industry in South Africa is capable of being developed to a great extent and must in time prove of importance to the country, since the annual wool clip is in the neighbourhood of 125,000,000 lbs., and cotton-growing is



THE UNITED TOBACCO COMPANIES (SOUTH) LTD., Capetown.  
Motor Transport at the Despatch Warehouse.

(See also pages 208, 209, 211 and letterpress, page 211.)

over £20,000, of which nearly £10,000 worth is manufactured copper. There is no doubt that the Union mines are capable of greatly increased production, to stimulate which only the establishment upon a firm basis and careful development of the electrical equipment manufacture are needed.

Electric light and power plants in the Union number about 150, employing some 61,200 hands.

industry, consisting of nearly 900 establishments, represented a fixed capital investment (value of land, buildings, machinery, plant and tools) of over £6,500,000, it employed 54,600 persons, of whom one third (17,410) were Europeans, and its annual wage bill amounted to over £10,500,000. The industry was at that time consuming fuel, light, and power to an annual value of £359,000, used materials to the value of nearly



regularly expanding, the yearly crop now exceeding 10,000,000 lbs.

Since 1921 a large concern, known as the Woollen Mills, Ltd., has been working, with branches and wool washeries at Woodstock, Capetown and Wolseley. This is the pioneer textile factory of the Union. The well known "Waverley" blankets, travelling rugs, tweeds, and blankets for the native trade are manufactured here. During 1923 a large factory was opened at Harmsworth (O.F.S.) known as the National Woollen Industries of South Africa, Ltd. For many years almost the whole of the Union's wool clip was shipped overseas, there to be manufactured into goods which were bought back by South Africa. The volume of imported woollen and cotton goods is still large but there has been a decided shrinkage during the last two financial years, while the production of the South African factories is growing.

**TOBACCO, ETC.** The manufacture of tobacco, cigars, and cigarettes is of long standing in South Africa, though for a lengthy period it was confined to the "roll" variety of the Boer tobacco grown in the Transvaal. With the acclimatisation of the better Turkish and Virginian brands the number of factories has increased to about 65, employing some 2,500 hands, and, with plant and machinery worth £100,000, the total annual value of output averages over £2,000,000. Nearly 2,000,000,000 cigarettes and about 9,000,000 lbs. of tobacco are produced in an ordinary year. (See article "Tobacco.")

**WOOL SCOURING.** This industry is of great importance to the South African wool-grower, as it mainly deals with the heavy classes of wool. During the period 1923-24 it suffered a serious set-back largely owing to Continental buyers purchasing South African wools in the grease to be scoured at destination, and also to the heavy price of washing commodities, which prevents the South African wool scourers from reducing their charges sufficiently to compete with the Continent. A lower rail rate for grease wool which is scoured within the Union is a suggested remedy.

## REPRESENTATIVE INDUSTRIAL ENTERPRISES

### THE UNITED TOBACCO COMPANIES (SOUTH) LTD.

**Inception.** This very important company, which controls by far the largest and most up-to-date enterprise of the kind in South Africa, was founded in 1905 at Capetown, where its head offices and largest factory are located.

**Development.** Tobacco had been grown in South Africa before the year named, but owing to lack of scientific care the character of the leaf produced was of the poorest quality and any system of careful grading was practically unknown. Much praise is therefore due to the United Tobacco Companies (South) Ltd., which commenced operations with great ideals and steadfastly pursued them, with the result that its work has been rewarded by the establishment of the largest and most efficient tobacco organisation in South Africa. Commencing on thoroughly sound lines by providing ample capital for development purposes, and engaging a staff of men with special training and long experience in all the various branches of the industry, the business has been built upon a solid foundation. In connection with the tobacco industry, as with numbers of others, technical knowledge and practical experience play very important parts, and these essentials have been acquired by the experts of this country at the recognised headquarters of tobacco production, namely at Virginia, in the United States of America.

**Early Methods.** In the early days very low prices were obtained for leaf in South Africa owing to the haphazard methods adopted by the farmer, whose ideas with reference to cultivation, grading, etc., were of the most primitive character, in fact, his tobacco was generally sold "as a crop" at a very low figure. To encourage the tiller of the soil to grade his product and see for himself the advantages of improving its quality a small range of prices was adopted by the company and these were approximately 5d for sound dark leaf, 9d for red leaf of light body, and 1s for yellow leaf. Previously, prices had ranged in the main from 1d

to 2d per lb., and a grower who received 6d per lb. was considered lucky. Even with this encouragement, the greatest difficulty was at first experienced in getting the farmers to fall in with the scheme. To-day the position has very much improved, not only from the farmer's point of view, but also from that of the manufacturer.

**Co-operative Movement.** Although in recent years a co-operative movement has existed among the growers, the United Tobacco Companies (South) Ltd. has kept its buying warehouses open, and is always willing to purchase direct from the farmers. In no way has the company tried to oppose the movement. In fact, it has for a lengthy period held contracts with the various co-operative societies themselves.

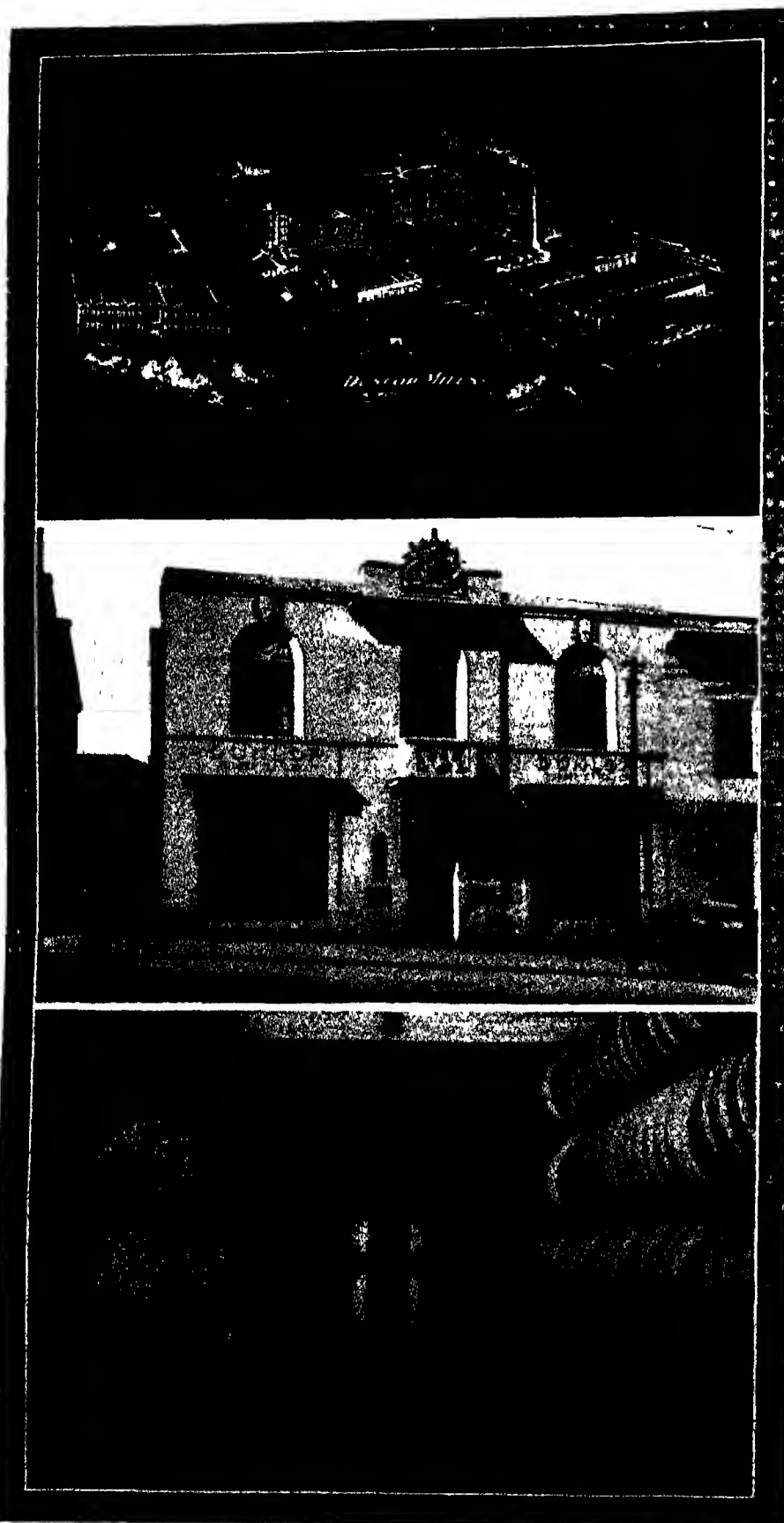
**Prices.** During the past few years appreciably higher prices have been paid for really good grades, averaging about a 20 per cent advance on the figures ruling in earlier days.

**Progress.** The enormous strides which have characterised the company's progress may be gauged by the fact that whereas in 1905 the total value of South African leaf purchased by the United Tobacco Companies (South) Ltd. was less than £4,000, in 1924 it paid out cheques to the value of over £300,000 to farmers and co-operative societies. Other instructive figures showing the growth of trade since the foundation of the company are those of freight disbursements to the South African Railways. In 1905 the United Tobacco Companies (South) Ltd. paid in this way £5,000. These figures are certainly noteworthy, but they appear somewhat insignificant when it is realised that no less a sum than £800,000 is paid per annum by the South African tobacco industry to the Union and Provincial Governments in taxation, there being a stamp tax of 4d. for every ten cigarettes, and an excise duty of 9d. per lb. on tobacco. In addition to this large sum, the South African tobacco industry has to pay various other Government, provincial and municipal taxes, joint stock company importers and general dealers' licences, representing in all a further large contribution to the revenue of the country, while in salaries and wages a sum of £350,000



THE UNITED TOBACCO COMPANIES (SOUTH) LTD., Capetown.  
Premises.

(See also pages 208, 209, 210.)



DUNLOP RUBBER CO. (S.A.) LTD., Capetown.  
 1. View of Mills, Montague, Victoria, Australia.  
 2. Company's Premises at Capetown.  
 3. Section of Motor Tyre Mould.

per annum is distributed among the workers. The United Tobacco Companies (South) Ltd. to-day employs more than 1,400 hands, and has branches in all the most important towns throughout the country.

**Policy.** The success of the Company is due mainly to its policy of manufacturing and selling nothing but the best quality of tobacco. The machinery employed is of the latest design, while buying, selling, accounting, advertising, etc., have been steadily brought to a very high standard.

**Special Department.** A useful enterprise has lately been inaugurated, and it should prove of material assistance to the tobacco growing industry. At an expense involving some thousands of pounds yearly the company has established a special department, whose duty it is to help free of charge any farmer who seriously desires to improve his crop, provided naturally that he has suitable land available for the purpose. This department is in the hands of highly qualified growers, who have nothing whatever to do with the company's leaf buying arrangements, but whose sole duty it is to advise and assist. Practical demonstrations are given, lectures are delivered and pamphlets distributed covering the whole business of tobacco production, from the selection of the suitable type of seed and soil through the various stages of cultivation, reaping, curing, grading and general handling. This is one of the most important and ambitious schemes on a commercial scale that has been adopted in the country, and the company's department is working in closest conjunction with the Department of Agriculture for the Union of South Africa.

**Employees.** One of the outstanding features of the administration of the United Tobacco Companies (South) Ltd. is the consideration shown to its employees, particularly the work people. It was one of the first to adopt in South Africa a "Welfare Scheme." Large dining rooms and recreation rooms are maintained under the charge of a competent chef and assistants, meals and refreshments being provided for the workers at very low cost. The health and general welfare of the work girls also receive special attention under a fully qualified matron and assistant matron, particular thought being given to good ventilation and general conditions in every department.

**Cigarettes and Tobaccos.** In order to cater for all tastes, the company manufactures a large range of cigarettes and tobaccos, the brands of which are household words in South Africa, and include "Lotus" (retail) as low as 3d. for a packet of 10 cigarettes, in spite of the stamp tax and excise duty. The better class and more expensive lines, such as "Flag," "C to C" and "Loyalist," are scheduled at from 4½d. to 6½d. per packet, but in the case of the famous "Three Castles" cigarettes the price is 8½d. on account of the brand being manufactured of imported tobacco. Pipe smokers are catered for in equal variety from such well-known brands as "Battleaxe" at 1½d. per oz. to the "C to C" mixture at 6d. It has always been the policy of the company not only to sell its products at as reasonable a price as possible, but also to provide for and allow the wholesale and retail distributors a fair profit, and especially to buy as much as possible in South Africa all those materials which it may require.

**Administration.**—The general manager of the United Tobacco Companies (South) Ltd. is Mr. George W. Hawley, who joined Messrs. W. D. and H. O. Wills in Bristol 25 years ago. He represented the Imperial Tobacco Company of Great Britain and Ireland in the Straits Settlements, and developed business for the British American Tobacco Company in the

Dutch East Indies, Siam, Borneo, etc., before he became acquainted with The United Tobacco Companies (South) Ltd. in 1906. Mr F. C. Sandell, who is the assistant manager of the company, has been engaged in the tobacco business since 1896, and came to South Africa in 1905.

**Offices.** The company has its registered office at 32, Kloof Street, Capetown. Postal address: Box 78, Capetown. Telephone No. 1339. Telegrams and cables: "Cigarette."

**Branches.**—The interests of the company extend from Capetown to the furthest parts of Northern Rhodesia. Leaf tobacco warehouses are established at Capetown, Woodstock, Observatory, Kat River, Oudtshoorn, Rustenburg, Brits, Salisbury and Port Jameson; there are factories at Capetown, Johannesburg and Rustenburg, and depôts at Johannesburg, Port Elizabeth, East London, Durban, and Kimberley. Agencies are established at Bulawayo, Salisbury, Delagoa Bay, etc. The fine depot and factory premises at Johannesburg were opened by the late President Kruger, while the factory and leaf warehouses at Rustenburg were erected in 1906, and have accommodation for 4,000,000 lbs. of leaf.

(See illustrations, pages 208, 209, 210, 211.)

#### DUNLOP RUBBER CO. (S.A.) LTD.

**Inception.**—The establishment of the Dunlop Company in South Africa dates from 1896, when a depôt was opened in Capetown under the control of the present general manager.

**Development.** At first the only lines handled were cycle tyres and cycle tyre accessories, but with the introduction of the motor car the scope of the company's business was, as might be expected, enormously increased. As motor cars and lorries gradually came into general use it was found necessary to open other depôts in South Africa, and completely equipped branches were established at Johannesburg, Durban, East London and Port Elizabeth. In addition to these, in order that users might be able to obtain their requirements in tyres, etc., without delay, a chain of stockists was formed throughout the country, so that to-day Dunlop products can be procured on demand in almost every village from the Cape to the Zambezi.

**Activities.** The principal lines handled at the company's depôts at present are solid and semi-solid tyres for motor trucks and omnibuses, pneumatic tyres for motor cars, lorries, etc., motor cycle tyres, bicycle tyres, the Dunlop "Maxfli" golf ball and the Dunlop tennis ball. Besides these, all accessories connected with the above articles can be obtained, also the Dunlop wheels and rims for motor cars, motor cycles and ordinary cycles. The territory controlled by the company, through its depôts and the system of stockists, includes the Union of South Africa, South-West Africa, Rhodesia and Portuguese East Africa, while practically every garage in all this vast territory carries a comprehensive stock of the Dunlop products for the use of motorists.

**Organisation.**—A general manager, chief accountant and the usual office staff are established at the head office in Capetown, but each of the main depôts also has its own manager and complete staff, the number of employees in the country being altogether 83.

**Depôts.**—East London: 5-7, Albert Street; Port Elizabeth: Parker's Buildings, Britannia Street, both of these being sub-depôts to the main establishment in Capetown. There are also important branches at Johannesburg, Dunlop Buildings, Marshall Street, and at Durban: Marine Parade Buildings, Esplanade.

**Offices.**—Head office: Dunlop Buildings, Strand Street, Capetown.

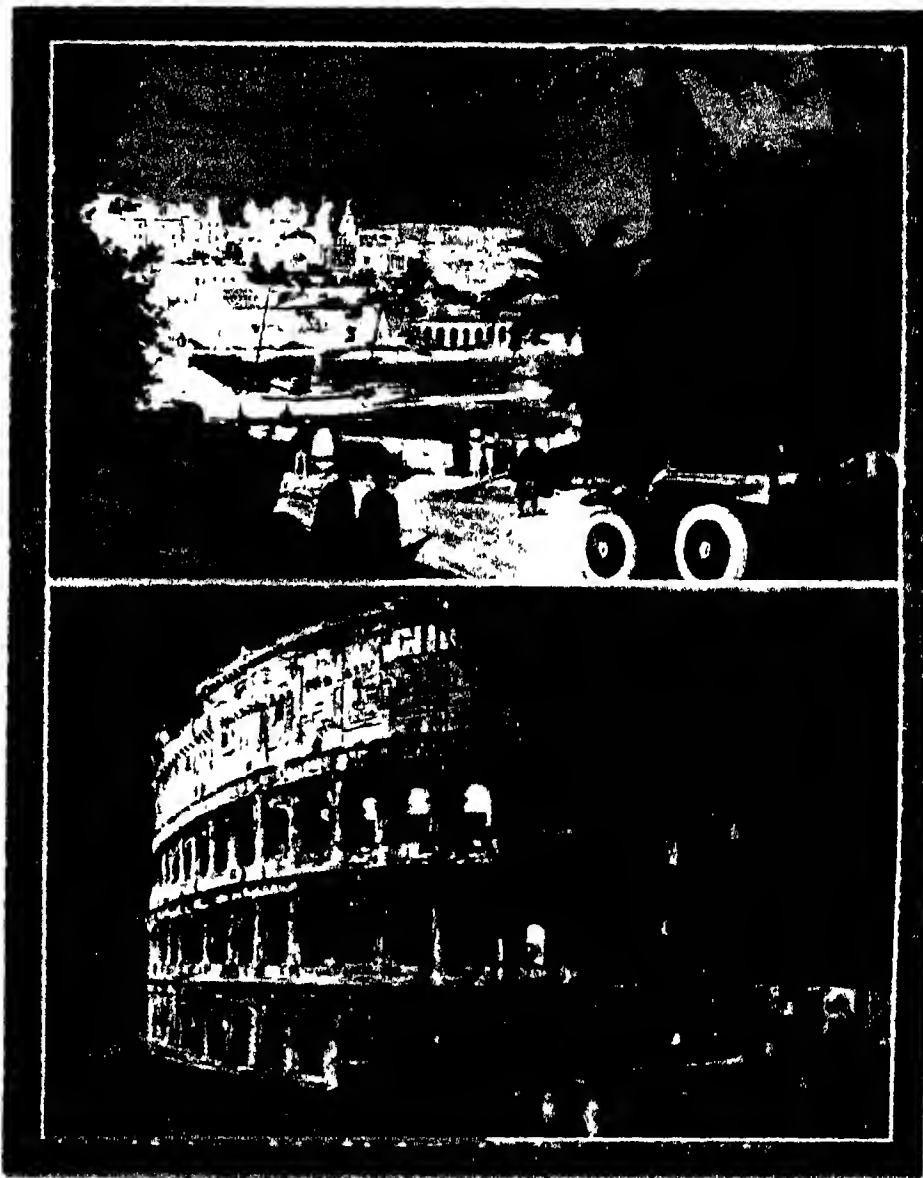
#### ATLANTIC REFINING COMPANY OF AFRICA LTD.

**Inception.**—A subsidiary of the Atlantic Refining Company of Pennsylvania, one of the largest manufacturers of lubricating oils in the world, the company under notice was established in South Africa on August 28, 1924, its object being to market the products of the parent company throughout the Union of South Africa, Rhodesia, and the islands of Mauritius and Rennon.

**Development.** At the outset of operations technical experts made a very careful study

**Activities.**—The company is interested in the sale of motor spirit, lubricating oils and greases, all of which are manufactured at the refineries of the parent company in America, whose long experience, extending over 60 years, has enabled it to manufacture goods that exactly meet the requirements of local conditions. At the fine refineries more than 6,000,000 gallons of the company's products are manufactured daily, these being distributed throughout the world from 40,000 points.

**Depôts.** Johannesburg, Port Elizabeth, Pretoria, Kimberley, Mossel Bay, Salisbury,



DUNLOP RUBBER CO. (S.A.) LTD., Capetown.  
Two examples of Modern Publicity Employed.

of the marketing conditions and requirements in South Africa and a reference hereafter to the large number of depôts which have been established will give some idea as to the success that has met the company's endeavours, and indicate the rapid development that has taken place during the short time it has been in existence. Both in motor spirit and lubricating oils it has placed on the market products of unchallenged quality, which are meeting with an ever increasing sale.

Lourenço Marques, Mauritius, Zanzibar, Chinde, Walvis Bay, Loanda, Durban, East London, Bloemfontein, Maritzburg, Mafeking, Bulawayo, Beira, Madagascar, Dar es Salaam, Mombasa, Luderitzbucht, and Mossamedes.

**Directorate.**—Mr J. E. Grey (managing director) and Mr D. P. Clark.

**Head Office in South Africa.**—South West House, P.O. Box 697 Cables, "Oilatref," Capetown.

(See illustration, page 214.)

**LENNON LIMITED.**

**Inception.** This firm had its origin in an apothecary's shop established about the year 1850 by Dr. Dunsterville for the convenience of his own patients. On the retirement of the doctor to England the dispensary was purchased by the then manager, Mr. B. G. Lennon, and the business was thus thrown open to the public.

**Development.** The undertaking prospered, and, as time went on, Mr. R. A. Fairclough was taken into partnership, while after the discovery of the Diamond Fields trade increased to such an extent that by the year 1880 it was found necessary to open a depot in London. From this period onward the country was being steadily opened up, and the

with a reserve of over £180,000, and for some years past a steady dividend of 9 per cent per annum has been paid on the ordinary shares.

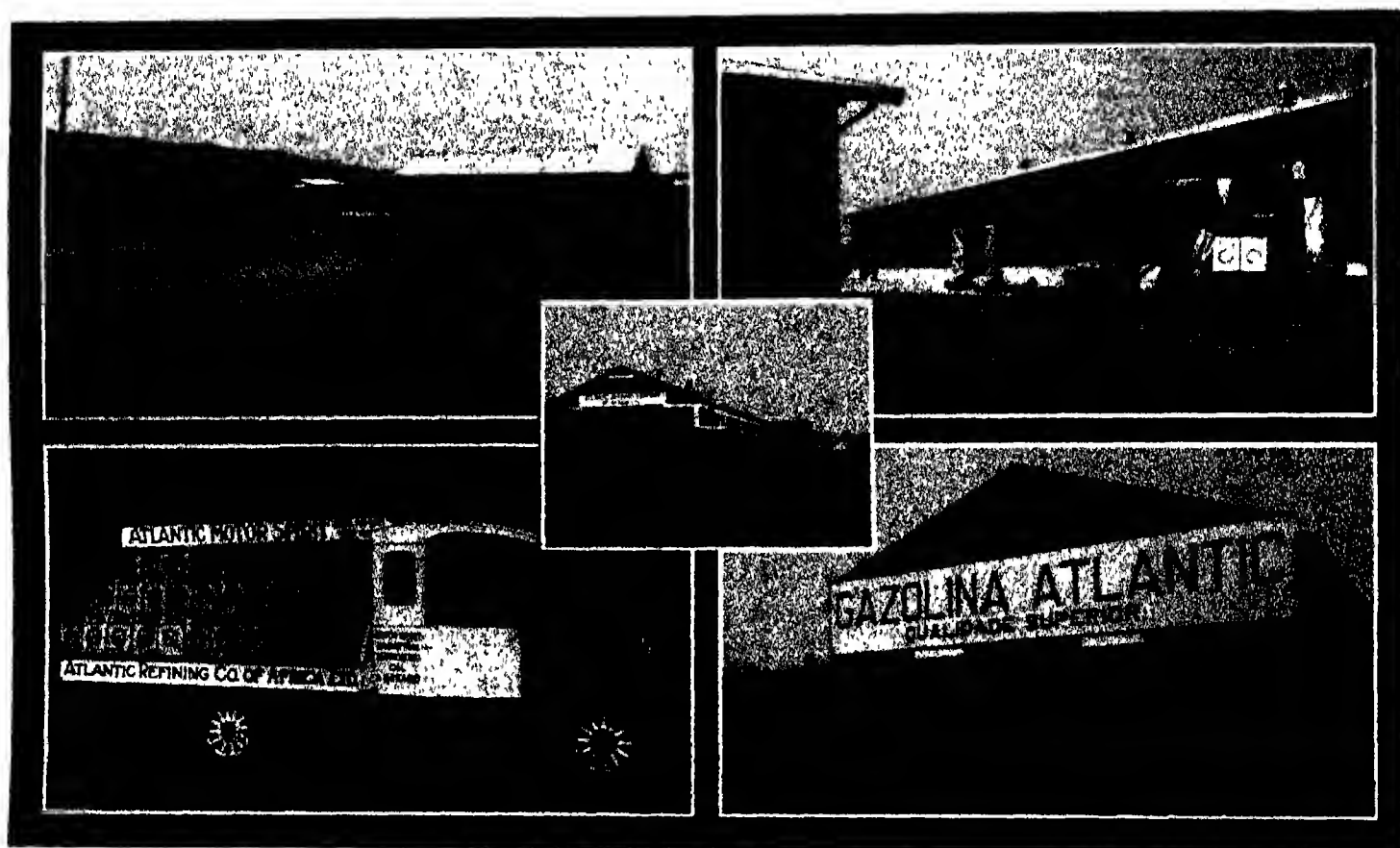
**London Premises.**—The London buying office has shown great progress since its establishment in 1880 in premises in Aldersgate Street. These were vacated for a large warehouse in Bunhill Row, followed by still larger buildings in Leadenhall Street until in 1901, a new factory and warehouse with offices were erected for the company in Queen Elizabeth Street near Tower Bridge.

**Activities.** The firm is now largely engaged in the manufacture of pharmaceutical goods, partly in London, but mainly at Port

**PETERSEN LIMITED.**

**Inception.** The progressive firm of Petersen Ltd. was established at Capetown by the late Mr. P. J. Petersen in 1842.

**Development.** The premises originally occupied by the company were in Plein Street, a small building which is in striking contrast with the many-storeyed modern structures now standing on either side of Barrack Street, which are reputed to be the largest, most complete and best equipped of their kind in the southern hemisphere. Intimately connected with the founder of the firm was his son, the late Mr. D. K. Petersen, governing director of the company from its inception until his death in 1918. To him in great measure was due the rapid progress



ATLANTIC REFINING COMPANY OF AFRICA LTD., Capetown.

1. Company's Installation at Durban under Construction.
2. Portion of the Company's Installation at Maitland, near Capetown.
3. One of the Company's Lorries
- Centre. Warehouse at East London.
4. Portion of the Company's Lourenço Marques Installation.

(See letterpress, page 213)

firm's business increased correspondingly, compelling the establishment of new branches and a general extension of ramifications throughout South Africa. In 1891 the firm was converted into a limited liability company, while in 1899 it was incorporated as a public company under the title of Lennon Limited. The affairs of Lennon Ltd. having become so important, it was decided in 1902 to set up a separate establishment for the head office in Capetown, and Mr. Albert Walsh, who had been twenty-two years at Port Elizabeth assumed control as general manager.

**Capital.**—The capital of the company, comprising ordinary and 5% cumulative preference shares, now stands at £438,480,

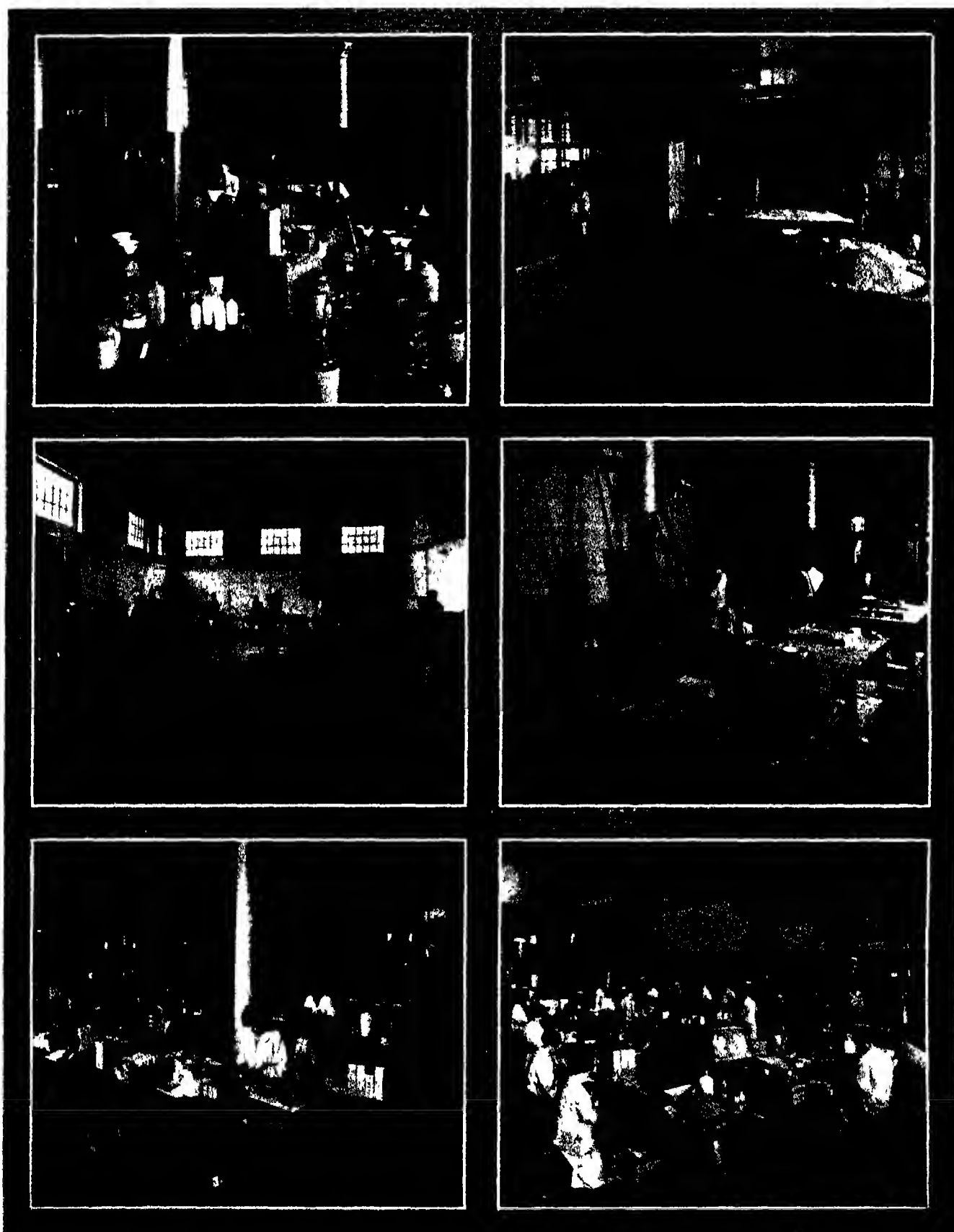
Elizabeth, and to a lesser degree in Capetown. It has also large retail establishments in the more important towns of the country, in almost all of which the growth of the business has necessitated a continual increase in the size of the premises occupied by the firm, and in many cases the special erection of suitable buildings.

**Branches.**—Port Elizabeth, East London, Johannesburg, Durban, Bulawayo, Salisbury, Bloemfontein, Aliwal North, Graaf Reinet, Kimberley, and Mossel Bay, while smaller retail branches are in existence at Gardens, Capetown, Stellenbosch, Oudtshoorn, Germiston and Gatooma.

**Head Office.**—Adderley Street, Capetown.

that has taken place in connection with the enterprise.

**Activities.** Petersen Ltd. are manufacturers of pharmaceutical preparations, pills, tablets, capsules, toilet preparations, perfumery, essences, Dutch medicines and veterinary preparations. They are specialists in the manufacture of proprietaries for overseas firms, and are distributing agents for many well-known English and American and South African proprietary articles. The advantage of manufacturing in South Africa lies in the saving of heavy importation duties, and the firm deals with all alcoholic preparations manufactured in bond from high-class spirit under special manufacturing rebates.



LENNON LIMITED, Capetown.

1. Galenical Department.
2. Steam Pans and Recovery Stills.
3. Portion of Pill and Tablet Packing Room.

4. Tablet Department, Granulating Room showing Machine Room.
5. Pill Making Room.
6. Portion of Girls' Packing Room for Toilet Cream and Specialties.



**Premises.** The premises have been constructed on the most approved principles as to hygiene and safety. Ventilation and lighting are perfect, and flights of cement stairs at one side of the buildings lead from floor to floor without passing through the rooms, from which they are shut off by fireproof doors, thus providing a safe means of escape in case of fire. The floor area of the stores and works exceeds 50,000 superficial feet, and there are nearly 200 employees.

**Machinery.** Amongst the many machines utilised, mention may be made of the automatic pill making, gelatine coating, tablet mixing, and granulating plants, which represent the outcome of many years' experimenting and research.

**Analytical Laboratory.**—Such medicines and other preparations as those made in the perfectly equipped analytical laboratory were formerly imported. The activities of the firm have made possible the utilisation of local products to supply the identical article at a lower price.

#### SOUTH AFRICAN MILLING COMPANY LTD.

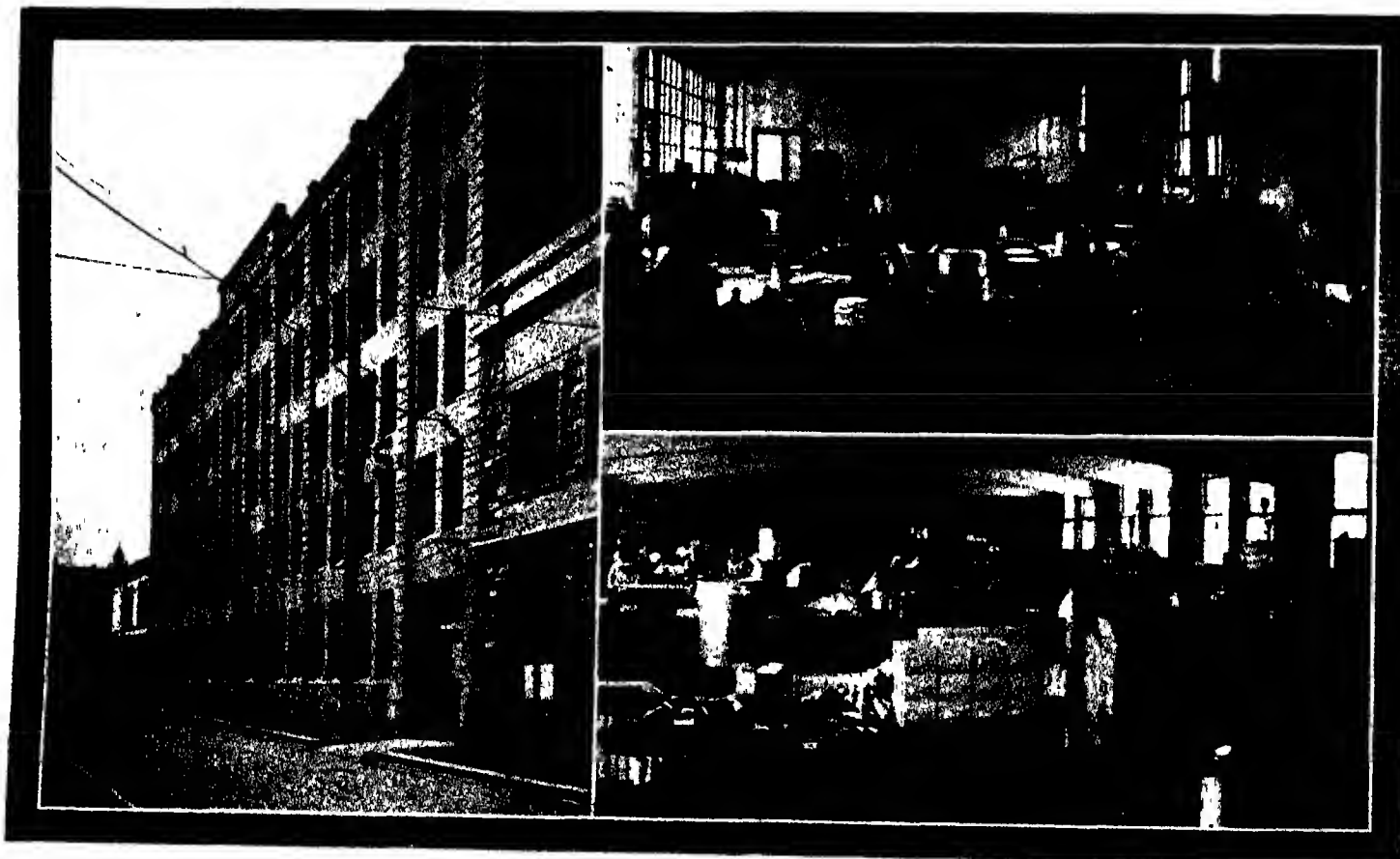
**Inception.**—This company is the successor to the Port Elizabeth Steam Flour Milling Co. Ltd., and the first mill was erected at Port Elizabeth in the early eighties.

**Development.** Commencing in a small way, the company has grown to be one of the largest industrial concerns in the country. The original Port Elizabeth mill has recently been re-modelled, and the equipment of a new silo in connection with it has been completed. It was at this establishment that the modern system of roller mills was first installed in South Africa.

**Activities.** The South African Milling Company to-day conducts the largest flour milling enterprise in the country. In addition to the Port Elizabeth mill it has an up-to-date 25 sack Simon mill at Capetown, and smaller flour mills at Artois, Wellington, Mossel Bay and Mahanabum. The company has also a large interest in the Orange Free State Milling Company Ltd., with mills at Bloemfontein and Guntree.

from the separators and a motor. Grain arrives at the silo in railway trucks and is discharged into a concrete tipping hopper, feeding to the boot of either of two intake elevators each having a capacity of 35 tons per hour. The grain is weighed and cleaned, and delivered to various bins by means of two band conveyors running the whole length of the top floor. Each band feeds three rows of bins through travelling throw off carriages and portable spouts. Grain is discharged from the bins through "Exact" wheat measures, and is then carried by means of conveyances and elevators to a trussed steel spout which leads to the wheat cleaning department.

**Milling Plant.**—The milling plant is housed in a four storeyed building, the ground floor of which is occupied by the elevator boots, drives for the roller mill, etc., whilst the first floor contains the mills themselves. The purifiers are on the floor above, and the top floor contains the plan sifters and centrifugals, the latter arranged



1. New Works at Capetown.

PETERSEN LIMITED, Capetown.

2. A Portion of the Laboratory at New Works.

3. A Section of the Packing Department.

(See letterpress, page 211)

**Directorate.**—Dr A. H. Petersen (chairman), John Main (managing director), James Scott (general manager), Howard Fergusson, J. B. Kayser, R. Macintosh (Johannesburg), and H. H. Greenwood (Bloemfontein).

**Agents.**—London: Grimwade, Ridley & Co., 124 to 127, Minories, E.C. 3. New York: Arkell & Douglas Inc., 73, Pearl Street.

**Head Office.**—Barrack Street, Capetown. Wholesale depôts at Johannesburg and Bloemfontein.

**Cables.**—"Iodine" Code A.B.C. 6th Edition.

**Port Elizabeth Mill.** This mill has a 20-sack "Simon" plant, and the silo has a capacity of 9,000 colonial tons. The original silo was partially destroyed by fire in 1920, but has now been replaced by a reinforced concrete building equipped with "Simon" machinery. The building is 160 feet long, 40 feet wide and 107 feet high, it has 99 bins, each 8 ft. square and 68 ft. deep. The receiving house, which is of brick with a steel roof, abuts on the silo, and contains a 1,500 lb. "Avery" automatic weigher, two warehouse separators for cleaning, cyclones for the dust collecting system and exhaust

either two or three high. The dust collectors are also fixed on this floor.

**Directorate.**—Mr William Pringle (chairman).

**Managers.**—Messrs. J. M. Stephen and E. Davies are joint managers, Messrs. J. G. Wood, A. F. Stephen, and A. B. Thomas are joint assistant managers. Secretary: Mr. Peter Paton.

**Bankers.**—The National Bank of South Africa, Ltd.

**Cables.**—"Milling," Port Elizabeth or Capetown.

**ALGOA MILLING CO. LTD.**

**Inception.** Established by Mr Lennox Mackay in 1902, this company commenced operations on the site occupied by the present mill. During the period of nearly a quarter of a century which has elapsed since that foundation the enterprise, by bringing into use each successive development in milling machinery and handling none but the best raw material has won deserved prominence among South Africa's successful milling undertakings. Its output is esteemed all over the country.

**Products.** The products manufactured by the company are milled mostly from Australian wheat, the bulk of which is supplied by that very prominent firm of Australian grain merchants Messrs John Darling & Sons, and are known throughout South Africa under the name of "Peerless" flour, etc.

**Premises.** The company's own modern up-to-date mill and extensive silos are situated on the main Port Elizabeth railway line. The capacity of the silos, to which the overseas wheat is delivered direct, is 2,000 long tons.

**Directorate.** The principal proprietor and managing director is Mr Lennox Mackay.

**Address.** P.O. Box No 491, Port Elizabeth.

**Cables.** "Rollers."

(See illustration, page 218.)

**ORANGE FREE STATE MILLING CO. LTD.**

**Inception.** This company was incorporated on March 1, 1916, on the occasion of the amalgamation of the Free State branch of the South African Milling Company Limited with the Schutte Draai Milling Company Limited.

**Development.** Since its formation the company has acquired the Athole Mills at Bloemfontein, now the largest concern of the kind in the Free State. Its three mills are going night and day, a very large quantity of wheat being absorbed by them. Besides its production of the well-known brands of flour called "Queen of the Snow" and "True Blue," the company markets many different varieties of wheaten meals.

**Other Activities.** In addition to the above products, the company also manufactures samp and all kinds of mealie meals of different qualities to meet the requirements of a large and varied clientele. In conjunction with its mills, the company also owns and operates the largest steam bakery plant in the Province, trading under the name of The Orange Free State Bakery Company, of Hanger Street, Bloemfontein. The bread and confectionery produced at this bakery are manufactured under the most hygienic conditions. The company is the owner of two large sites next the Castle Brewery, and at a later date the erection of an up-to-date mill thereon will be undertaken. A start has already been made at the sites in question, a storehouse with a capacity of some 80,000 sacks of wheat having been erected. This must ensure that the farmers of the Province will always have a good market close at hand.

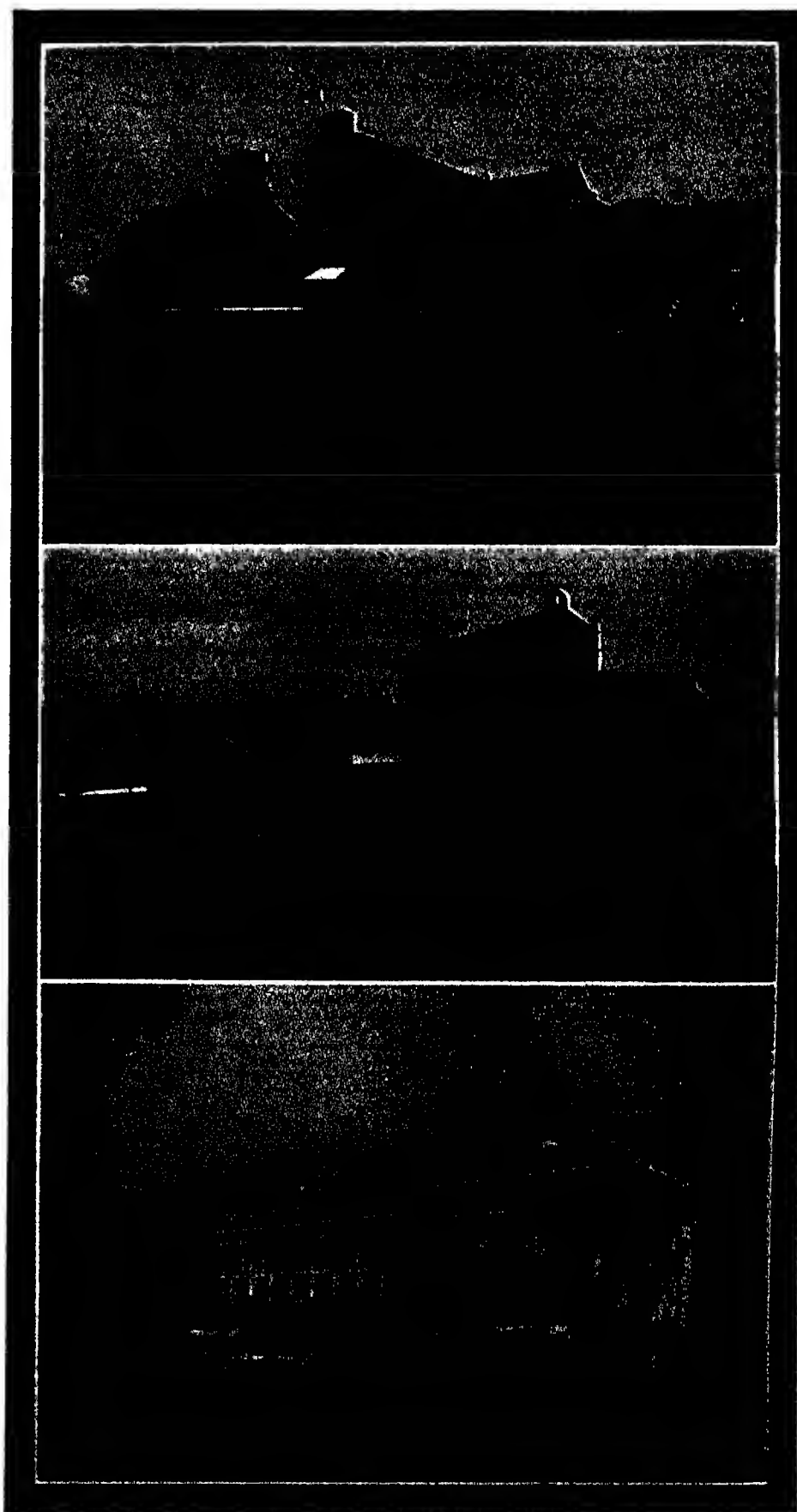
**Directorate.**—Messrs E. Davies, of Port Elizabeth (chairman), W. E. Stevens of Schutte Draai; William Pringle, of Port Elizabeth, and J. M. Stephen, of Capetown, with Mr W. S. Mannion as general manager of the company.

**Mills.**—Harvey Road, Bloemfontein, Athole Mills, Atherstone Street, Bloemfontein, and at Guntree Station.

**Head Office.**—Harvey Road, Bloemfontein, P.O. Box No 261. Cables: "Milling," Bloemfontein. Codes: A.B.C. and Premier.

**London Office.**—Messrs Alexander Fraser & Son Ltd, 16, Eldon Street, E.C.

(See illustration, page 218.)



**SOUTH AFRICAN MILLING COMPANY LTD., Port Elizabeth.**

1. General View of the Mill at Port Elizabeth.
2. Port Elizabeth Mill, showing the New Silo in the Centre.
3. New Capetown Mills.



ALGOA MILLING CO. LTD., Port Elizabeth  
Mill at Port Elizabeth (See letterpress page 217)

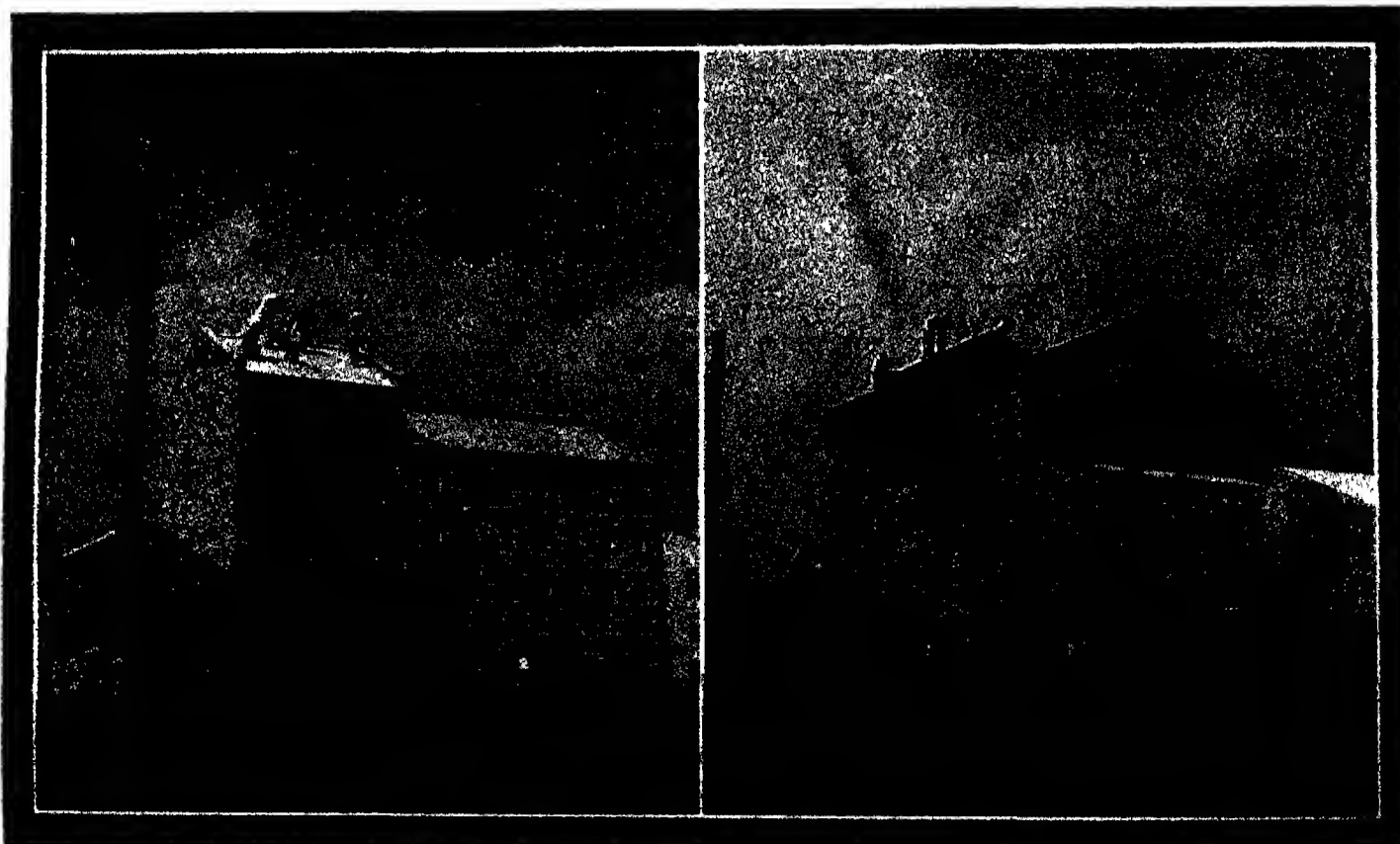
**KAFFRARIAN STEAM MILL CO. LTD.**

**Inception.**— This company commenced business in King William's Town, Cape Colony, about the year 1880.

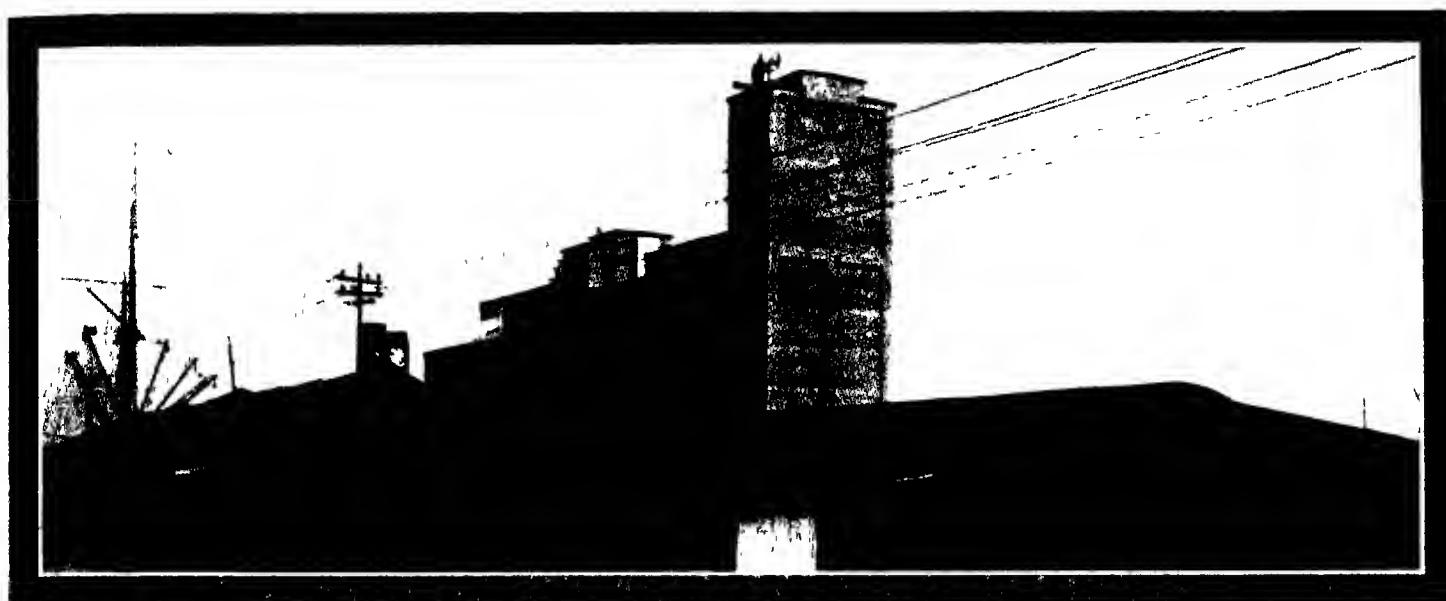
**Activities.** The firm has now five mills in operation, and one of its chief products is the patent flour "Golden Cloud." This product is well-known all over South Africa and Rhodesia, and was used in the South African Railway restaurant car at the Wimbley Exhibition.

**Durban Branch.** This branch, which controls an extensive maize milling plant and has been established over 20 years, is a large exporter of maize and maize products. The mills and silo are situated on the Maydon Wharf site, where modern machinery has been installed to deal with bags and bulk maize in the most expeditious manner. Among the other products manufactured are samp, gits, maize, rice, maize flour,

and meals of varying quality, which are supplied as rations to different estates and are also exported. Hominy Chop is exported to England and the Continent. During the last 15 years the capacity of the mill has been more than doubled. In addition to the grain silos, the company has large storing capacity for bag maize, it is interested also in the export of wattle bark and is the distributing agent for the famous Fison Albatross fertilisers.



ORANGE FREE STATE MILLING CO. LTD., Bloemfontein.  
Two aspects of the Company's Mills at Guntree, near Bloemfontein.  
(See letterpress, page 217.)



KAFFRARIAN STEAM MILL CO. LTD., Durban View of Mill (See letterpress page 218)

**Capital.** The capital of the company is £150,000, fully paid up

**Management.** The chairman of the board is Mr. Iveritt, a position he has held for the past 25 years

**Head Office.** -Royal Exchange Building Smith Street, Durban

**Agents.** Henry Williams & Co., Baltic Exchange, London, and Fenwick Street, Liverpool

**Bankers.** The National Bank of South Africa, Ltd

**Cables.** "Pacific," Durban Codes Bentley's and A B C 5th Edition

#### **PYOTT LIMITED.**

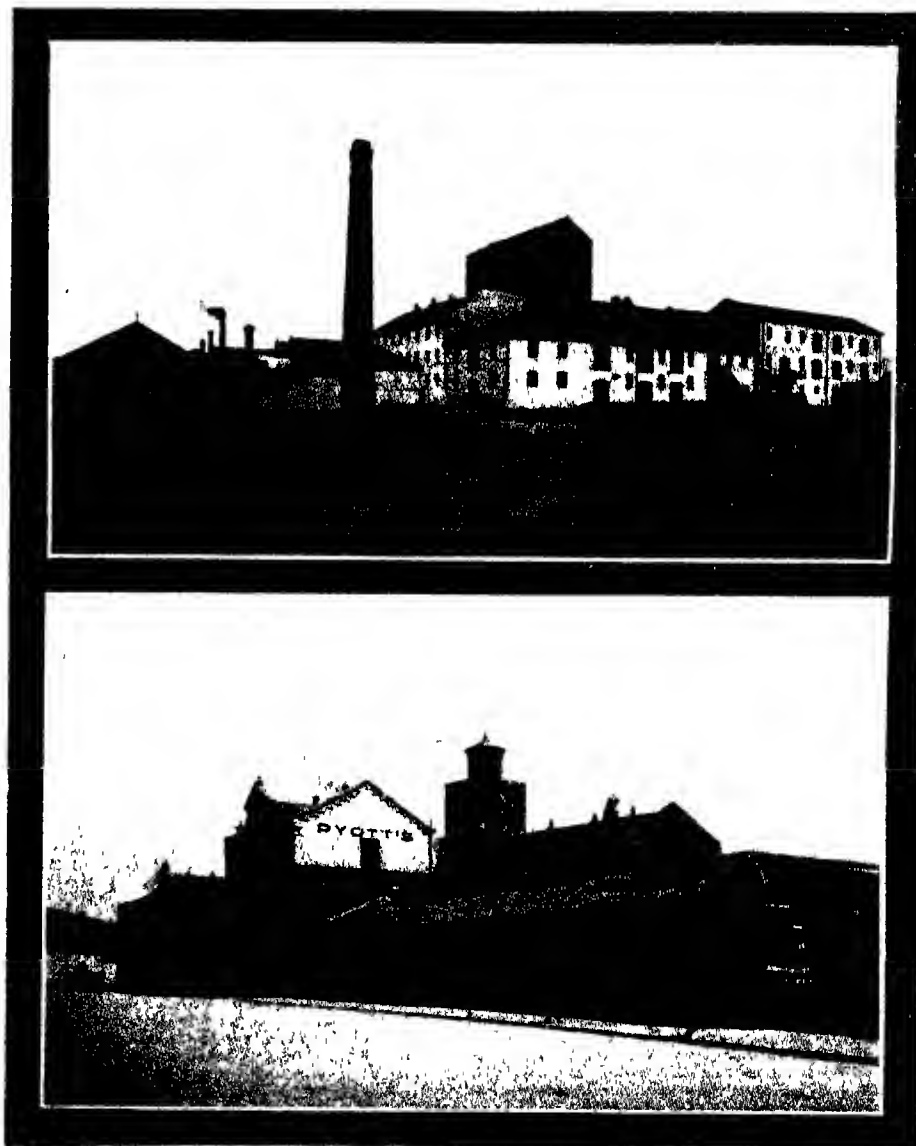
**Inception.** The firm of Pyott Ltd was established at Port Elizabeth in 1885 by Mr. John Pyott, who commenced in a small way to manufacture jams and confectionery

**Development.** His efforts met with such success that within two years biscuits and cake making were added, while in 1891 flour milling was instituted. The firm, which was converted into a limited liability company in 1900, at that time confined its business to the Midlands, the Orange Free State and the Transvaal. More outlets were needed for expansion, however, and in order to extend the field of operations a branch was opened in 1906 in Woodstock for the manufacture of biscuits, to be followed later with bread making and flour milling. Soon the rapid growth of business necessitated the erection of new premises at that centre, and the establishment of a dépôt in Johannesburg in the year last named

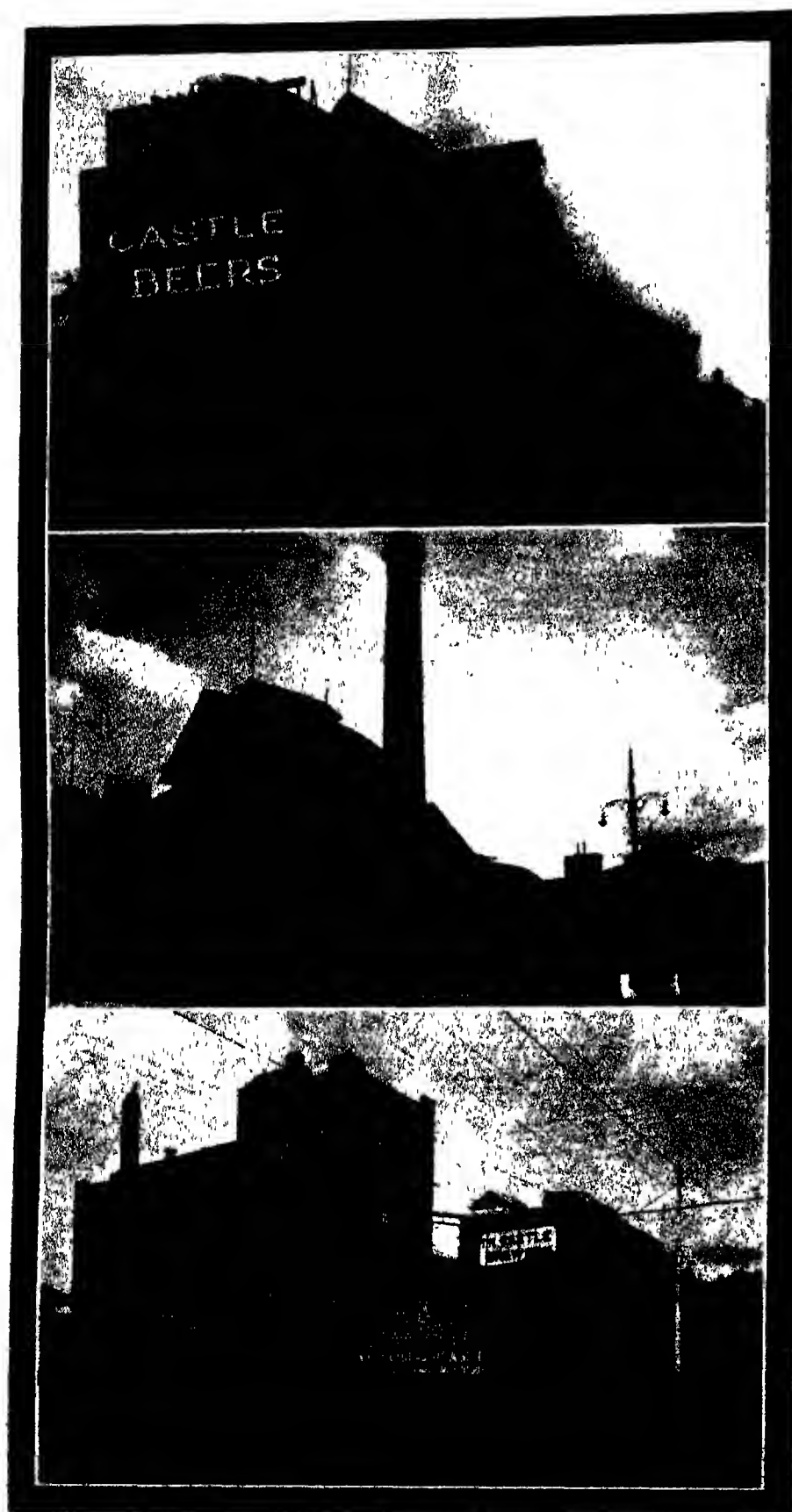
**Factories.**—The factories at both Port Elizabeth and Woodstock are fully equipped with the most modern machinery for manufacturing the firm's productions, and each factory has, in addition, its own engineering, tinsmithing and box making plants

**Distribution.**—The company's products are now distributed throughout the whole of the Union, South West Africa, Rhodesia, and the Belgian Congo, but Natal is supplied by a subsidiary company under the title of Pyott (Durban) Ltd.

**Directorate.**—Messrs. John Pyott (chairman and managing director), James Mudie, (managing director), John Scrimgeour, James McLagan, R Pyott, and C Macdonald.



**PYOTT LIMITED, Port Elizabeth.**  
1. Head Office and Factory at Port Elizabeth.  
2. Factory at Woodstock, near Capetown.



THE SOUTH AFRICAN BREWERIES LTD., Johannesburg.

1. "The Natal Brewery," Pietermaritzburg.
2. "Castle Brewery," Johannesburg.
3. "Castle Brewery," Pretoria.

**Woodstock Managers.** Messrs James McLagan and John J. Goulden

**Bankers.**—The National Bank of South Africa, Ltd

**Cables.** "Pyotts"

(See illustration, page 219)

#### THE SOUTH AFRICAN BREWERIES LTD.

**Inception.**—This huge enterprise was of modest origin in the year 1890, when the Natal Brewery Syndicate was formed in Pietermaritzburg with a capital of £35,000 for the purpose of brewing beer.

**Development.** The success of the company's operations from the commencement surpassed all expectations, and it was soon found necessary, owing to the rapid expansion of business, to rebuild and extend the brewery premises in the Natal Capital. Furthermore, the opening up of the Witwatersrand gold fields provided an additional region for exploitation, with the result that the company, as a first step, effected the purchase of Messrs. Glass & Co's brewery in Johannesburg, and rebuilt the premises thus taken over. This was followed by the conversion of the original syndicate into the present South African Breweries Ltd., and from that time onward the history of the enterprise has been one of continued and rapid progress.

**Breweries.** There are now no fewer than eight large fully equipped breweries in important towns of South Africa with modern plant for the production of Castle Beers, which are the speciality of this company, and, in addition, its depots and agencies are to be found in all centres of activity in the country.

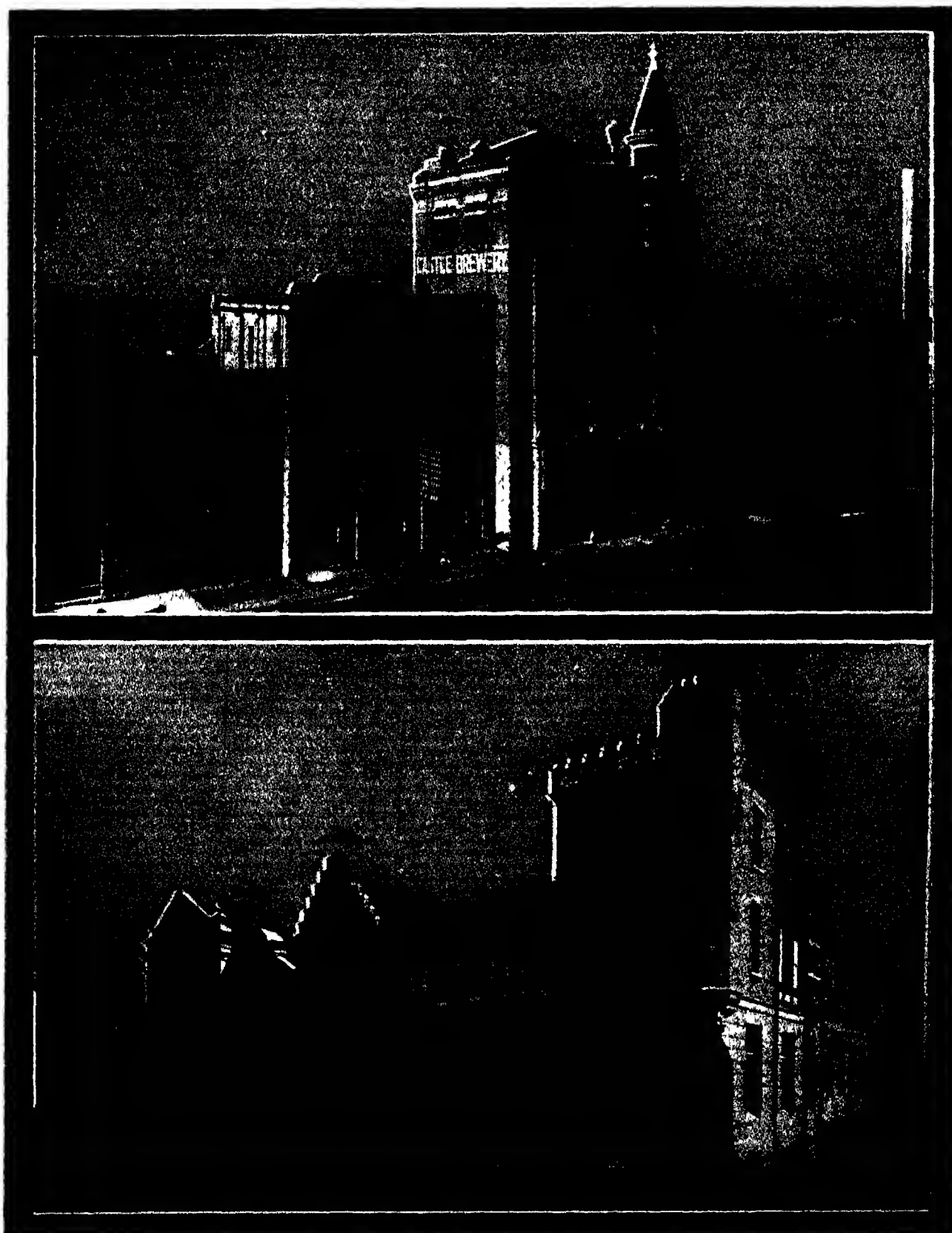
**Capital.** The authorised capital of the company is £2,500,000, divided into 1,500,000 ordinary shares of £1 each and 1,000,000 5 per cent cumulative preference shares of £1 each. Of these 1,447,920 ordinary and 1,000,000 preference shares have been issued and fully paid, making 2,447,920 in all issued and fully paid. The reserve fund at the end of the financial year on March 31, 1925, stood at £225,000 and the special reserve against trade investments at £65,000.

**Activities.** An idea of the magnitude of the company's present field of operations may be gathered from the fact that the distance between the most southerly and the most northerly of the breweries is over 1,600 miles, while there is an extent of 500 miles between the most easterly and westerly, though the area in which its business is done covers, of course, even greater distances than these.

**Products.**—In actual brewing the company has always insisted upon the best of materials, the most modern plant and absolute cleanliness being used, and, no doubt, much of the progress and popularity of its products is due to the strict observance of this rule. The Castle Beers are drunk from the Cape to the Congo, and have not only won the good opinion of consumers, but also numerous gold and silver medals awarded at all the important exhibitions held in South Africa.

**Malting Barley.**—The South African Breweries Ltd. are, moreover, giving great encouragement to farmers for the cultivation of barley suitable for malting purposes. With this object they have, for some time past imported and distributed to farmers the best types of seed barley. The movement has met with a very encouraging response, with the result that considerable amounts of money which were formerly sent overseas for the purchase of malt can now be spent and kept in circulation in South Africa. A beginning has therefore been made in the industry, but without doubt there is a great





THE SOUTH AFRICAN BREWERIES LTD., Johannesburg.  
1. "Castle Brewery," Woodstock, Capetown.  
2. "Castle Brewery," Port Elizabeth.

opening for advancement in this direction. Progressive farmers will find that barley cultivation is sure to well repay such enterprise, as the Castle Breweries can naturally give much higher prices for barleys suitable for malting purposes than those that are at command for ordinary barley. The malting of barley grown in the country is carried on at Pretoria and Port Elizabeth, where modern plants have been erected for the process, and the company is now constructing large malting works at the Castle Brewery, Johannesburg, for the same purpose.

**Hop Growing.** The management has also lately been considering the question of hop cultivation in South Africa, and has given careful thought to the possibilities of this becoming a successful crop under the conditions prevailing in the country. With this end in view, hop sets were imported some time ago for distribution to farmers and other interested persons about the territory, especially in those parts where the climate and soil give promise of favourable conditions.

ordinary shares (free of income tax), the sum of £20,000 was added to the special reserve against trade investments, and the balance of £88,037 10s. 2d. was carried forward.

**Branches.** Breweries, fully equipped for the production of beer, are now established by the company at Pietermaritzburg, Durban, Johannesburg, Pretoria, Bloemfontein, Cape-town, Port Elizabeth and Salisbury, of which the first two are known as the Natal Brewery and the Durban Brewery respectively, the others going under the name of the Castle Brewery.

**Administration.** Directors: Messrs. John Stroyan, J.P., D.L. (chairman), George Henry Raw, Isaac Lewis, S.B. Joel, J.P., Edgar C. Wigan, Charles A. Chidell and the Rt. Hon. Sir A. Griffith-Boscawen, P.C. General manager in South Africa: Mr. Reginald P. Fitzgerald. Secretary, Mr. Leonard Roomie.

**Head Office.** 8 to, Great St. Helens, London, E.C.

(See also illustrations, pages 220, 221.)

much prized even in this country, renowned for the excellence of its fruits.

**Employees.**—These number between 800 and 1,000.

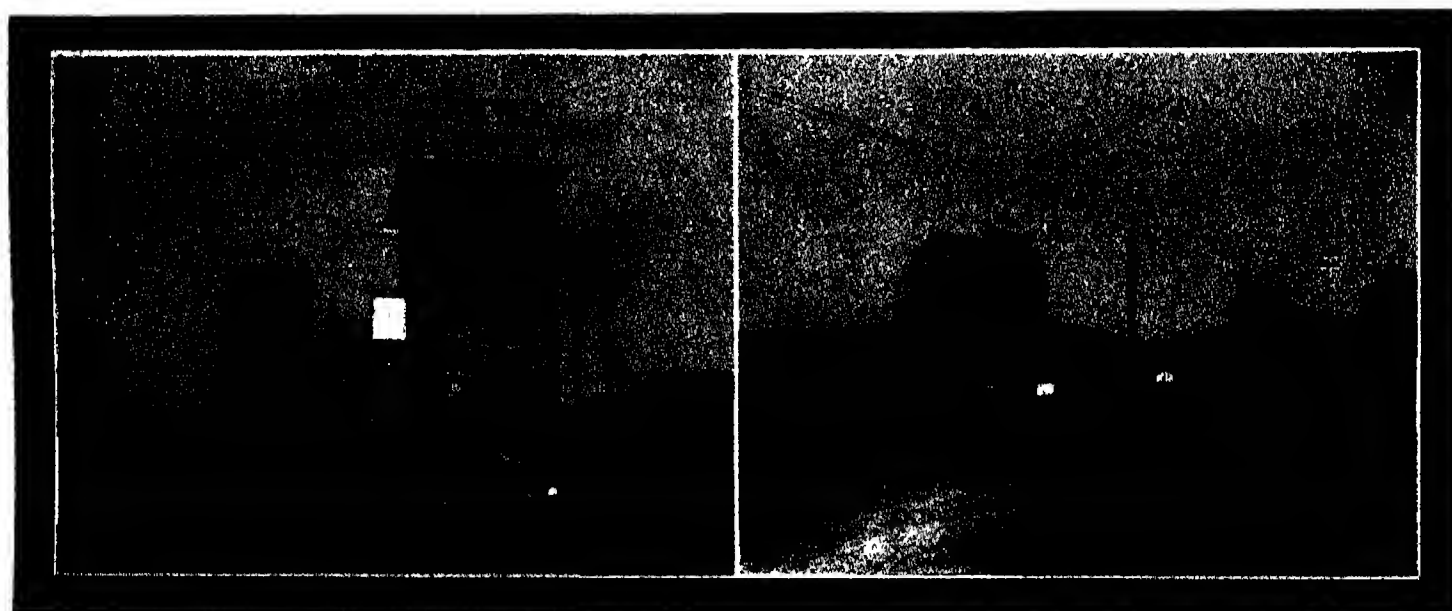
**Equipment.**—Work in every department is carried out under the strictest hygienic principles, and the machinery is of the most modern and up-to-date description. The cannery has the reputation of being one of the finest in the British Empire.

**Export.**—The corporation's products are marketed in many countries, the principal exports, however, going to Great Britain.

**Directorate.**—Messrs. I. W. Schlesinger (chairman), J. A. MacRae, W. O. Bullock, I. F. Atterbury, A. A. Heaton, A. Pellett, D. M. Burton. General manager: Mr. S. Craig Bam.

**Offices.** Head office: Newmarket Square, Port Elizabeth. London office: 122, Cannon Street, E.C. 4. Cables: "Canpack."

**Bankers.**—The National Bank of South Africa, Ltd.



THE SOUTH AFRICAN BREWERIES LTD., Johannesburg.

1. "Castle Brewery," Salisbury, Southern Rhodesia.

2. "Castle Brewery," Bloemfontein.

(See letterpress, page 220.)

The project can only be considered as being at present in the experimental stage, but the results already obtained encourage the anticipation that an important new enterprise will in the near future be opened up to the agricultural community of South Africa, the efforts of the South African Breweries Ltd. in this connection being supplemented by the interest taken in the subject by the Government agricultural authorities.

**Financial.**—According to the balance sheet for the year ended March 31, 1925, the profits of the company, after making provision for depreciation and London expenses, amounted to £323,047 19s. 8d., which, with the sum of £88,766 16s. 5d. brought forward, made a total of £411,814 16s. 1d. After providing for income tax and corporation profits tax and allowing for the interim dividends paid on both preference and ordinary shares, there remained a balance of £277,829 10s. 2d., which was allocated as follows: final dividends of 2½ per cent. on the preference shares (less income tax) and 2s. per share on the

#### AFRICAN CANNING AND PACKING CORPORATION LTD.

**Inception.**—The corporation bearing this title was established in 1919 to consolidate the interests of a group of pineapple growing estates, and to engage in the canning of pineapples and other fruit.

**Activities.**—The company's factory at Port Elizabeth is devoted to the canning of pineapple, pears, apricots, grape fruit, berries, and other fruits. It also manufactures jams, marmalade, fruit pulp, glace and crystallised fruits. The chief brands are known as "Gold Reef," "Sakabula" and "Surf Maid," all of which have gained a high reputation.

**Capital.**—The capital of the organisation is £530,000.

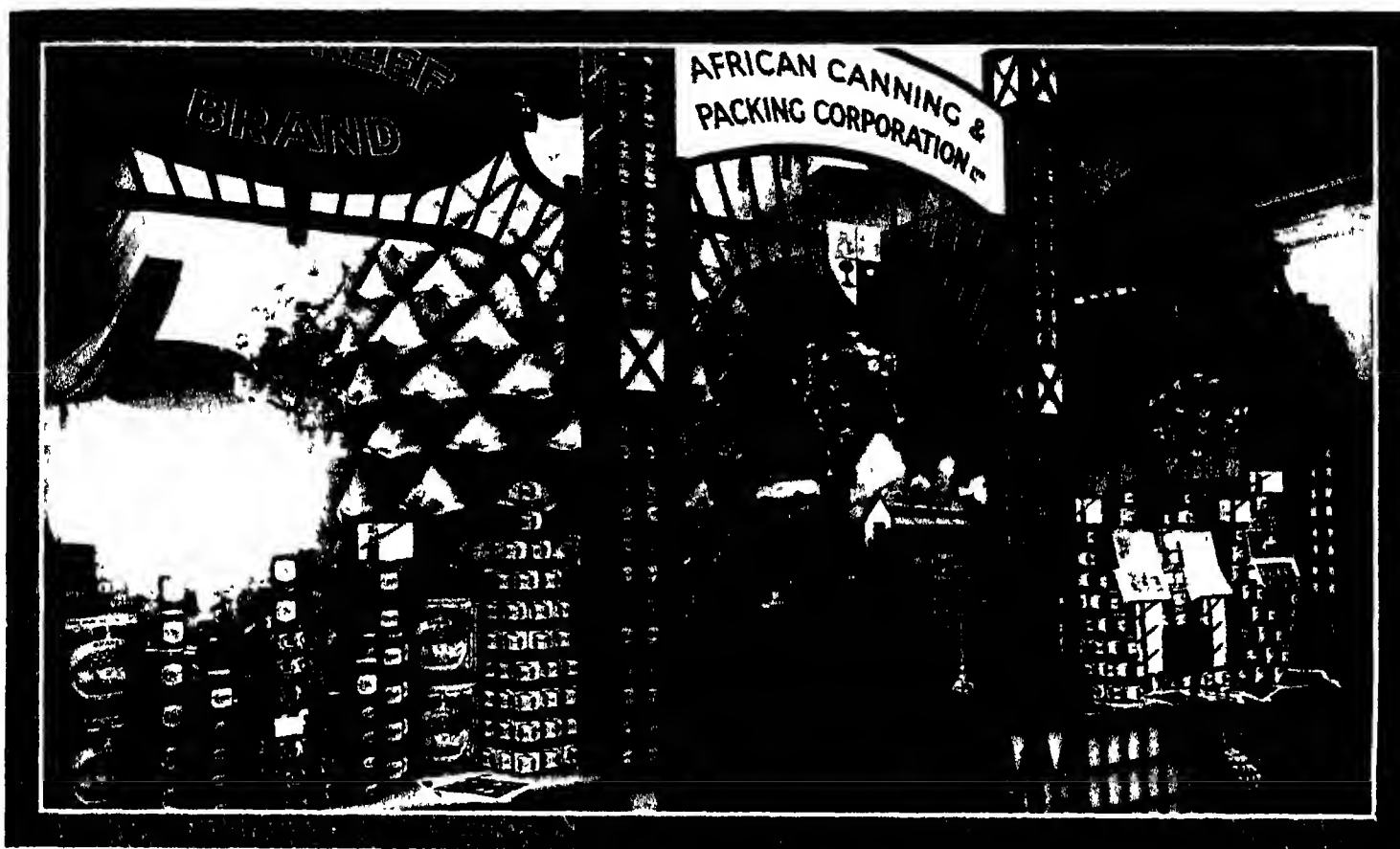
**Properties.**—The landed property of the corporation covers some 8,000 acres in the Bathurst district of Cape Province, which is in the heart of the pineapple growing industry of South Africa. The fruit from this district acquires a flavour and a rich colour which are

#### PRETORIA PORTLAND CEMENT CO. LTD.

**Inception.**—This very important company was established in 1892, and was then known as the First Portland Factory, Ltd. It began operations with a small shaft kiln plant, producing a few hundred bags of cement per month, but in spite of assistance from the Republican Government in the form of a protective tariff, and the fact that imported Portland cement was almost unobtainable, except at prohibitive cost, little progress was made, due mainly to the antiquated process of manufacture then in use. The enterprise was thus virtually in a state of collapse when reconstruction and revised administrative methods were resolved upon.

**Capital.**—This is £630,000, in £1 fully paid shares.

**Development.**—In 1904 the company under its present name introduced a rotary kiln (which has revolutionised the process of manufacture of Portland cement), and



AFRICAN CANNING & PACKING CORPORATION LTD., Port Elizabeth.  
The Firm's Exhibit at the Wembley Exhibition.

subsequently added other modern units. Success attended the introduction of these improvements, and the demand for cement having increased, the company was encouraged to make considerable additions to its plant. To-day the productive capacity of the factories exceeds 3,000,000 bags (of 100 lbs. each) per annum equivalent to about 1,500,000 casks, and these figures indicate the advancement made by the organisation, whose enterprise is now recognised as one of the most successful of South African industries.

**Activities.**—The company operates two electrically controlled factories—one at Hercules, Pretoria (dry process), on the original site of operations, and the other (wet process) at Slurry, near Mafeking. This latter was erected in 1915, and is to-day the largest Portland cement works operating in South Africa. The limestone deposits owned by the company are of very high quality, are practically unlimited in extent, and the quarries are situated conveniently near to each factory. Gypsum is also quarried on one of the company's properties.

**"Pretoria Cement."**—This cement has been used exclusively in the majority of South Africa's leading buildings, among the most important of which are Union Buildings (approximately 80,000 bags), Railway Station, University Buildings, Post Office and Government Buildings in Pretoria; the Town Hall, new Law Courts, Chamber of Mines Building and University Buildings in Johannesburg, the new Graving Dock (630,000 bags), Harbour Works, Congella, and the Shongweni Dam (250,000 bags) in Durban. It was also used in the construction

of the harbour works at East London and Port Elizabeth, and in many irrigation schemes, the largest of which are the Vaal River Barrage, the Hartbeespoort Dam (250,000 bags), Lake Mentz (201,000 bags), Calitzdorp and Van Rynvelds Pass (120,000 bags).

**Power Plant.** Power is derived from turbo-generators, supplied with super-heated steam from Babcock & Wilcox 250 h.p. sterling boilers, fitted with mechanical chain grate stokers. The stations produce sufficient power to cope with all the needs of the factories, including lighting and driving power. These factories possess chemical and physical testing laboratories equipped with the latest appliances for testing materials used in the manufacture of products. Great care is taken in this connection, every truck of cement leaving the works being tested and full reports kept.

**Staff.**—The average total of employees is 150 whites and 1,200 natives, wages paid amounting to £9,000 per month. No difficulty is experienced in obtaining unskilled native labour, the welfare of the employees receives every attention, and the company provides tennis courts, swimming baths, a recreation club and library.

**Directorate.**—Mr F. G. Izod, M.B.E. (chairman), Sir Julius Jeppe, C.B.E., Mr. E. Davidson (managing director and general manager), Messrs C. Maggs and T. Marks Secretary. Mr M. C. Bird.

**Head Office.**—Colonial Mutual Chambers, 94, Fox Street, Johannesburg. Cables "Cement," Johannesburg.

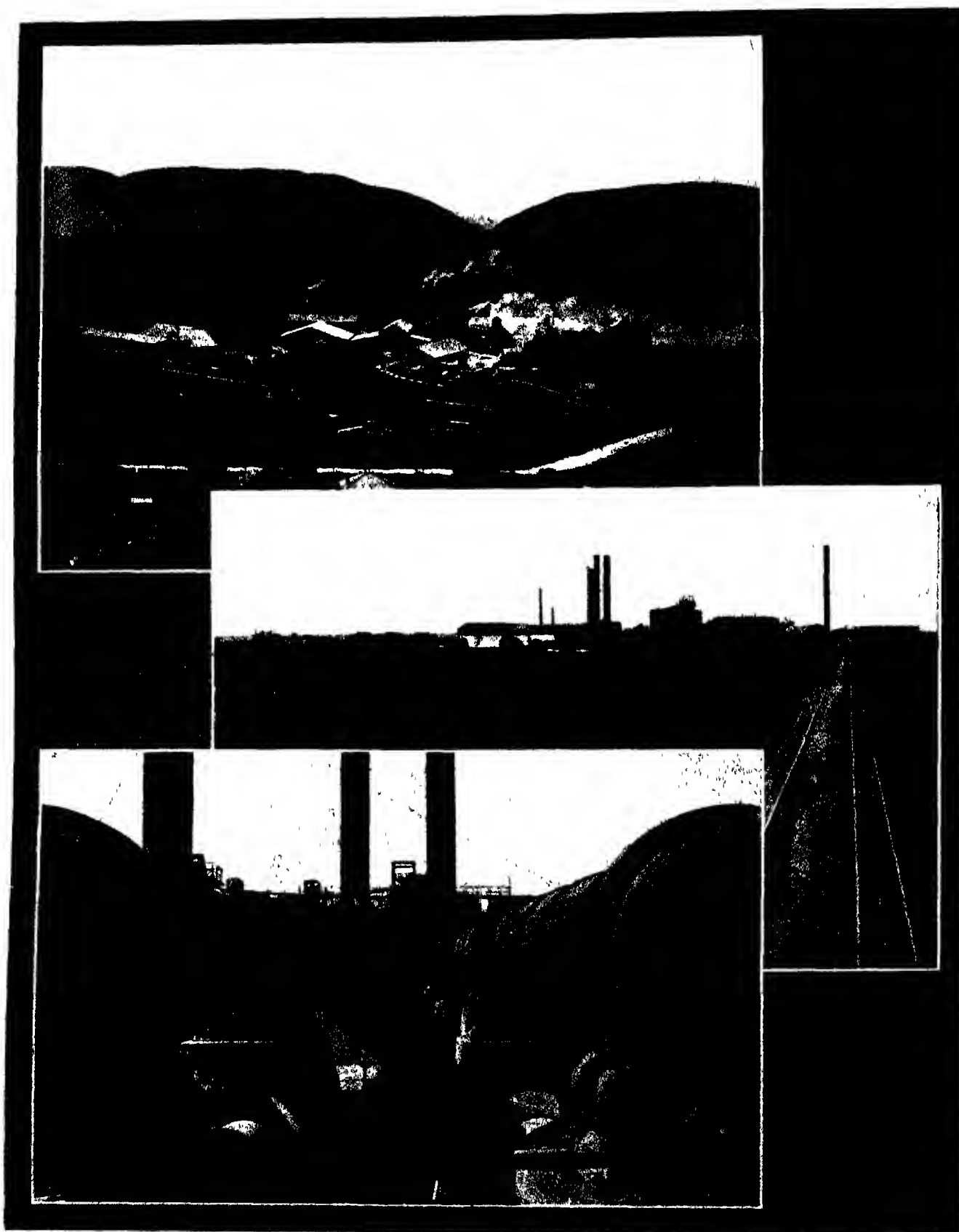
(See illustration, page 224.)

#### WHITE'S SOUTH AFRICAN CEMENT CO. LTD.

**Inception.**—This company (registered in England) is subsidiary to the two large English Portland cement companies—the Associated Portland Cement Manufacturers and the British Portland Cement Manufacturers, Ltd. The factory, which was erected under the supervision of the companies just named, was completed and started producing Portland cement in 1914. It is equipped with the finest plant procurable, and has one of the most up-to-date cement works in the world besides having behind it the practical experience gained by the parent companies during the past hundred years and the results of the most modern research work.

**Installation.**—The "wet process" of manufacture has been adopted which ensures absolute uniformity of quality. Two rotary kilns are installed, the capacity of the factory being approximately 1,000,000 bags per annum.

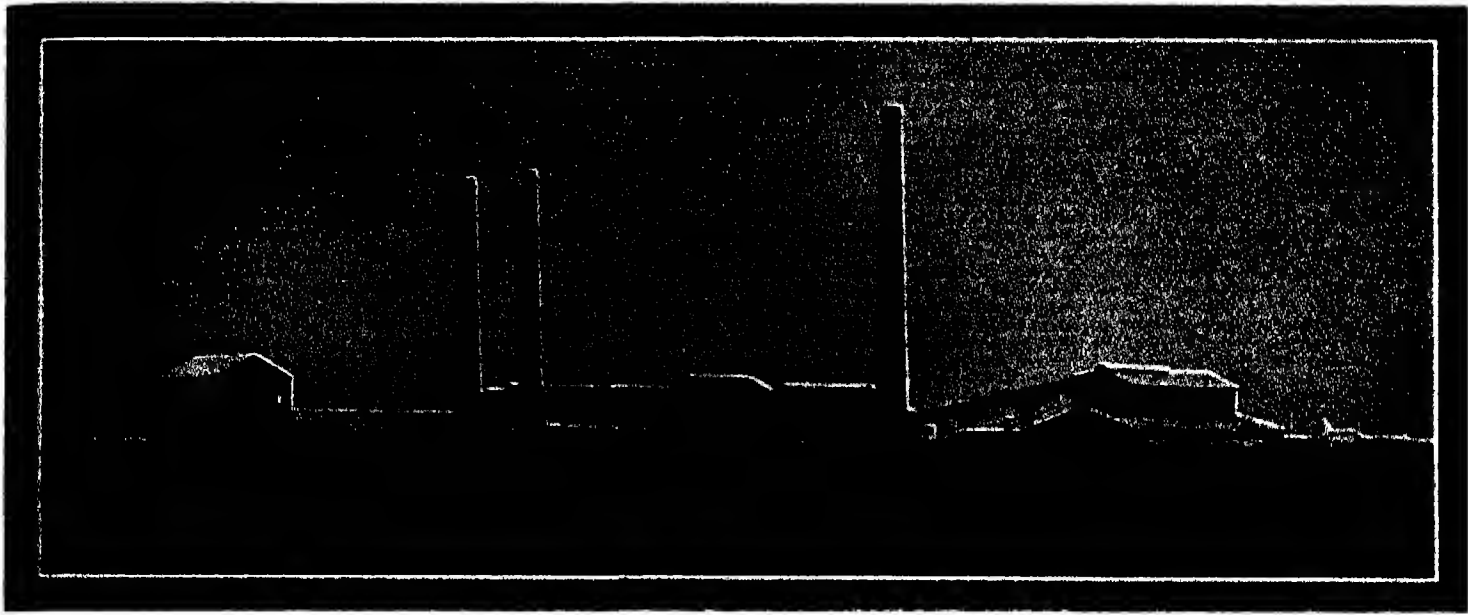
**Product.**—The product is not only guaranteed to exceed the requirements of the British Standard Specification, but prolonged tests have proved it to be equal in all respects to the brands manufactured by the parent companies. It has been extensively used in buildings and bridges throughout the Union, Government grain elevators, irrigation and water work schemes, etc., and was exclusively employed in the Kamanassie Dam, Oudtshoorn, the Bethulie Dam, the Steenbras Reservoir and Capetown water supply, being also largely utilised in the Vaal River Barrage of the Rand Water Board.



PRETORIA PORTLAND CEMENT CO. LTD., Johannesburg.

1. General View of Company's Works at Hercules, near Pretoria.
- Centre. View of the Works at Slurry.
2. The Kilns, Slurry.

(See *Illustrations*, page 222.)



**WHITE'S SOUTH AFRICAN CEMENT CO. LTD., Johannesburg.**  
General View of the Factory, 30 miles South of Kroonstad, Orange Free State  
(See letterpress, page 223)

Being centrally situated, the factory is in a position to supply the requirements of the whole Union.

**Offices.**—Head office, 47-49, National Bank Buildings, Sammonds Street, Johannesburg. P.O. Box 2484. Cables: "Portland," Johannesburg.

**BOKSBURG BRICK AND FIRECLAY CO. LTD.**

**Situation.** The works of this company are situated at Boksburg North in the Transvaal and are self-contained, the very complete installation there permitting the execution of orders of any size.

**Activities.** The company has been for many years contractors to the Union Government of South Africa, the South African Railways and the Victoria Falls Power Company Ltd. while its products have also resulted in the winning of many testimonials from numbers of leading firms and others.



**BOKSBURG BRICK AND FIRECLAY CO. LTD., Johannesburg.**  
View of Works at Boksburg, North Transvaal.



A fine exhibit of the company was shown at the Wembley Exhibition, when both English and American experts very favourably commented upon it.

**Products.**—The shale used by the firm is of exceptionally fine quality, and on analysis showed a percentage of from 60 to 68 per cent silica, with a lower iron content than any other known deposit. The over-burden is manufactured into various types of building bricks, these are of excellent quality, and are all double pressed.

The company always desires to introduce the most modern methods of manufacture, and the great success that has attended its efforts is attributable solely to the sterling qualities of its output.

**Head Office.** 60-62, Exploration Buildings, Johannesburg.

**Bankers.** The National Bank of South Africa, Ltd.

**Cables.** "Porcelain," Johannesburg.

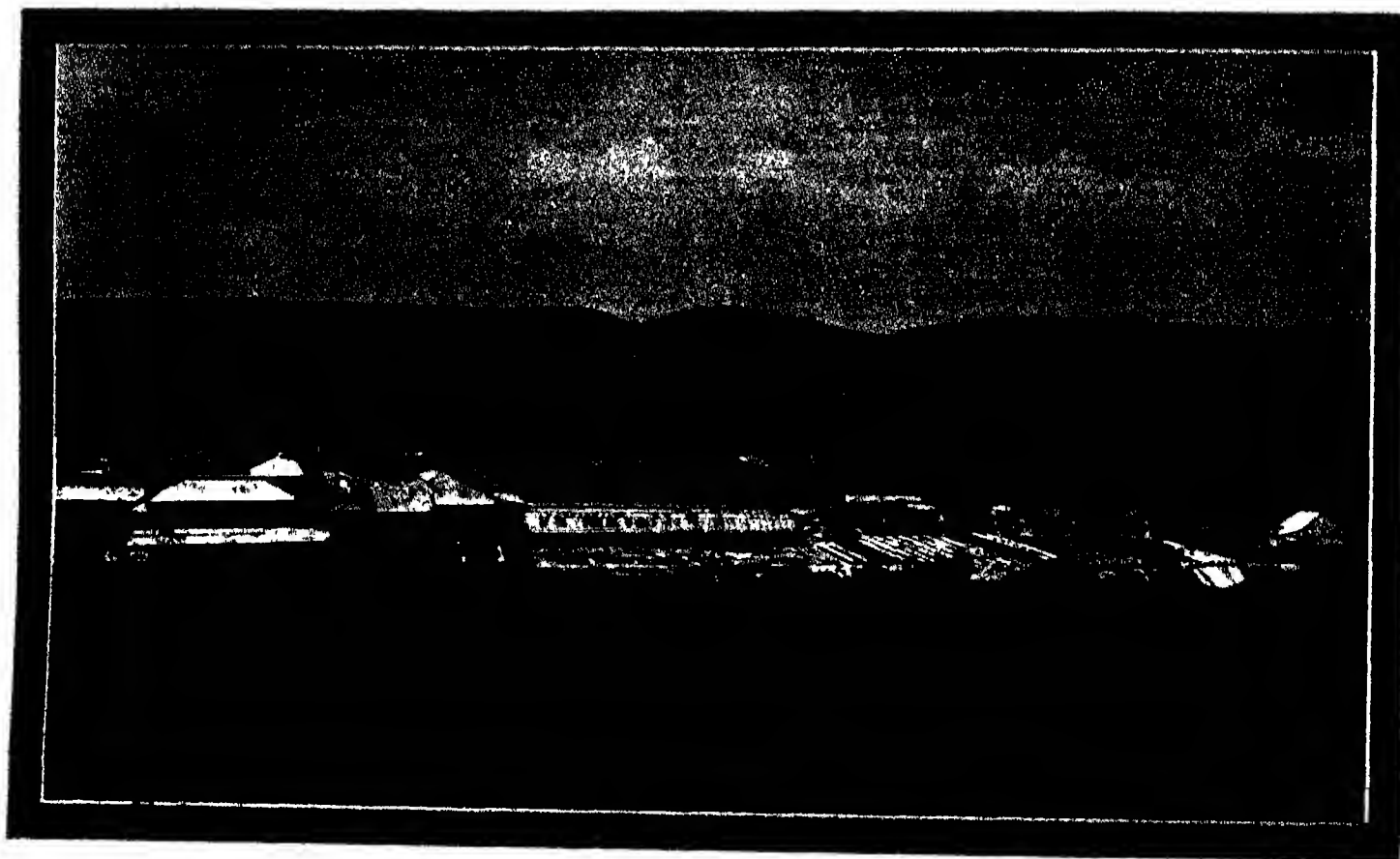
Marks' Block, Exchange Building, the Dutch and English Churches, the Flatherley Building in Market Square and Jeppe House, Doornfontein. He also converted the old Rand Club into the old Law Courts. His Pretoria contracts include the following: The old Government Building, the new University College new Mint Building, Artillery Barracks, Investment Building and Union Mansions Ltd., while at Bloemfontein the most important contracts have been the Raadzaal and the Prison.

**Property and Output.**—The land belonging to the factory is some twenty-seven acres in extent; the output amounts to twelve million bricks per annum, and there is a large supply of shale clay on the property, sufficient to last for many years. The plant consists of two continuous and twelve down draft kilns and there is a railway siding running right into the factory.

The company will be pleased to supply information with regard to any of the pro-

and the average turnover is between £170,000 and £200,000.

**Premises.** The works and stock yards, which are situated at Maydon Wharf, cover fully five acres, and the shops are equipped with the most modern plant for structural engineering. There is a compressed air plant for supplying power to the pneumatic riveters, as well as an hydraulic compressor feeding the eight hydraulic riveters which are installed in the yards. Both these plants are electrically driven and have emergency auxiliary steam engines. The yards, with the railways running through them, are in an excellent position for receiving and shipping merchandise. The private siding which traverses the stock yards is equipped with a 5-ton travelling crane, there being a 60ft gib crane with a lifting capacity of eight tons. This crane can be added to considerably. The shops are fitted with overhead travelling cranes. Motive power is electrical, the energy being supplied by the Durban



JOHN J. KIRKNESS (THE GROENKLOOF BRICK, TILE & POTTERY FACTORY), LTD., Pretoria.  
General View of the Works, giving some idea of the size of the Industry.

**JOHN J. KIRKNESS (THE GROENKLOOF BRICK, TILE & POTTERY FACTORY), LTD., PRETORIA.**

**Inception.**—The founder of this enterprise, Mr J J Kirkness, started operations in a small way as a builder and contractor in 1887 at Bethlehem. Some of the first work carried out were bridge construction in the Orange Free State and church buildings in Bethlehem and Heilbron. Business expanding, Mr Kirkness later on went to Barberton, and then, in 1888, to Johannesburg. Gradually the enterprise grew, until to-day the operations cover the Union, Rhodesia and South Africa.

**Activities.**—Some of the principal buildings erected by Mr Kirkness are, Lewis &

ducts which it is manufacturing, these including all varieties of bricks, roofing tiles, quarry tiles, pottery, etc.

**Staff.**—These number 60 Europeans and 440 Natives.

**Bankers.** The National Bank of South Africa, Ltd.

**Cables.**—"Kirkness," Pretoria.

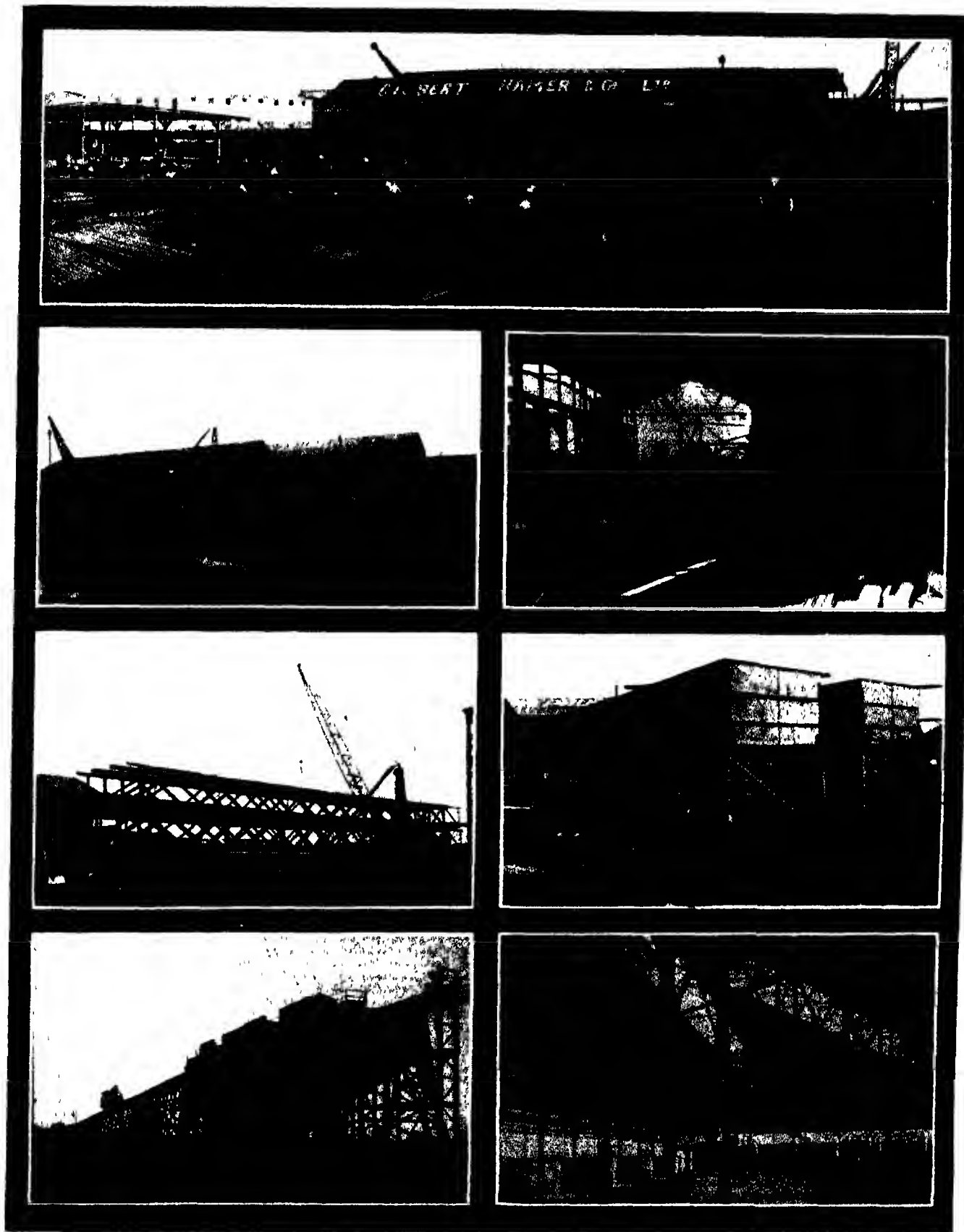
**GILBERT HAMER & CO. LTD.**

**Inception.**—Founded in 1906, this company assumed the name of Gilbert Hamer & Co. four years later, the present style being adopted in 1911 when the enterprise occupied premises at Maydon Road.

**Capital.**—The working capital of the company, incorporated in Natal, is £30,000,

Corporation to 45 motors with an aggregate of between 290 to 300 h.p. The stocks held in Durban average 1,400 tons of assorted sectional steel, which is imported from the United Kingdom.

**Contracts.**—Among the contracts undertaken by the company are the following: supplied the South African Railways and Harbours with the whole of the steel work for the masts and bridges in connection with the electrification of the Natal line (a total of 8,000 tons of light structural steel work), this being the first electrical railway scheme in the country; coal mine head-gears for the Dundee Coal Co.; coal bunkering plant at Cato Ridge for the South African Railways (this being the



GILBERT HAMER & CO. LTD., Durban.

1 & 2. General View of the Yard.

3. Another Section of the Yard.

5. Railway Electrification Scheme. Steel Structures ready for Erection.

7. Another Important Contract.

4. View of the Machine Shops.

6. Hoppers for "Butters" Filter Plant, as supplied to Gold Mining Companies.

8. Interesting Steel Structure supplied by the Firm.

largest coaling appliance in the Union), erected three 1-million gallon oil tanks on the Bluff for the British Imperial Oil Co., ice tanks measuring 62 ft. by 15 ft., manufactured and erected for Sparks & Young, structural steel for the Farmers' Co-operative Meat Industries at Congella, erection of hopper wagons for the Gold Mines, structural steel for Platzky's Buildings at Port Elizabeth, additional steel extension to Corporation Abattoirs and for Rhodesian Broken Hill Development Co. power house, mill house for Sir J. L. Hulett at Felixton, Zululand, steel work for the New Modderfontein Gold Mining Co.'s classifying plant, large stores and buildings for African Explosives and Ind. Ltd., tanks with capacities of 30,000 and 50,000 gallons for the Natal Chemical Syndicate, and steel work for the tube mill

**Head Office and Works.**—Maydon Wharf, Durban P.O. Box 301 Cables "Gardens"

**Code.** Western Union 5 letter

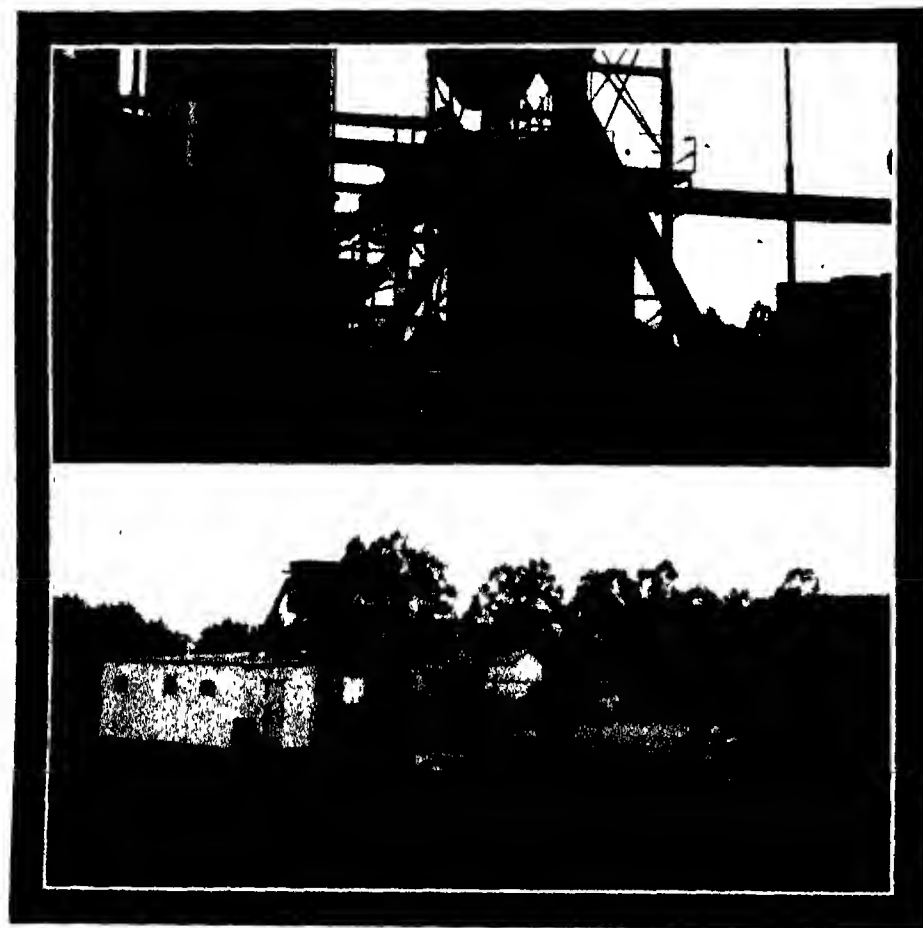
**Johannesburg Offices.**—Royal Chambers, corner of Summonds and Fox Streets Cables "Steelwor"

**London Agents.**—Messrs. Spicers' Export Ltd., 19, New Bridge Street E.C. 4

**Bankers.** The National Bank of South Africa, Ltd., Natal Branch  
(See illustration page 227)

#### HENDERSON'S TRANSVAAL ESTATES LTD.

**Inception.** This company, registered in 1912, is a reorganisation of an enterprise with the same name registered in Rhodesia in 1908, which itself was a reconstruction of a company registered in London in 1894



HENDERSON'S TRANSVAAL ESTATES LTD., Johannesburg.  
1. General View from Producer Gas Outlet Side  
2. Tar Dehydrating Plant (left) and Water Cooling Tower (right).

pebble bins for the Central Mining and Investment Corp., Modderfontein East Mine

**Contracts in Hand.**—Among the contracts in hand are the following: Steel work for the new power station at Port Elizabeth, Durban New Theatre, water cooling tray tower and structure for Sparks & Young, steel work for the Town Hall at Springs, shafts, sets and head gear for the S.W. Africa Co., steel work for Station and Tobacco Factory at Salisbury, Rhodesia; structural steel for Durban Falkirk Iron Co., etc.

**Staff.**—This numbers from 80 to 100 workmen, besides about 200 Natives

**Directorate.**—Sir J. L. Hulett, Messrs J. T. Lea (managing director), W. E. R. Edwards, A. S. L. Hulett, and W. Doull Secretary; Mr. J. Johnston

**Capital.**—The authorised capital is £1,075,000 in 4,300,000 shares of 5s each. To March 31, 1924, 2,818,487 shares were issued and fully paid, of which 600,000 were subscribed at par

**Activities.**—The company's interests combine the ownership of freehold farms, covering large areas in the Transvaal and Orange Free State, with extensive mineral rights in the same territories and in Swaziland. Other property includes the lease of townships.

**Industrial Possibilities.**—The manifold natural advantages and services available to the industrial settler in South Africa are exemplified by those existing at the Tweefontein United Collieries. Throughout this property, covering 13,000 acres freehold of

the Witbank coal district of the Transvaal cheap sites with unlimited water and building materials at low cost are obtainable, power, both in electricity and gas, is unlimited and cheap, freedom from municipal taxation ensures lighting and sanitary services at nominal rates, while the Government School, Post Office and Railway connections and daily medical attendance are additional benefits enjoyed. Labour is plentiful and cheap, and comfortable houses at low rental are provided for employees.

**Developments.**—The Tweefontein Group is not confining its attention solely to coal producing, but by the installation of a Lynnby product plant at the Minaar Colliery takes a leading part in the supply of high-grade tar. In course of time the manufacture of sulphate of ammonia and other by-products of coal will be undertaken. Conditions are also extremely favourable for the opening of a starch industry.

**Subsidiary Companies.**—In addition to the Tweefontein United Collieries Ltd., the company is interested in the following: Henderson Consolidated Corporation Ltd., Tweefontein Colliery Ltd., Daggafontein Mines Ltd., Delagoa Bay Development Corporation Ltd., British Asbestos Chrome Co. Ltd. and S.A. Construction Company Ltd.

**Offices.**—London 36, New Broad Street, E.C. 2 Johannesburg City House, 27, Harrison Street Cables "Hibernus," Johannesburg and London

#### WADE AND DORMAN LTD.

**Inception.**—This firm of structural engineers of Durban and Johannesburg was founded in 1903 as Charles Wade & Sons. Six years later it amalgamated with Messrs. Dorman Long & Co. Ltd., of Middlesbrough England.

**Workshops and Stockyards.**—The company has extensive workshops and stockyards both at Durban and Johannesburg, and has supplied steel frame buildings to constituents throughout the Union, some of the contracts for steel work carried out by the Durban shops being those for Stuttaford's new buildings, Norman Anstey, National Mutual Life Association of Australasia Ltd., Payne & Payne, The Natal Land and Colonisation Co., Henderson's, John Orr & Co., Manne Hotel, Royal Hotel, King's Hall, Waverley Hotel, Lion Match Factory, and Natal Estates Ltd.

**Other Contracts.**—These include steel work for the Johannesburg Town Hall, Durban Town Hall, and the Cato Goods Sheds for the Government in Durban, the roof in connection with this latter structure being the largest in Africa, covering 5½ acres and being 400 ft. long by 570 ft. wide. In addition, structural steel was furnished for the New Modderfontein Stamp Mill at Circular Shaft, also for the Colenso Power Station at Colenso.

**Workshop Installation.**—The new and additional plant recently installed here comprises five electric cranes, four of which have a lifting capacity of five and one of 10 tons on a clear span of over 50 feet. Then there are two large punching and shearing machines, saws, plate rolls, rivetting machines, pneumatic hammers and drilling machines, electrical drills and ending machines. The whole of this plant is driven by power supplied by the Durban Corporation, and it is one of the most up-to-date installations of this particular class in the whole of South Africa.

**Stocks.**—The largest stocks of steel sections in the country are carried by the company, and this enables it to supply almost every kind of steel structure at short notice.

**Directorate.**—Sir. A. J. Dorman, Sir Hugh Bell, Mr. Walter B. Wade (managing director), Capt. M. C. Wade and Mr. F. D. Wade.



WADE & DORMAN LTD., Durban.  
General View of the Works

**Agents.** The company's agents at Capetown are Messrs. Brimble & Briggs, but it has purchased a site at Woodstock in order to erect its own offices and shops there.

**Buying Agents.** Messrs Charles Wade & Co., Birmingham, England.

**Address.** South African Ironworks, Durban. P.O. Box 932. Cables "Joists" Code A B C 6th Edition.

**Johannesburg Offices and Works.** Main Street. P.O. Box 2997, under the management of Mr. John Shore.

#### MACDONALD, FORMAN & CO. LTD.

**Inception.** This company was formed in 1916 to carry on the business of grain milling engineers. In 1918 Mr. J. H. Forman joined the concern, which was then formed into a private limited liability company under the title of Macdonald, Forman & Co. Ltd.

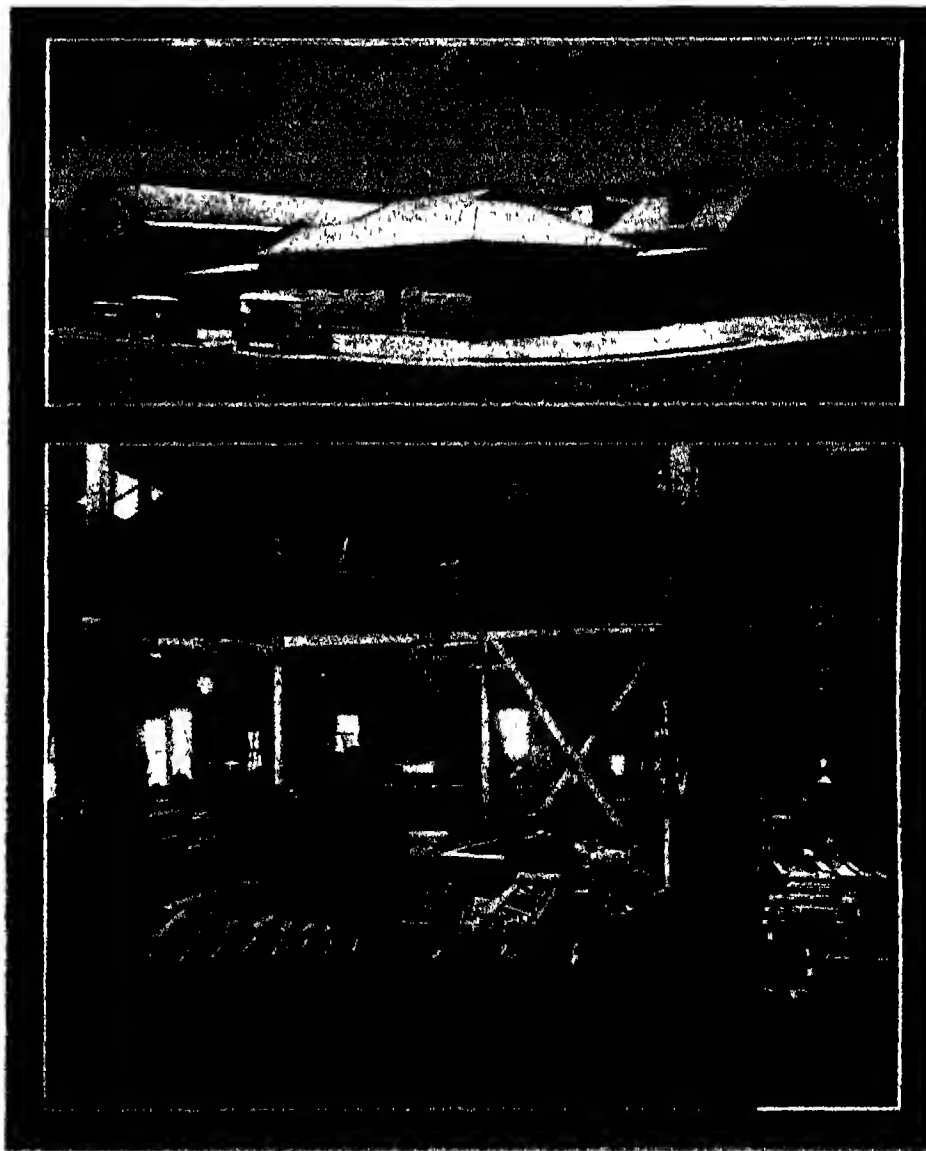
**Development.** Originally dealing exclusively in grain milling machinery, the construction and equipment of grain elevators were taken up and several important contracts were carried out. Later a belting department was established, to become an important feature of the enterprise.

**Activities.**—The company operates throughout the Union, Rhodesia and Mozambique, and has representatives constantly travelling, as well as having offices and depôts at convenient points.

**Factory.**—The head office and factory are in Johannesburg, the buildings being erected on six stands, and having an area of 24,000 sq. ft., parts of the premises being double storeyed. The machine shop has, besides the usual equipment, a complete plant for grinding and re-fluting mill rolls, three machines being installed, each capable of taking two rolls up to 60 in. in length, with separate grinders for smooth rolls. The wood-working shop is equipped with modern plant, and is capable of turning out all kinds of joinery in connection with flour mills.

**Staff.**—A large outdoor staff of erectors and millwrights is maintained for work in all parts of the country.

**Contracts.**—Among the many important contracts carried out by Macdonald, Forman & Co. Ltd. are two reinforced concrete buildings with machinery for the Vereeniging Milling Co., together with grain elevator, also in concrete, having a capacity of 100,000 bags of maize. Further recent contracts



MACDONALD, FORMAN & CO. LTD., Johannesburg.  
1. Johannesburg Premises.  
2. Machine Shop.



SILVERTOWN TANNERY AND BOOT FACTORY LTD., Pretoria. The Factory

include large maize plants for Bennett's at Standerton, Schweizer Renecke Supply Stores, Rutowitz Flour Mills, Pretoria, Frenkel & Co., Johannesburg and a large 15-sack flour mill for Pretoria West Flour Mills. The company has also erected plants for the extraction of oil from maize germ.

**Agencies.** - Messrs F. R. & F. Turner Ltd. Ipswich (flour milling engineers) and Southwark Manufacturing Co. Ltd. of London (machine belts).

All general engineering requirements are purchased on the open market.

**Directorate.** - Messrs Thomas Macdonald (managing director), J. H. Forman, C. F., and W. Seddon.

**Bankers.** The National Bank of South Africa, Ltd., Commissioner Street, Central Branch, Johannesburg.

**Address.** - Corner of Kruis and Frederick Streets, Cables "Domak" Code Bentley's.

#### SILVERTOWN TANNERY AND BOOT FACTORY LTD.

**Inception.** The company named was formed in the year 1915 to establish a tannery and footwear factory to deal in South African raw materials, with the object of converting them into sole, harness, upper and fancy leathers, also into footwear.

**Development.** The business was soon placed on a firm basis, and steadily increasing in importance, it now utilises 550 hides and 750 skins weekly.

**Works.** These are located at Silvertown on a large area of ground, provided with an ample water supply, and the equipment of the factory is thoroughly up-to-date. Coal, to meet the company's requirements, is cheap, while wattle bark for tanning is produced on the proprietors' estate in Transvaal Province.

**Products.** - The products of the Silvertown Tannery and Boot Factory Ltd., carry the distinguishing mark of "Magnolia," and are well-known throughout the Union of South Africa, in which they find a ready sale, some indeed being exported to British East Africa and Portuguese East Africa. The products are sold through the medium of the company's agents.

**Employees.** - The white employees of the company number about 80, while the natives and coloured aggregate some 120.

**Directorate.** - The managing director and principal shareholder is Mr. Charles Maggs.

**Bankers.** National Bank of South Africa.

**Head Office.** Somerset House, 178, Vermeulen Street opposite Church Square, Cables "Magnolia."

#### THESEN & CO. LTD.

**Inception.** - A progressive firm, it owes its inception to the enterprise of two brothers, Mr. A. H. Thesen and Capt. M. I. Thesen, shipowners and merchants of Stavanger, Norway. In 1860 the depression in Norwegian shipping and mercantile trade led them to undertake, accompanied by their families, a voyage in their last remaining sailing vessel the "Albatross," bound with a cargo of timber for New Zealand. Owing to various circumstances, however, the schooner ended its voyage at Capetown, where the foundations of the present flourishing concern were laid.

**Personal.** The sound basis and subsequent success of the organisation under notice were due in great measure to the labours of the company's present chairman, Mr. Peter Thesen, a boy of 16 at the inauguration of the South African venture. After shipping office experience successively at Port Elizabeth and Capetown, and a short sojourn on the gold-fields, he joined his brothers (who were then at Knysna) in business when they opened their Capetown office. Later he was accredited to the Union as Consul-General for Norway, being awarded the North Star on his retirement after ten years' service.

**Development.** - The company's initial South African operations lay principally in the direction of the coasting trade. The "Albatross," followed by a Dutch brig, and subsequently a fleet of six coasting steamers, were employed in this service. Constant extension of interests following on prosperity has secured for the firm its present importance as general merchants in timber, grain and ironware supplied for carriage-building.

**Timber Trade.** - The shipping of timber throughout South Africa is carried on from the company's own forest at Knysna and from Woodstock, near Capetown, on which properties electrically-driven mills are installed. The Knysna forest, covering 2,000 acres and constantly replanted, furnishes some twenty varieties of hardwoods, including

boxwood specially exported to England and the Continent for use in carriage-work. The firm handles, in addition to local timber, imported stocks from Norway, Sweden, Finland, Canada, the United States, Burma and Java.

**Flour Milling.** - The original Paarl Roller Flour Mills, with which Mr. J. P. Retief's "Nantes" mill was amalgamated, are among the company's other property. The plant, situated at Paarl, near Capetown, is employed chiefly in milling South African wheat, but imports and mills also Canadian, South American and Australian wheat. Of the latest type and electrically operated, it maintains an hourly output of 22 sacks of 200 lbs. each. Messrs. Thesen's "White Star Flour" is esteemed and distributed throughout Africa. The silo now installed is capable of storing 3,000 tons of grain, a capacity which will soon be doubled.

**Lime.** Under the firm's aegis the Standard Lime and Mortar Co. has been formed for the exploitation and manufacture of white lime on the Cape Flats, near Capetown.

**Fish Oil and Cattle Food.** - The company is now actively considering a projected fish industry in connection with the manufacture of fish oil and cattle food, a similar enterprise being conducted with success in Norway.

**Other Activities.** Other concerns owned by Thesen & Co. are the Premier Engineering Works Ltd. and the South Western Narrow Gauge Railway, which connects the town of Knysna with their forest.

**Representation.** - The company represents the Titan Paint Co., of Oslo, Norway.

**Foreign Agents.** - England: E. W. Bourne, 81, Spencer Street, Birmingham; United States: Henry W. Peabody & Co., New York; Norway: Krag & Co., Oslo.

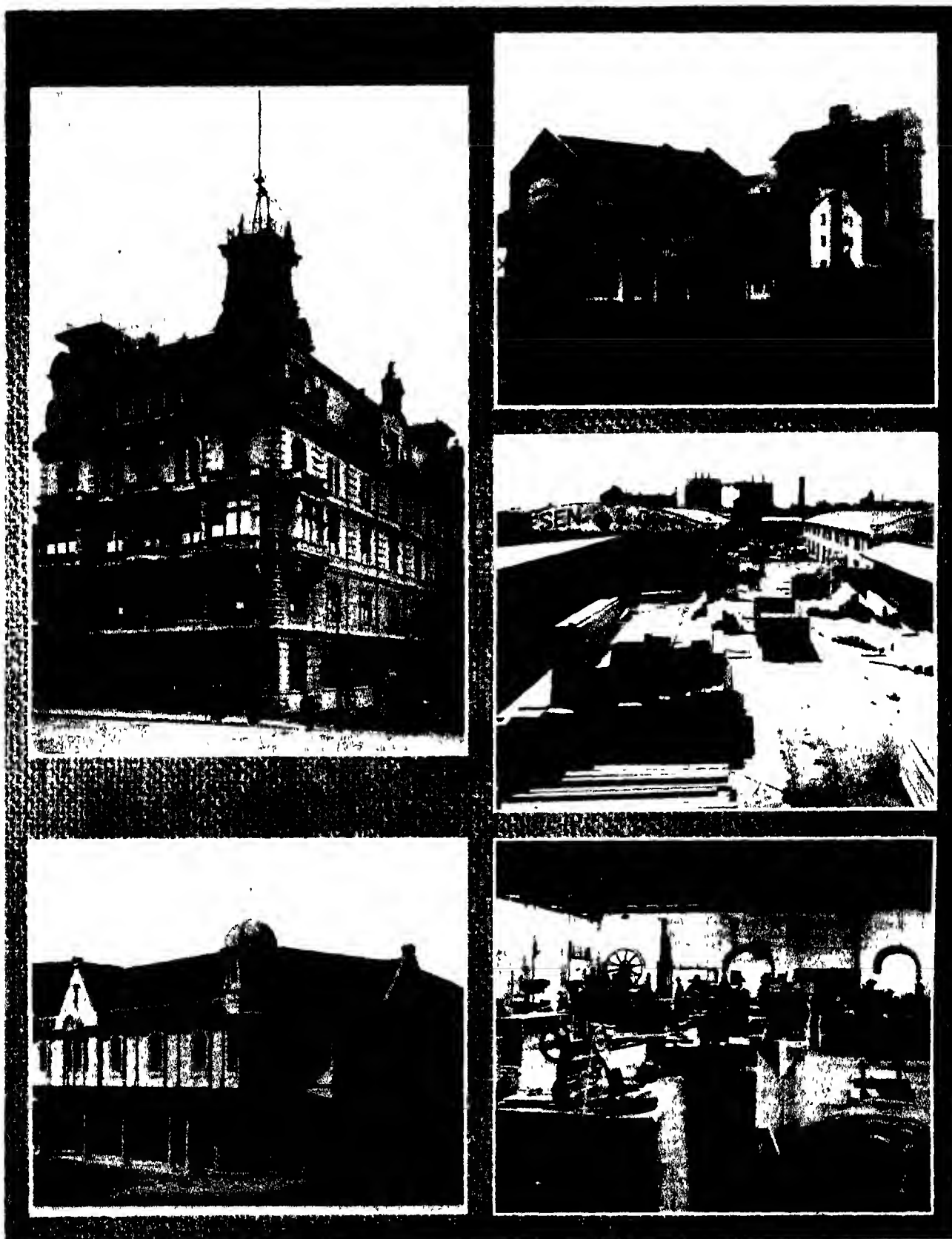
**Bankers.** - Standard Bank of South Africa, Ltd.; National Bank of South Africa, Ltd.

**Head Office.** - 30, Riebeeck Street, Capetown.

**Cables.** - "Thesen," for Capetown, Knysna and Durban.

**Directorate.** - The following compose the Board, the first two being the senior directors: Peter Thesen (chairman), C. W. Thesen, A. L. Thesen, Harry Thesen, Harold Thesen, M. T. Thesen and Oscar Thesen.





THEISEN & CO. LTD., Capetown.

1. Company's Building and Head Office Premises at Capetown.
2. Offices at Kaysna.
3. Company's Flour-mill and Silo at Paarl.
4. Saw-mill at Woodstock, near Capetown.
5. Part of up-to-date Saw-mill at Woodstock; everything is driven by Electricity.



WHALING STATION, "CUTTING UP STAGE"

## THE FISHING INDUSTRY OF SOUTH AFRICA

**T**he importance of the South African fishing industry is realised by few outside those engaged in it but the rapidity and volume of its expansion during the last few years are well exemplified by the state of affairs in Capetown Harbour to day, where the Railway and Harbour authorities have been seriously troubled to provide accommodation for the large and still growing fleet of trawlers, whalers, and motor fishing craft. Some idea of the potentialities of the industry can be gained from the fact that in Cape Province over 4,000 people are engaged in fishing pursuits, while the amount distributed in Capetown alone for wages and stores is placed at between £15,000 and £20,000 per week. It is further estimated that the fishable area of the Union is something like 110,000 square miles in extent, of which at present less than 20,000 miles have been surveyed.

**EARLY HISTORY.** Very early in the days of the East India trade the region around the "Cape of Storms" acquired a great reputation for the abundance of fish in its seas, a curious, and at the same time convenient, superstition arising among seafaring men that it was not lucky to pass the Cape on the long journey to the East without a short delay for the purpose of fishing on the Agulhas Bank. There is mention by Van Riebeeck in his journal that in an expedition to Saldanha Bay a fish very like the pike of his native country had been caught, to which he gave the name of "sea-pike" or "Zeesnoek". The name snoek is now familiar to all South Africans, and salted snoek not only constitutes an important article of food in the country, but is exported in large quantities to the value of about £10,000 per annum.

Later, though fishing was never exactly encouraged, such industry as existed was mostly identified with the Malay population of the Cape, and was limited in scope and primitive in method. The Malay is an expert fisherman, using his small open boat

and hand lines with skill, and he soon discovered that snoek could be caught in great numbers by the simple device of an unbarbed hook baited with a piece of coloured rag. He found also that crayfish could be procured in any quantity by a simple dip-net. In those days therefore the fish supply was more than abundant and cheap enough, with large snoek and crayfish purchasable at a penny each there could be no fear of starvation, even for the poorest in the land.

**LATER DEVELOPMENTS.** The development of the fishing industry came as a result of the discovery of South Africa's mineral wealth, the rise of the great inland towns, and the opening up of the country by the railways. Just when the supply of fish needed to be increased, it was found that the snoek and other varieties were becoming much scarcer. The capture of fish under a certain size was prohibited, and the experiment of introducing experienced fishermen from the North Sea and Norwegian coasts to develop the deep sea areas off the Cape coast was tried without success. Finally, experiments were made with the steam-trawling method of fishing, though it was some time before suitable areas for this were found. Scientific surveys were made, and the rich areas of False Bay, Mossel Bay and the Agulhas Bank were discovered and utilised. Still later developments were in the direction of larger boats fitted with motor power, the improvement of harbour accommodation, and the installation of modern plant for the conversion of the waste products of the fisheries into valuable poultry and stock foods.

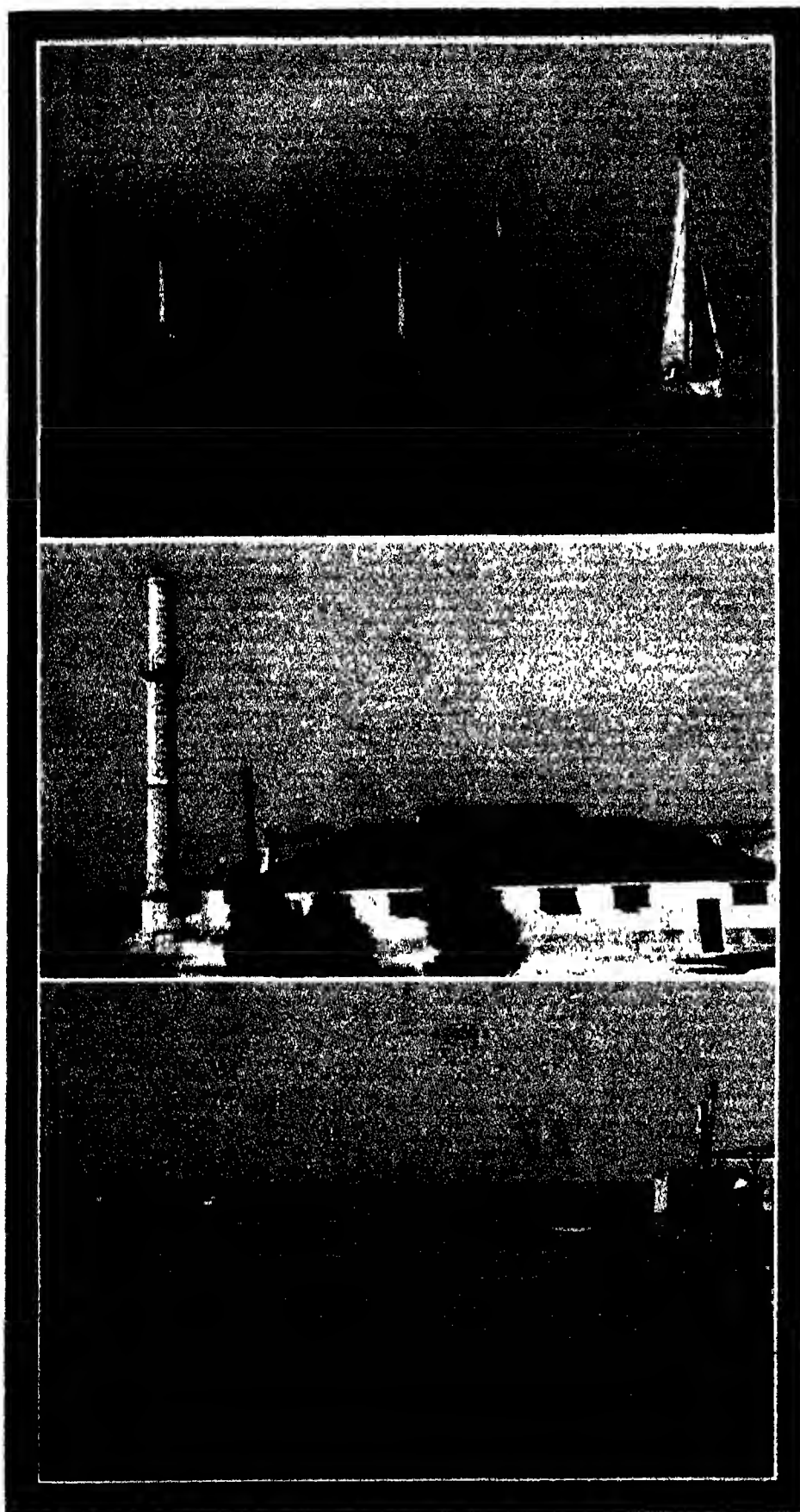
At Capetown especially the progress of the trawling industry has been very marked. By means of well equipped steam vessels it is now possible to bring fish in good condition to Capetown from the Agulhas Bank, and even from distances of over 150 miles. This growth was not attained without serious risks and disappointments. The stormy Cape seas, with their unknown

currents and other dangers, led to the loss of many valuable vessels, the market has often been uncertain, fish, though abundant, are apt to shift their localities and cannot be found. At times it has appeared as if the enterprise would have to be abandoned, but it has at last been put on a sound and permanent basis. The fish supply to South Africa has been more than doubled, and there were in 1925 ten trawlers at work on fishing grounds previously untouched.

**PRODUCTS (MARINE).** The fish found in the waters off Cape Province and Natal coasts include many varieties, the best known and most commercially valuable being the snoek, stockfish (cod), kabeljaauw, kingklip, crayfish, gebeek, harder and sole.

**CRAYFISH INDUSTRY.** The Cape crayfish (or spiny lobster) first became known to Europe towards the end of the 18th century, but the crayfish industry was only started in a tentative way about 1874 by the Right Hon. J. X. Merriman. Several attempts to form companies afterwards failed, until Messrs. Hinchcliffe and Holland and Messrs. H. R. and H. J. C. Stephan started their up-to-date factories at Saldanha Bay, the North Bay Company being formed in 1912-13. During the War the industry thrived, but, owing to its dependence on the French market and the fluctuations of the franc, has since declined.

According to Mr. H. J. C. Stephan, the crayfish industry, which has absorbed a capital of £2,000,000 since 1914 (payment to fishermen alone amounting to over £60,000 per annum), needs Government assistance if it is to be kept on its feet. It is suggested that the Union Government should come to a tariff understanding with the French Government to enable the Saldanha Bay cannery to compete successfully with the Canadian canned fish manufacturers; also that the Government should interest itself in the industry by enforcing improved methods of canning (See also under "Commerce.")



STEPHAN BROS. LTD. Capetown.

1. A Portion of the Stephan Fleet of 150 Boats.
2. One of the Factories.
3. Showing Crates with Crayfish. Method of Storing Live Fish prior to Canning

(See letterpress, page 234)

**GLUBBLK** Often known as Cape salmon, the geelbek belongs to the same family as the kabeljaauw, and is a large handsome fish with a superficial resemblance only to the salmon. Being a surface-swimming fish and not a ground feeder, it is seldom taken by the trawl, but is often caught in large quantities by hook and line.

**HAARDER** The harder or mullet, and the maastanker or horse-mackerel are apparently identical with species found in other parts of the world. They are procurable in abundance, and the former has been salted and dried in quantities for the use of the farming population from early times in South Africa.

**KABELJAAUW** The kabeljaauw, or silver salmon (*Scorpaenidae*), belongs to a family of fishes which is widely distributed in the Northern and Southern Hemispheres. The name "kabeljaauw" is applied to it in the Cape and "silver salmon" in Natal, the latter name probably having reference to the silvery colour characteristic of small specimens. It is captured at the Cape in large quantities, both by line fishers and trawlers, but is not found in deep waters like the stockfish and kingklip fish. It is an important product in the ordinary line fishing industry of the Cape fishermen, as it occurs in fairly shallow parts, and does not migrate from place to place so much as several of the other fish of economic value.

**KINGKLIP** The kingklip (*Genypterus capensis*) is a large fish resembling the European ling. Both in South Africa and Australia it is highly prized as a food fish. In South Africa it was not well known, and was not procured in any abundance until the advent of the trawlers. Recently a considerable export trade in kingklip has arisen, not as a smoked article, but in the frozen state, and the trade with Australia is developing.

**SNOEK** The snook (pike) or zeesnoek, as it was first named by the early settlers, is characteristic of the Southern Hemisphere only, being known in Australia as the barracouta. It is a fish of the colder waters, being found mostly on the west coast of South Africa and never on the east coast except at Port Elizabeth on rare occasions. It was in early times in such abundance that it was practically unsaleable in the season, but as it is a fish which preserves well in salt, whether whole or cut up in small pieces ("mootjes"), quantities are sent inland, and of recent years it has been largely exported to Mauritius, where it is much appreciated by the Indian population.

**SOLE** The different varieties of flat fishes or soles number some fifty species, many of which are highly esteemed for their fine flavour. The most important is the mud sole or Agulhas sole, found in great quantities on the Agulhas Bank. It was first discovered in 1898 in the "Pieter Faure" survey, and this ground has been fished regularly by trawlers for about 20 years without producing any noticeable diminution in the supply. The South African market has therefore been well stocked, and some 50,000 lbs are exported annually.

**STOCKFISH** The stockfish (cod) was so named by the early Dutch settlers on account of its resemblance to the European cod, called stockfish in Holland. It is a large fish of a particularly fine flavour, may be utilised in the fresh state, and is well adapted for preservation, more especially as smoked fillet. This fish will prob-



STEPHAN BROS. LTD., Capetown  
Showing one of the Land Stations' Factory and Accommodation for Workers  
Part of the Company's 70 Miles of Coast.

ably prove the mainstay of the South African export trade, a promising market for it having been opened in Australia.

**WHALING INDUSTRY.** - Whales are found off both coasts of South Africa, and the revival during recent years of a very old industry has been rapid. Off the Natal coast alone over 12 500 whales were killed between 1908 and 1924, and exports of whale oil now amount to over a quarter of a million sterling a year.

#### STEPHAN BROS. LTD.

**Inception.** This firm was established by Mr. H. R. Stephan at Capetown in the early days. In 1918 it was converted into a limited liability company, the entire control being in the hands of Mr. H. J. C. Stephan.

**Activities.** The company is engaged in the crayfish industry and fisheries, having two canning and one can manufacturing factories, the three covering 12 acres. The plant is thoroughly up-to-date, 470,000 having been spent in improvements during a period of five years. As the company owns a coastline extending over 70 miles in the Malmesbury District which is as yet practically undeveloped, there is ample scope for the further expansion of the industry.

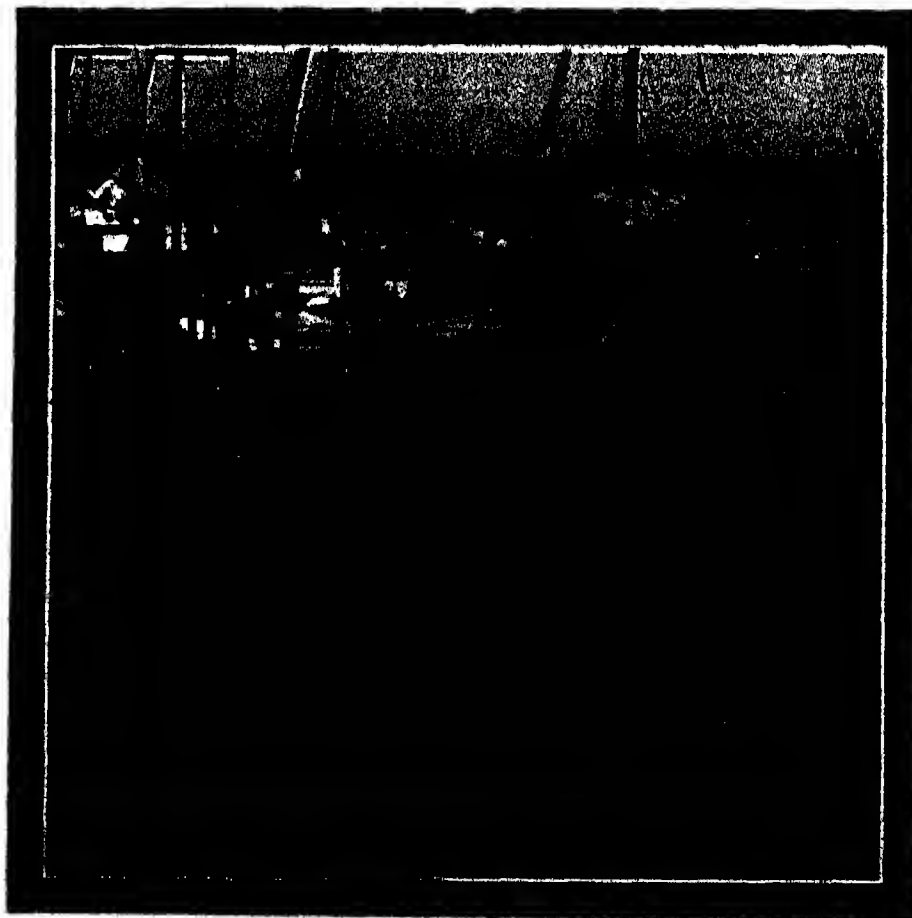
**Factories.** - The canning factories are equipped with the most efficient machinery, manufactured by Messrs. Bliss & Co. of U.S.A., while the can manufacturing plant is supplied with Karges-Hammer machines capable of turning out 200 cases of 95 cans each per day.

**Fish Handling.** - There are two important features in the method of handling the fish prior to canning. These are placed in crates alive, the crates remaining in the water until the fish are actually required for the factory, when they are conveyed in retort cages with a capacity of 50,000 fish direct from the crates to the factory. By this means the handling of the fish is eliminated, and the freshness of the product is ensured.

**Packing.** - Owing to "detining," the company has abandoned the usual system of packing with parchment paper lining, and adopted the method of packing with a veneer wood lining, which completely isolates the

contents from the tin. The production is 20,000 cases of 96 half-pound tins per annum. Fishing is confined mainly to general dried and salted fish, chiefly exported to Mauritius, the output being about 600 tons per annum.

**Equipment.** The company owns 67 open five-ton fishing boats for local fishing, 4 forty-ton motor boats, and one 150-ton Diesel engine vessel as well as a steam boat of 80 tons, the total number of craft of every



STEPHAN BROS. LTD., Capetown.  
Another View of Method of Storing Live Fish Prior to Canning.

description being 150. It also possesses workshops fully equipped for any light engineering work, where all five-ton open fishing boats are built.

**Employees.**—Employment is found for a thousand persons, including women and children, and all these dependents of the firm are housed and provided with boats and gear.

**Branches.**—There are eight branches situated along the Malmesbury District coast.

**Offices.**—48, Bree Street, Capetown. Cables: "Stephanus," Capetown. Codes: A B C 5th Edition and Bentley's.

**Bankers.**—Standard Bank of South Africa, Strand Street Branch.

(See illustrations, pages 233, 234.)

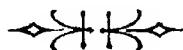
#### SALDANHA BAY CANNING CO. LTD.

This enterprise was founded in 1910 by Capt. H. Scharnberg, and became a limited liability company in 1922, with a capital of £12,000. The factory, which is situated at Saldanha, 60 miles from Capetown, is the property of the company and covers an area of 17,000 square feet. It is fully equipped for the canning industry, and employs 15 boys and 40 girls, while 100 fishermen are engaged in the actual fishing. The company owns 9 motor launches for fishing and the transportation of the firm's products to Capetown, and employs 15 fishing boats. The activities of the organisation centre principally in the fishing and canning of crayfish and Cape lobster ("Saldanha Bay Brand") and the export of these articles to Great Britain,

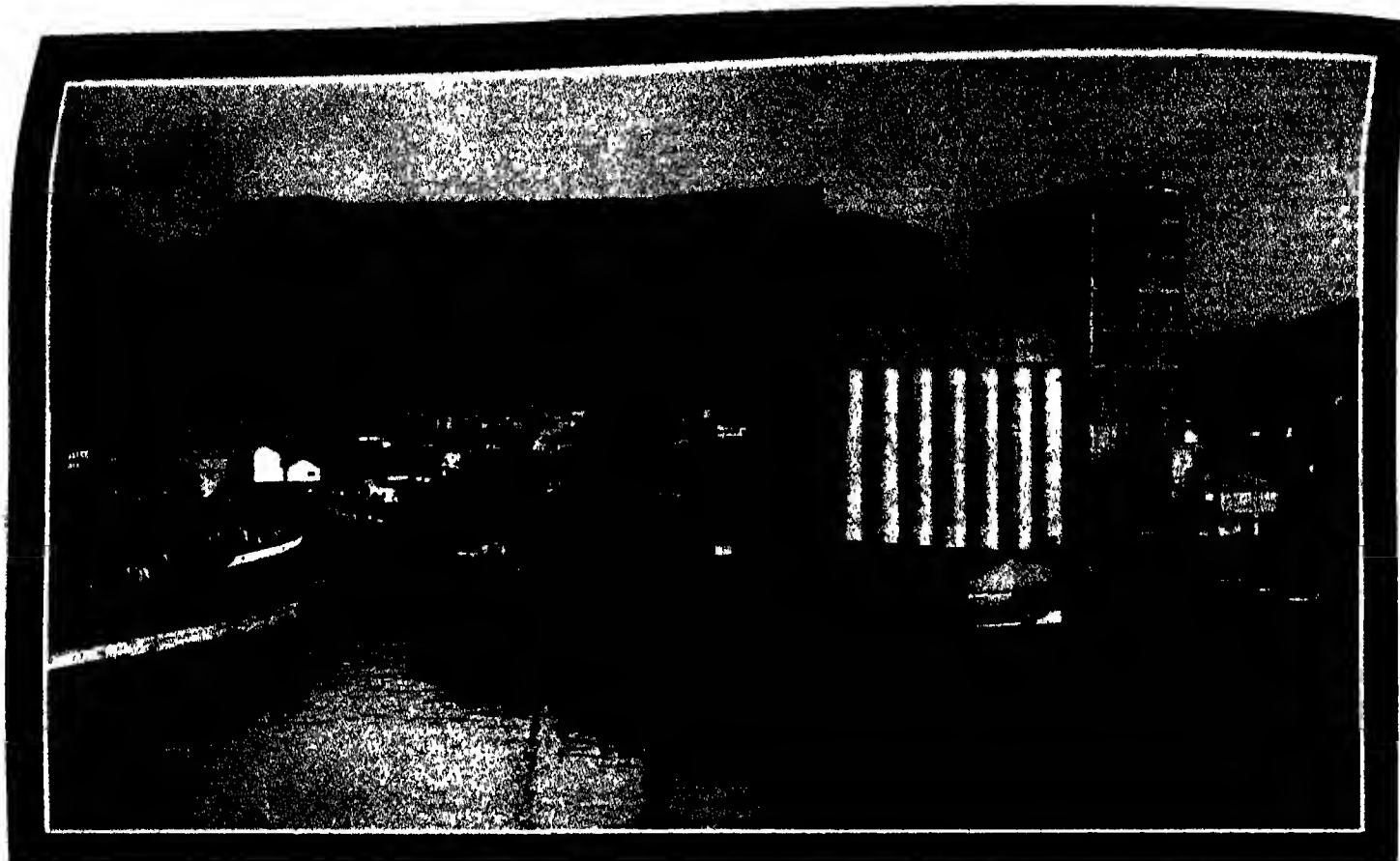
France and Australia. The average output is 6,000 cases per annum, containing 96 half pound or 48 one-pound tins each, the weights and measurements being in the former case 85 lbs. of 2 ft. by 2 ft., and in the latter 75 lbs. of 1 ft. 6 in. by 1 ft. 6 in. The industry is an important one, and the company is fully prepared for further expansion in the near future. The directors of the enterprise are Capt. H. Scharnberg (managing director), Messrs. C. Sher and H. Silverman. The London agents are Messrs. R. T. Turnbull & Co., 4 Lloyd's Avenue, E.C. 3, while the firm's bankers are the Standard Bank of South Africa, Ltd. The offices are in the Royal Exchange Buildings, St. George's Street, Capetown. Cables: "Packers," Capetown. Codes used: A B C 5th Edition and Bentley's.



FISHING AT MONSEEL BAY.







GRAIN ELEVATOR, CAPETOWN

## TRANSPORT

### SHIPPING

#### SHIPPING

**W**ITH a coast line of over 4,000 miles in extent and the two world-famous harbours of Table Bay and Port Natal, to say nothing of the lesser ports of call, South Africa has, from its earliest discovery, attracted to its shores the overseas shipping of the world originally from the need of provisioning and repairing on the long route from Europe to the Far East, latterly for coaling purposes and to carry the trade that has gradually been built up between the Union and overseas ports.

The first regular mail service to and from South Africa (that of the old Union Line) dates from 1853, when 45 or 50 days were occupied on the journey. Today the run from Southampton to Table Bay takes barely 17 days, and the original two small vessels of the Union Line have been replaced by the fleet of the Union Castle Line of nearly 50 well-appointed steamships, while a host of other liners, large and small, intermediates, cargo boats, and tramp steamers fill the docks of the Union harbours from one year's end to another, indeed it is doubtful if any Dominion of the British Empire is so well served as South Africa with the choice of shipping lines to practically all parts of the world.

### RAILWAYS

**ADMINISTRATION.**—The harbours and lighthouses of the Union are under the direct management of, and all harbour works and lighthouses are owned by, the Government. They are associated under the South Africa Act with the railways of the Union for the purpose of control and administration, and financially are upon the same footing as the railways under the provision of the Constitution dealing with the Railways and Harbour Fund. The developments of the separate ports and the numerous facilities offered to shipping, as well as all port charges and regulations, are initiated and carried out by the Administration, largely upon the advice of the Advisory Boards, which are in existence at the five principal ports—Table Bay, Durban, Port Elizabeth, East London, and Mossel Bay. Each Advisory Board consists of seven members, one representing the Municipal Council and three the local Chamber of Commerce, while three are nominated by the Governor-General. In the nomination of the last-mentioned three members, one is selected with a view to the representation of the shipping interest, and one to the representation of the persons paying wharfage, landing, shipping, or transhipping dues at the harbour.

### AIR, RIVER AND ROAD

**FREIGHTS.**—Under the South African Ocean Mail Contract between the Union Government and the Union Castle Steamship Company certain freight rates are fixed, being only subject to revision every three months. Outward freights during the last two years have remained more or less stationary, any alteration displaying a downward tendency. Homewards, the freights have tended to advance, especially during 1924-25, a fact which has led to a serious conflict of opinion as to the advisability of renewing the mail contract by the Union Government, and also to more than one intimation that an extension of governmental activities, even so far as the establishment of a State line, is in contemplation.

**GOVERNMENT SHIPPING.**—In 1919 the Union Government acquired, as prize vessels, three steamers of 15,069 total gross tonnage—the "Seattle" (5,133 tons), "Huntress" (4,997 tons), and "Apolda" (4,939 tons). In 1925 two Glasgow-built cargo steamers, the "Aloe" and "Erica," costing £70,000 and £80,000 respectively, were added to the fleet, which is under the control of the Railways and Harbours Administration. The two last-named vessels are destined to carry maize, coal, and timber, and will be engaged on the Australian service. This

would appear to be the first step in the Government's declared policy of extending its own fleet of steamers, in order to make the country more independent than hitherto of outside shipping resources.

**HARBOURS (REVENUE AND EXPENDITURE.)** The following table shows the financial position of the Administration as to harbours only for the year ended March 31, 1925, as compared with 1923-24 —

	1923-24	1924-25
Total capital expenditure (including lighthouses) at 31-3-25 . . . . .	13,003,432	13,202,701
Total Earnings . . . . .	1,307,076	1,375,045
Gross working expenses . . . . .	603,588	603,187
Surplus of earnings over working expenses . . . . .	703,488	771,858
Net surplus (after paying interest, providing for expenditure on lighthouses and including miscellaneous receipts and charges) carried to Revenue Distribution Account . . . . .	361,602	368,764
Cargo dealt with (tons) . . . . .	6,837,386	7,138,129

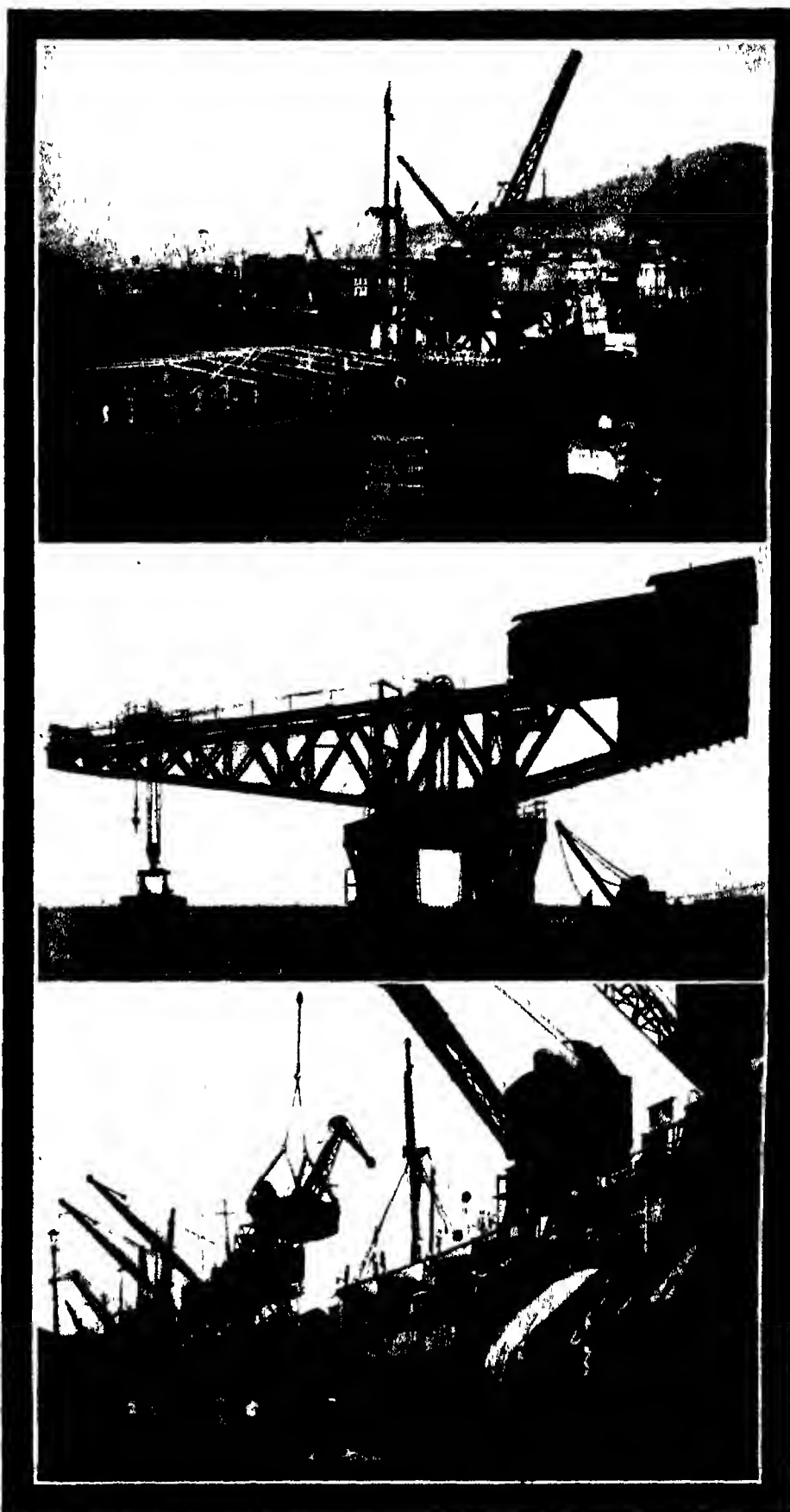
**LIGHTHOUSES AND LIGHTS.**—The coast and harbour lights on the South and South-West African coasts are administered as a branch of the Railways and Harbours Administration. The principal coast lights vary in range from 10 to 23 miles, the most important being the lighthouses at Cape Point, The Bluff (Durban), Green Point, (Natal), Great Fish Point, Hood Point, Cape L'Agulhas, Cape St Blaize, Cape St Francis, Cape Recife, Swakopmund, Dassen Island, and Cape Hermes. The erection of further new lighthouses at important points on the coast, as well as improvements to existing lights, is under consideration.

**LINES (STEAMSHIP).**—What are known as the Conference Lines of steamers using the South African ports may be described as a confederation of British steamship companies engaged in the South African trade, which periodically adjusts and fixes freight and other charges in view of the competition from German, Dutch, and other foreign-owned or subsidised lines. The following companies compose the Conference Lines —

**BETWEEN GREAT BRITAIN AND UNION PORTS** — Union Castle Mail Steamship Company Limited, Clan Line, Limited, Ellerman and Bucknall Steamship Company Limited, Ellerman-Harrison Line, Bullard, King and Company Limited (Natal Direct Line), J. F. Rennie, Son and Company Limited, R. P. Houston and Company.

**BETWEEN UNION PORTS AND GREAT BRITAIN** — Union Castle Mail Steamship Company Limited, Ellerman and Bucknall Steamship Company Limited, Clan Line, Natal Direct Line, Harrison-Rennie Line, Hall Line, Limited, R. P. Houston and Company.

**EAST COAST CONFERENCE LINES** — Union Castle Mail Steamship Company Limited, Ellerman and Bucknall Steamship Company Limited, Clan Line, Ellerman-Harrison Line, Houston Line, Natal Direct Line, J. T. Rennie, Son and Company Limited; British-India Steam Navigation Company; Clan-Ellerman-Harrison Joint Service.



1. CAPETOWN DOCKS, VESSEL OFF-LOADING  
2. TITAN CRANE, PORT ELIZABETH.  
3. THE WHARF, DURBAN



EXPORTING WOOL, DURBAN WHARF.

**OTHER SERVICES**—Steamers load direct or call at South African ports to and from Australia, Canada and India. A direct mail passenger and cargo service is established between New York and South African ports, and there is a 10 days' service from the United States. From Rotterdam, Amsterdam, Antwerp and Hamburg a direct service is maintained by the Holland-South Africa Line and the United Netherlands Navigation Company (Holland-East Africa Line), while the Deutscher Afrika Dienst Woermann Line A. G. also trades between Continental and South-West and South African ports.

#### MOVEMENT OF SHIPPING (GENERAL).—

In 1924 the total number of vessels entering Union ports was 4,373, compared with 4,377 in 1923, the gross registered tonnage being 7,762,001 (coastwise) and 4,980,295 (overseas), as against 7,555,534 (coastwise) and 5,137,195 (overseas) in 1923. The total tonnage of cargo landed in 1924 was 2,547,467, as against 2,153,390 tons in 1923. Vessels clearing from Union ports in 1924 numbered 4,334, as against 4,349 in 1923, the gross registered tonnage totalling 12,682,820, compared with 12,642,864 tons, and the cargo loaded, 4,110,498 tons, as against 4,496,480 tons.

Figures for the first seven months of 1925 were:—Total number of vessels entered, 2,892, compared with 2,518 during the corresponding period of 1924, total net tonnage 8,079,334, compared with 7,326,351.

**NEW HARBOUR PROJECT.**—For a long time past the need of a harbour which shall serve the rich and important area of Northern Zululand has been increasingly felt. In 1922 and 1923 an investigation was made by the Railways and Harbours Authorities and by Sir George Buchanan, K.C.I.E., whose services were engaged by the Union Government. The localities examined were Kosi Bay, 214 miles by sea from Durban and 75 miles from Delagoa Bay, and Sordwana

Bay, 171 miles from Durban and 118 miles from Delagoa Bay. The last-named was adjudged to be the most practicable locality for a new port, having regard to time and cheapness of construction. An important feature of the projected harbour at Sordwana Bay would be its value as a new outlet for

the Transvaal coal trade, the construction of railways from the Transvaal coalfields to the northern Zululand coast offering few difficulties. More than a million acres of Crown lands, rich in general agricultural prospects and highly suited to the production of sugar and cotton, would thus be opened up to settlement.

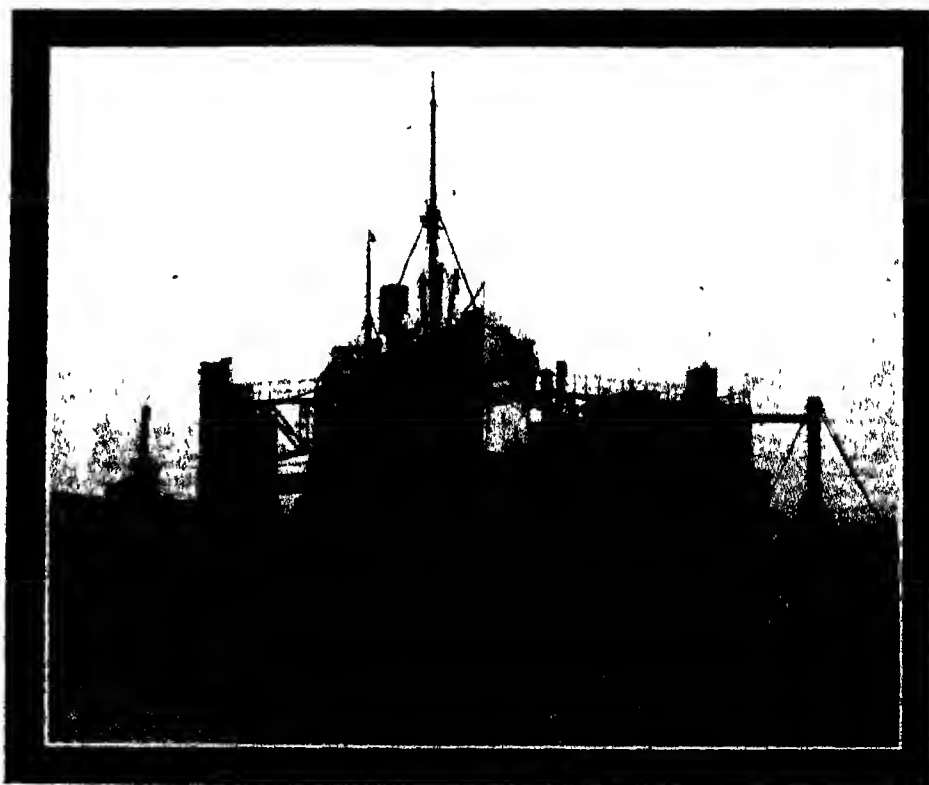
**OVERSEAS SHIPPING.**—The following table shows the number and net tonnage of steamers and sailing vessels from overseas entered and cleared at Union ports during the year 1924.—

	No	Tons
<b>ENTERED</b>		
Steamers	1,276	4,064,942
S. Vessels	17	15,353
Total	1,293	4,980,295
<b>CLEARED</b>		
Steamers	1,221	4,721,800
S. Vessels	19	15,827
Total	1,240	4,737,717

For 1923 the number of vessels entered was 1,365 of 5,137,195 tons in the aggregate, while the clearances totalled 1,316 vessels of 5,005,148 tons.

The tonnage of cargo landed and shipped in 1924 was: Landed 1,322,205, shipped (including bunker coal) 2,368,318, the figures for the preceding 12 months having been: Landed, 1,080,107 tons, shipped (including bunker coal), 3,025,550 tons.

The tonnage of cargo landed at Union ports in 1924 was the highest on record since 1913, being only 22,291 tons less than the inward tonnage handled that year. The record tonnage of cargo shipped in 1923 was principally due to the large shipments of coal (cargo and bunker) and to the phenomenal exports of maize of that year. The fall in the shipments of maize was entirely responsible for the lower tonnage recorded



FLOATING DOCK, DURBAN.

in 1924, the volume of other leading South African exports having increased. (See also under "Commerce.")

The year 1925 promised to establish a new record, the total net tonnage of cargo landed from overseas during the seven months ended July 31, 1925, aggregating 3,273,494 tons.

**SHIPPING BY FLAGS.**—The following table shows the distribution as to flag of the total number of vessels from overseas countries entering the Union ports in 1924.

	No. of Vessels	Tonnage
British		
South African	38	19,763
Other	926	3,849,257
Dutch	68	204,733
German	64	250,656
Swedish	41	169,269
Norwegian	34	86,689
Portuguese	31	111,911
American (U.S.A.)	28	97,951
Japanese	27	97,641
Danish	14	11,852
French	6	15,168
Italian	6	14,530
Other	10	23,871

Total 1,293 4,980,295

There was a decrease of 89 in the number of British steamers entered in 1924, while foreign steamers showed an increase of 17 when compared with the previous year. In 1924 the cargo landed by British ships totalled 1,778,060 tons, against 1,171,181 tons in 1923, an increase of 307,479 tons, while that landed by foreign vessels aggregated 580,658 tons, against 511,926 tons in 1923, an increase of 74,732 tons. Cargo shipped by British vessels in 1924 totalled 3,194,194 tons, against 3,413,843 tons in 1923, a decrease of 219,651 tons, due to reduced exports of maize. During the same years 731,367 and 908,452 tons respectively were shipped by foreign vessels.

**SHIPPING BY PORTS.** The following table shows the shipping entered and cargo landed at South African ports in 1924—

	No. of Vessels	Reg. Net Tonnage	Cargo Landed Tons
Capetown	1,701	3,964,308	710,370
Durban	1,197	3,847,896	1,051,619
Port Elizabeth	501	2,252,773	398,648
East London	605	2,095,572	200,993
Mossel Bay	151	530,797	34,460
Port St. John's	54	4,166	2,080
Port Nolloth	49	14,540	15,688
Knysna	37	9,973	4,568
Simonstown	18	42,301	33,041

Total, Union 4,373 12,742,296 2,547,467

**SHIPPING REGISTER.**—On December 31, 1924, there were 138 vessels of 23,968 tons on the register of South African ports, four having been added during the preceding 12 months. They were distributed as follows:—Capetown, 81; Port Elizabeth, 11; East London, 6; Port Natal (Durban), 40.

**STANDARD TIME.**—The Union of South Africa, Rhodesia, South West Africa, and Portuguese East Africa (Mozambique) have adopted as standard time the mean solar time at the 30th meridian East of Greenwich, which is two hours in advance of zero, or Greenwich time, and 46 minutes in advance of mean solar time in Capetown. Noon in South African standard time corresponds to the following standard times:—London and Paris, 10 a.m.; Quebec and New York, 5 a.m.; Calcutta, 3.30 p.m.; Melbourne, 8 p.m.; San Francisco, 2 a.m. South African time is identical with standard time in Eastern Europe, including Bulgaria, Rumania, Eastern Turkey, and Egypt.

## REPRESENTATIVE SHIPPING AND FUEL COMPANIES, ETC.

### AFRICAN SHIPPING LIMITED.

**Inception.** This company commenced business as shipping, forwarding and customs agents at Johannesburg in 1902.

**Development.**—Operations were gradually extended to other parts of South Africa, the rapid growth of business entailing the opening of branches at Port Elizabeth in 1908, at Durban in 1913, and at Delagoa Bay in 1923.

**Capital.** The capital employed by the company is now appreciably over £20,000.

**Activities.** The services of African Shipping Ltd. include shipping, forwarding, distribution, handling, storage and insurance of every kind of import and export commodity. It possesses spacious and well equipped bonded and duty paid warehouses, and is in a position to store at the coast and to distribute merchandise to towns in any part of the sub-continent. The export side of the business has received special study, and to day practically every kind of exportable product passes through the company's hands. Information with regard to rates, freights, costs, etc., can be obtained from any of the firm's branches by interested concerns. A varied trade is also done in imports, such commodities as Wakefield oils, Rockett's blue, Buchanan's whiskey and other well-

known brands of goods being distributed in large quantities.

**Agencies.** The company represents many famous overseas shipping organisations, including Messrs W. Wingate & Johnston, G. W. Sheldon & Co., of London, Mackay Bros., Scotland, etc. It is also chief agent for the Provincial Insurance Co. Ltd. transacting all classes of insurance business.

**Management.** The managing director is Mr. H. P. J. Verschuyl, who has been associated with the company since its inception. Each branch is equipped with a competent staff under thoroughly capable management.

**Offices.** Hatfield House, President Street, Johannesburg, P.O. Box 3634, Cables "Afriship," Johannesburg and all branches Codes: Western Union and Bentley's Phrase.

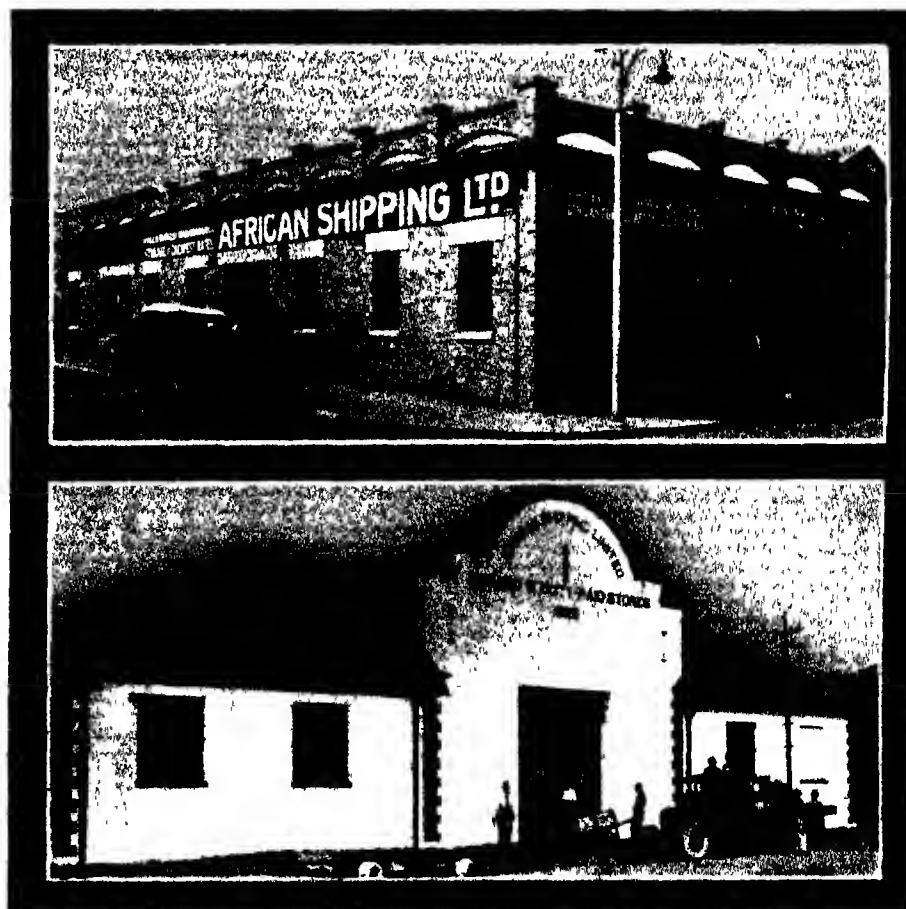
**Bankers.** The Netherlands Bank of South Africa.

### MITCHELL COTTS & CO. (S.A.) LTD.

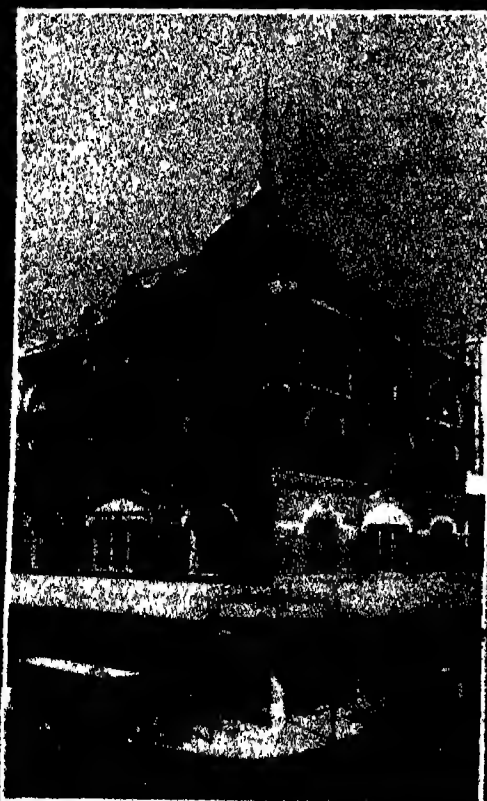
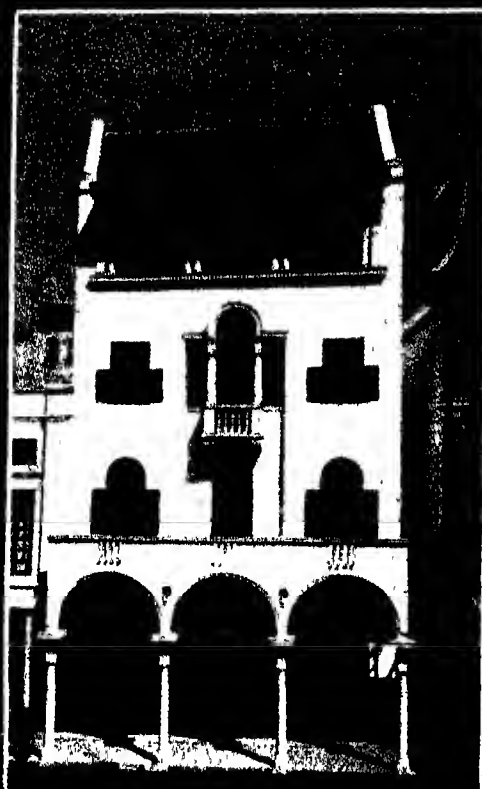
**Inception.** This business was established at Durban in 1864 by Sir W. D. Mitchell Cotts, Bart., K.B.E., J.P., of London.

**Activities.** Mitchell Cotts & Co. (S.A.) Ltd. act as steamship and general agents and coaling contractors, as also importers and exporters.

**"Shell" Products.** Among the principal agencies held by the company is that of the British Imperial Oil Company (S.A.) Ltd. ("Shell" Motor Spirit and Motor Oil).



AFRICAN SHIPPING LIMITED, Johannesburg.  
1. Free and Bonded Warehouse at Johannesburg.  
2. Bonded Warehouse at Durban, installed with Travelling Crane, etc.



**MITCHELL COTTS & CO. (S.A.) LTD., Capetown.**

1. Company's Head Office, Cape House, Capetown.
2. Company's Johannesburg Premises.
3. General Office at Capetown.
4. Main Tank Installation of the British Imperial Oil Co. (S.A.) Ltd. at Durban, for which Mitchell Cotts & Co. (S.A.) Ltd. are Distributing Agents throughout South Africa.
5. Johannesburg General Office.



The development of local industries is a matter of supreme importance to South Africa, and this oil company in erecting a large installation at Durban for the handling and packing of "Shell" motor spirit is deserving of every commendation. The works, known as "Shell" Corner, cover 20 acres of land reclaimed from the bay at the foot of the Bluff. The latest plant has been installed, and operations conducted there give regular employment to about 400 men. Adjacent to the tin and case factory, filling and packing rooms and general stores are three great storage tanks having a capacity of four million gallons. The case and tin making plants have an output capacity of 5,000 cases and 10,000 tins per day.

**Motor Spirit Transport.** From the refineries in the Dutch and British West Indies "Shell" motor spirit is brought to South Africa in bulk in tank steamers of the company's fleet in cargoes of 2,500,000 gallons. On arrival of the tanker at the "Shell" special wharf, the petrol is pumped through pipelines to the storage tanks. From the main tanks it is again pumped to four elevated service tanks as required and is then drawn off by gravitation to the special automatic filling and measuring machines which are used for filling the four gallon tins, the two gallon red cans, and the various drum packings.

**Tank Depôts.** In addition to the large works at Durban, the "Shell" company has erected subsidiary installations for the handling of motor spirit in bulk and in returnable packages at Johannesburg, Pretoria, Bloemfontein and Kimberley and another is in course of erection at Capetown. To stock these depôts twelve specially constructed railway tank cars are kept fully occupied, and motor tank lorries are employed to deliver the spirit from these tanks to the now well known kerbside pumps. One great merit of this bulk distribution is its convenience and safety.

**General.** The "Shell" Company was the first to introduce these modern methods of distribution in South Africa, and it is now organising for the distribution of bulk motor spirit in all the principal towns, so that the advantages and saving which the metropolitan user has enjoyed will now be available to all.

**Branches.** Messrs Mitchell Cotts & Company (S.A.) Ltd. have branches at Johannesburg, Pretoria, Mossel Bay, Port Elizabeth, East London, Bloemfontein and Kimberley.

**Principal Agencies.**—Alfred Holt & Co., Anglo Saxon Petroleum Co. Ltd., Nippon Yusen Kaisha, Harrison Lane, Commonwealth and Dominion Line, British Imperial Oil Co. (S.A.) Ltd. (Shell Motor Spirit & Oil), State Saw Mills of Western Australia, Canada Carbide Co., Natal Navigation Collieries & Estate Co. Ltd., Northern Natal Navigation Collieries Ltd., Vryheid (Natal) Railway Coal and Iron Co. Ltd., Wilham Cotts & Co. Ltd. (Durban), Cotts & Co. (Lourenço Marques and Beira).

**Directorate.**—Messrs William Yuill, Frank C. Horner, H. Newton Morton.

**London Agents.**—Mitchell Cotts & Co., 3, St. Helen's Place, E.C.3.

**Head Office.**—Cape House, Capetown.  
**Cables:** "Cotts"

**Bankers.**—The Standard Bank of South Africa, Ltd., and The National Bank of South Africa, Ltd.

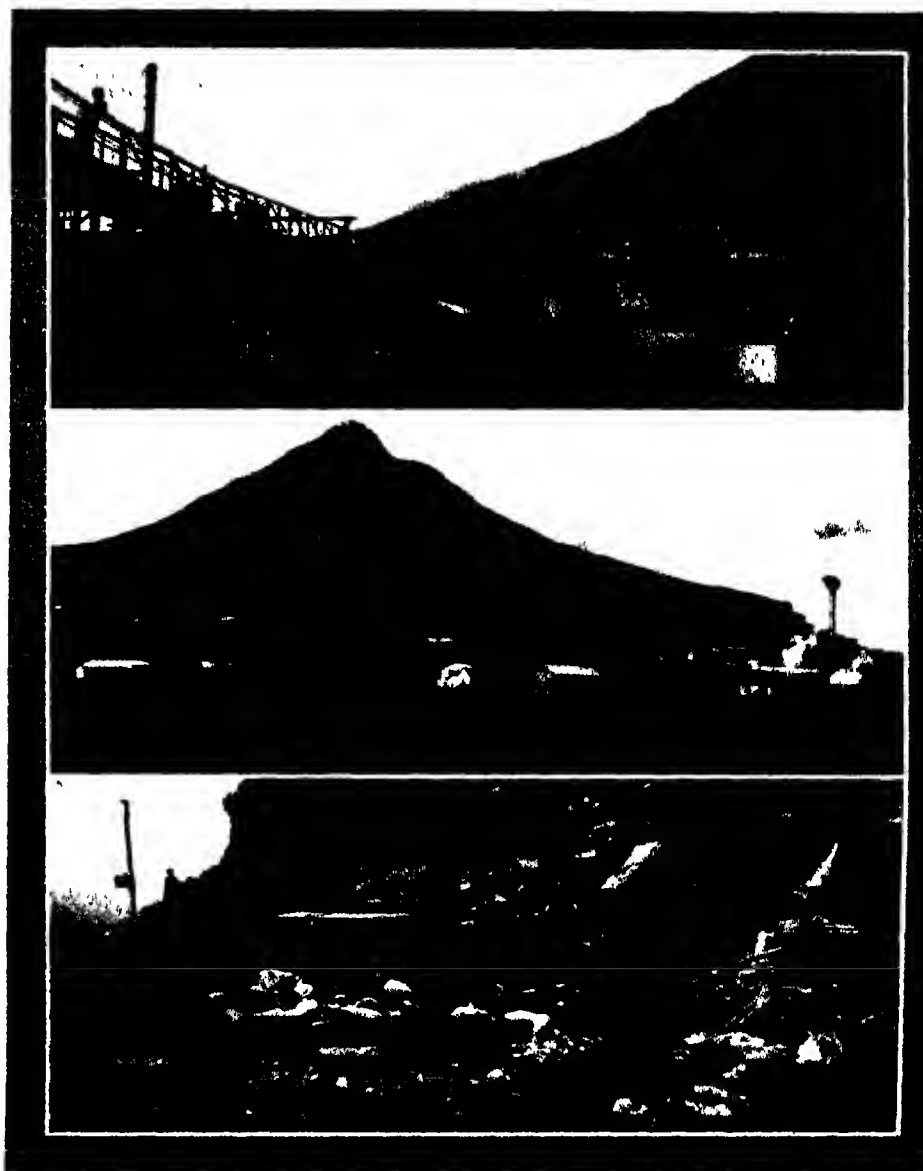
## MANN, GEORGE & CO. (SOUTH AFRICA) LTD.

**Inception.** This organisation is the South African branch of the world wide coaling firm of Mann, George & Co. Ltd. of London, Cardiff, Glasgow, etc. and is registered in Durban.

**Activities.** The firm controls and manages the Tendega Collieries Ltd. and the New Tendega Colliery Co. Ltd. whose mines are

for which is steadily increasing. The company is also agent for many important steamship lines including the New Zealand Shipping Co. Ltd., and the Federal Steam Navigation Co. Ltd. likewise for leading insurance companies.

**Coaling Facilities.** Messrs Mann, George & Co. (S.A.) Ltd. provide facilities at Durban for the dry docking of vessels. A bunkering depot is maintained at Capetown, operations being carried out from the shore by cranes.

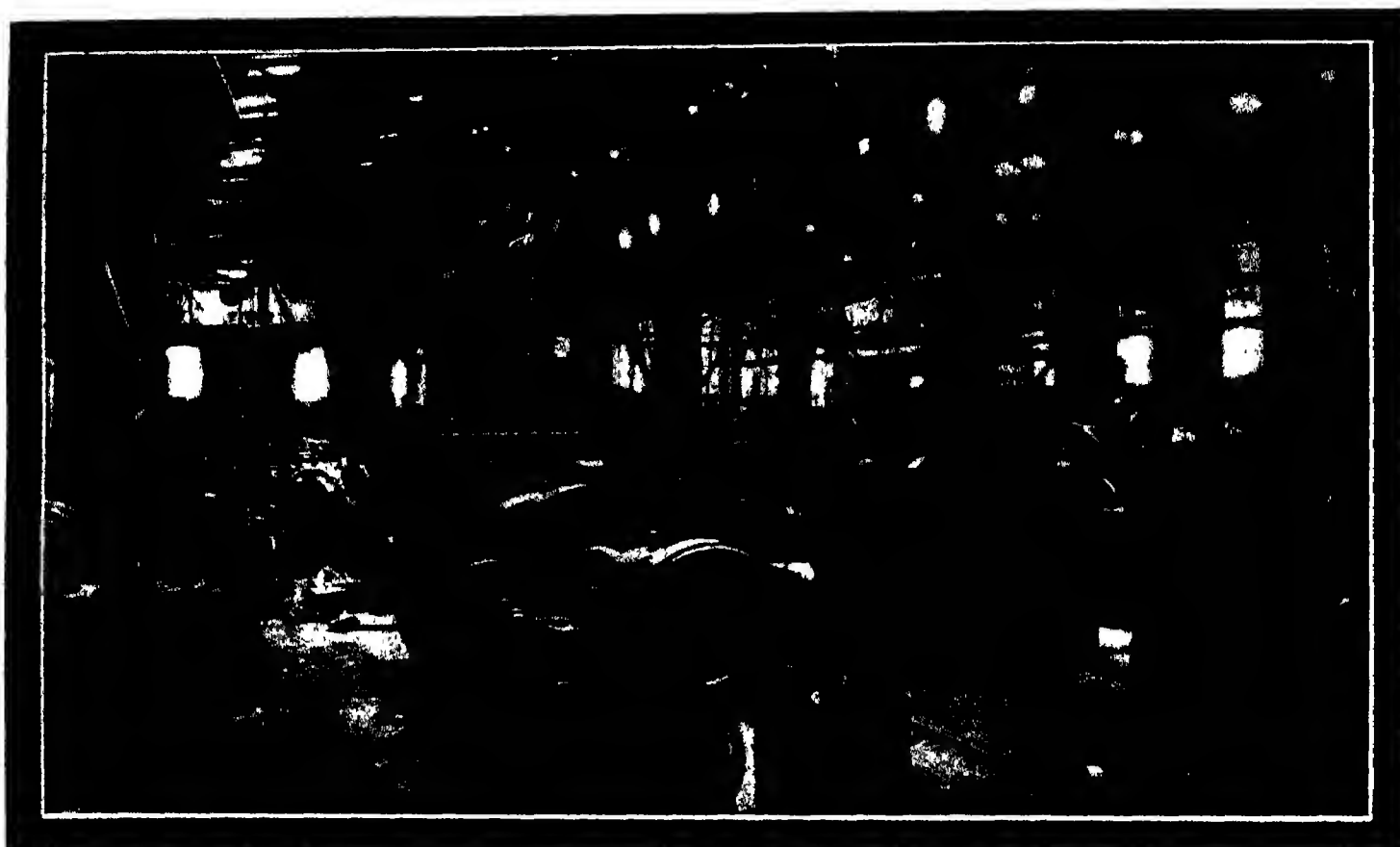


MANN, GEORGE & CO. (South Africa) LTD., Durban

1. Tendega Collieries Ltd. (Agents, Mann, George & Co. (S.A.) Ltd.) View showing self-acting Incline for lowering Coal from Mine to Screening Plant
2. A Mountain Colliery in Natal General View Tendega Collieries Ltd.
3. New Tendega Colliery Co. Ltd. (Agents, Mann, George & Co. (S.A.) Ltd.). Entrance to Mine.

in the Vryheid district, Natal. The coals from these mines are classed by the Natal Coal Grading Committee as "first grade," and are supplied to the principal steamship lines calling at Durban, to the Admiralty, the South African Railways, and the leading industries and power stations of the Union. An extensive overseas export trade is also carried on. The Tendega collieries are manufacturers of foundry coke, the demand

and lighters simultaneously with loading and discharge. Large stocks are also maintained at Durban, where coaling is effected by means of modern appliances. The company is Lloyd's sub-agent at Walvis Bay, where it represents the Union Castle line and other companies. Stocks of coal are held here, and stevedoring work is undertaken in addition to steamship agency, forwarding and storage contracts.



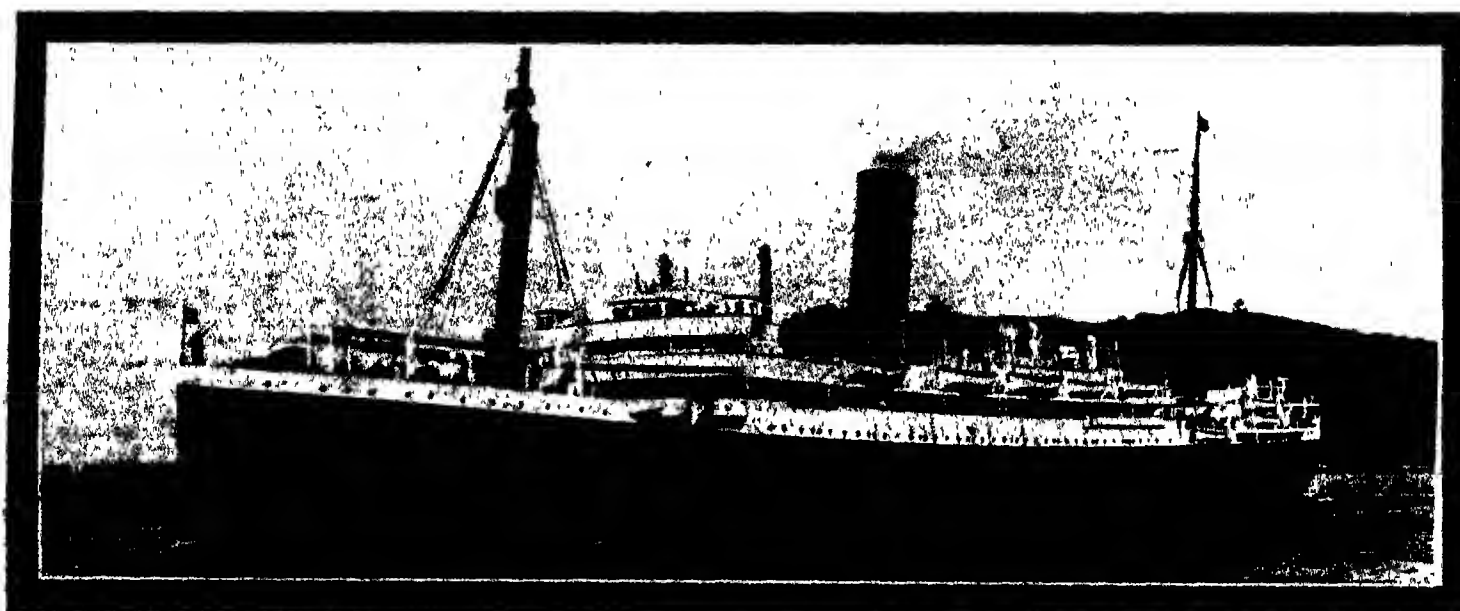
GEARINGS LIMITED., Capetown  
View of Machine Shop.

**Subsidiary Companies.** - The operations of the company's steamship agency department at Capetown are extended by a subsidiary concern, William Anderson & Co. Ltd., which acts as agents for some of the chief lines trading to Australia via the Cape, and conducts

a large passenger and tourist business. Messrs Mann, George & Co. (S.A.) Ltd. are also proprietors of the Table Bay Stevedores, particularly concerned with vessels loading bulk grain at the elevators. This organisation also gives expert and rapid service in cargo

stowage besides being contractors to the Union Government, the Admiralty and leading steamship lines.

**Oil.** - The company under notice acts as agent for the Anglo-Persian Oil Co. Ltd., which maintains oil fuel storage tanks in the dock area, with



THE SOUTH AFRICAN & GENERAL INVESTMENT & TRUST CO. LTD., Johannesburg.  
S.S. "Sophocles" of The Aberdeen White Star Line, represented by the Company.  
(See also page 68)

pipe-line connections to the various quays. Lubricating oils are also kept in stock.

**Agencies.** The organisation has agencies at Port Elizabeth and East London, while its correspondents at Lourenço Marques are Mann George & Co (Delagoa) Ltd, and at Beira, Mann, George & Co (Beira) Ltd.

**Addresses.** Mann, George Buildings, Point, Durban, 24, St. George's Street, Capetown, P.O. Box 4, Walvis Bay, Cables "Malveso."

#### GEARINGS LIMITED.

**Inception.** The firm of Gearings Ltd. was originally established in 1878 under the name of Cunningham and Gearing by Mr. Andrew Cunningham, a millwright, and Mr. Sydney Charles Gearing, a marine engineer. In 1918 the enterprise was converted into a limited company, with Mr. S. C. Gearing as chairman.

**Development.** In the early years of its existence the firm carried out several important contracts for ship repairs, among the steamers concerned being the White Star liner "Ionic," the R.M.S. "Norman," and the S.S. "Wladimir Sawin." About 1892, when the geological survey of the country was being made, the partners manufactured for the Government of Cape Colony a type of prospecting and water boring drill, which was subsequently adopted by the Transvaal and Orange Free State Republics, Southern Rhodesia and German South-West Africa. Later, the firm built the first ammonia refrigerating plant for meat storage in South Africa. Its capacity was 40 tons, and it is interesting to note that after thirty years this plant is still in use. Similar plants were built throughout South Africa for the various branches of the Cold Storage Trust. The

manufacture of windmills was undertaken in 1909, followed shortly afterwards by the production of iron-work for school desks and furniture.

**South African War.** During the South African War (1899-1902) the firm was responsible for the mounting on field-carriages of the 6 inch naval guns used in the relief of Ladysmith, and for the design and erection of condensing plants for the water supply to the Boer prisoners' camp on the Island of St. Helena, also the manufacture of loophole protection plates for Lord Kitchener's system of blockhouses. At this period Mr. Sydney Chas. Gearing assumed sole control of the business.

**World War.** On the outbreak of the World War the firm was established at the present Atlas Works, Ebenezer Road, Capetown and it did much work for the British naval and military authorities, also for the Union forces operating in German East and West Africa. Included in these undertakings was the re-conditioning of H.M. auxiliary cruiser "Himalaya" and defensive-ammunition gun-mounting for over three hundred vessels. At this time also the famous tea-chipper "Cutty Sark" was re-masted and repairs were effected to the S.S. "Bhamo" of the Henderson Line, and to the Union Castle liner "Saxon" whose rudder had been seriously damaged.

**Activities.** Marine repairs continue to be the principal business of the firm, but it still carries on other activities and supplies a large proportion of the school furniture required by the Union. In the western part of Cape Province the firm represents Messrs. John I. Thornycroft & Co. Ltd. the famous

agricultural machinery and motor car manufacturing firm of Southampton and Basingstoke, England.

**Directorate.** Messrs. H. C. Gearing, M. I. Meckle (chairman), Sydney Gearing, and Arthur Gearing.

**Offices.** Atlas Works, Ebenezer Road, Capetown.

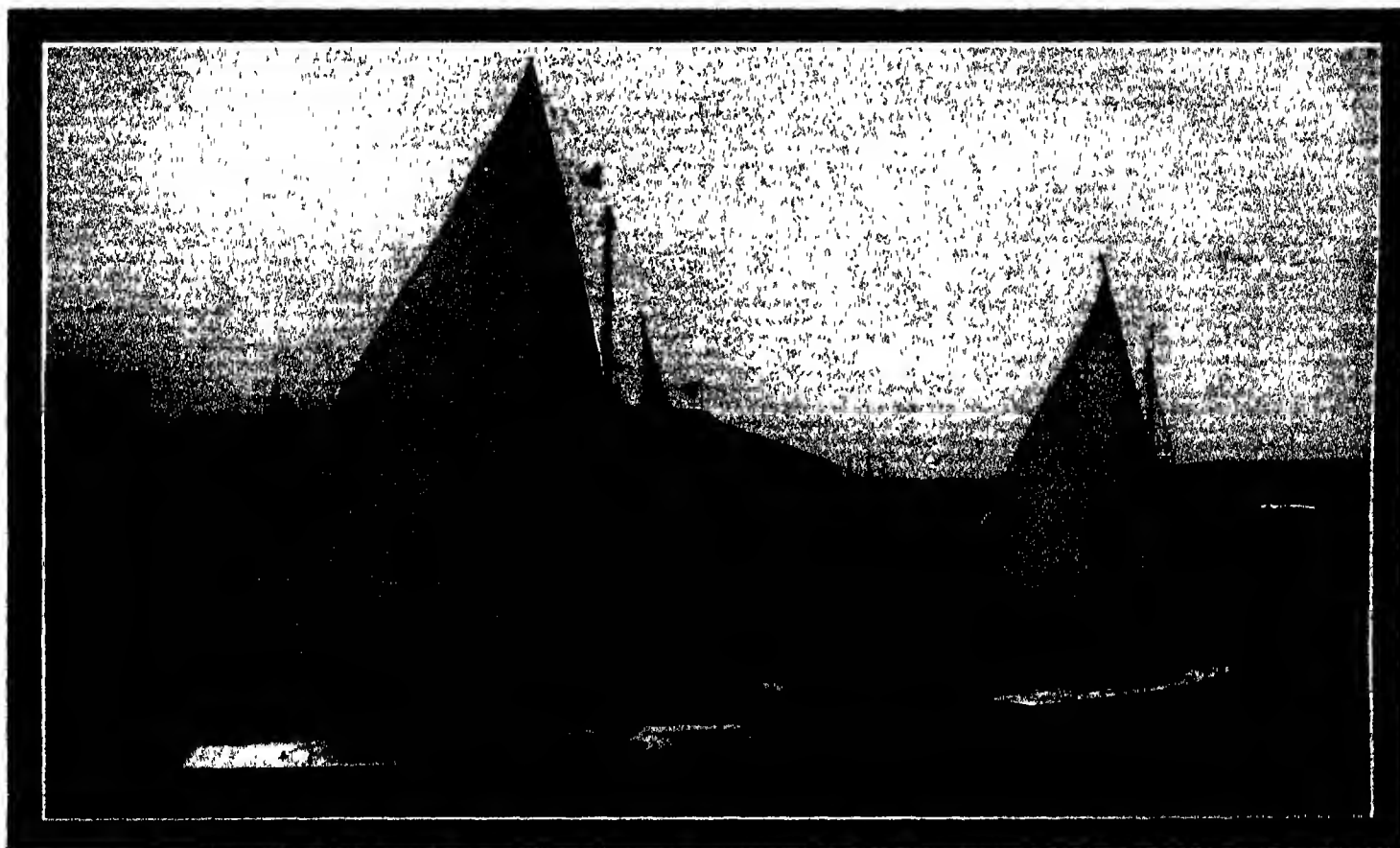
#### THE SOUTH AFRICAN AND GENERAL INVESTMENT AND TRUST CO. LTD.

**Activities.** This important financial company, whose principal activities are in connection with the advancing of sums of money against first mortgage of town and suburban holdings and farms chiefly on the Witwatersrand in Natal, Zululand and Rhodesia, the secretaryship of mining, land, industrial and agricultural corporations, in addition to trusteeship, executorship, investment and administration of funds, also interests itself in shipping, holding the representation of the Aberdeen and White Star Lines of Steamers carrying passengers and freight between South Africa and the United Kingdom and Australia.

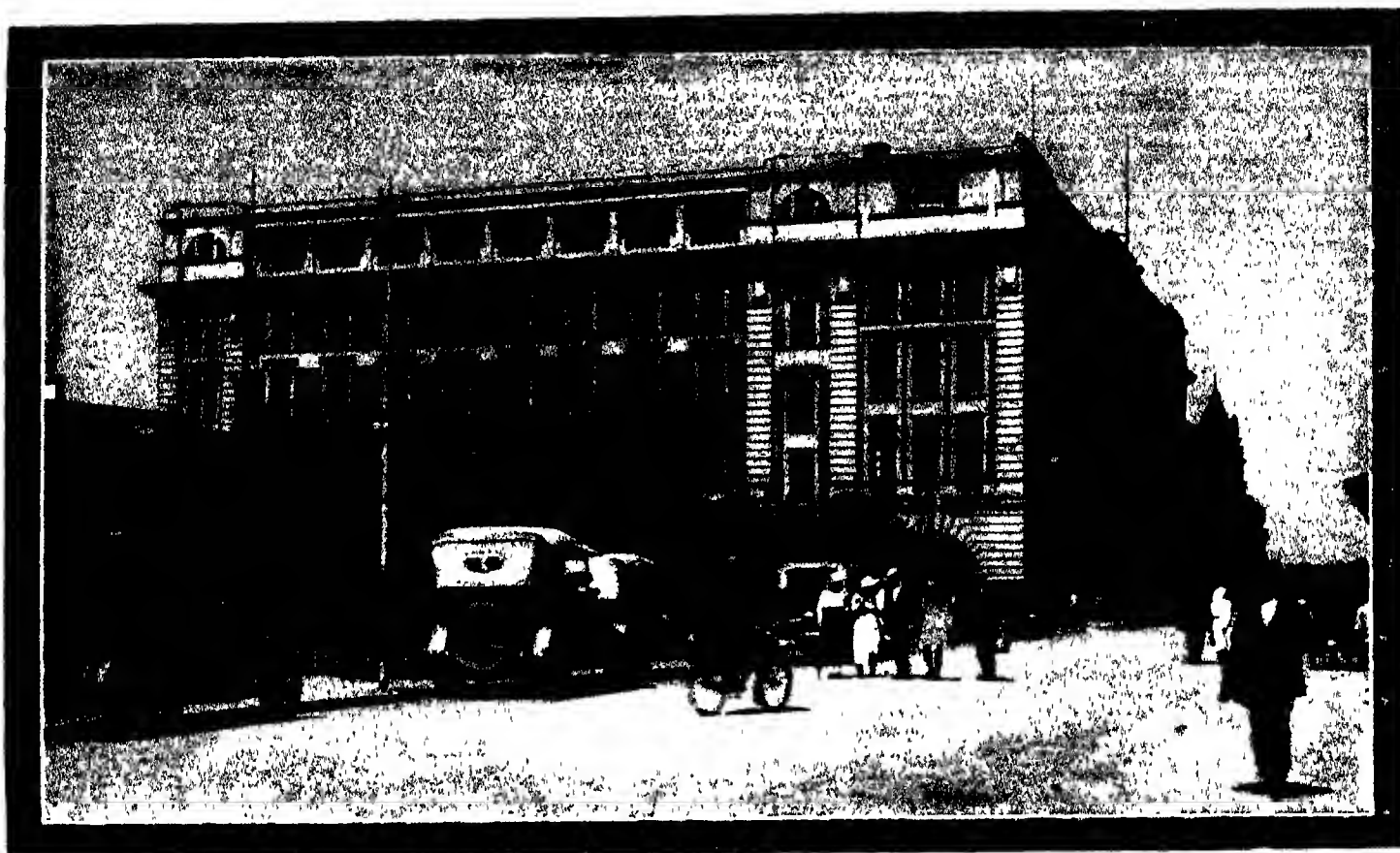
**Offices.** London (head office), Pinners Hall, Austin Friars, E.C. 2, Johannesburg, Trust Buildings, corner Fox and Loveday Streets (cables "Sphinx," Johannesburg), Durban 1, 2 and 3, Club Arcade, Smith Street, Salisbury, Rhodesia 1, 2 and 3, Union Buildings, Manica Road.

**Directorate.** James W. Bowhill (chairman), John Abernethy (deputy chairman), Henry B. Marshall, J.P., D.L., Clement Davies, J.J. Carlyle Gifford and James Kissik Marshall.

(See also page 68.)



A SCENE IN DURBAN HARBOUR.



SOUTH AFRICAN RAILWAYS: HEAD OFFICES AT JOHANNESBURG.

## RAILWAYS

**T**HE Union of South Africa comprises the territories of the four provinces of the Cape of Good Hope, Natal (including Zululand), the Transvaal, and the Orange Free State and has an area of 472,347 square miles, within which there are 10,555 miles of railways, the whole being operated by the Government under the style of the South African Railways and Harbours. Practically all the lines (about 99 per cent) are owned by the Government, which also owns most of, and controls all, of the 1,331 miles of the connected railways in the adjoining mandated territory of South-West Africa.

Linking up with this system at the eastern border of the Transvaal, the Caminhos Ferro de Lourenço Marques gives access to the port of Delagoa Bay, while northward through Bechuanaland the connecting systems of the Beira and Mashonaland and Rhodesia Railways not only provide direct communication with the port of Beira, but in turn link up on the border of the Belgian Congo with the Chemin de Fer du Katanga, on what is perhaps better recognised as the Cape to Cairo route, the railhead of which is now Bukama, 2,600 miles from Capetown. These various systems place at the service of the traveller and merchant distributor approximately 15,000 miles of connected lines, having

a standard gauge of 3ft. 6in. over all trunk or main lines.

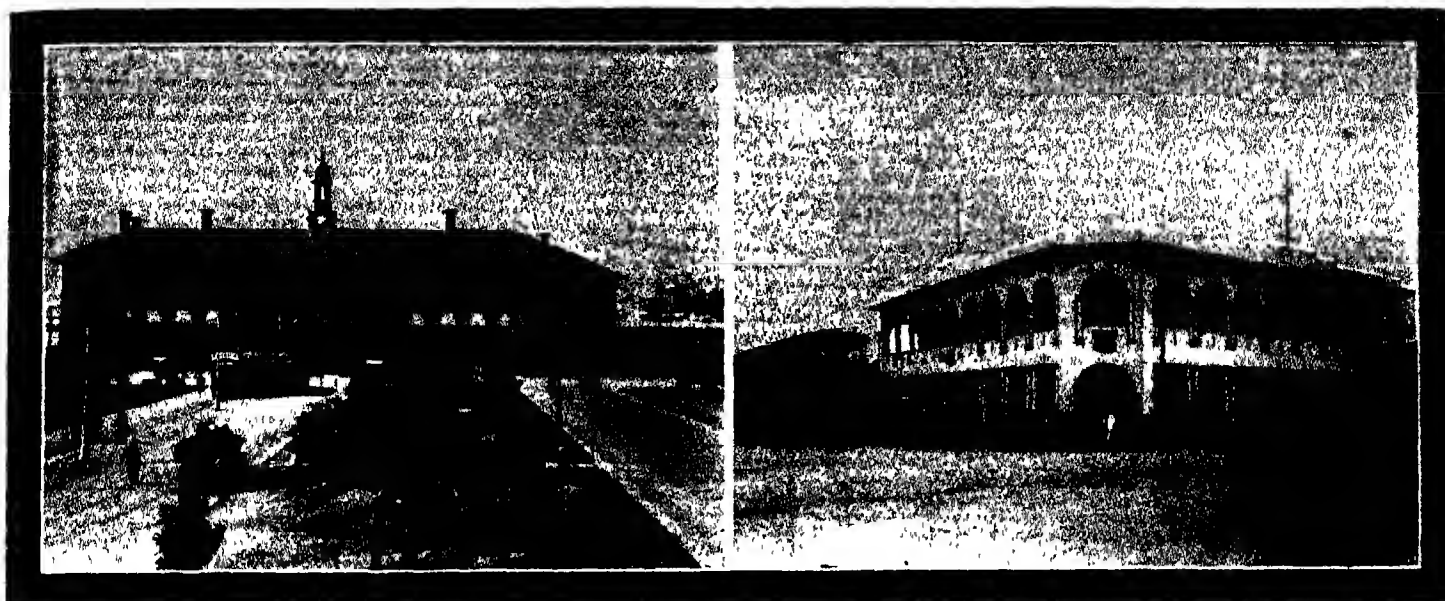
**ADMINISTRATION AND ORGANISATION.**—The railways, ports and harbours of the Union of South Africa are administered under the control and authority of the Governor-General in Council, exercised through the Minister of Railways and Harbours, who is advised by a Railways and Harbours Board, appointed under Section 126 of the South African Act, 1909. The administration and working of the railways and harbours are distributed among the following six departments—General Manager's, Transportation, Engineering; Mechanical, Stores, and Accounting.

Perhaps the greatest problem, after Union, was that of bringing the railways under one control. The difficulties, however, were overcome, with the present-day harmonious working arrangements as a result. The railways are managed from a central point, Johannesburg, where the administrative offices are located, certain sections of the General Manager's staff being stationed at Capetown during the Parliamentary Session. Johannesburg is also the headquarters of the Engineering, Stores, and Accounting Departments, and of the Transportation Department System "C." The

headquarters of the Mechanical Department are at Pretoria.

**DEPARTMENTAL SYSTEM.**—The control and working of the railways and harbours in South Africa on the divisional system are a considerable improvement on the pre-Union method of departmental organisation. Prior to 1910 under the systems in vogue on the three railways, by which each department did its work to the best of its ability without consideration for the good effect or otherwise on other departments, the cost of upkeep was very much higher than it is now, when the working of each department is designed to have a bearing on the others. Efficiency is just as much a consideration to-day in the several departments as it was before the Union, but individual efficiency is now subordinated to the collective good of the railway system in all its aspects.

**CAPITAL COST.**—The capital expended on railways within the Union up to 1925 was over £120,000,000, which represents an increase of £47,000,000 since the Union was established. Expenditure on new lines constructed since the establishment of the Union and up to 1925 totalled £12,170,000. The average cost per mile open of lines of 3ft. 6in. gauge in the Union is £8,035, and of lines of 2ft. gauge, £2,798.



RAILWAY STATION, PRETORIA

RAILWAY INSTITUTE, DURBAN.

**EARLY HISTORY.** Many years must pass before a railway centenary will be celebrated in Africa, as it was only in 1860 when a line of 13 miles from Durban to "the Point" was opened, that the first railway of the Continent was completed. This was followed in 1862 by the opening of a line on the western side of the Continent from Capetown to Perse River, a distance of 21 miles. Of the two systems the Cape line made the more rapid progress, having been extended southward to Wynberg and northward to Wellington by the end of 1864, a total distance of 63 miles. No extension was made to the Natal line until 1867 when it was pushed forward a further four miles as far as Umgeni.

It is worthy of note that at the outset the gauge of the Natal line was 4ft 8½in, while that of the Cape was 3ft 6in, which has become the ruling gauge of all main lines in the Union of South Africa and in the adjoining territories whose systems link up with the South African Railways.

**GOVERNMENT CONTROL.** State ownership of railways had its commencement in the Cape at the beginning of 1873 when the existing roads from Capetown to Wellington and Wynberg were handed over to the charge of the Public Works Department. Three years later this example was followed by the Natal Government in the case of the six miles of track then in operation.

Settlement of the country meanwhile extended from Capetown along the coast to Port Elizabeth and further on to East London whilst the settlement of the fertile Natal interior also proceeded apace from all sides. The lines from Capetown and Durban were pushed inland, and, as time went on, further lines were constructed to serve the interior from Port Elizabeth and East London. By 1886, workshops had given an added importance to each of the four ports. Ten years later the first railway in the Transvaal was opened, a small stretch from Johannesburg to Boksburg being designed

principally to serve the needs of the newly-arisen mining community.

**TRADE DEVELOPMENT.** The mineral wealth of the Transvaal and the rich yield of the Kimberley diamond fields were the principal factors in the linking up by rail of Capetown and Johannesburg, which was an accomplished fact before the war of 1899-1902. At this stage also complete journeys by train could be made to Johannesburg from the ports of Lourenço Marques, in Portuguese East Africa, Durban, East London, and Port Elizabeth.

From the close of the Anglo-Boer War to the date of Union (May 31, 1910) about 3,000 miles were added to the various systems, and amalgamation of the railways in the Transvaal and Free State had been effected, making, together with the Cape and Natal lines, three systems in all in the country.

The union of the four colonies set afoot further activities in railway construction, and between 1910 and 1925, excluding the

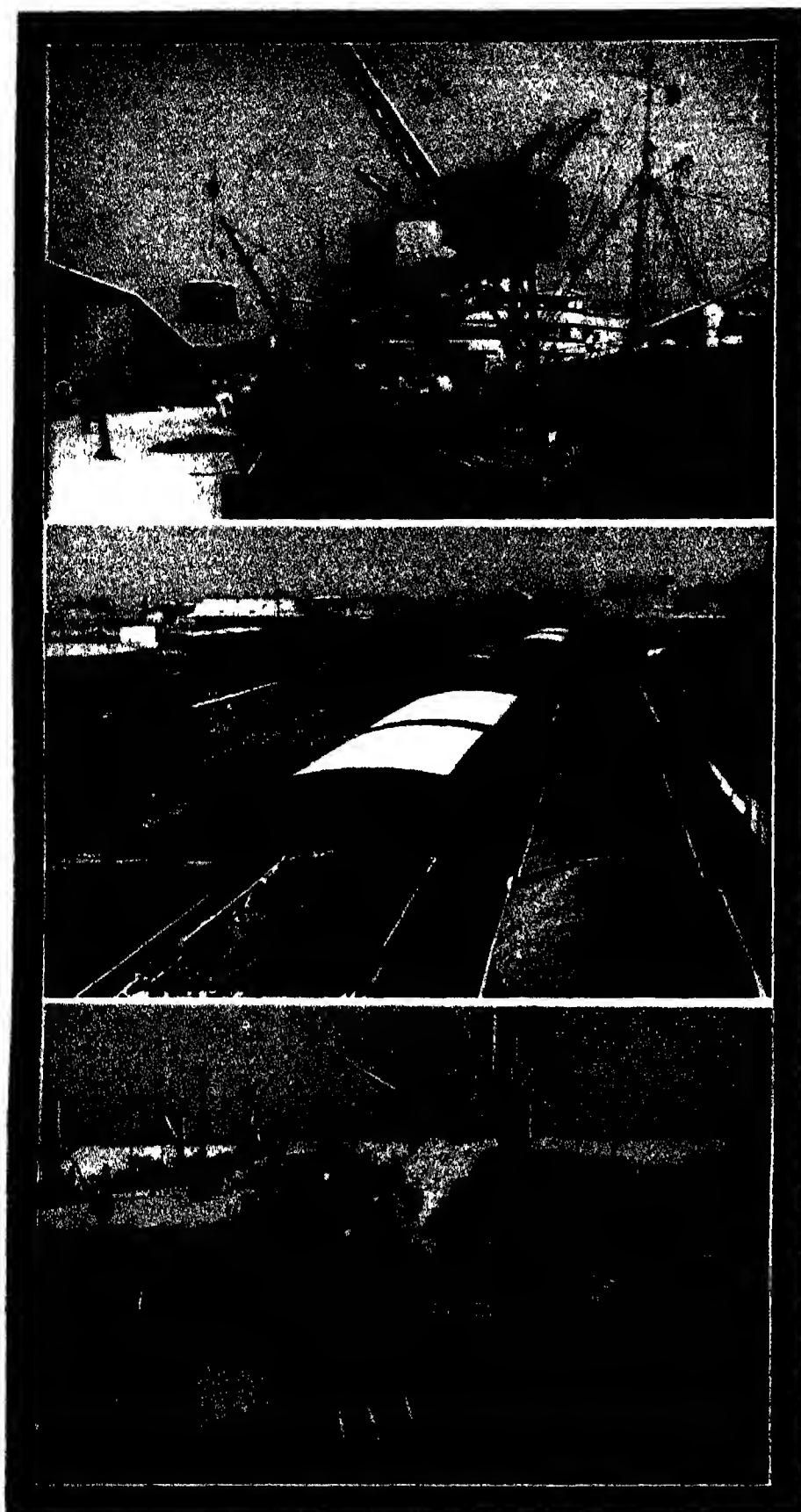


VIADUCT, UITEHQUA MOUNTAINS.

SOUTH AFRICAN RAILWAYS.

DEVIATION, WATERVAL ONDER, TRANSVAAL.





**SOUTH AFRICAN RAILWAYS.**  
 1. Unloading a Steamer, East London.  
 Centre. Coal Trains, Witbank, Transvaal.  
 3. Exporting Wood, Port Elizabeth.

1,331 miles in South-West Africa taken over by the Administration, 2,980 miles of line were added to the 7,575 miles then existing. To-day the development of railways within the Union on ultra-modern lines is proceeding in earnest. Allowing that the axis is the gold reef where the high output is consistently maintained, and of which the central point is Johannesburg, factors which have more than ordinary significance are the phenomenal growths witnessed since the conclusion of the European War in the maize and coal and to a certain extent, the citrus and sugar industries. Further, the steady industrial progress in the adjoining countries of Rhodesia, Portuguese East Africa, and the Belgian Congo have all an ultimate bearing on the issue.

**GRADIENTS: ENGINEERING DIFFICULTIES.** South Africa is distinctive in the matter of topography, its high inland plateau (four to six thousand feet above sea level) rendering engineering difficulties more acute than those of most countries. On the coastal belt, curves and grades in quick succession can be regarded as characteristic, thus rendering the distances between points as the crow flies and as the track runs somewhat out of proportion. In the early period of South African railway history the respective administrations were forced to use gradients as severe as 1 in 30, with curves of only 300ft radius, but new locations, in these less importunate times, have been found to ease the situation.

One method adopted on South African lines, where great changes of altitude occur over small distances, was the reversing station, which, however, is gradually being abolished in favour of tunnels and bridges which save a great deal of time. In one case, the 158 miles stretch of line from Durban to Easton has been practically duplicated, the new construction touching the old line only at certain points, by which process the inland grades have been reduced to a maximum of 1 in 65, and the curves to a not sharper radius than 574ft. These recent improvements cannot be taken as a reflection on the work of the old surveyors who laboured at a time when the finances of the country were far from flourishing.

**BRIDGES AND TUNNELS.** Tunnels, bridges, viaducts, and culverts are regular features in South Africa. The longest tunnel (1,001 yds.) is in Natal, between Durban and Maritzburg, while the longest bridge, built primarily for military purposes during the South-West African campaign in 1915, is the structure (2,974 ft in length) which crosses the Orange River at Upington in the Cape Province. Some of the steel viaducts which span deep gorges are interesting spectacles, the one crossing Van Staadens Gorge, in the vicinity of Port Elizabeth, 642ft long and 254ft high, being a notable example.

**GRAIN ELEVATORS.** The grain elevator system has been adopted in the Union, the whole being under the direct control of the Railways and Harbours Administration. Thirty-four elevators, with an aggregate storage capacity of 109,200 tons, are in active working order in the principal maize growing areas, one is located at Capetown with a capacity of 30,000 tons, whilst the largest, having a capacity of 42,000 tons, was to have been completed at Durban by the early part of 1926. Under the elevator system, which has given complete satisfaction to agricultural interests, the Administration undertakes the cleaning, grading, weighing,

storage, transporting, and shipping of grain. Bulk handling in specially designed trucks has proved an expeditious arrangement, both in loading and off-loading. Statistics show that by means of the elevator at Capetown ship loading can be conducted at the rate of 1,000 tons per hour. Not all the export maize, however, goes through the elevators. With a surplus for export of from 400,000 to 1,200,000 tons in a season, much of this commodity is trucked in bags direct to the wharves, where it comes under the surveillance of specially appointed railway graders. The disparity on the off-loading times of bag and bulk grain respectively is very apparent, but quick transport from the farm to the ship's hold is essential in South Africa, where grain is subject to quicker deterioration than in many other parts of the world. The elevator system has proved a boon in many ways, the early results foreshadowing a tremendous increase in the export trade as a consequence of growing confidence by overseas buyers in a commodity on which there is a Government seal.

**MILEAGE.** Including 1,331 miles of railway lines in South-West Africa, which are controlled and worked by the Administration, the total route mileage of all lines, state-owned and private, in 1925 was 12,102 miles. Of this total 500 miles were owned by private companies, and 1,013 miles were of 2ft gauge. Of these latter 303 miles were built to serve mining districts in South-West Africa. The capital cost per mile of the railways stood in 1924 at £10,158. The tram mileage run in 1924-25 10,202,785 miles constituted a record.

It is noticeable that the Union of South Africa owns the second largest mileage in the world under single management, with nearly 12,000 miles in use. Figures given by the Minister of Railways to the House of Assembly in 1925 were 2.24 miles of line to every 100 miles of territory in the Union, as compared with 1.08 in the Argentine Republic, and 1.72 in New South Wales.

**NEW LINES.** In 1925 the House of Assembly passed the Railway Construction Bill, providing for 25 new branch lines, and involving 962 miles of railway at an estimated cost of £4,541,225. These new lines, recommended by the Railways and Harbours Board, are designed to give improved services to agricultural and pastoral areas. They will be simply extensions or branch lines of existing systems, and none of them will exceed 100 miles in length, the average being under 40 miles.

**PASSENGER SERVICE.**—Comfort of travel on South African lines is a byword. The design of the coaches has more regard to individual privacy than to conservation of space. Each first-class compartment contains four sleeping berths, and a limited number of coupés are provided, which contain two berths only. Dining cars are an adjunct of every long distance train. The dining-car staff is European, and the tariff, a standard one on the entire railway system, comparatively moderate.

Of the three classes of accommodation on the South African Railways, first and second, except in the case of special reservation by Asiatics, Natives, or Coloureds, is devoted exclusively to Europeans, whilst the third class is similarly put aside for the use of non-whites.

**PASSENGER FARES.**—The scale of fares in operation for long distances is on a tapering reduction basis, that is, the longer the journey the cheaper the fare per mile. First-class ordinary tickets range in cost from 2.7d per mile to 1.12d per mile. The cost of second-class tickets is two-thirds of

that of first-class tickets. Third class tickets range from 1.4d per mile to 56d per mile. Return tickets are charged for at single fares for double the single distance.

**PASSENGERS CARRIED.**—The number of passengers carried over the Union Railways in 1924-25 (70,832,180) constituted a record, and represented in comparison with the previous year an increase of 5,020,570, or 7.63 per cent. The increases were 1,052,737 in 1st class, 2,033,600 in 2nd class, and 1,934,182 in 3rd class passengers.

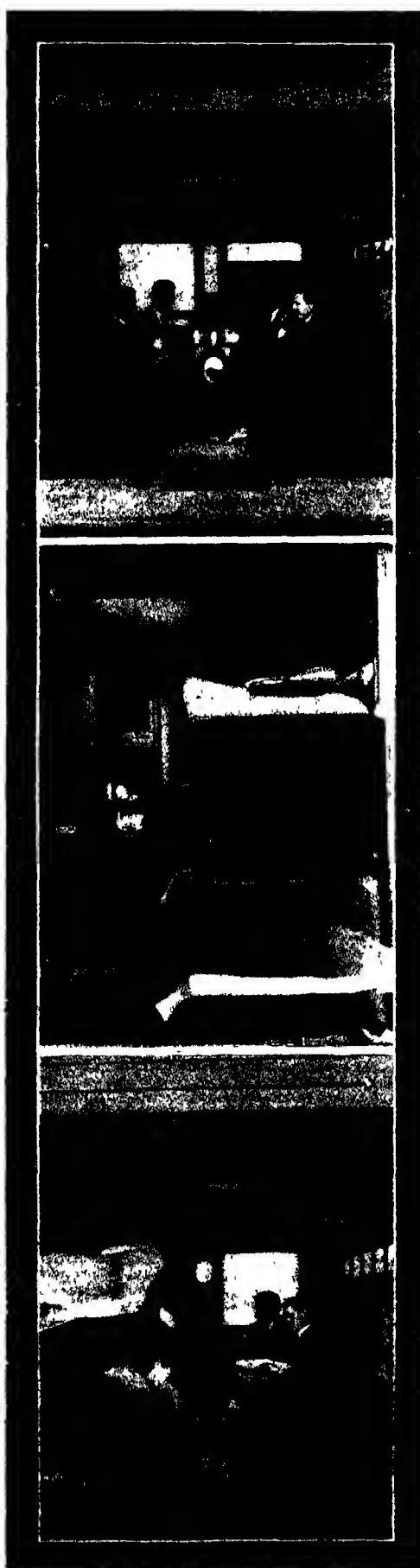
**PERMANENT WAY.** The standard gauge of the South African Railways is 3ft 6in, this gauge having been adopted quite early in the history of railway construction because it permitted of easier negotiation of sharp curves as well as of reduction in the quantities of earthworks. The normal formation widths for main lines are banks, 16ft for single track, with slopes of 1½ to 1, cuttings, 18ft, and slopes 1 to 1 or steeper according to conditions. Slopes are rarely sodded but in some few places they have been planted with Hottentot fig, marram grass or other suitable plants to check sand-drift. Wet cuttings are sometimes widened further to provide ample table drains, and are also provided with sub-drainage. Where double tracks are laid, they are at 13ft centres, and the formation is widened accordingly.

**ELECTRIFICATION.** The year 1926 will have seen the completion of the first section a distance of 174 miles on the Natal main line between Pietermaritzburg and Glencoe under an extensive electrification scheme involving more than 800 miles of main line track and 65 miles of suburban. The constantly increasing traffic on the mountainous section cited has made the step expedient, and results thus far tend to confirm the wisdom of the departure. Under electric power haulage capacity has decidedly increased, whilst wear and tear on the brakes and tyres under the regenerative system whereby current is returned to the overhead line to retard motion on the down grade have been considerably reduced. As illustrating the nature of the country on the section under electrification between Pietermaritzburg and Glencoe, it may be stated that the mileage as the crow flies is little more than half that of the track.

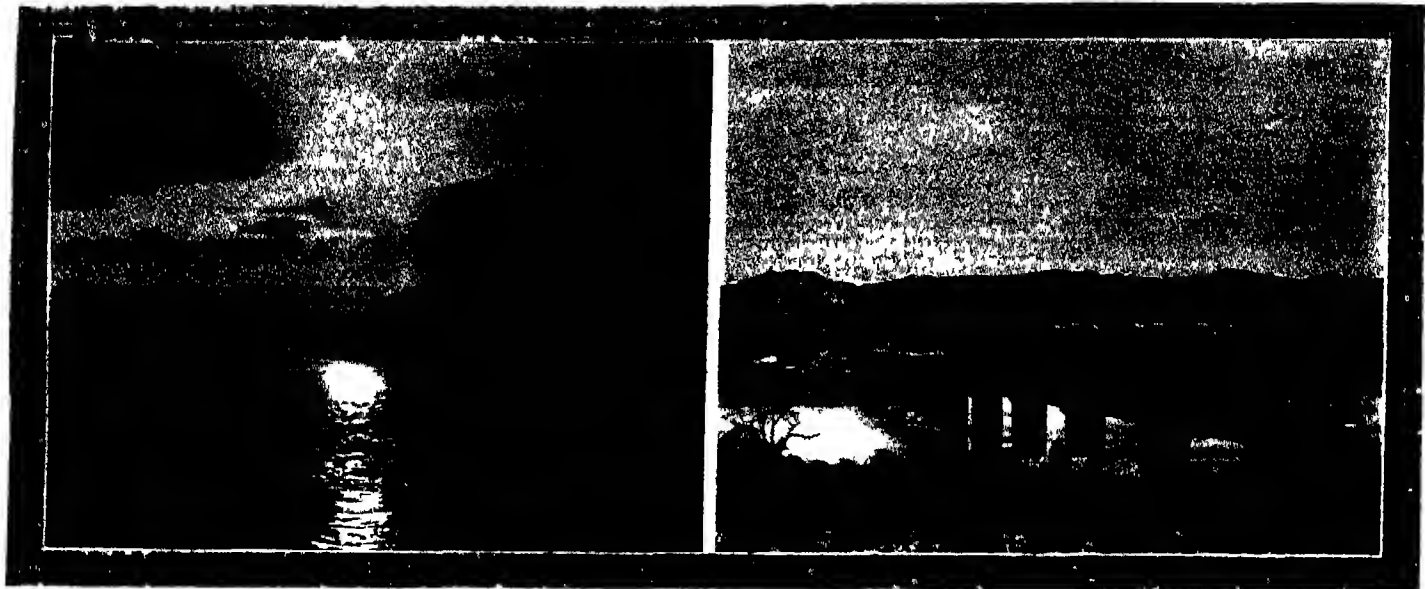
**TRACK CONDITIONS.** By successive steps the track position in South Africa has undergone changes for the better. The lightest rail used on main lines weighs 80lb, and is 40ft in length. These are sleepers mostly of jarrah, with a fair proportion of djati hardwood imported from Java. Broken stone ballast is employed, working out to about 2,200 cubic yards per mile. This kind of track will carry axle loads of 18 long tons. On branch lines the respective weights and dimensions are on a lower scale.

**WATER SUPPLIES.** In most parts dependence is placed on subterranean sources for locomotive water supplies, but the injurious qualities apparent in borehole water, which have a deleterious effect on boiler life, have forced the Administration to look more and more to conservation schemes for the solution of the problem, and, in this connection, work is proceeding in the direction of the elimination of the borehole system altogether.

**PORT SERVICES.**—So far as concerns the railways of the Union, the main lines converge from the ports of Capetown, Mossel Bay, Port Elizabeth, East London, and Durban directly upon Johannesburg, and the ports in turn are connected with each



1. FIRST CLASS DAY SALOON CAR.  
2. FIRST CLASS COUPÉ.  
3. FIRST CLASS SLEEPING COMPARTMENT.



KOMATI RIVER BRIDGE

## SOUTH AFRICAN RAILWAYS

ORANGE RIVER BRIDGE AT NORVALS PONT

other by direct routes. Thus the most populous areas although widely separated are served in the speediest manner.

**PUBLICITY.** The work of the Publicity Department has grown to an enormous extent in recent years and ample evidence is forthcoming as to the efficiency of the present system under which every form of advertising together with bookstall management is controlled. The revenue from tourist sources has exceeded expectations

and the receipts from railway bookstalls, automatic machines and hoarding and other advertisement sites on the properties of the Railway Administration are considerable.

**REVENUE AND EXPENDITURE.** The following table gives the main features of the working of the South African Railways for the year 1924-25.

Total capital expenditure at  
March 31, 1925

£120,101,735

Total earnings	£21,747,631
Gross working expenditure, including depreciation, relaying and strengthening	£16,858,571
Surplus of earnings over gross working expenditure	£4,889,060
Interest on capital	£4,147,882
Net surplus (after including miscellaneous receipts and charges) carried to Revenue Distribution Account	£820,925

SOUTH AFRICAN RAILWAYS.  
FIRST CLASS DINING SALOON

	NUMBER
Passengers carried . . .	70,832,189
Goods, minerals and coal (revenue earning) ..	Tons 18,790,806
Open mileage . . .	Miles 11,528
Mileage worked by Adminis- tration . . .	12,162

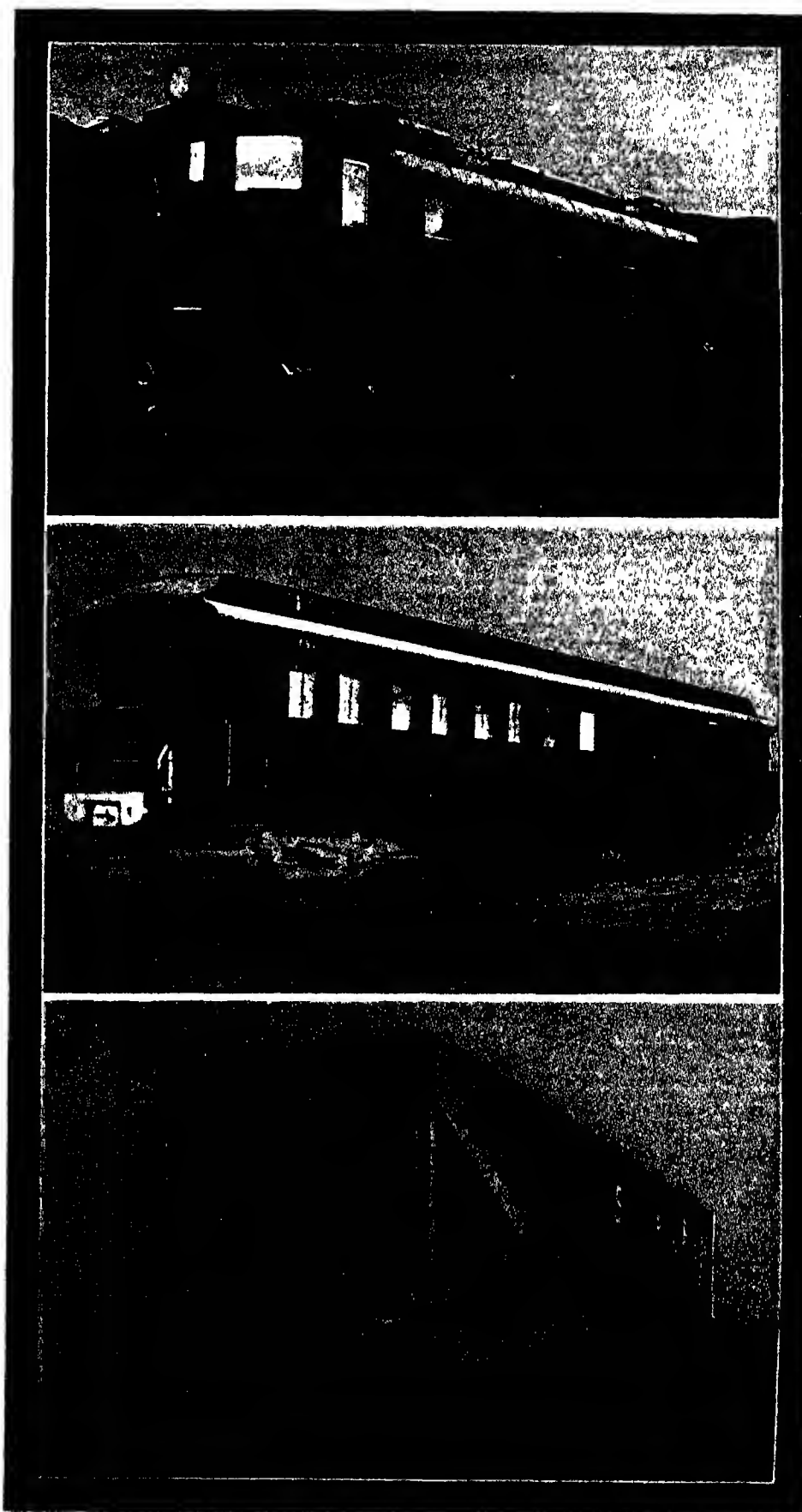
On March 31, 1925, the accumulated deficit stood at £5,185, being the balance of accumulated deficits of the previous years amounting to £2,220,511, less the surplus earnings of the financial years ended March 31, 1924 and 1925.

**ROAD MOTOR TRANSPORT.**—With due regard for the outlying settlements, the Railway Administration have inaugurated a system of motor transport where the volume of business does not justify the expense of laying a track. Use is made for the most part of the common highways, but a system is in vogue whereby power takes the form of a road tractor, the rubber-tired wheels of which run on specially prepared wheelways outside a tram track, in which the guiding wheels run. Under this arrangement the gripping properties of the tyres have been proved to exert a tractive effort four times greater than that of any engine running on rails. In 1924-25 some 100,000 passengers were carried by the road motor services, and about 8,000 tons of goods. Earnings in the same year totalled £18,495, against an expenditure of £17,379.

**ROLLING STOCK.**—At the end of 1925 the South African Railways were stated to be in possession of 1,862 locomotives and 34,362 wagons, an increase since 1909 of 451 locomotives and 11,795 wagons. At the same date 54 engines were on order, and every month witnesses a substantial increase in the capacity of the system for handling the huge traffic with which it now has to cope.

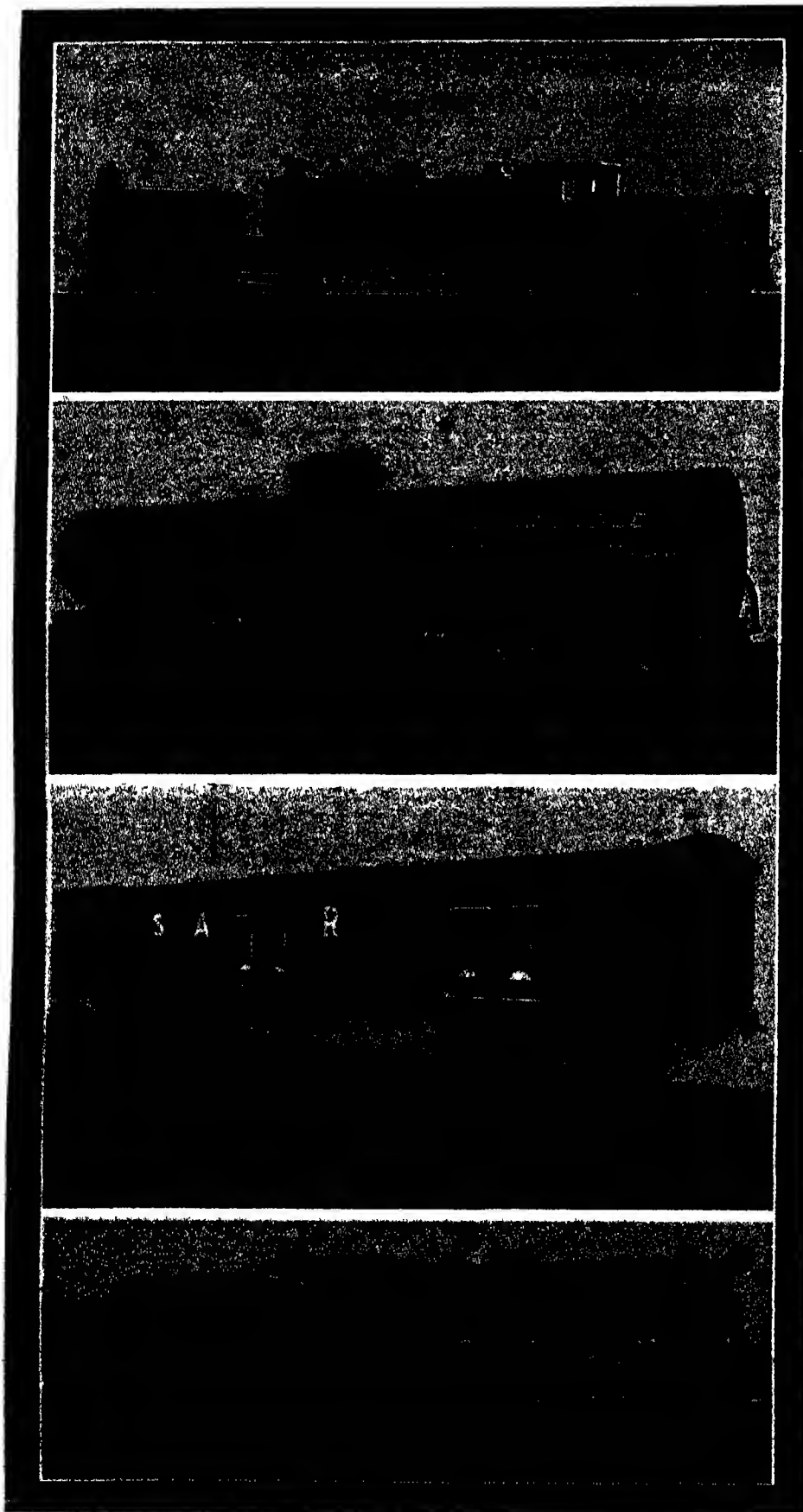
**TRUCK AND LOCOMOTIVE STRENGTH.**—Relics of former organisations in the way of locomotive and rolling stock—some of it dating back to the nineties—can still be observed in shunting and traffic operations, but the creation of a modern South African standard, after years of experimenting, can be spoken of as an accomplished fact. The importation of Baldwin locomotives of the Pacific and Mountain types, for inland and coastal work respectively, has produced satisfactory results both from speed and haulage view points.

The general scheme of rotatory truck distribution, in a land where the trucking of commodities is more or less seasonal, is gradually reaching a harmonious working basis. South Africa is quickly assuming importance as an exporting country, and the demands on the Railway Administration's supply of trucks for the transport of maize, coal, cattle, and other agricultural and industrial goods increase daily. The tendency is towards the construction of special truck types, some of which are erected in the railway workshops situated in various parts of the country. The aim of specialised trucks is, of course, to get variety of use and to obviate haulage of empty wagons over long distances. Unfortunately, in a land where agricultural and industrial interests are scattered, the haulage of empties is often unavoidable. The coal industry, entirely centred in the Transvaal and Northern Natal, makes constant calls on the truck strength of the Administration. The standard type of coal truck has a capacity of 100,000 lb., for which there is often the difficulty of obtaining a return load. As a partial solution, a vehicle designated the universal cattle truck has been evolved in local workshops. This truck, with a movable roof,



SOUTH AFRICAN RAILWAYS.

1. Electric Locomotive, Colenso, Natal.
2. First Class Main Line Day Coach and Sleeping Saloon.
3. Steel Hopper Wagon, capacity 100,000 lbs.



**SOUTH AFRICAN RAILWAYS.**  
 1. Garrett (Class G.A.) Locomotive.  
 2. Tank Truck for Petroleum.  
 3. Bogie Wagon, capacity 160,000 lbs.  
 4. Pacific Type of Locomotive.

partition, doors, and other conveniences, is readily convertible from a coal to a cattle, sheep, maize or general merchandise carrier.

**WORKSHOPS.**—The Mechanical Department of the South African Railways and Harbours is controlled from Pretoria, where the Chief Mechanical Engineer is stationed. The very efficient workshops of the Administration are situated at Pretoria, Bloemfontein, Pietermaritzburg, Uitenhage, Durban, and Salt River, where engines and rolling stock are built, erected and repaired. The total number of staff employed in the Mechanical Department at the end of 1925 was 10,014, of which number 7,484 were Europeans. Particular care is exercised in training South African born youths for permanent employment in this department.

**SERVICES (INDIRECT).** By comparison, the employees of the South African Railways are liberally treated in the way of facilities in such matters as sick and pension funds. The pension fund is conducted between the Administration and its employees on the £ for £ principle, with interest at 4 per cent per annum accruing on the monthly balance held by the Administration. Under the sick fund regulations, the railway employee and his wife and children are provided not only with ordinary medical attendance and hospital treatment, but also with surgical and specialist treatment, while payment during the period of incapacity is made on a basis of roughly one-third of the ordinary wage or salary. There is a charitable fund which has for its object the relief of distress (arising out of circumstances out of control) among the Administration's servants or ex-servants and their families, whilst Children's Homes have been established within recent times. These institutions, which have for their aim the upbringing of children of deceased railwaymen for whom there is no other provision, are supported entirely by voluntary contributions made by employees.

Under the aegis of the Administration a section of the social life of the employees is catered for by staff institutes, 48 of which are established at various centres. In these buildings the railwayman finds both recreation and rest, as well as the opportunity for friendly intercourse with his fellow employees. In connection with these institutions the railwayman is able to indulge in sports and entertainments which do not have for their venue the actual institution, but which tend to provide him and his family with interests in their leisure hours.

**NEW DEPARTURE.** The South African Railways take considerable interest in agricultural education. In conjunction with the Government Agricultural Department, a train of specially fitted vehicles, each representing a branch of agriculture, is despatched in turn to the various areas. The accompanying technical experts lecture on their respective subjects, and by this means the section of the populace engaged in rural pursuits is enabled to get into closer touch with all the latest developments.

**STAFF.**—The staff of the Railways Administration at the end of 1924-25 numbered 87,271, to whom salaries and wages totalling £13,211,145 were paid.

**STATIONS.**—At Capetown, Johannesburg, and Durban fairly heavy suburban traffic is dealt with, as well as a large number of long-distance passengers; but station arrangements do not call for special description. Germiston, a large junction outside Johannesburg, has 32 miles of track in sidings. There is a similar mileage at Braamfontein, the Johannesburg depot for long-distance passenger trains, and the centre of the large general goods and live



stock traffic dealt with at that city. Durban and Capetown have depôts for goods and coal comparable in magnitude with those at Johannesburg, and lesser towns are provided with passenger and goods stations suitable for handling the necessary traffic. In addition, there are large exchange stations, some of which have grown up (at points where no townships formerly existed) as locomotive changing and traffic sorting depôts.

For the purpose of crossing trains on single lines, wayside stations have to be introduced at regular intervals, whether or not traffic originates from them. Between such wayside stations crossing loops, with no resident staff, are generally placed.

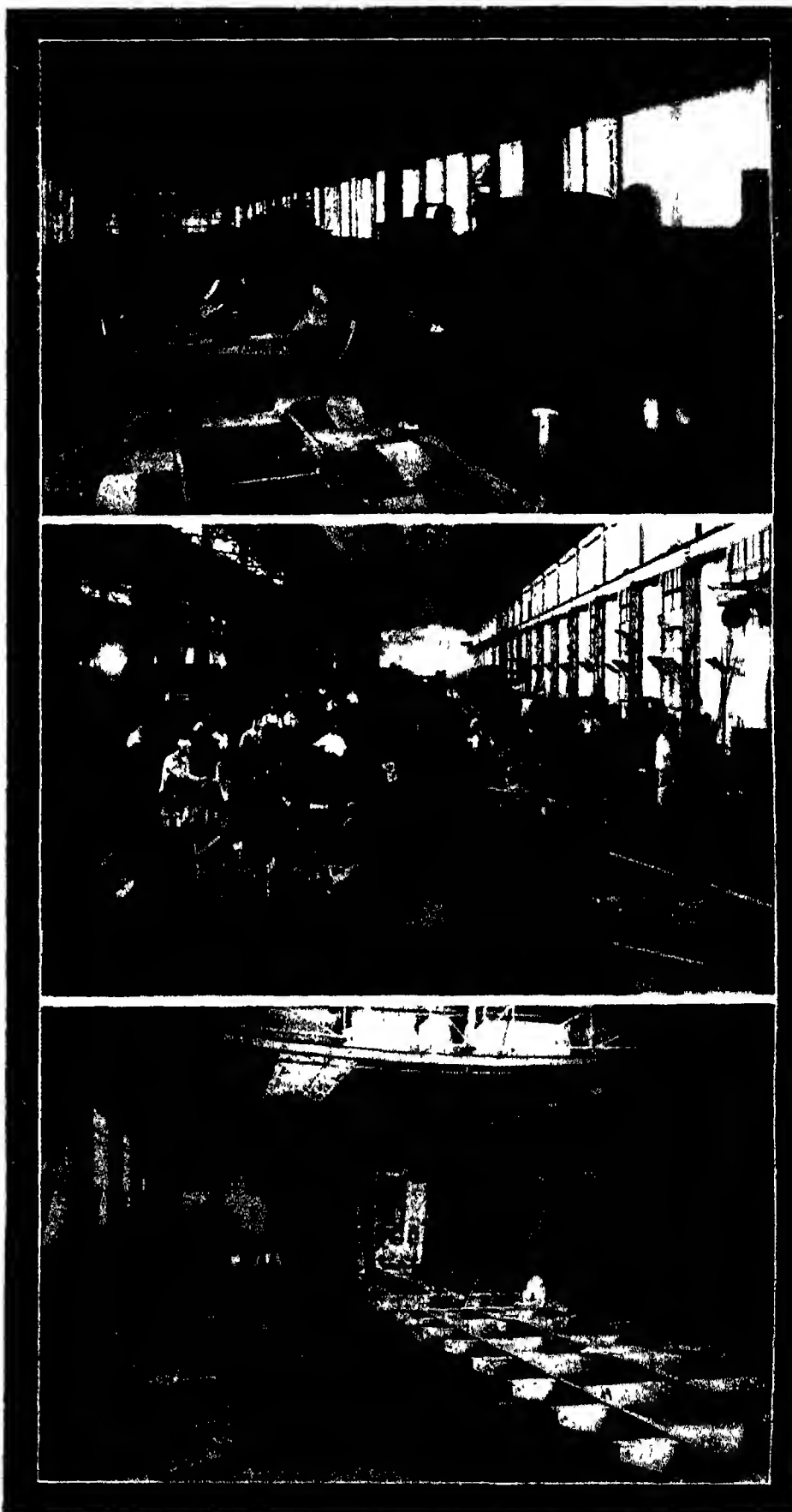
**STORES DEPARTMENT.**—The policy of the Railway Administration in relation to the Stores Department is to draw on local stocks as far as possible, and local purchases by far exceed overseas purchases. The value of materials imported and purchased in the Union in 1924-25 was £4 689,000 and £5,112,000 respectively. Details of the less important items required are exhibited on notice boards at the main centres, whilst formal tenders are invited for lines which involve considerable expenditure. Indents for locomotives, carriages, wagons, permanent way material, and other railway specialities are passed to the High Commissioner for the Union in London, who invites tenders for such supplies.

**TRAFFIC RETURNS.** The gross tonnage of revenue-earning goods and mineral traffic in 1924-25 was 18 790,800, compared with 18 838,573 tons conveyed during 1923-24. The revenue derived from goods traffic during 1924-25 was £11,732,725, the highest ever recorded, that for 1923-24 being £11,611,724.

**COAL TRAFFIC.** Although there was a decline in the goods traffic, occasioned principally by reason of drought conditions which prevailed almost generally throughout the Union during the 1923 planting season, thus adversely affecting the production of staple products such as grain, sugar and citrus fruits, there was an important increase in the goods traffic of 1924-25 reflected in the volume of coal conveyed, 9,736,403 tons having been railed from all collieries in the Union, an increase in comparison with the previous year of 302,784 tons. The tonnage of coal railed during 1924-25 from collieries in the Transvaal and Orange Free State has only once been exceeded, viz., in 1920-21, when a heavy demand for South African coal was created by industrial troubles on the British coalfields. The output from Natal also represented a record in the history of the coal industry of that province.

**TRAIN DISTANCES.** In a land six and a half times the size of the British Isles considerable distances have to be traversed. Agricultural and industrial interests are widely scattered, and travelling time on some of the more uneven stretches is comparatively slow, although the mail train from Capetown to Johannesburg, which to day occupies 30 hours on the 956 miles journey—representing a reduction of just under 15 hours since 1910—can be cited as an example of the progress made in the direction of speeding up. This works out at an average of 32 miles per hour, the average on the return journey being 32½ miles.

The longest continuous journey over the Union Railways (excluding the South-West African system) is from Klaver in the Cape Province to Somkele in Natal, the distance being 1,555 miles.



SOUTH AFRICAN RAILWAYS.

1. Salt River Workshops: Locomotive Erecting Shop.
2. Durban Workshops.
3. Steel Underframe Shop, Salt River Workshops.

## AIR, RIVER AND ROAD

### AVIATION

**A**IR travel has developed but slowly in South Africa. The first aeroplane journey was made in 1912 on a Voisin biplane, but little progress took place in civil aviation until after the War, when in 1919 aerodromes were laid out at Wynberg, Bloemfontein, Johannesburg, and other places as stages on the Trans Africa Route. The first flight from Cairo to Capetown was made in 1920 by two South African military pilots. In the same year an Aero Club was formed at Capetown.

**AIR MAIL SERVICE.** See under "Posts, Telegraphs, and Telephones."

**CIVIL AIR BOARD.** The Union Aviation Act of 1923 gives effect to the decisions of the International Air Navigation Convention, and makes provision for the control, regulation and encouragement of flying within the Union. A Civil Air Board advises the Minister of Posts and Telegraphs, who is charged with the administration of the Act. Air Navigation Regulations for the Union have been framed on the lines of the British Regulations, and became effective as from July 1, 1924.

**COBHAM FLIGHT (THE).**—At the beginning of 1926 one of the most noteworthy flights in the history of aviation was accomplished by the British airman, Mr. Alan Cobham, who flew from London to Capetown and back. Leaving the Staglane Aerodrome on November 10, 1925, in a de Havilland 50 biplane (385 Armstrong Siddeley "Jaguar"), accompanied by an engineer and a photographer, Mr. Cobham arrived at Athens (1,765 miles) on November 20, resuming his flight on December 6. Cairo was reached on December 7, Khartoum (3,755 miles) on December 22, Kisumu (5,000 miles) on January 13, Ahercorn on January 19, and Bulawayo (6,670 miles) on January 31, 1926. Here the great height above sea-level (5,000 ft.), the intense heat and the adverse atmospheric conditions made it necessary for Mr. Cobham to send on his photographer by rail and also to reduce his load of petrol. He reached Pretoria (7,000 miles) on February 2, Johannesburg on February 5, Kimberley on February 15, and Bloemfontein on February 16. On the evening of February 17 he landed at Capetown (8,020 miles) before a large and enthusiastic gathering, Parliament having done him the honour to suspend its sitting in order to welcome him.

Mr. Cobham's return journey to London was, if possible, even more spectacular, since he flew from the Cape to Cairo in nine and a half days and completed the eight thousand odd miles in fifteen days (80 hours flying time), receiving the personal congratulations of the King on his return on March 13, 1926.

This flight aroused intense interest in aviation throughout South Africa, which, according to the aviator, is an ideal flying country. It is probable that the accomplishment will prove to be the real inaugurator of a great air line running from the Cape to the Equator and linking up Kenya, Uganda, Tanganyika and Egypt, where it will connect with the sea service to Europe, and reduce mail times.

**FUTURE PROSPECTS.**—The following important announcement was made in the Union House of Assembly by the Minister of Posts and Telegraphs in March, 1926.—

"A tentative agreement has been made under which the Government proposes to subsidise to the extent of £8,000 per annum a weekly civil aviation service for passengers, goods, and mails between Capetown and Johannesburg, via Oudtshoorn, Port Elizabeth, East London, and Durban. Such agreement will be binding for only one year. The first condition is that a company shall be formed in South Africa with none but British subjects on the board, and four at least must be resident in South Africa. One director is to be nominated by the Government."

Other conditions laid down are that the service is eventually to be staffed exclusively with South African personnel, and that the arrangement is not to be completed until a substantial financial guarantee has been lodged with the Government for the due and proper fulfilment of the conditions imposed.

### RIVER

River transport throughout the Union of South Africa is almost negligible, the streams of the Union being only in one or two cases navigable for more than a few miles from their mouths and affording no commercial possibilities. With regard to Portuguese East Africa the situation is different, since that territory is unique among the countries of South and East Africa in possessing a number of rivers which are, or can without very heavy expenditure be made into, valuable inland waterways. The Zambezi, one of the four great rivers of Africa, traverses about 550 miles of Portuguese territory before entering Rhodesia, and over most of this distance is navigable to a greater or less extent. From the Chinde mouth, for some 300 miles to about 30 miles above Tete, sternwheel steamers can usually work for two thirds of the year, but navigation is impossible during the dry season and at high floods. Above Tete, the Quebra Baco rapids, extending for 75 miles, form a bad gap in the waterway. The principal tributary of the Lower Zambezi, the Shire, was formerly navigable to Katunga, in Nyassaland, within about 27 miles of Blantyre, but Port Herald, near the southern frontier of Nyassaland, is now the head of navigation, and can only be reached during a portion of the year.

The second largest river of Mozambique is the Limpopo, which is always practicable for small steamers as far as the progressive river port of Vila Nova de Gaza, 30 miles from the mouth. An important barrage project for this waterway is to be carried into effect as soon as funds are available. Other rivers which are navigable by small craft for some distance from their mouths are the Maputa, flowing into the South end of Delagoa Bay, the Matolla, at Lourenço Marques, the Tembe, a tributary of the Matolla, the Umbeluzi, and the Komati, also flowing into Delagoa Bay. In the Mozambique Company's territory the Pungue, though its navigability is much impeded by shifting shoals, can be ascended for 100 miles in the wet season, and for half this distance during the remainder of the year. The Busi, which enters the sea near Beira, is navigable by launches for about 40 miles and by vessels drawing 9 ft. for 20 miles during the flood season. It is much used for transport purposes, and serves as a traffic route between the sugar mills at Nova Lusitania and Beira.

### ROAD

In 1924 there were altogether some 66,200 miles of roads in the Union of South Africa, 19,423 miles of these being classed as main roads and 44,505 miles as district roads, while the chief traffic roads in the Transkei totalled 2,300 miles. Generally speaking, only the proclaimed main roads are regularly maintained by the Provincial Administrations, the greater proportion of the highways outside the settled areas being the so-called dirt or veld roads. Gravel roads are, however, being constructed each year.

#### DEVELOPMENT OF MOTOR TRANSPORT.

Progress in road construction has been especially marked since 1910, due to the recognition of the motor car as a form of transport necessary to farmers.

Formerly the universal method of road goods transport throughout South Africa was by high wheeled waggons, drawn by oxen at an average pace of three miles an hour, this having sufficed for the owner, who generally accompanied his produce. Although the Union, together with the South-West Africa Territory, possesses some 11,750 miles of railways, the lines covering such a vast area of country do not link up all the outlying farming communities, and road transport must continue for a number of years. Farmers, however, have eagerly taken to the automobile, which enables them to reach their markets, transact business, and return home in a tenth of the time required for ox wagon travelling. The wide use of the motor-car has, therefore, made good roads a necessity, and the authorities are using every endeavour to meet the needs of country as well as town dwellers.

**MOTOR ROADS.** No one district of South Africa has a monopoly of scenery or motor roads. These latter are, however, as might be expected, more numerous in the settled districts of Cape Province, and in the immediate vicinity of Capetown there is a group of roads, many of which have been blasted out of solid rock midway between the sea and the cliff summits, comparable with the famous Corniche Road of the Riviera. In Cape Peninsula alone upwards of 100 miles of new roads have recently been built so as to make a complete circuit of the peninsula when traversed, together with several linking-up roads. Table Mountain, the Constantia Mountains, Nuizenberg Mountains, and the Rhodes residence at Groote Schuur are within this itinerary, which includes magnificent scenery of every description. Mountain passes up to 6,000 ft. have occasionally to be crossed, but the gradients are such that any car of moderate power can easily ascend them. Another motor tour along fine and well kept roads is that from Capetown to Johannesburg, via Caledon, Swellendam, Mossel Bay, George, East London, Pondoland, Port St. John's, Durban, and Pietermaritzburg. Due north from Johannesburg there is an excellent road running some hundreds of miles to the borders of Rhodesia.

In Rhodesia itself the question of motor transport and of roads to take it is already under consideration. With the co-operation of owners of motors it is hoped that a great improvement will soon be visible, and that the ox or donkey wagon will be superseded by the motor lorry and the antiquated mail cart by the motor-van or the char-a-banc. Even under present conditions, however, many of the Southern Rhodesian roads have excellent surfaces. (See also under "Tourist Resorts.")

## PROVINCE OF NATAL

**T**HE original colony of Natal was formally created in 1856, but did not obtain responsible government until 1893. Five years later Zululand and the incorporated Amatongaland were annexed to the colony by Letters Patent. Following the Anglo-Boer War, the districts of Utrecht and Vryheid and part of the district of Wakkerstroom, formerly pertaining to the Transvaal, were annexed. The total area is now 35,284 square miles, rather more than that of Scotland or Tasmania, with a seaboard of about 360 miles. On the north Natal touches Portuguese East Africa, the Protectorate of Swaziland, and the Transvaal, on the west it is bordered by the Orange Free State and Basutoland, and on the south by Cape Province. The Province contains the loftiest peaks in the Union, the Giant's Castle and the Mont aux Sources of the Drakensberg Range, both on the boundary line between Natal and Basutoland, being respectively over 9,000 and 11,000 feet high. From the Drakensberg the subsidiary ranges of the Buggarsberg, the Moon River Heights, and other ranges extend like the fingers of a hand and there are isolated groups of mountains such as the Ingeli Mountains in the extreme south-west and the Mahwaga Mountains in the west also single mountain tops which, in Natal as in Zululand, stand out on the landscape as solitary beacons. The Province is well watered, but the rivers are of little use for navigation. The largest is the Tugela, which rises on the slopes of the Mont aux Sources and flows 200 miles to the sea. The Umfolosi is the main river of central Zululand, others being the Mkusi and Pongola. The climate is on the whole extraordinarily healthy for a sub-tropical country, and the magnificence of the scenery in the Drakensberg and Quathlamba Mountains is proverbial.

**ADMINISTRATION** - The Provincial Council consists of 25 members, elected by ballot to represent the same number of constituencies. Electors must be not less than 21 years of age, and possess immovable property to the value of £50, or rent such property to the annual value of £10, or have resided three years in the Province with an income of not less than £90 per annum. No coloured person can vote unless he has resided for 12 years in the Province, been exempted from native law for seven, is recommended by three European electors, and is granted the franchise by the Governor-General in Council. Natives of India are excluded from the franchise.

Roman-Dutch law is the basis of the legal system, the law being administered by the Provincial Division of the Supreme Court of South Africa, composed of a Judge President and three Puisne Judges, and by Resident Magistrates. In ordinary criminal matters the natives are amenable to the criminal law of the Province, offences of a political character or connected with native law or custom, and all civil actions between natives living under native law, are tried by the Native High Court of the Province, or, subject to the jurisdiction of and appeal to that court, by Magistrates, while the chiefs have a limited criminal and civil jurisdiction, from which an appeal lies to the Magistrates.

The present Administrator of Natal is the Hon. Sir G. T. Plowman, K.C.M.G.

**LOCAL GOVERNMENT** - Natal is divided into ten counties and the province of Zululand, the former being named Victoria, Durban, Alexandra, Alfred, Umvoti, Pietermaritzburg, Weenen, Klip River, Utrecht and Vryheid. For administrative

during the present century has been mainly directed towards the cultivation of sub-tropical products, and the success of Natal as a sugar-growing country has been phenomenally rapid. The total area under cultivation being in a recent year 260,000 morgen (about 2.1 acres) with a production of 1,918,560 tons of 2,000 lb. each. The cotton industry is rapidly expanding, pro-



HOWICK FALLS, NATAL.

poses the country is divided into 31 magisterial districts. There are nine municipalities and 15 local boards.

**AGRICULTURE.**—Natal has the great advantage of variety of climate within a comparatively limited area, and, as far as the fruits of the earth are concerned, the number of its products is out of all proportion to the size of its territory. At one time a great pastoral country, attention

duction in 1923-24 amounting to 5,845,909 lb. from some 7,000 acres. Some coffee is grown, and an increasing amount of tea, maize is cultivated throughout the colony, 538,080 bags being the yield in 1924 and 1,924,000 bags in 1925; wheat, barley, and oats are grown on the higher levels; some 650,000 lb. of tobacco were produced in 1924, and all kinds of fruits and vegetables do well, especially the citrus varieties.

of the former. Though the forests of the province are now of small extent, there are still some, largely of yellowwood, existent on the reserves in the northern district. (See also articles on "Agriculture," "Cotton," and "Tobacco.")

**COMMERCE.**—See general article on "Commerce."

**FINANCE.**—The provincial revenue for a recent year amounted to £976,251, and the expenditure (ordinary) to £973,086. Detailed items of revenue were: Union subsidies, £563,032, general licences, £120,882, racing taxes, £50,701, and departmental receipts, £85,015. Expenditure was concerned with education, £605,320, roads, bridges, and works, £192,312, hospitals and poor relief, £98,852, general administration, £76,446, and refund of revenue, £150. Capital expenditure reached the sum of £91,668, roads and bridges accounting for £63,446 and buildings for £28,162.

On March 31, 1926, the Provincial Council was faced by a deficit of £95,000 on the previous year's working, to meet which an importers' tax had been suggested, ranging from  $\frac{1}{4}$  to  $\frac{3}{4}$  per cent.

**INDUSTRIAL PRODUCTION.**—In 1924 there were 1,213 factories in Natal out of a total of 7,024 for the Union, 268 of these being concerned with food and drink, 160 with clothing and textiles, 138 with vehicles, 121 with metals and engineering, and 109 with building and contracting. The gross value of factory production in 1923-24 was £16,780,211. The whaling and general fishing industries of the Province are important. The former is estimated to bring

in about £150,000 in an average year, the production of other fisheries being about £70,000.

**LIVE STOCK.**—Not all of the Province of Natal is suitable for the rearing of live stock, but there are large sheep farms in the midland and upland districts, in the counties of Pietermaritzburg, Umvoti, Weenen, and Klip River, and on the higher and drier lands of Weenen and Klip River. Angora goats are pastured. Cattle are found principally in the inland counties, they are valued for transport purposes, their hides are exported, and dairy farming is being carried on to an increased extent. The following were the figures of live stock in Natal in 1924: Horses, 72,609, mules, 8,582, asses, 44,408, cattle, 1,035,522, sheep, 1,477,209, goats, 427,464, pigs, 64,867, ostriches, 671.

**MINERAL PRODUCTION.** Natal contains a large and valuable coal field in the Klip River county at the northern end of the Province, the mining centres being Dundee and Newcastle. About 60 per cent of the coal produced in the Province now comes from Utrecht and Vryheid counties, and large fields are known to exist in various parts of Zululand. The highest grade coal in South Africa is produced in Natal, the ash therein being comparatively low compared with other South African coals. How the coal output of the Province has grown may be gathered by comparing the output for 1880-90 (107,000 tons) with the average for the five years 1909-13 (2,263,000 tons), and with the output for the year 1924, which was 4,713,291 tons. Gold is found in the Tugela Valley and at Umzimto, as also in Zululand, but the output is trifling.

Silver, copper, lead, and iron ore are all known to exist. The total value of minerals produced in Natal in 1924 was roughly £2,500,000, of which coal was responsible for £1,824,292. (See also articles on "Mining and Minerals" and "Coal.")

**POPULATION.**—The population of Natal, including Zululand, according to the Census returns of 1921, numbered 1,429,398, or 40.51 to the square mile, having increased by 235,355 in the ten years preceding. The white population totalled 136,838 and the non-European 1,292,560, the latter being made up of 1,139,804 natives (Bantu), 141,649 Asiatics, and 11,107 Coloured. The natives, therefore, outnumbered the whites in the proportion of nearly nine to one, and the total coloured population exceeded the white population by between nine and ten to one, the excess of coloured over white men being much larger than in Cape Province. The large number of Asiatics is due to the introduction of Indian coolie labour previous to 1911. The bulk of the native population of the Province is to be found in native locations, which absorb in all an area of approximately 4,000 square miles. The natives there live under their own chiefs, and to a large extent under their own laws and customs, but are supervised by European officers. There are many tribes, all of Kaffir origin, some indigenous to the soil, not a few immigrants since the days when Chaka and his Zulu warriors laid the land desolate, and a large proportion are Zulus or closely akin to the Zulus.

**TRANSPORT.** See general articles on "Shipping" and "Railways," also "Port of Durban."



## CITY OF PIETERMARITZBURG

**PIETERMARITZBURG**, or Maritzburg as it is more generally called, the administrative Capital of the Province of Natal, is a beautifully situated city of over 18,000 inhabitants, about 70 miles north of Durban. It has always been noteworthy politically, and has now, in addition, become an important commercial distributing centre, besides being the junction of four railway lines. Maritzburg is however known especially as a residential and educational centre, being unrivalled in this respect by any other town in South Africa.

**BUILDINGS.**—The Capital is in all respects a picturesque and up-to-date city, with many fine public buildings and memorials, also wide well-paved streets. St Saviour's Cathedral and St Andrew's Church both date from the fifties, as does the Presbyterian Church with its fine clock tower. The Town Hall was built to replace a former structure, and was opened in 1901 by the present King. It is built almost entirely of red brick, and contains a fine organ and concert hall, the Municipal Art Gallery being above. The Colonial Buildings in Church Street and the old Legislative Council Buildings, now occupied by the Education Department, provide strongly contrasted types of architecture. Other striking buildings are the Post Office, Museum, Law Courts, and Grey Hospital.

**CLIMATE.**—The climate of Maritzburg may be described as warm and moist, but

on the whole invigorating, the rather hot summer months being mellowed to some extent by the mountain breezes and by the rainfall, which at this period attains its maximum, amounting on an average to 82 per cent of the mean annual rainfall of 35.07 inches. The mean annual temperature is 66.6 deg. Fahr.

**FINANCE.**—The ratable value of Maritzburg is £4,492,900. The net debt in 1924 was £985,424, while the value of trading concerns was £664,049, other assets amounting to £1,360,533. Municipal rating is 3½d. in the £ on the value of freehold immovable property, together with a special water rate of ½d. in the £.

**GARDENS AND PARKS.**—A most delightful place in Maritzburg is the Botanic Gardens, which contain one of the most valuable scientific collections in South Africa. Though partly subsidised by the Corporation and Government, these gardens are controlled by private enterprise. The great pleasure resort of the city is Alexandra Park, the central sports-ground and picnicking spot for the majority of the inhabitants. In the park is the small but attractively laid out "Mayor's Garden."

**INDUSTRIES.**—In industrial activities Maritzburg makes no pretence of being very prominent, though it possesses one of the largest wattle-extract factories in the country, a boot factory, and a flourishing

mill industry, it also produces on a considerable scale what are said to be among the best bricks in South Africa. As an agricultural centre the city claims undoubted prominence. Extensive wattle plantations have been laid out upon the surrounding hills, these being principally owned by the Municipal Corporation.

**MUNICIPALITY.**—The seal of the city dates from 1855, when Pietermaritzburg first became an incorporated municipality with a Mayor and Town Council, Mr. D. D. Buchanan being the first Mayor.

**POPULATION.**—The total population of Pietermaritzburg, comprising Europeans, Asiatics and Bantus, amounted in 1923 to 37,750, of which 18,400 were Europeans. The birthrate was 28.3 and the death rate 9.2 per 1000.

**SCHOOLS AND COLLEGES.**—Foremost among the educational institutions for which Maritzburg is noted is the Natal University College, whose buildings occupy a fine site on the north-west side of the town. The Government Training College is installed in the interesting building and grounds which were formerly the residence of the Governor of the colony. Other leading educational institutions are, for boys—Pietermaritzburg College, Hilton College, St Charles' College, and several high-class preparatory schools; and for girls—the Girl's Collegiate School, Wykeham.

School Epworth High School, St John's High School, and the Convent of the Holy Family.

**SPORT AND RECREATION.** The race-course, reached by tram, is at Scottsville, and here popular meetings are held. Beyond the University an 18-hole golf course has been laid out, and it is one of the most delightful of grounds, from which are obtainable fine views of the distant Zwartkop. Boating on the beautiful Unisindusi River is popular, as are cricket, tennis and football in and near Alexandria Park. There is a public swimming bath in the centre of the town, and the construction of an open air bath is under consideration. An excellent theatre and several cinema halls have extensive patronage at all times.

**STOCK SHOWS.** Maritzburg is an important stock centre. The Royal Agricultural Society of Natal, the oldest society of its kind in South Africa, holds its annual show here. The grounds of the Society are about 10 acres in extent, and

## BUSINESS ENTERPRISES

### "THE NATAL WITNESS."

**Inception.** This newspaper was first published as a four sheet weekly on February 27 1846 when Pietermaritzburg was no more than a village, with a white population of some 300 and about eighty houses. The original offices of the paper consisted of a thatched cottage, situated on what is now the principal street of the modern city. Frequently there was a scarcity of news, and the editorial staff found it difficult to fill the small sheets.

**Development.** It was not until nineteen years later that the first telegraph line was established in Natal. The printing press then used was a very primitive machine but little in advance of Caxton's when compared with the monster roller presses of to day. Two men used to work the hand turned press, running off copies at a maximum speed of 200 per hour. Circulation was

Africa to the Empire and to promote immigration and land settlement. Its leaders and articles are dignified and fair, and contain constructive comment on all matters of public interest.

**Circulation.** This covers a field of 10,000 square miles, the journal circulating throughout Natal, Zululand and adjoining territories.

**Advertising.** As an advertising medium, the "Natal Witness" is unrivalled in Natal, and expressions of the excellent results achieved have been received from all over the Union, also from advertisers in Great Britain.

**Durban Representative.** Mr F. H. Tamplin, 10 Plowright Lane.

**A. WOOD.** 331, Pietermaritz Street, Pietermaritzburg. This business was founded by Mr A. Wood thirty-two years ago, and is to day one of the best equipped of its kind in Natal. The organisation acts as general and mechanical engineers, importers of automobile, wattle and industrial machinery, and is in a position to undertake any kind



THE NATAL WITNESS LTD., Pietermaritzburg  
The Firm's Premises

many new buildings have been added during recent years. Latterly the society's activities have greatly increased owing to the added interest being taken in all sections of agriculture in the Province. Many of the finest cattle ever seen in South Africa have been entered for competition at the Royal Show, and during recent years additional sections have had to be provided to accommodate cotton, tobacco and wattle exhibits.

**TRAMWAYS.**—The tramway system of Pietermaritzburg, which dates from 1904, is of the 4 ft 8½ in gauge usual in South Africa, and has eight miles of track. The total capital expenditure exceeds £130,000, and the number of passengers carried annually is about 2,770,000.

**WATER SUPPLY.**—Water for household consumption is laid on throughout the town, and even to the further residences in the modern suburb of Scottsville and Howick Road, where of late rapid strides in development have taken place.

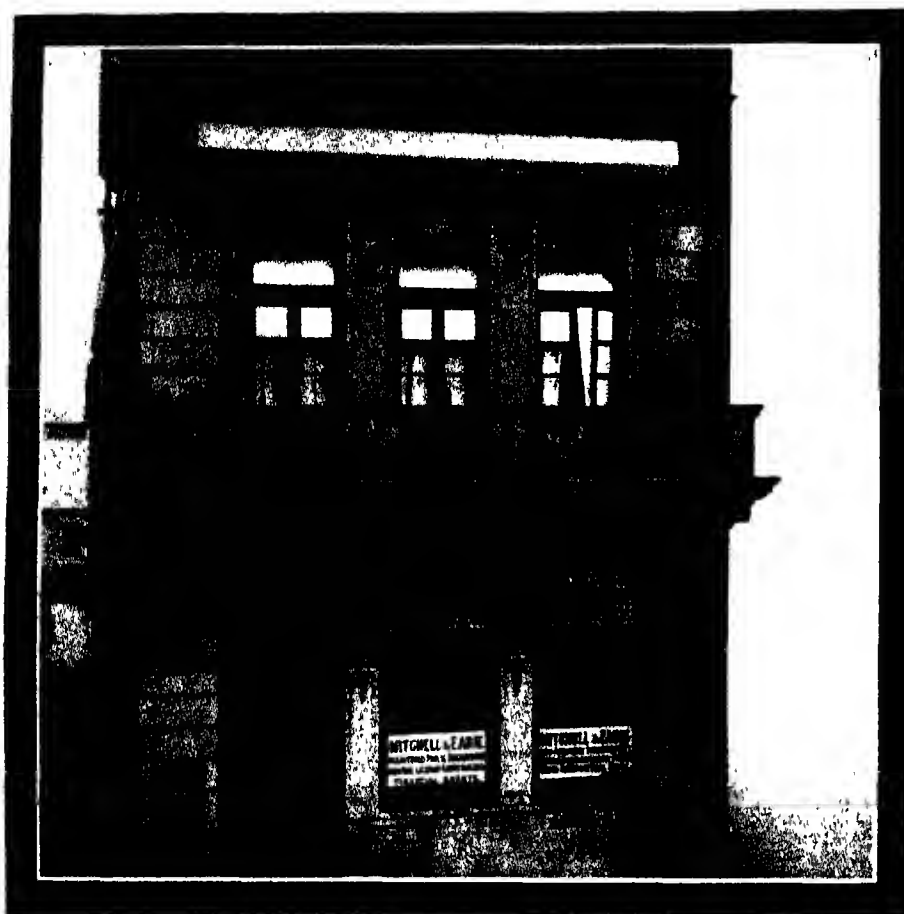
naturally limited, and was greatly hampered by the absence of any postal service in the colony. When its founder and editor, Mr David Dale Buchanan inaugurated his delivery system between Maritzburg and Durban, it was eagerly seized upon by the citizens to forward their letters, a charge of 6d per letter being made. The photograph accompanying this letterpress shows the progress since made by Natal's foremost daily newspaper. The editions now average 16 pages daily, and are run off at the rate of 24,000 per hour on the most up-to-date machinery.

**Feature Pages.**—The "Natal Witness" was the first newspaper in South Africa to publish a regular "feature page" every day. These pages cover many interests, including art, science, literature, etc. The paper was also a pioneer in the publication of photographs of topical events.

**Policy.**—This is strictly non-partisan, and strongly Imperialistic, its chief object being to strengthen the bonds which unite South

of light engineering work. In addition to the usual machinery, engraving, grinding, and milling machines have been installed, and various contracts have been undertaken, both for the Government and the South African Railways and Harbours. The works and machine shops are situated on the firm's own property, and cover an area of 270,000 square feet. All kinds of motor-car repairs are effected, and the firm has held the local agency for Dodge cars in the city of Maritzburg and district for nine years. A complete range of spares for these cars is always in stock. Mr Wood has invented, patented, and manufactured an instrument for cutting and chopping bark, also a wattle-bark packing machine, which are in use by all the principal exporters in Natal. At the Pietermaritzburg Royal Agricultural Show the former obtained the premier award of a gold medal, the latter being granted a silver medal. The firm's bankers are The National Bank of South Africa, Limited.





MITCHELL & EADIE, Pietermaritzburg  
Head Office

#### MITCHELL & EADIE.

**Inception.** The present firm became successors in 1918 to Duff, Mitchell & Eadie, the partners of which concern began business in 1905 as Duff & Eadie subsequently Duff, Eadie & Co.

**Partners.** The partners now associated are Messrs T. C. Mitchell F.S.A.A., R.P.A., D. M. Eadie, R.P.A., and A. C. Mitchell, R.P.A.

**Activities.** The firm operates as registered public accountants and auditors, con-

veyancers, estate, financial and general agents.

**Insurance.**—Messrs Mitchell & Eadie are also agents for the Central Insurance Co. Ltd. (Fire), the Standard Life Assurance Co., and the Railway Passengers' Assurance Co.

**Companies.** The company department of the firm includes the Dalton Wattle Co. Ltd., Natal Investment & Annuity Co. Ltd., and Maritzburg Ricksha Co. Ltd., all of Pietermaritzburg and Ravene Plantations Ltd., Inhambane, Portuguese East Africa.

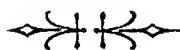
Other institutions represented are the City Permanent Building Society (secretaries), Pietermaritzburg (established 1890), Cordwalles Preparatory School for Boys (T. C. Mitchell, bursar), Natal Society of Accountants (Inc.), (A. C. Mitchell, registrar), and Natal Agricultural Union (A. C. Mitchell, secretary).

**Invested Funds.**—These amount to £250,000.

**Branch.** Eadie & Mitchell, 344, Smith Street, Durban.

**Cables.** Head Office "Accomptant," Pietermaritzburg Branch office "Comptac," Durban Codes Bentley's and Broomhall's Imperial.

**SOUTHERN ADSSERVICE.** The principal of "Southern Adsservice" realised over a quarter of a century ago the future possibilities of South Africa as a market for world manufactures, and from that period he devoted his time and attention to advertising. To-day the agency undertakes advertising and publicity work of all descriptions and in all media. Its organisation and equipment are as modern and as able as those of the best English and American enterprises of a like nature. The scope of its activities extends from the southern coast to the Northern outposts, and from the East to the West Coast. The Agency arranges contracts and by a system of checking safeguards the advertising outlay of overseas customers, thus saving them unnecessary expense. The one aim is to increase clients' sales. Branches are established at Johannesburg, Durban, and Capetown. Bankers, The Standard Bank of South Africa, Ltd. Business manager, Mr C. O. Salsbury. Postal address, P.O. Box 314, Pietermaritzburg, Natal. Telegrams, "Soutads," Pietermaritzburg.





THE CENTRE OF DURBAN TO-DAY. POST OFFICE ON LEFT, TOWN HALL ON RIGHT.

## CITY AND PORT OF DURBAN CITY

**D**URBAN, the third largest city of South Africa and the chief port of the Union, is at once a busy centre of industry and one of the most enjoyable holiday resorts in the world. Beautifully situated on the south-east coast overlooking a fine bay, and with a climate perhaps the most genial of any to be found in the Union, the city has always been noted for its cleanliness, its liveliness, its brilliant colouring, and its enterprise.

Durban is just over a hundred years old, the centenary of the Province of Natal having been celebrated in 1924. In 1824 Lieutenant F. G. Farewell, an officer of Marines stationed at Capetown, accompanied by a small party of adventurous pioneers, put into Port Natal in the trading brig "Salisbury." He succeeded in obtaining permission from the Paramount Chief of the Zulus, the terrible Chaka, to settle at the Bay, and some years later one Nathaniel Isaacs, on behalf of the few settlers then occupying some wattle and daub huts, obtained from Chaka accession of the settlement district. In 1835 the settlement, with a population of less than 300, was named D'urban, after Sir Benjamin D'urban, the Governor of Cape Colony. In 1854 it was proclaimed a borough, with a population of 1,204.

As an indication of the remarkable progress which Durban has made since those times, it is interesting to note that in 1924 the European population was estimated at 50,792. To-day the Old Fort, erected on the site of the encampment which Captain Smith defended so nobly in 1842, and whence Dick King set forth on his memorable ride to Grahamstown, recalls those interesting events of South African history in which Durban has played so prominent a part, rising from small beginnings through many vicissitudes to the proud position it now occupies as at once the Commercial Gateway and the Playground of South Africa.

**ART GALLERY.**—The Art Gallery, situated above the Museum in the Town Hall buildings, houses a collection of pictures mainly representative of the oil and water-colour work of British artists of the modern school. Recently the Gallery has been enriched by the donation of a very valuable collection of old Dutch pictures, etchings, and prints by some of the best masters, statuary by Rodin and others, and some fine old Chinese, Sevres, and other porcelain.

**BATHS.**—The Municipal Baths are situated in West Street, opposite the Town Hall, and comprise sea water swimming

baths, Turkish and slipper baths, and hot salt water baths. The salt water swimming bath measures 80 ft. in length by 30 ft. in breadth, and has a depth of 6 ft. 9 in. at the one end and 3 ft. 3 in. at the other.

**BROADCASTING.**—Durban is to have the first municipally-owned and operated broadcasting station in the world, a very powerful installation being now in course of erection which, it is anticipated, will easily be heard on 4 valve sets throughout the Union, good reception on crystal sets being possible up to 20 miles.

**BUILDINGS.**—By far the most imposing public building in Durban is the magnificent Town Hall, which was erected by the Provincial Government at the beginning of the present century, and justly ranks as one of the finest edifices of its kind in the world. The building is in three storeys, the dome rising to a height of 167 feet, and is suggestive of grace combined with strength and solidity. Separate blocks divide the structure into three sections, the front portion containing the main assembly hall with a seating capacity of 3,500, known as the Town Hall block, the portion fronting West Street accommodates the Council Chamber and the principal municipal departments, and the block facing Smith



DURBAN AS IT WAS IN 1852.  
Original Offices of Messrs. R. Acutt & Sons in right foreground

Street worthy houses three of the finest of Durban's public institutions, namely, the Borough Library, the Art Gallery and the Municipal Museum.

The arrangement and embellishment of the interior have been carried out with the highest skill, and staircases of marble, balustrades of teak, and panellings of the finest woods procurable are characteristic of the building as a whole.

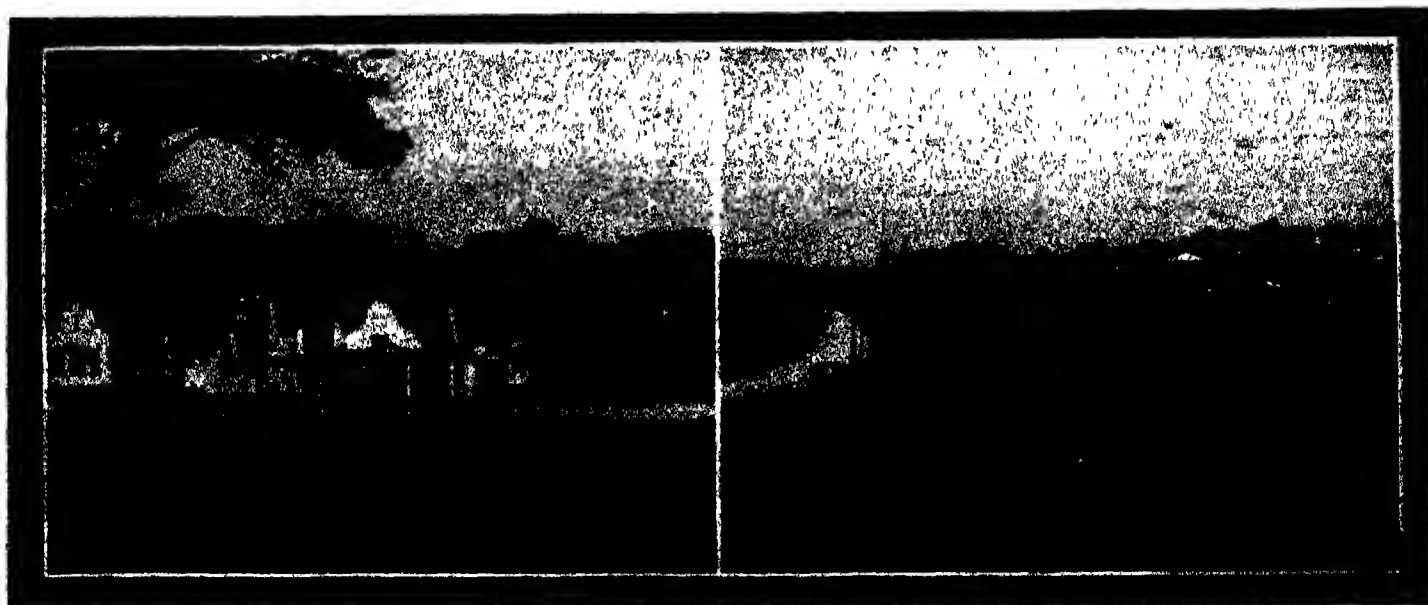
Within a short radius of the Town Hall and the General Post Office (the old Town Hall) may be found the most striking of Durban's public buildings: the Old Court House, used now as the headquarters of the Native Affairs Department and of the Borough Water Department, the main Railway Station and offices of the Administration, the fine new Wool Exchange, the Law Courts, the Standard and National

Banks, the Durban Club, and the imposing headquarters of the Royal Natal Yacht Club.

**CHURCHES.**—Durban possesses two cathedrals and many other imposing ecclesiastical buildings. St Saviour's, the Anglican cathedral of the diocese, first built when the memorable Colenso controversy was at its height, is a fine building in the heart of the city. The largest church is the Roman Catholic Emmanuel Cathedral, of Gothic style, and enriched by much beautiful Canara marble. The old church of St Paul's was destroyed by fire in 1907, but a finer and more handsome edifice has been erected. The Wesleyan Church is in West Street, the Congregational Church in Alwal Street, and the Presbyterian Church on the Berea.

**CLIMATE.**—The climate of Durban throughout the winter months is uniform and ideal, resembling that of Southern France and Italy, and on this account the city is a favourite winter resort. Even during the summer the heat is never oppressive, being tempered by cool sea breezes and refreshing showers. The mean annual temperature is 70.8 Fahr, the temperature of the warmest month averaging 76.6 and that of the coldest month 64.6 Fahr.

**CLUBS.**—The leading club of Durban—one may say, of Natal—is the Durban Club, whose fine quarters occupy a commanding position on the Esplanade, overlooking the wide sweep of the Bay. The club-house, wherein many distinguished visitors from overseas, including H R H the Prince of Wales, have been entertained, is a substantial building, spaciouly planned, and with



RED HILL, DURBAN.

Two attractive Suburbs developed by Messrs. R. Acutt & Sons.

SEA VIEW, DURBAN.

ample residential accommodation. The Mercantile Club, in Commercial Road, has also a large membership, and is noted for its generous hospitality, as are the Southern and Union Clubs, both situated in Smith Street. The Durban Turf Club and other Sporting Clubs are mentioned elsewhere.

**ELECTRIC POWER.**—All the power needed for the lighting, transport, and industrial and commercial consumption in Durban is provided by the Municipality, whose Power Station is second to none in South Africa, and is being added to yearly to meet requirements.

The Municipality has always recognised the importance of a supply of cheap power to a community which is ambitious of extending its industrial activities, and now, when new works are established, practically no other source of power is put down. In 1924 nearly 42,000,000 units were sold, of

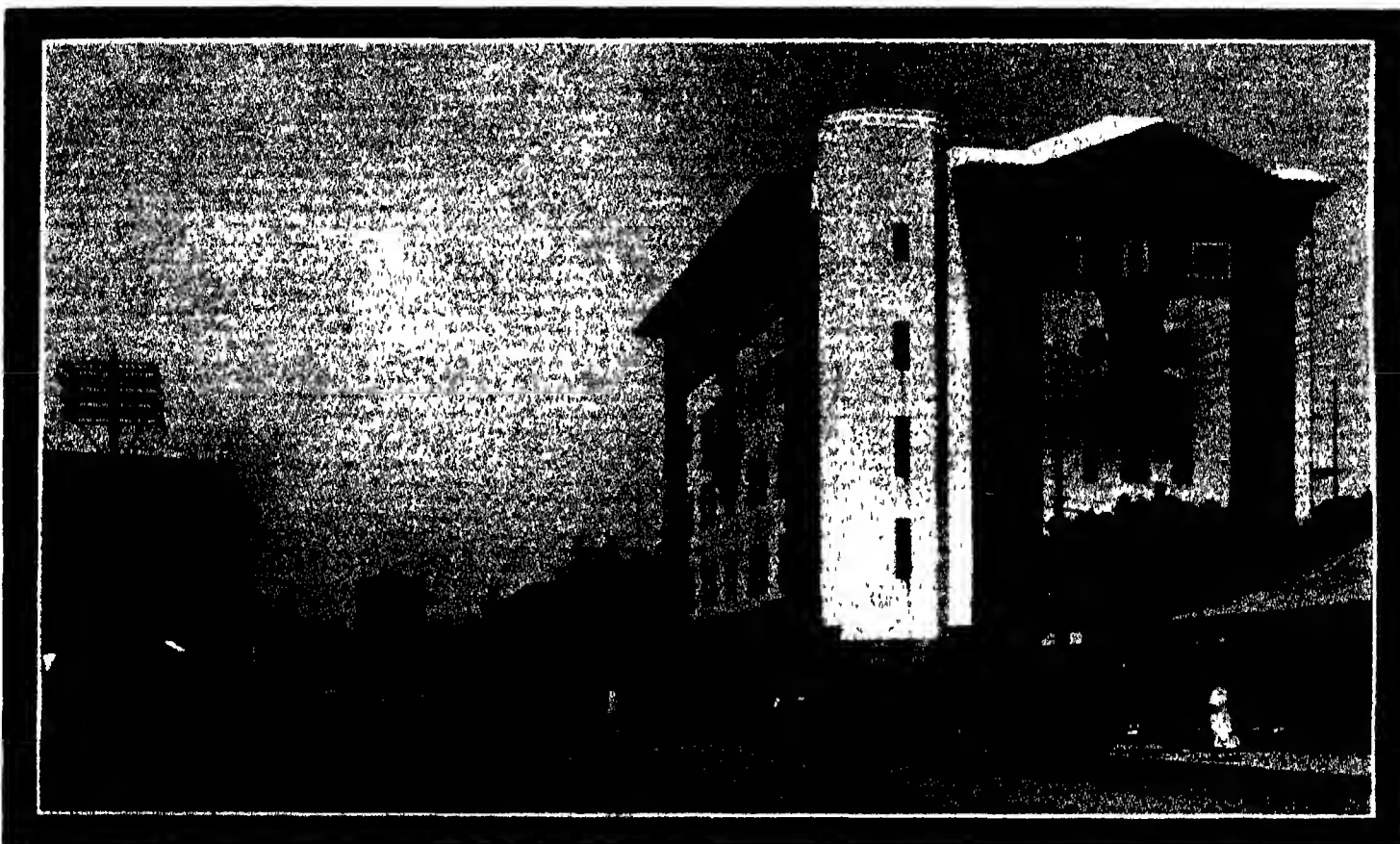
These figures, it is anticipated, will be lowered with the opening of the Stillwood and Umgeni areas. Houses of five, six, and seven rooms are difficult to obtain, and rents are consequently high—from £10 to £12 per month for the smaller, and from £15 upwards for the larger residences. Building societies advance up to three-quarters of the assessed value for purchase of houses, and a variable amount on those to be built on land already acquired and paid for. Repayments are monthly over a period of years.

**INDUSTRIES.**—With its unrivalled situation and pre-eminence as a port, Durban has seen a great industrial expansion during the last quarter of a century, and in a recent year its factories (Pinetown included) numbered 500. Of these, 115 were connected with clothing and textiles, 62 with building and contracting, and 60 with engineering

Collection and the "Hillier" Shakespearean Library, as well as a remarkable collection of technical and scientific works. A special library caters for the children's needs, a very popular "Story Hour" being held four times a week.

**MARKETS.** All the markets are controlled by the Municipality, the largest being the Municipal Market House, opposite the Central Railway Station. This is an imposing building, and a special feature of its trade is the show of Natal fruits. The Indian Market is situated behind the Roman Catholic Cathedral, and the Municipal Native Fating House is close to it. The scenes here recall those of an Indian bazaar.

**MODEL MUNICIPALITY.**—By the scope and efficiency of its municipal works Durban long since earned for itself the name of the "Model Borough." In its electric light and power services, its pure



ALBERT STREET, DURBAN.  
Messrs. Nunnerley & Co.'s New Premises in the right foreground

which over 12,000,000 units were used for industrial motive power. Under the existing ordinary tariff, householders can obtain electricity at five-eighths of a penny per unit, less 10 per cent for cash.

**FIRE BRIGADE.**—Durban possesses an admirably equipped fire station and a fire brigade of 41 employees, of whom 33 are Europeans. There are six fire engines, which in an average year deal with about 100 calls.

**HOUSING AND RENTS.**—At present the demand for houses is greater than the supply. The price of building plots in the best residential area, the Berea, overlooking the ocean, is high, a value of £800 being placed on a number of sites 100 ft. by 100 ft. At Bulwer Park and Stamford Hill a sum of £550 will purchase a similar piece of ground.

and metals. The manufacture of soap and fertilizers has greatly increased during recent years, and the whaling industry now employs a considerable number of men. (See also general article on "Industries.")

**LABOUR SUPPLY.**—Skilled and unskilled labour is always available in Durban in all the usual branches. Native and Indian labourers may be engaged from 30s to £2 10s 6d per month for the former and up to £5 for the latter.

**LIBRARY.**—The Municipal Library and Reading Rooms adjoin the Museum in South Street, and the Lending Library, which is one of the finest in South Africa, contains over 40,000 volumes. In the Reference Department are the valuable "Don"

and plentiful water supply, its tramways and telephones, its abattoir and its municipal markets the Corporation has satisfactorily solved problems which have perplexed many older municipal bodies. With but one exception—the Town Baths—all these undertakings not merely pay their way, but contribute considerable sums in relief of the borough rates.

**MUSEUM.**—The Municipal Museum is in that part of the Town Hall facing Smith Street. It contains, among other interesting features, a large collection of South African antelopes, and a very representative collection of native birds, as well as of eggs, butterflies, and other insects. The room devoted to native and local historical curios is also of great interest.



WEST STREET, DURBAN

The Premises of Messrs. Harvey, Greenacre & Co. Ltd., the finest departmental Store in Durban, if not in Africa, are shown in the left foreground

and contains the bell of H.M.S. "Southampton," the ship which in 1842 brought relief to the besieged Durban garrison in response to Dick King's famous ride to Grahamstown in 10 days.

**PARKS AND GARDENS.**—The parks of Durban are individually small, but together they represent a generous share of the municipal area. The Town Gardens are in the very centre of the city and were once the original Market Square. Here is the stately War Memorial erected by public subscription. Albert Park lies close to the Embankment and has a beautiful avenue of banyan trees and palms, a carriage drive and cycle track, and a grand stand and pavilion overlooking the Oval, on which many famous cricket matches have been played. Mitchell Park, some 15 minutes by tram from the post office, is situated on a slope of the Berea, and is not only a picturesque combination of lawns, flower beds and magnificent trees, but also the home of innumerable birds of gorgeous plumage, the denizens of the municipal aviaries which have been established there.

The Botanical Gardens are a favourite resort of residents and visitors alike, the collection including a wonderful variety of tropical and semi-tropical plants and trees, as well as a palm-house and herbarium, the grounds being beautifully laid out.

**POPULATION.**—The estimated population of Durban, both borough and suburbs, at December 31, 1924, was as under.—

	Borough	Suburbs
Europeans ..	50,792	10,725
Coloured ..	4,471	1,279
Native ..	35,000	10,701
Asiatic ..	16,150	35,562
	106,413	58,267

The total population was therefore, 164,680. The number of burgesses on the roll was 21,736.

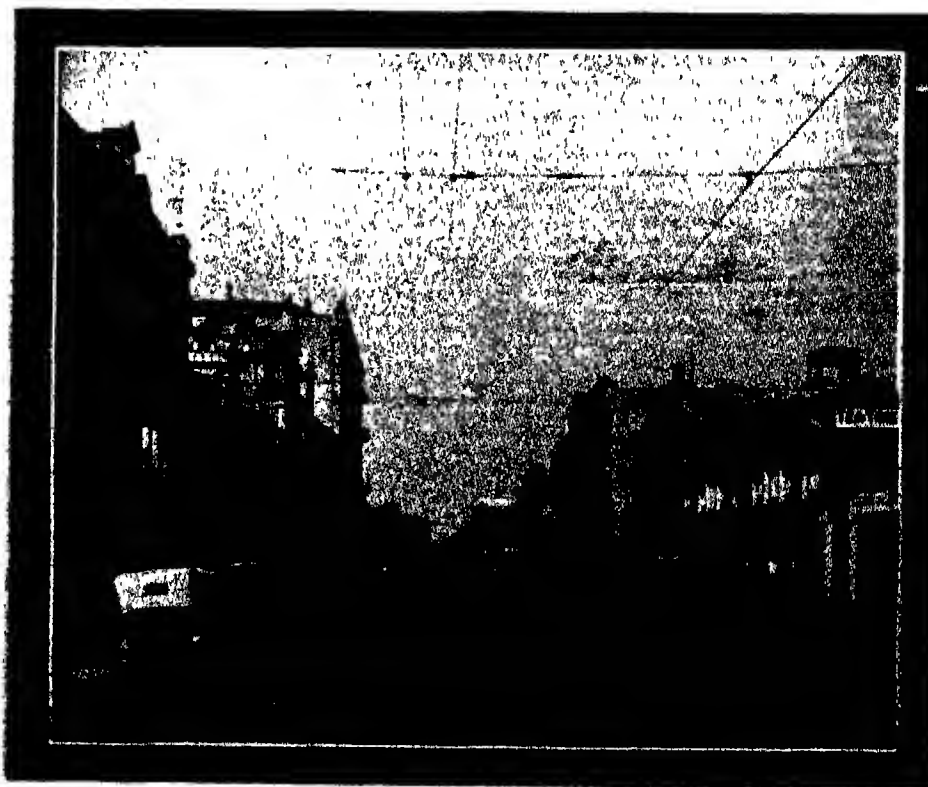
**RACECOURSES.**—One of Durban's racecourses is situated at Greyville, at the foot of the Berea, and the other at Clairwood, some 8 miles out of town, on the south coast road. The older track at Greyville is controlled by the Durban Turf Club, and upon it there is good racing on twenty to twenty-five days in the year, the fashionable winter meeting in July and August, with the July Handicap as the *piece de resistance*, attracting huge crowds and unflinching interest.

**SPORT AND RECREATION.**—The City of Durban excels in the opportunities it offers for every variety of sport and recreation. Sea-bathing in the Indian Ocean is a most popular pastime during summer, cricket clubs are numerous, and putting greens for golfers have been laid down near the Model Dairry at Ocean Beach. In addition to many clubs for tennis, which has taken a great hold of the younger population of the city, the Municipality has established a splendid set of courts on the Marine Parade, and the sheltered waters of the Bay provide excellent facilities for boating, yachting, or fishing.

The Durban Rowing Club has a large membership, and offers exceptional terms to visitors, while the frequent races held by the Motor Boat Association are a great attraction.

That football (of both kinds) is popular throughout the winter need hardly be stated, and besides the Oval, at Albert Park, many grounds for the playing of it are scattered about the town and its nearer suburbs. There are two excellent bowling greens at Greyville and Ridge Road, while annually competition of the keenest character takes place for the Crawford Shield and the "Natal Advertiser" Trophy.

**STREETS.**—The principal thoroughfares of Durban are Smith, West and Pine Streets, which run parallel to each other. Of these, West Street is the busiest and most important,



WEST STREET, DURBAN, showing Hanwood's Proprietary Store in left foreground.



containing as it does the fine buildings of the Town Hall and Municipal Offices, the old Volunteer Drill Hall, His Majesty's Theatre and the Theatre Royal, the offices of the Union Castle Line, and many of the banks and principal commercial houses. Pine Street is a fine broad thoroughfare, and the centre is laid out as a public recreation ground. The Victoria Embankment, which runs along the Bay from the Point to Park Street, was constructed at a cost of about £60,000, while the Ocean Beach, which only a few years ago was a stretch of sand-dunes, is now a beautiful esplanade, with motor roads, asphalt pavements, and many hotels overlooking it from the neighbouring slopes.

**TELEPHONES.**—Durban possesses the only municipal telephone system in the Union, and has the second largest exchange. The system controls over 6,000 connections, and the tariff is lower than in any other part of the Union, the charge for the use of the 50 public call-boxes conveniently placed throughout the city being 1d, as compared with 3d in other South African towns.

Automatic exchanges have recently been installed at Toll Gate and Stamford Hill, which provide for 1,000 and 2,000 subscribers respectively.

**TRAMWAYS.**—Durban possesses a fine up-to-date tramway system, providing quick, cheap, and easy transit. This system dates from 1902, and in 1924 had over 20 miles

of route track and some 40 miles of line track. The cars, which number over 120, are of a commodious type, with inside and outside accommodation. The average number of car miles run annually is approximately 2,400,000, and of passengers carried, 28,000,000. The yearly revenue averages about £290,000, and the expenditure £270,000.

**WATER SUPPLY.**—The water supply of the city—controlled by the Municipality—is at present more than adequate for its needs, and is renowned throughout South Africa for its high standard of purity. The present consumption for all purposes is slightly in excess of 6,000,000 gallons of water per diem, but, in order to guard against even the remotest risk of a possible future shortage, the Municipality has embarked upon a new and comprehensive scheme. A dam is being constructed which will increase the available water supply, if need be, to a total of 20,000,000 gallons per diem. This dam will impound no less a quantity of water than 2,000 million gallons, forming within a natural rampart of the Shongweni Hills a fresh water lake 300 acres in extent.

The charge for water for trade purposes is 1s 3d per 1,000 gallons, decreasing to 1s per 1,000 gallons where quantities are consumed. For domestic purposes the supply is unrestricted, and no specific charge is made over the water rate of 4d in the £.

## VISITORS' GUIDE

**CLUBS.**—Country—Umgeni Road, Durban—Esplanade, Mercantile—Commercial Road, Natal Automobile—314, Smith Street, Southern—329, Smith Street, Union—Smith Street.

**CONSULATES.**—Argentina—291, Pine Street, Belgium—Reid and Alcott's Buildings, Esplanade, Chile—21, Alcott's Arcade, France—95-96, Club Arcade, Italy—20, Commercial Road, Spain—20, Commercial Road, Sweden—Mutual Buildings, United States—91-93, Club Buildings.

**HOTELS.**—Alexandra—Point, Balmoral Marine Parade, Beach—Beach Road, Belgrave—Smith Street, Carlton—West Street, Connaught Sea View St., Beach, Esplanade—Esplanade, Federal—Beach Road, Grand—Ocean Beach, Langham—Point and Beach Roads, Majestic—Marine Parade, Marine—Marine Parade, Metropole—Corner of Smith and Prince Alfred Streets, Norfolk—Gillespie Street, Ocean View—Musgrave Road, Berea, Prince of Wales—Smith Street, Royal—Smith Street, Savoy—11, Smith Street, Twine's—Esplanade, Victoria—Beach, Windsor—Alexandra Street.

**THEATRES.**—Criterion—Esplanade, Empire—Gardiner Street, His Majesty's—West Street, Theatre Royal—West Street, and many Bioscope Theatres.

## PORT OF DURBAN

Port Natal (to use the older name of the Port of Durban) is situated on the south-east coast of South Africa, and is the premier commercial port of the Union. It differs from most other ports of South Africa in being partially landlocked, and is one of the best equipped and most accessible harbours on the coast. Judged on the

basis of tonnage alone, Durban easily outdistances every other South African harbour: its monthly traffic usually exceeding the totals of Capetown, Port Elizabeth and East London added together. With unsurpassed lines of communication with Johannesburg and other up-country centres and the continued growth of the city's industrial

activities, it would appear difficult to place any limits to the future development of what has been well termed the "Commercial Gateway of South Africa."

**ADMINISTRATION.**—The South African Railways and Harbours Administration controls and administers the port of Natal and undertakes all landing and shipping,



POINT ROAD, DURBAN. Office and Warehouses of the Consolidated Stevedoring prominent in right foreground.

SMITH STREET, DURBAN. Sparks, Young & Farmers' Meat Industries Ltd. in right foreground.



1. SMITH STREET, DURBAN. Messrs. Wickins & McNicol's fine Showroom on the right.
2. DURBAN. General View of Harbour. Farmers' Meat Industries and Kaffrarian Mills Prominent in the illustration.
3. COMMERCIAL ROAD, DURBAN. Premises of Messrs. Foaden & Kent on the right.

as well as the loading into trucks and the despatch of goods to their final destination

**ANCHORAGE.**—Port Natal is easily accessible, and the anchorage is uniformly good. In the outer bay the best anchorage is in 10 fathoms, sandy bottom, with the lighthouse bearing S W by S, and Rocket House Beacon W by N, distant from the Bluff about 1½ miles magnetic. Vessels should anchor to the northward of this position in preference to the southward. To the eastward the anchorage is open, with good holding ground.

**APPROACH.**—The position of Port Natal is marked by a prominent headland or bluff (Cape Natal) on the south side of the harbour entrance, 195 ft above sea level, on which stands the lighthouse, painted white, being visible 24 miles in clear weather. The entrance to the harbour is between the North Pier and the South Breakwater. The distance between the piers is 600 ft and the navigable width is 400 ft. The depth maintained at the entrance channel is 36 ft L W O S T, and the depth in the entrance channel is 32 ft L W O S T. The depth on the bar in the entrance channel and in the bay is maintained by two powerful suction dredgers, the "Cetus" and the "Nautilus." On the rare occasions when the entrance is considered impassable a black cone (point downwards) is hoisted at the yard area of the Signal Station at the Point and Bluff before sunset, and a red light after sunset.

**BERTHING ACCOMMODATION.**—The available berthing wharfage in Durban Harbour is as follows—

**BLUFF WHARVES**—These consist of 2,365 ft of concrete quay wall, with a depth alongside varying from 30 ft 6 in to 35 ft at L W O S T, and 100 ft of timber wharfage for the landing of explosives only, with a depth of 25 ft alongside.

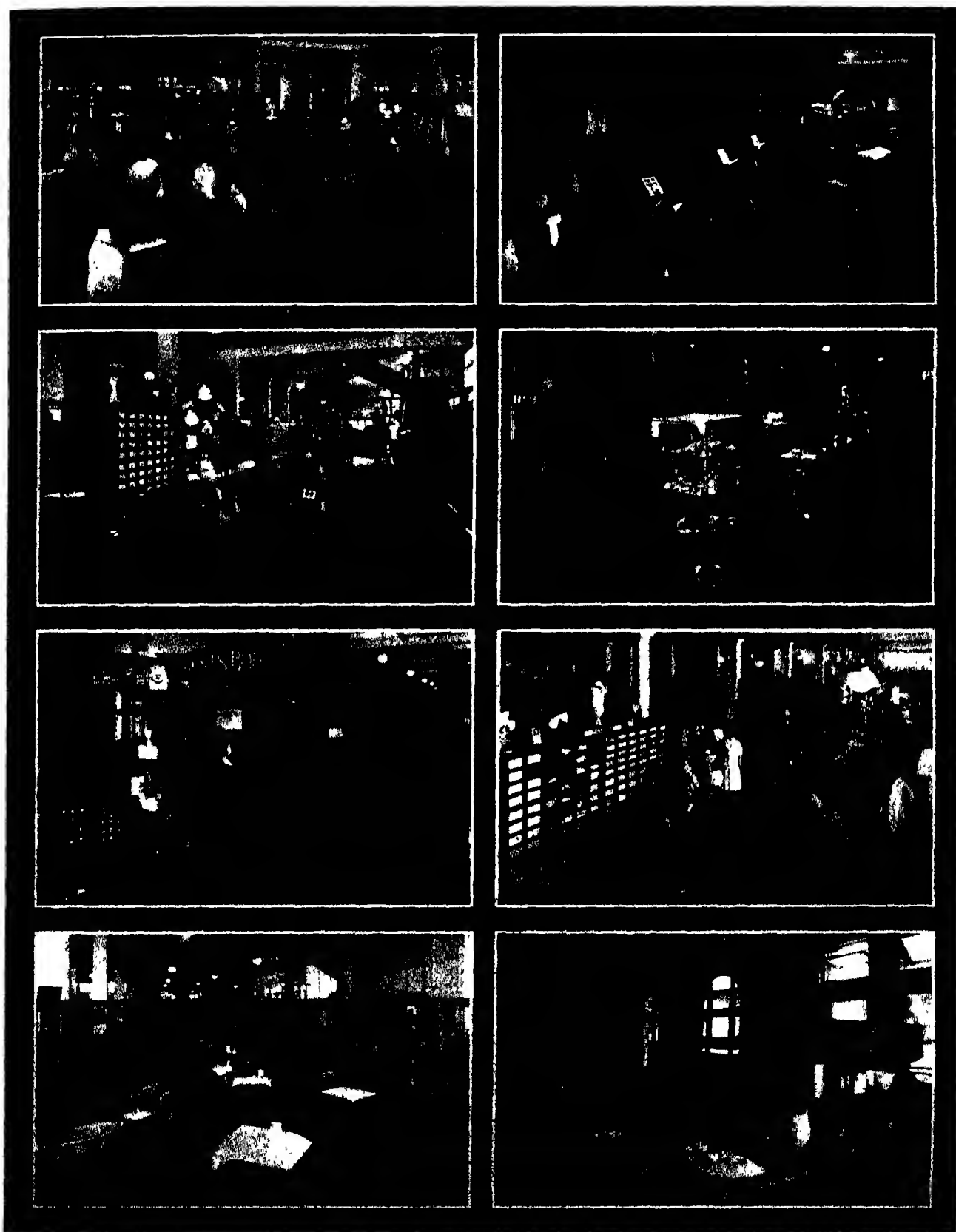
**CONGELLA WHARVES**—These wharves, of reinforced concrete, front the reclaimed area of the Congella, and extend 5,360 ft, with minimum depth alongside of from 25 ft to 32 ft 6 in L W O S T. The reclamation sites are occupied by many private manufacturing and other trading concerns, which do a large business in timber, soap, candles, biscuits, flour, maize, sugar, and various other articles and products.

**QUAYSIDE WHARVES**—The main quays at the Point extend 6,266 ft and provide berths with minimum depths of from 23 ft to 38 ft 6 in L W O S T. The quay cargo sheds have a total floor area of 557,200 sq ft and an extensive system of railway sidings enables cargo to be loaded and off loaded immediately alongside the ship with a minimum amount of handling.

The total wharfage accommodation of Port Natal, including repairing quays and jetties, exceeds three miles. At the present time Durban Harbour can accommodate 47 ships of an average length of 480 ft., viz. 28 at berthage and 19 at the moorings. With two abreast along the berthage, a total of 75 ships can find refuge inside, and by the time the additional deep-water berthages are completed and the Congella Wharf is extended to the graving dock, accommodation will be available for 90 ships.

**BUNKERING.**—Durban, being the nearest and also the natural outlet for the extensive coal fields of Natal, does a considerable trade in export and bunker coal.

The coaling appliances of the harbour are electrically driven, and consist of two modern type dumpers of 100 and 80 ton.



**HARVEY, GREENACRE & CO. LTD.**

Durban's Premier Departmental Store—Perhaps the finest in South Africa.

- |  |   |
|--|---|
| 1. Gowns Department.   | 2. Fancy Drapery Department.  |
| 3. Men's Outfitting Department, showing Staircase to Tea Room. | 4. Silverware and Fancy Departments.                                |
| 5. Boot and Shoe Department.                                   | 6. Men's Outfitting Department, with other Departments in distance. |
| 7. Tea Room.   | 8. The Pastry Kitchen.  |

capacity respectively, with storage bin capacity of 10,000 tons served by belt conveyors and mechanical bucket transporter, enabling three vessels to be loaded simultaneously at the rate of 1,000 tons per hour. The coaling plant is situated on the Bluff side of the entrance, and has a quay frontage of 2,465 ft with depths alongside of from 25 ft to 30 ft 6 in L.W.O.S.T. Modern plant for storage and the supply of oil fuel to shipping has recently been installed on reclaimed sites adjacent to the Bluff quays.

**CRANAGE EQUIPMENT.**—Port Natal is equipped with adequate cranage plant to deal with practically all classes, sizes, and weights of cargo. The full equipment is as follows:—1 fifty-ton fixed hydraulic crane, 1 ten-ton travelling hydraulic crane, 4 ten-ton travelling steam cranes, 9 four-ton travelling electric cranes, 20 three-ton travelling hydraulic cranes, 11 three-ton travelling electric cranes and 1 fifteen-ton floating crane.

**FLOATING DOCK.** Excellent repairing facilities are provided. There is a floating dock 470 ft long by 60 ft wide (internal), with a net lifting power of 5,500 tons, and with a draught of 23 ft. Small vessels up to 150 tons dead weight can be accommodated on a patent slipway. In 1925 the floating dock was used by 123 vessels of an aggregate tonnage of 138,519.

**GRAIN ELEVATOR.**—The erection of the new terminal grain elevator adjoining the Congella Wharves, which was begun in 1921, was expected to be completed by the end of 1925. It is of the latest type, and will be of 2,000 tons storage capacity to deal with the export of maize in bulk at the rate of 1,000 tons per hour.

**GRAVING DOCK.** This important undertaking, which is nearing completion, was commenced in December 1919, and is estimated to cost about £2,000,000. When put into commission it will rank second to none in the world in point of length and depth, so far as graving docks for purely mercantile shipping purposes are concerned. Its length is 1,150 ft (which can be increased to 1,191 ft), its breadth 110 ft and its depth at high-water ordinary spring tides 41 ft, or at low-tide 35 ft. The dock is situated at Congella, at the west end of the bay, and is in close proximity to the railway, being within 180 yards of the Natal Main Line. A feature of the Durban Graving Dock is the inner caisson, which enables it to be divided into two compartments, the outer 678 ft 10 in and the inner 450 ft in length. The volume of water required to fill the dock is 38,118,000 gallons, and the time occupied in filling is 47 minutes, while emptying takes four hours.

**PILOTAGE.**—Compulsory. The rates are included in port dues.

**PORT CHARGES.**—The following are the principal charges at the Port of Durban:—

**COALING SHIPS.**—Loading and trimming is performed by the Administration as follows, per ton of 2,240 lb.: Into bunkers or elsewhere for ships' consumption—1s. 6d.; cargo coal shipped into holds—1s., cargo coal, where special stowage or separations are required—1s. 2d., into lighters ex railway trucks, direct—4d., into lighters ex storage bins—8d.

**LANDING AND SHIPPING CHARGES.**—Cargo intended for delivery by rail is landed at a charge of 2s. per harbour ton. Additional to the landing charge of 2s. is tonnage wharfage of 1s. 6d. per ton and ad valorem wharfage of 16s. 8d. per £100. Cargo is shipped at

the rate of 2s. per harbour ton, plus export wharfage of 5s. and 10s. per £100 ad valorem, or 8d. per 100 lbs. and 1s. per harbour ton according to the nature of the cargo.

**LIGHT DUES.**—All vessels, unless specifically excluded, anchoring off Port Natal, or entering the inner harbour, pay light dues at the rate of 2d. per ton for each registered ton.

**PORT DUES.**—These, which include pilotage rates, are the same as at other South African ports. See under "Cape-town," "Harbour Dues."

**STORAGE.**—In store, 3d. per ton per day, in open spaces, 1d. for first 14 days, double afterwards.

**TOIL AGE.**—From about £3 to £7.

**WATER.**—Ships can obtain a plentiful supply of excellent fresh water, which is laid on to the wharves. The charge is 7s. 6d. per 1,000 gallons, with discount of 2½ to 15 per cent, according to quantity taken above 10,000 gallons.

**WHARF DUES.**—On imports is 6d. per ton and 16s. 8d. per cent ad valorem if from ports outside the Union, and 6d. per ton and 8s. 4d. per cent ad valorem if from ports within the Union. On exports, 5s. per cent, ad valorem on coal, grain, forage, fruit, vegetables, sugar, bark, clay, asbestos, and all ores and concentrates, 8d. per 100 lb. on wool, hides, and skins, 1s. per ton on old iron and steel scrap, and 10s. per cent ad valorem on all other goods. On transshipments (except personal baggage) is 3d. per ton wharfage is charged.

**QUARANTINE.**—As soon as possible after the arrival of a vessel the pratique officer and a pilot visit the ship. If the ship is from a healthy port and has no sickness to report, pratique is at once granted.

**SHEDS AND STORES.** In 1924 the shed and storage accommodation totalled 574,370 square feet of floor space, with a cubic capacity of 15,553,700 feet. At the Point there are eleven wharf sheds and one at the Maydon (Congella) wharf, the gross super-area aggregating half a million feet, with a cubic capacity of six and a half million feet. There is also a bond store of over 1½ million cubic feet capacity, provided with a 50 ton hydraulic elevator, which lifts loaded trucks to the first and second floors, as well as a complete telephage system for loading and off loading. All the sheds and the bond store have rail communication either through or alongside the buildings. There are two running tracks and two transporter tracks the whole length of the Bluff concrete wall, and two running tracks and one crane track the whole length of the Point or St Paul's Wharf. Both wharves and sheds are lighted with powerful incandescent electric lights.

**TOWAGE.**—The towage fleet of the harbour consists of seven powerful tugs, four of which are fitted with modern salvage and fire appliances. A large fleet of lighters and punts is utilised in supplementing the shore handling facilities for cargo and bunker coal.

**TRADE AND SHIPPING.**—During the year ended March 31, 1925, a total of 1,257 vessels, excluding warships, of a gross registered tonnage of 6,541,860 called at Durban, an increase of 27 vessels and 99,819 tons compared with 1923-24. Of the total number of vessels, 78 per cent. were on the British register.

During the same year the volume of cargo dealt with, inclusive of coal, totalled

4,520,571 tons, this constituting the largest tonnage so far handled at Durban, being 100,901 tons more than that for 1923-24, when the previous highest tonnage was recorded. The volume of cargo landed (1,089,951 tons) also constituted the highest tonnage recorded in the history of the port, the million mark having never previously been attained.

Coal handled at the port during 1924-25 amounted to 2,805,017 tons, compared with 2,647,365 tons in 1923-24. Of the total, 1,520,601 tons were exported, 1,283,538 tons bunkered, and 878 tons shipped to Union ports.

**IMPORTS AND EXPORTS.**—During 1924 a considerable expansion was shown in the imports and exports passing through Durban. The increase in exports was all the more gratifying in view of the comparative failure of the maize crop in that year and the fact that the sugar crop was adversely affected by the prolonged drought. Fruit, cotton, eggs, citrus fruits, frozen meat, wool and haled produce all showed increases, decreases being observed in maize, sugar, asbestos, wattle bark, and explosives. Gold to the value of about £14,000,000 was exported through Durban in 1924, as compared with about £1,500,000 in 1923. This large increase was due to India importing direct from South Africa instead of via London as hitherto. There was also a large increase in the quantity of coal exported and bunkered.

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### HARVEY, GREENACRE & CO. LTD.

**Inception.** This company owes its inception to the amalgamation in 1869 of the separate businesses of Mr. M. Harvey and Mr. B. W. Greenacre, which had both been carried on since 1861. The partnership thus created became known as Messrs. Harvey, Greenacre, of London and Natal, later to be converted into the present private company.

**Personal.** The honour of knighthood was subsequently conferred on Mr. B. W. Greenacre, who was for many years head of the firm. The late Sir Benjamin was also Mayor of Durban 1875-6, 1889-92 and 1897-8, while he represented that port in the Legislative Council, and subsequently in the Legislative Assembly, after the granting of responsible government. His eldest son, Mr. Walter Greenacre, O.B.E., J.P., is now chairman of the board of directors, while his youngest son, Mr. Edwin Greenacre, personally controls the London office.

**Development.**—The two founders commenced their partnership under the soundest auspices, tendering to potential customers the advantages of their personal selection from the best markets. The consequent saving of all commission enabled their imports to be offered to wholesale and retail buyers at prices considerably below those usually charged in Natal, and progress inevitably followed this far-seeing basic policy. Powerfully organised, and preserving "founders' ideals" of continual extension and consolidation, the store is now inseparably linked with the development and the daily activities of Durban.

**Premises.**—Messrs. Harvey, Greenacre & Co.'s premises are situated in Central West Street, the heart of Durban's retail shopping quarter. The three-storeyed building covers a ground area of 150 by 300 feet, and is surmounted by a tower which forms a landmark for the district.

**Departments.**—The multiple activities of the store are spread over 58 departments, prominent among which in their ever-changing display of reliable and up-to-date wares are the following: Drapery, including wool, cotton and silk piece goods, gloves, hosiery, haberdashery, umbrellas and soft furnishings, ladies' outfitting covering costumes, gowns and jumper suits, millinery, underclothing, corsets, boots, tailoring, men's and boys' outfits of all kinds, trunks, suit cases and hammocks, dress making, fancy goods, including jewellery, silverware, watches and clocks, bags, art needlework, soaps and perfumery, stationery, books, toys, perambulators and photographic necessities, sports equipment for all indoor and outdoor games, fishing tackle and bee-keeping appliances, crockery, hardware, featuring household utensils, brushware, poultry and garden supplies, and furnishing, including bedsteads, carpets and pictures.

**Other Activities.** The manifold activities of this organisation embrace a branch post office and a flourishing mail order business, with special service for country retail orders. Among other amenities of the store are its tea room, ladies' lounge and rest room, and the book club and lending library.

**Staff.** The European employees of the company number 250.

**Branches.** Branches of the firm are established in the Transvaal at Johannesburg and Wakkerstroom, in Natal at Ladysmith and Newcastle, in Cape Province at Kimberley, and in Griqualand East at Kokstad.

**London Office.** Harvey & Greenacre, Ltd., 60, Bunhill Row, E.C. 1.

**Agents.**—The company has foreign buying agents in Paris, New York and Vienna (See illustration, page 263.)

**MARINE HOTEL.** This hotel has been established nearly 45 years. Although within a few minutes' walk of the centre of the town it is delightfully situated and faces the sea. The accommodation consists of 178 bedrooms, 30 of which have bathrooms attached, 9 private suites comprising bedroom, sitting room and bathroom and private telephone installations, two spacious lounges, an Italian garden and a palm court. The dining room has seating accommodation for 200 persons. H. R. H. The Prince of Wales during his recent visit patronised the hotel on three occasions, and the civic banquet held in his honour took place there. Other notable guests who have been banqueted in the hotel include H. R. H. Prince Arthur of Connaught, the Earl of Athlone and Lord Kilsant. The "Marine" is also the headquarters of the Rotary Club. The cuisine and service are well organised, and the cellar holds a large and varied assortment of French, German and Cape wines. Dinner dances are held every Tuesday and Saturday during the season. The staff numbers 30 Europeans, 40 Indians and 60 natives. Hotel motor car meets all trains and steamers.

#### R. ACUTT & SONS.

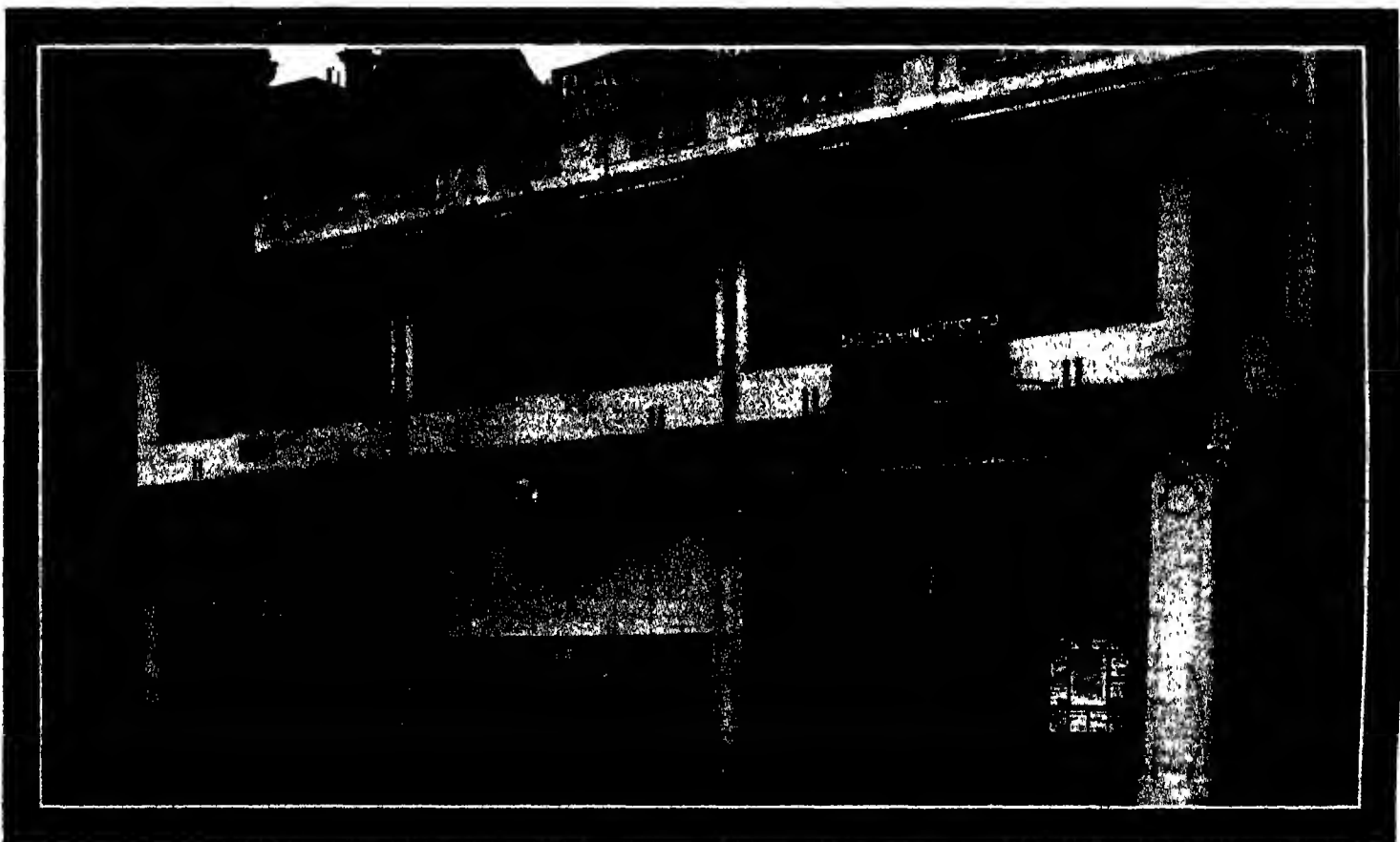
**Inception.** This well-known and leading firm of land auctioneers and estate agents, which for three quarters of a century has conducted business on the identical site of its foundation, was established in 1851 by the late Mr. Robert Acutt.

**Premises.**—At the time of the firm's inception the colony of Natal was still an infant state, Durban boasting but a few wood and iron shanties, with probably one or two brick buildings. A pictorial record exists of Mr. Robert Acutt's original diminutive premises in Gardner Street, showing the founder conducting a sale of merchandise in front of his offices. In 1860 these premises were rebuilt as a large auction mart, which served on various occasions as town hall, post office, and ballroom for the entertainment of Royalty. In 1895 the building was reconverted into shops and offices, but a generation of the rapid expansion of Durban has made imperative the necessity for rebuilding in the near future.

**Development.** A landmark in the long and honourable career of the concern was the decision in 1895 to relinquish the general auctioneering business and to devote entire attention to real estate transactions. Operations in this field have included the handling of most of the important business properties in Durban as well as many flourishing suburban estates, among them Clairwood, Seaview, Escombe, Kloof Hill Crest, Greenwood Park and Rosehill. The firm has also been instrumental in developing the township of Durban West, recognised as the future industrial centre of Durban and already the site of numerous factories.

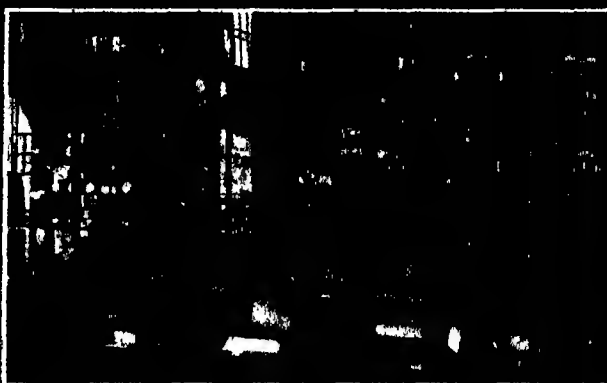
**Partnership.** The present senior partner is Mr. Ernest L. Acutt, C.M.G., J.P., sometime Mayor of Durban. With him are associated Mr. Ken Acutt, grandson of the founder, Mr. H. W. Bellville and Mr. W. W. Brady.

**Address.** Acutt's Arcade, 55, Gardner Street, Durban.



R. ACUTT & SONS, Durban.  
The Offices, Facing the Town Hall, Durban.





P. HENWOOD SON, SOUTTER & CO., Durban.

1. Crystal and Porcelain Department.
2. Furniture Department.
3. Carpet Department.
4. Sanitary Department.

5. China Department.
6. Silverware Department.
7. Tools Department.
8. Hardware Department.

**P. HENWOOD SON, SOUTTER & CO.**

**Inception.** In 1849 Paul Henwood, a native of Cornwall, sailed from London on the 388-ton ship "Henry Tanner," which took 120 days to complete the voyage to Durban. Seven years were spent in trading trips to the Orange Free State and the Transvaal before this merchant-pioneer, setting up business in Durban as general importer and ironmonger, laid the foundations of the present widely-renowned concern.

**Development.** In 1872 the style of the firm was changed from Henwood & Co to Henwood & Roseveare, and in 1883, on Paul Henwood's son Alfred being taken into partnership, the name P. Henwood, Son & Co. was adopted. Six years later the entolment of the founder's son-in-law, H. Wallace Soutter, gave the firm its final and present

concern takes chief pride as the hardware specialists of Natal and the Transvaal.

**Premises.**—The premises consist of a three-storeyed building affording very extensive floor-space, in which the great variety of stock is effectively displayed. An electric lighting system on the most modern basis has recently been installed for advantageous illumination of the showrooms. Under the same roof large rooms are provided for the accommodation of reserve stocks.

**Departments.** Among the most important departments may be mentioned the following:

**BUILDERS' IRONMONGERY.**—A complete range of household fittings is stocked, and large quantities can be supplied at short notice.

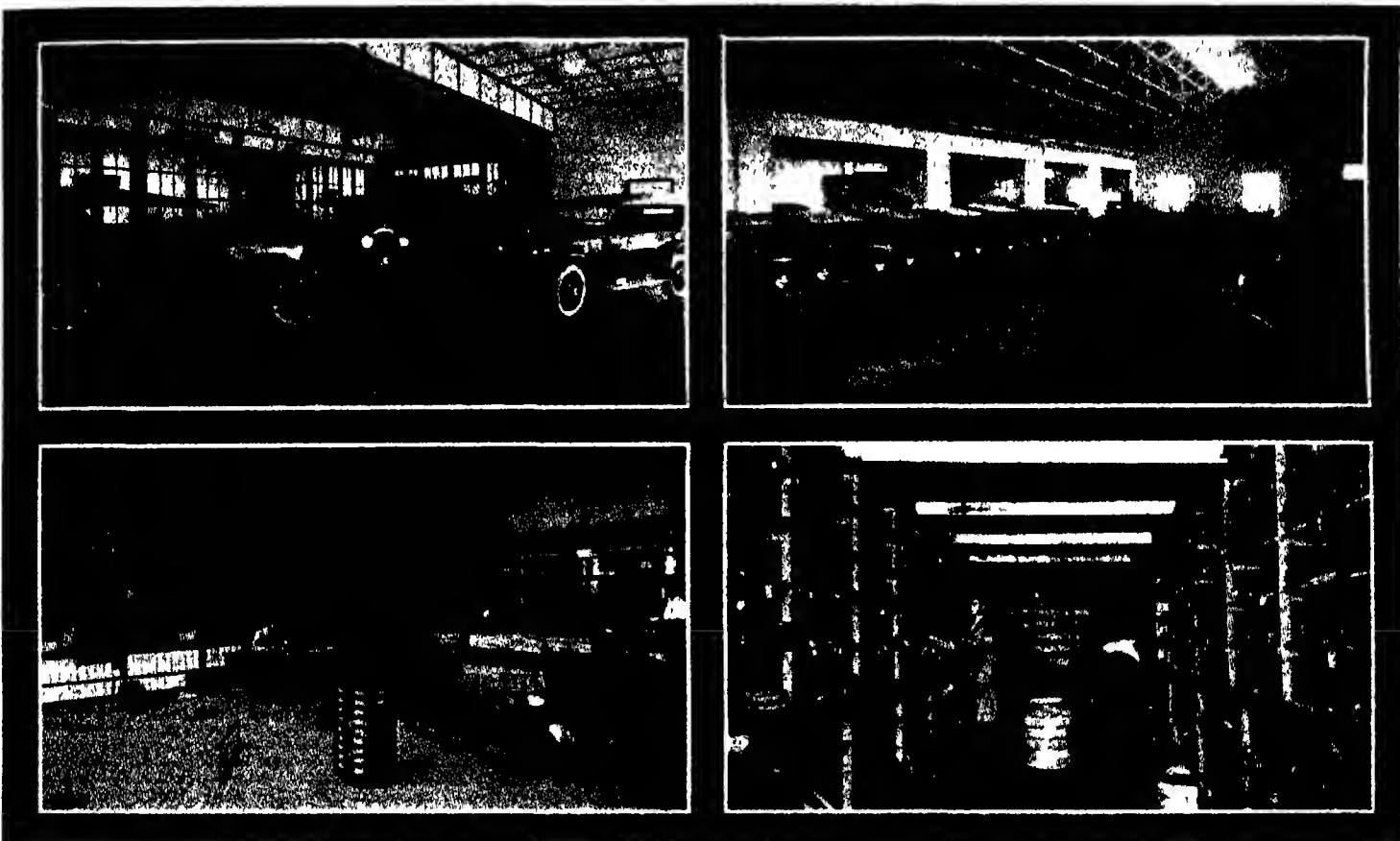
**TOOLS.** Henwood's carry an extensive range of tools for carpenters, bricklayers,

**HOUSEHOLD IRONMONGERY.**—This department has everything for the kitchen and for the house generally, meat safes, ice chests, washing machines, mangles, wringers and all laundry requisites.

**STOVES AND RANGES.** In this section are to be found Henwood's famous Ideal stove and the Range Eternal, the best obtainable and specially adapted to the country, also grates and mantels of every kind.

**FANCY GOODS.** Silverware, electroplate, and brass goods of every description, safety razors, stropping machines and everything necessary for shaving and toilet are stocked.

**FURNITURE.**—This department contains bedroom and dining room suites and a full range of house furniture.



1 and 3. The Showrooms

WICKINS &amp; McNICOL, Durban.

(See letterpress, page 268.)

2. The Garage  
4. The Stores.

designation, P. Henwood Son, Soutter & Co. Paul Henwood retired in 1904, leaving the business to be carried on by Alfred Henwood and H. Wallace Soutter. In 1916 Alfred's eldest son, Arthur Lynton Henwood, became a partner, the second son, Alfred Norman Henwood, following his example a year later. Alfred Henwood, sen. and H. Wallace Soutter retired in 1920, and after two years the former's third son, Howard Henwood, entered into partnership. The three brothers are the sole partners to-day.

**Progress.**—To the foresight and initiative of the founder and the progressive qualities mainly of his own kin is thus due the present eminence of the firm, not only in Durban, but throughout South Africa, where the name "Henwood's" is a household word. The

plumbers, engineers and every craft, beside contractors' requirements such as shovels, forks, etc.

**SANITARY.** In this department can be seen baths, lavatory basins, cisterns, sinks, and a fine selection of modern bathroom fittings.

**MACHINERY.**—Forges, drilling machines, and grinding mills for grain and fowl foods are on hand.

**POULTRY, DAIRY AND BLENDING GOODS.** A very full range is carried, and expert advice can be given by practical, trained men. Fearson and Economic incubators and the Isometer tester for all cattle dips are always in stock.

**PAINT.**—Paints, varnishes, enamels and stains are available in every shade and quality.

**SOFT GOODS.**—Among these is a complete stock of curtain and upholstery materials, table and bed linen, carpets and rugs from the finest makers, and linoleums in lengths and squares. Upholstering is done on the premises by experienced employees, and expert advice as to complete furnishing schemes is readily forthcoming.

**CHINA AND EARTHENWARE.**—This section provides a wonderful range of beautiful productions from the world's finest potters, covering wares for domestic use and the artistic achievements of Doulton, Wedgwood, Moorcroft, Fielding and others.

**GLASSWARE.**—The varied display of glass of wonderful quality and colour includes Stuart's English cut glass and the finest Belgian specimens.

**Special Agencies.**-- Ajax cream separator, Bamford's grinding mills and engines, Allegro honer and stropper for safety razor blades, Rolls razors, Copeland's blue Italian earthenware, Sherwin Williams' paints, Fearson's incubators, Economic all-metal incubator, Engman-Matthews' Range Eternal, Smith & Wellstood's Ideal stove, Watkins Pitchford isometer tester for cattle dips, Pollard geysers, West Bromwich steel window frames, Simplicity teak verandah blinds, and Matex roof repairing cement.

**Head Office.** West Street, Durban. This office is under the management of Mr. Alfred Norman Henwood, resident partner for Natal.

**Branches.**-- Branches were originally established by Paul Henwood in Natal at Pietermaritzburg and Newcastle, in Cape Province at Kimberly and in the Transvaal (in which Mr. Howard Henwood is resident partner) at Pretoria, Johannesburg, Barberton and Kroonstad.

**London Office.** The firm has its own buying office in London at 65, London Wall, E.C., under the management of the senior partner, Mr. Arthur Lynton Henwood.

(See also notice, page 70, Johannesburg section.)

#### WICKINS & McNICOL.

**Inception.** This firm was founded in 1919 by the present partners, Mr. H. R. Wickins and Mr. G. McNicol, each of whom has been president of the Motor Traders' Association, the former in 1923 and the latter in 1924. Mr. Wickins may be considered one of the

pioneers of the motor business, having been connected with the industry for over 20 years, whilst Mr. McNicol, who has always been a keen motorist, has travelled all over South Africa in a car.

**Progress.** To day Messrs. Wickins & McNicol are recognised as the foremost motor car importers and garage proprietors in the Province of Natal, their spacious showrooms being well known to all motorists in the country.

**Activities.** All classes of automobile work are undertaken, and repairs are carried out under the supervision of skilled mechanics. The workshops are equipped with the most up-to-date plant, and a complete range of spares and accessories is kept in stock.

**Departments.** These comprise motor showrooms, spare parts, accessories, workshops and second hand cars. The workshops cover an area of 15,000 square feet.

**Staff.** The staff numbers 35 of whom 22 are European.

**Branches.** These are established at Maitzberg and Kokstad.

**Agencies.** The motor agencies held include the Buick Cadillac, Morris Oxford, Morris Cowley Morris one ton truck and the G.M.C. truck, the last named being used by the Vacuum Oil Co. among others. Messrs. Wickins & McNicol are sole distributors of the above motors for Natal, Zululand, East Griqualand and Hartismuth districts. All kinds of accessories are imported from the United Kingdom and America.

**Shippers.** Kemsley & Millbourn, New York, Kemsley, Lover & Millbourn, London.

**Address.**-- 178-186, Smith Street, Durban. Cables: "Tonneau," Durban. Codes: Bentley's and G.M.C. private.

**Bankers.** The National Bank of South Africa, Ltd.  
(See illustration, page 267.)

#### H. J. WALSH & CO.

**Inception.** This firm of automobile importers was founded in 1922, being successors to Williams Hunt & Co. Ltd., who had operated in Durban since 1915.

**Activities.** The company imports automobiles, motor cycles, and accessories, a complete range of spare parts always being on hand. Repairs of all descriptions are undertaken, the workshops being equipped with the latest machinery and appliances. All work is carried out under expert supervision.

**Premises.** The building occupied by the firm covers an area of 7,500 square feet, and comprises excellent showrooms, as well as motor cycle, accessory, and service departments. The assembly department, situated in Palmer Street, has a floor space of approximately 10,000 sq. ft.

**Agencies.** The firm has the sole agency for Natal, Zululand and East Griqualand for Chevrolet motor cars, "Indian" motor cycles, Alemite lubricators and G. & P. petrol pumps, 25 of which have been installed in Durban alone.

**Staff.** This comprises 25 Europeans and a proportionate number of natives.

**Personal.** Mr. Walsh, who has had 15 years' experience in the motor business, is now vice-chairman of the Motor Traders' Association of Natal.

**Address.**-- 99, West Street, Durban. P.O. Box 273.

**Cables.** "Powerplus," Durban. Code: Bentley's.

#### THE CONSOLIDATED STEVEDORING & FORWARDING AGENCY, LTD.

**Inception.** This agency, which has been established over 50 years, was known as Chiazan & Co. Ltd. till 1922, when the style of the firm was altered to the present designation, there being, however, no change of personnel.

**Activities.** The activities of the agency embrace the following:

**CUSTOMS CLEARING AND FORWARDING.** All classes of merchandise are cleared through the Customs and despatched to any part of Africa.

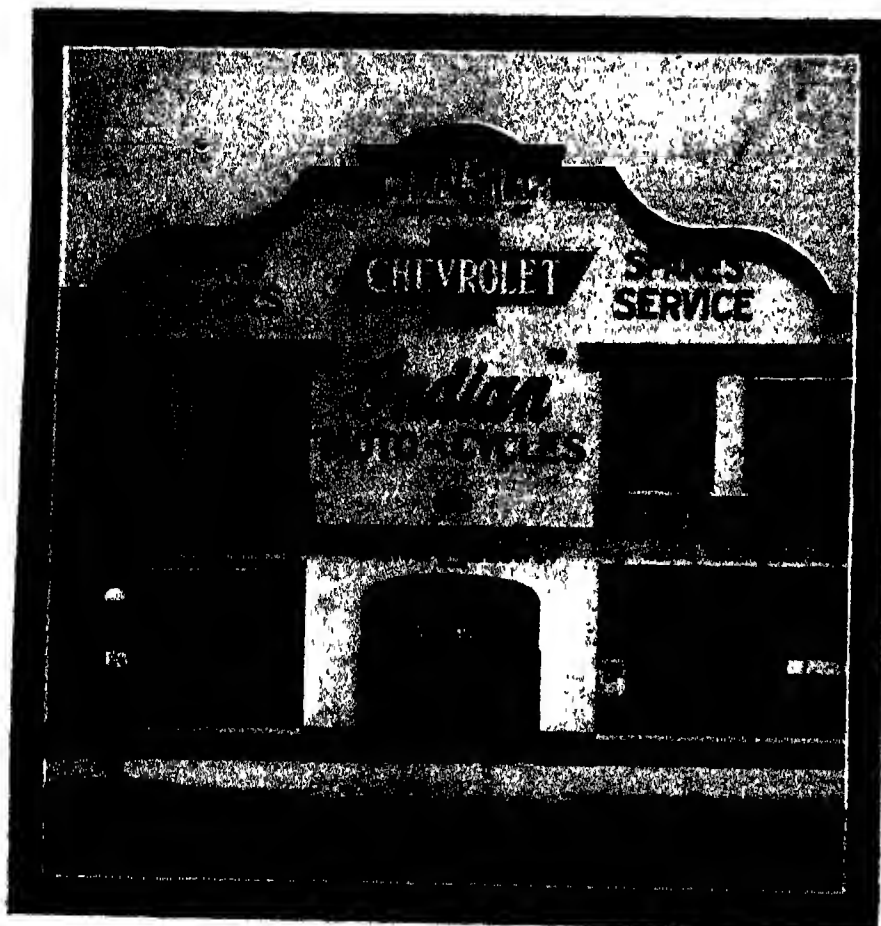
**STORAGE.** Goods may be stored pending shipment in the company's large duty-paid and bonded warehouses, and clients have the advantage of a private railway siding, with consequently cheaper railway rates.

**CARTAGE.** The firm has its own motor transport service, and can readily handle goods for local delivery.

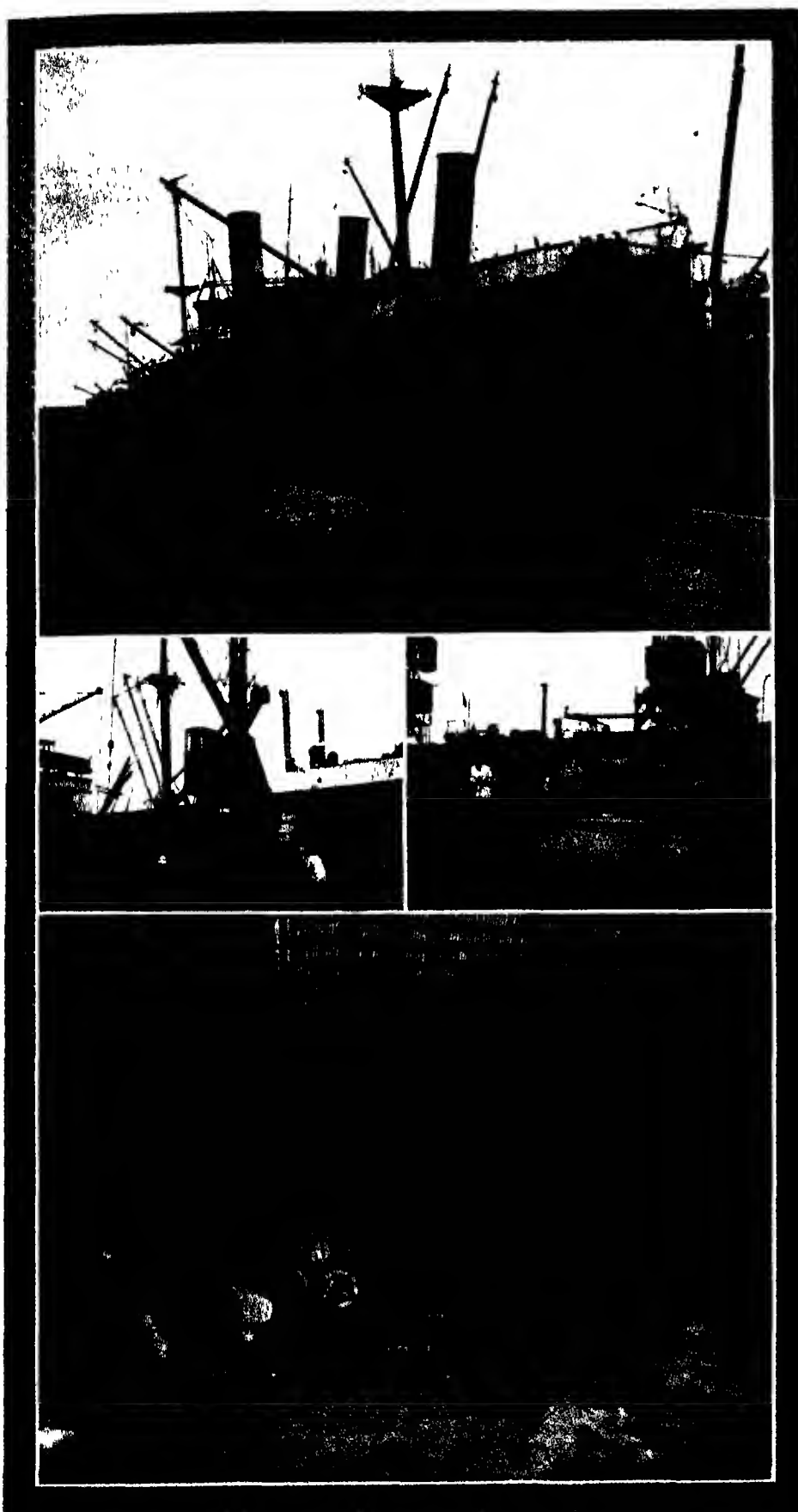
**SHIPPING.** All classes of exports come within the scope of the agency, special attention being given to perishable goods such as eggs and fruit. The firm has established a re-packing depot, so that any consignment that is rejected by the Government inspectors owing to certain causes is attended to at once and re-packed for export. This saves the grower the loss he would otherwise experience if the rejected consignment were sold on the local market. The firm handles 60 per cent. of the fruit shipped through Durban.

**LIVE STOCK.** Special care is devoted to the handling and care of live stock.

**STEVEDORING.** The agency, which is one of the oldest and largest stevedoring concerns at Port Natal, both for import and export, has a large staff conversant with the control of all classes of merchandise, and has



H. J. WALSH & CO., Durban.  
The Company's Showrooms and Garage.



THE CONSOLIDATED STEVEDORING & FORWARDING AGENCY, LTD., Durban.

1. Loading Meat for Sparks, Young and Farmers' Meat Industries, Ltd.
2. Discharging Iron. 3. Loading Maize.
4. View of Warehouse.

been appointed stevedores to the following lines: Harrison, Aberdeen White Star, Deutscher Africa Dienst, German-Australian, American South African, Commonwealth Government, and Messageries Maritimes. The firm also handles the cargoes of chartered vessels calling at the port, and, should owners wish, will act as their agents.

**Branches.** The Johannesburg branch is controlled by Neale, Wilkinson & Renne Ltd. The Port Elizabeth Office is styled Neale, Wilkinson & Renne (P.E.) Ltd. The Lourenço Marques branch is under the company's own name.

**Head Office.** P.O. Box 3, Point, Durban, Natal.

**London Representatives.** John I. Renne Son & Co., Bury Court St. Mary Axe E.C. 4, and Neale & Wilkinson Ltd., 16 Cannon Street, E.C. 4.

**Management.**—Chairman: Mr. A. H. Renne, of Messrs. John I. Renne Son & Co., London Manager: Mr. A. D. Mitchell.

**Agents.** New York: Pitt & Scott Inc., 55 Frost Street, Hamburg: Herz & Schaberg, Kaiser Wilhelmstrasse 76.

**Cables.** "Chazzaris" Codes: Bentley's ABC 5th & 6th Editions; Scott's 10th Edition.

#### DOUGHERTY & STEAD.

**Inception.** The firm of Dougherty & Stead was established in 1901 by Mr. H. F. Dougherty and Mr. F. Stead, but the last-named retired from the concern in 1917, leaving Mr. Dougherty as sole proprietor.

**Development.**—Commencing in a small way, the firm built up a large enterprise, and it is noted for its integrity and sound business principles. It enjoys the confidence and support of a large number of the leading importers and exporters of the country.

**Activities.** Messrs. Dougherty & Stead act as freight and insurance brokers, customs clearing and forwarding agents, bond and free warehousemen, cartage contractors (motor transport), and as agents for shippers of maize and other South African produce. They have specialised in the export business and in addition to shipments on vessels of the regular trading lines, load a large number of chartered steamers with maize.

**Motor Transport.** Being one of the pioneers of motor transport in Durban, the firm maintains a large fleet of motor trucks for the transportation of goods from the harbour sheds to local merchants, and vice versa.

**Warehouses.**—Messrs. Dougherty & Stead own spacious warehouses, both bond and duty free, having accommodation for upwards of 6,000 tons of merchandise.

**Agencies.** Price's Candle Co., Harmens Bros. (milk), Oxo (South Africa) Ltd., and Ronuk Ltd. The firm is desirous of getting in touch with the owners of steamship lines who desire to appoint agents at Durban.

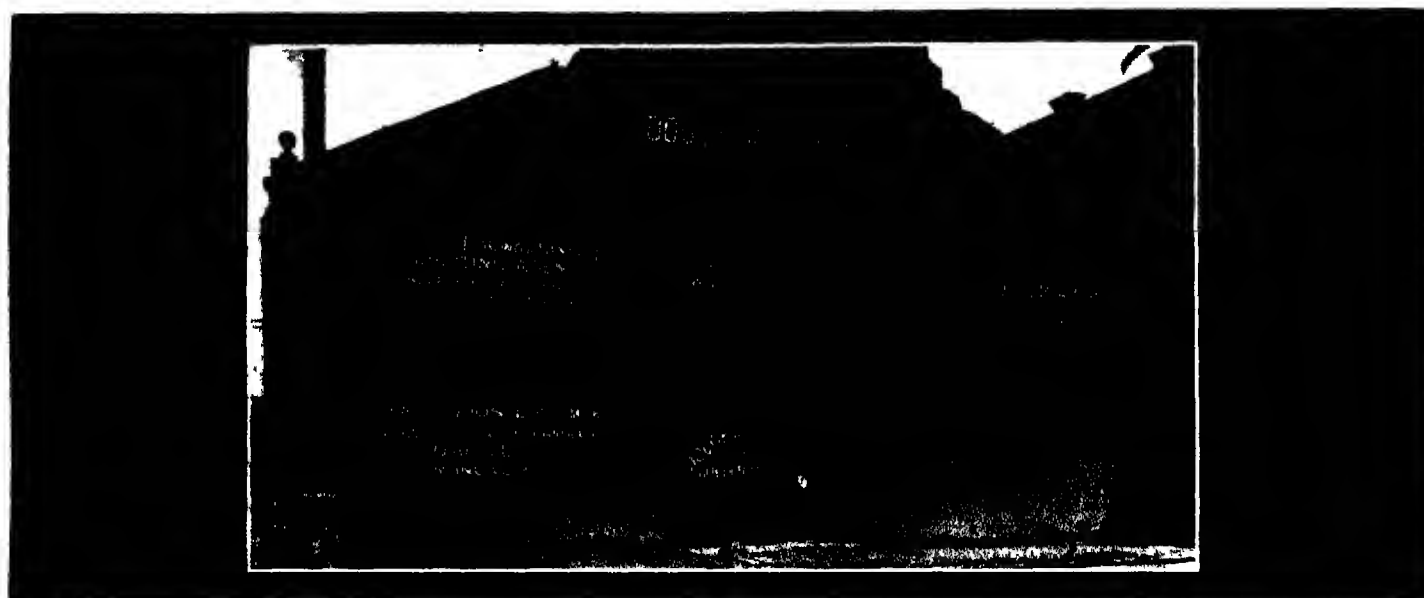
**Address.** 84, Point Road, Port Natal P.O. Box 4.

**Cables.**—"Stead," Durban.

**Bankers.**—The National Bank of South Africa, Ltd.

(See illustration, page 270.)

**PARKER, WOOD & CO. LTD.**—Durban. Commenced operations as a private company in 1860, limited liability company formed 1890. Engaged in ironmongery, crockery, agricultural, grocery, furniture, rough and soft goods business, with branches at Maritzburg, Harrismith, Vrede, Frankfort, Ficksburg, Johannesburg, Lake Chrissie, Carolina and Barberton. London agents, Wood & Parker, 21, Chiswell Street, E.C. 1.



DOUGHERTY & STEAD, Durban  
The Firm has commodious Warehouses.  
(See letterpress page 266)

#### ROGERS-JENKINS & CO.

**Inception.**—This firm of mechanical electrical and contracting engineers was established in 1892 by Mr A Rogers Jenkins the sole proprietor

**Activities.** The business of Messrs Rogers Jenkins & Co is of an extensive nature. In addition to representing many overseas firms of world-wide repute the firm caters for the requirements of the industrial engineering building and other industries the various departments being staffed with men having high technical qualifications and practical experience

**Engineering.**—This department specialises in the supply and erection of steam and internal combustion engines, boilers pumping

plants grinding mills concrete mixing and hoisting machinery ball bearing appliances railway harbour and municipal appliances

**Contracting.** Contracts are undertaken for the construction of asphalt and bituminous concrete roadways floors and roofs and jointless magnesite floors

**Manufacturing.** An interesting feature of the company's activities in this direction is the dissolved acetylene gas station. Here the gas is generated from calcium carbide and, after passing through the purifiers and driers, it is compressed into specially constructed accumulators or cylinders. This station was originally erected and equipped to provide dissolved acetylene gas as the luminant for the numerous Government lighthouses on the South African coast. The lighting apparatus

for these lighthouses is of the famous A.C.A. system for which the firm acts as sole representative in South Africa. Dissolved acetylene is to day used very extensively in the engineering industry for the welding and cutting of metals by means of the oxy-acetylene blow pipe. Practically every up to date workshop throughout South Africa is using the company's apparatus

**Concrete Works.** These were established to meet the requirements of the building industry concrete columns roofing tiles balusters panels baths and many other commodities being manufactured on an extensive scale. The firm was awarded a gold medal and a certificate of merit for its exhibits at the Pietermaritzburg and Durban agricultural shows

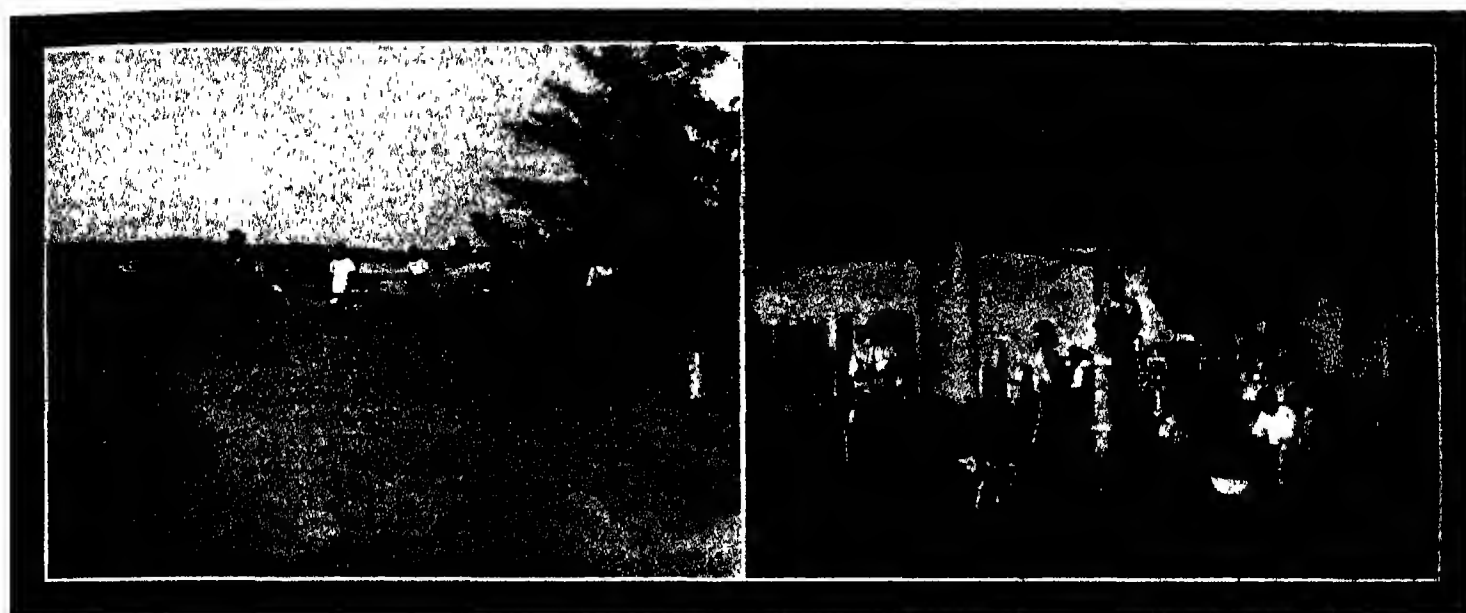


ROGERS-JENKINS & CO., Durban.

1. Section of Window Display given up to S.K.P. Ball Bearings.

2. Corner of Showrooms at Durban.





ROGERS-JENKINS &amp; CO., Durban.

1. Asphalt Roofing (New Eastern Telegraph Building)

2. Cement Tube Manufacturing Plant.

**Branches.** London, Capetown, Johannesburg and Port Elizabeth

**Address.**—Mercury Lane, Durban, P.O. Box 1876

**Cables.**—“Jenkins,” Durban. Codes Bentley’s and A B C 5th Edition

**Directorate.**—Messrs. C. J. Hansford and Gordon Mackenzie are the directors of the company

**Agents.** London: J. Hales and Co. Ltd., 11, Great St. Helens, E.C. New York: Smith Kirkpatrick Inc., of 10, Bridge Street

**Cables.** “Scantlings,” Durban. Codes A B C 5th Edition, Bentley’s and Western Union 5 letter

**Bankers.**—The National Bank of South Africa Ltd.

#### HANSFORD & HANSFORD, LTD.

**Inception.**—This company was formed in Durban in 1911 by Mr. C. J. Hansford, who has been associated with the timber trade for over 30 years

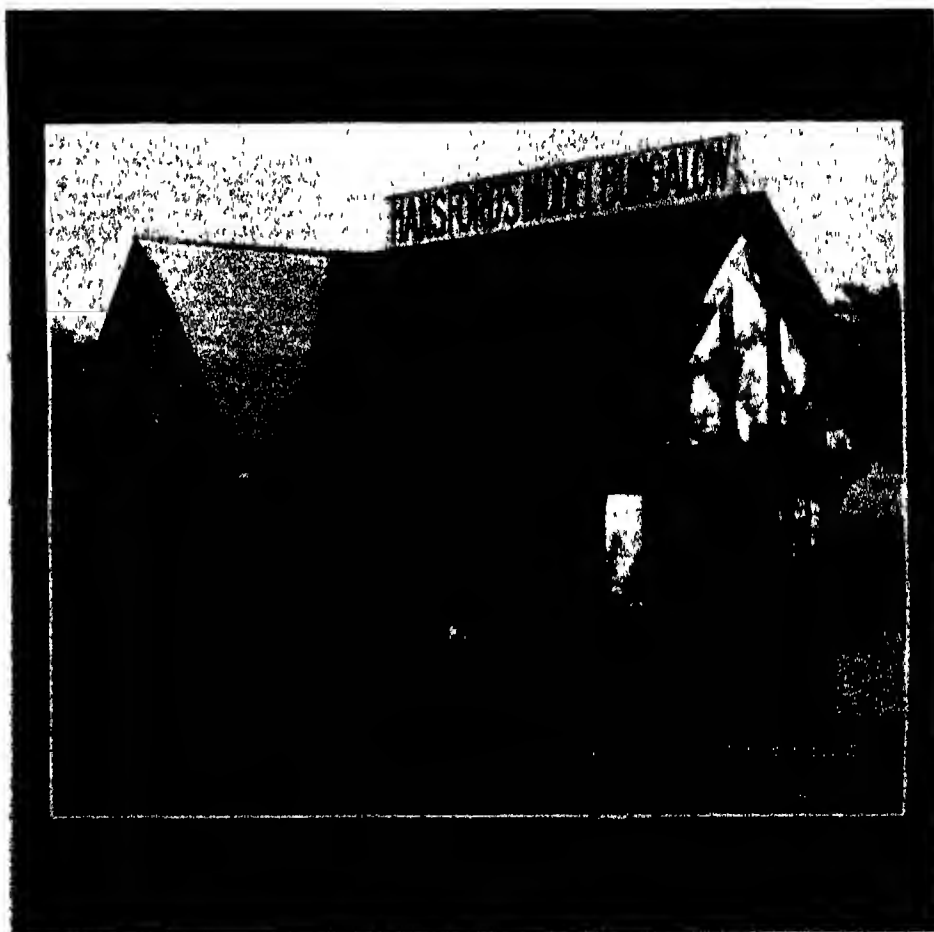
**Activities.**—Timber, hardware, and fencing materials form the main portion of the company’s activities. It specialises in the manufacture of “ready to erect” homes, constructed of wood-framing, with outer walling of asbestos cement sheets. The simplicity of the process of erection and the comfort and convenience of the model “Hansford Home” are fully explained in the firm’s illustrated catalogue of designs. Messrs. Hansford & Hansford Ltd. have also done much in popularising the use of ready-mixed paints

**Premises.**—The premises of the firm, situated in Pine Street, cover an area of two acres, and comprise the executive offices as well as the workshops, where the sawmills and general joinery plant are installed. The motive power used by the company is electricity

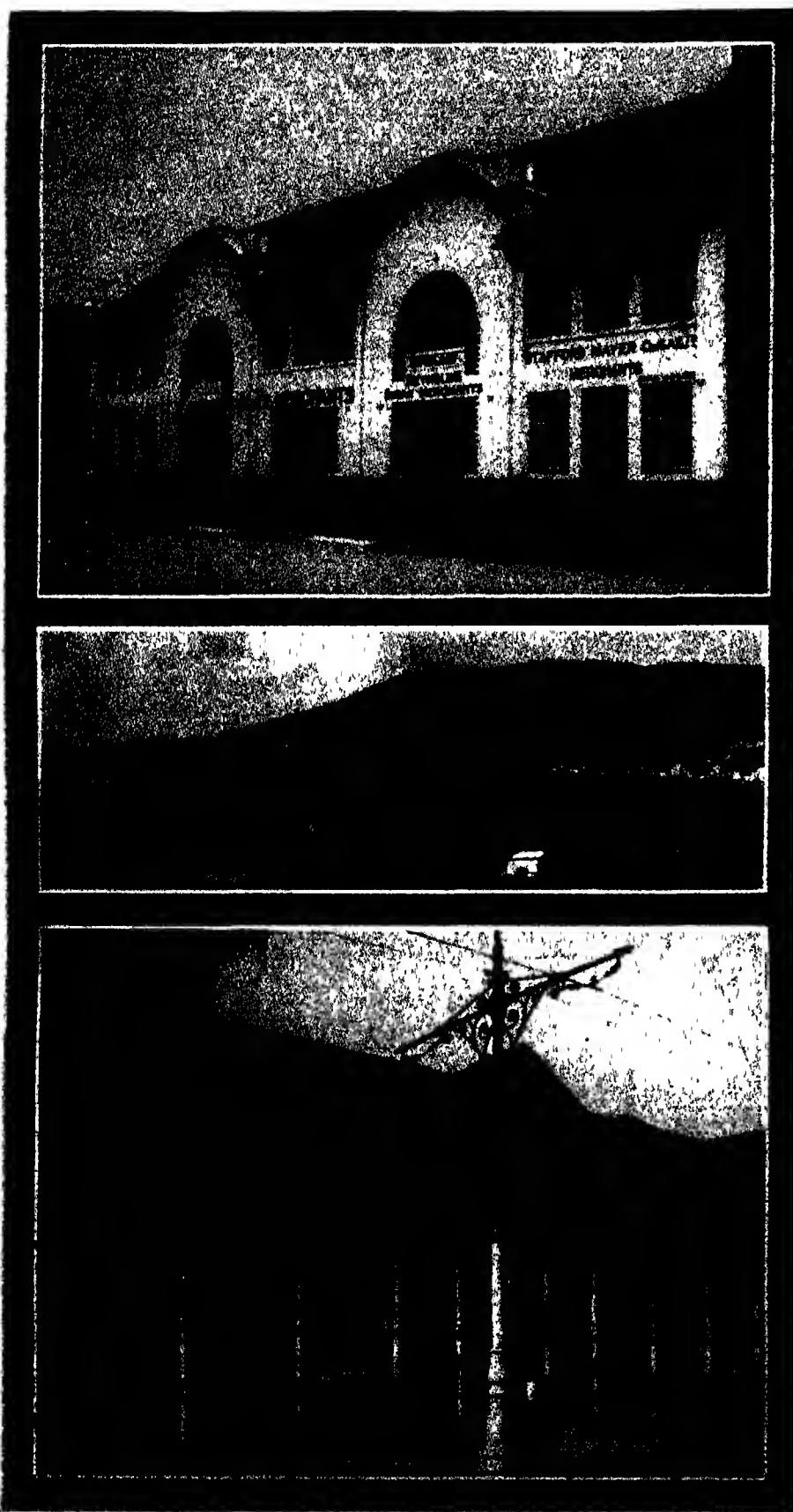
**Representations.**—Besides acting as distributing agents for many well-known building materials, the firm represents Messrs. White Cross & Co. Ltd., of Warrington, manufacturers of plain and barbed high strained fencing wires

**Staff.**—This comprises 40 Europeans and 50 natives.

**Head Office.**—8-12, Pine Street, Durban, P.O. Box 974. Branch office: Mooi and Main Streets, Johannesburg, mainly for the distribution of the company’s building specialities.



HANSFORD & HANSFORD LTD., Durban.  
Ready-to-Erect House, constructed by this Company and exhibited at the Durban and Coast Agricultural Show, 1923.



STAFFORD MAYER COMPANY (SOUTH AFRICA) LTD., Durban.

1. Office, Commercial Road.
2. Panoramic View of Bay of Durban and Buffalo Collieries.
3. Office at The Point, Durban.

#### STAFFORD MAYER COMPANY (SOUTH AFRICA) LTD.

**Inception.**—In 1918 this company was incorporated in Mauritius by Mr Stafford Edgar Mayer to handle the Durban and Natal agency of the Natal Collieries, which were floated with Mauritius money. Employing capital from the same source the company was enabled to promote the Melville Sugar Co Ltd. (with mills at Stanger, Natal), for which it acts as agents and secretaries, also the Union Engineering Supply Co Ltd., and the Cletract (S.A.), Ltd., serving these firms as secretaries. Mr Mayer, in addition, largely assisted Mr R. A. Rouillard, the pioneer cotton-grower of South Africa on a large scale, in the foundation of the Candover Estates, Ltd., a company now planting yearly a minimum of 11,000 acres of cotton.

**Activities.**—The Stafford Mayer Company (South Africa) Ltd., besides acting as manufacturers' agents and representatives, merchants, shippers and commission agents, has opened a new department for representing overseas manufacturers and in this connection acts for Jute Industries, Ltd., of Dundee, Manchester and Calcutta. The manager in charge of this department has had great experience in soft goods, etc., enabling the firm to take charge on a commission basis of similar agencies for direct representation.

**Collieries.**—The three collieries for which the company are agents supply a high-grade Natal coal, and hold bunkering contracts with the leading steamship lines calling at Port Natal. The Bernica colliery manufactures coke of excellent quality.

**Tractor Agency.** The firm played an outstanding part in introducing to Natal and Zululand the agricultural tractor to aid operations in the sugar belt, and is well-known to millers and planters.

**Agencies.**—The firm holds agencies for three collieries having mines at Vryheid: Enyati Colliery, Ltd., Buffalo Colliery, Ltd. and Bernica Colliery, Ltd., also for the following companies: Coke Producers Agency, Matthews Wrightson & Co Ltd., at Lloyds; Jute Industries, Ltd.; Candover Estates, Ltd.; Cleveland Tractor Co. of Ohio, U.S.A.; Stafford Mayer & Co Ltd., of Port Louis, Mauritius, and the Melville Sugar Co Ltd.

**Offices.** Head office 30, Commercial Road, Durban (P.O. Box 1381). Branch office Wilson's Buildings, Point Road, Durban.

**Management.** General manager, Mr Stafford E. Mayer, Port Mauritius. Joint managers, Messrs F. H. W. Curtin and John Williams, Durban.

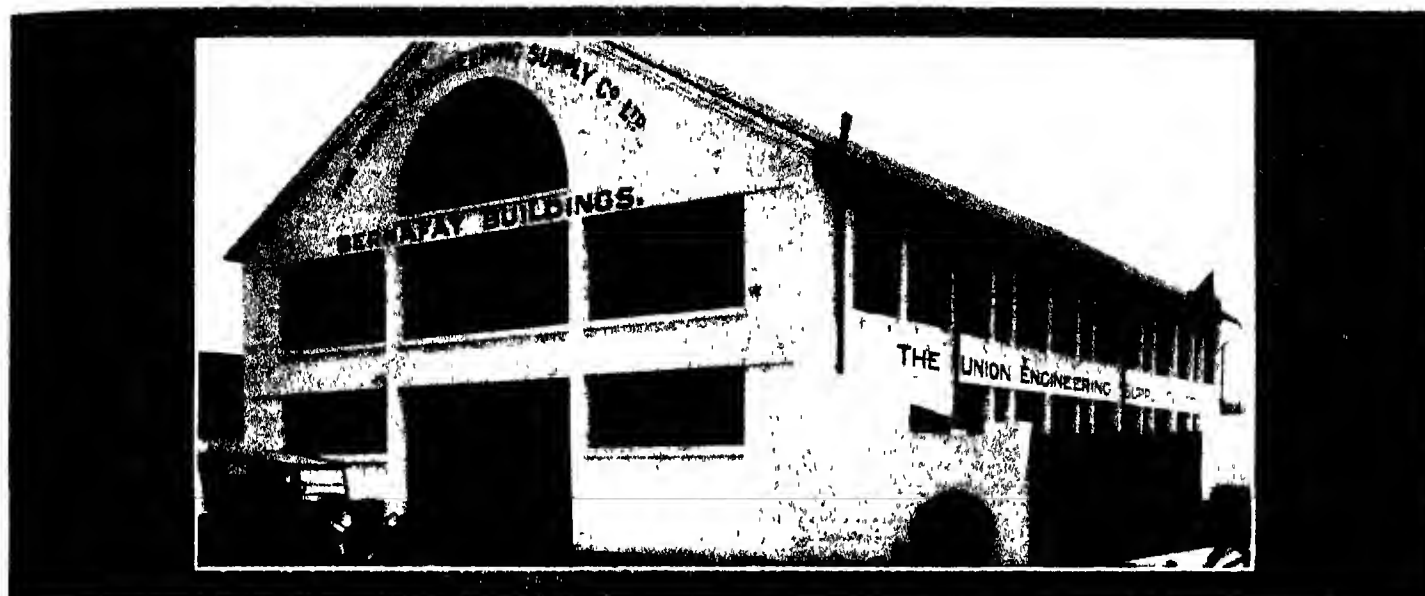
**Cables.**—"Stafmayer," Durban. Codes A B C 5th and 6th Edition and Bentley's.

#### UNION ENGINEERING SUPPLY CO. LTD.

**Inception.**—Registered in Natal, this firm of engineers and machinery merchants owes its inception to the enterprise of the Hon. Maurice Martin and Mr Stafford E. Mayer, both of whom have large vested interests in the country.

**Activities.**—The principal activities of the company embrace shipping, coal mines, sugar estates, cotton ginning and cultivating, wattle bark, sawmills, timber, flour and meal. It also supplies the materials for the maintenance of provincial roads and the requirements of corporations, contractors, etc.

**Agencies.**—The company represents amongst others the following: Luminus Cotton Gin Co. U.S.A. (cotton ginning plants), Skoda Works (industrial machinery), Jos. Dixon Crucible Co. (silica graphite paints),



THE UNION ENGINEERING SUPPLY CO LTD Durban.  
View of Showrooms

E. R. & F. Turner Ltd (flour and meal mills), A. Blyde & Co (steels), P. & D. Duncan (ploughs), Edge & Sons (steel wire ropes) and C. S. Milne & Co Ltd (oxy acetylene welding plants)

**Warehouse.** This, situated in Fisher Street, adjacent to the railway receiving and delivery sheds and close to the docks, consists of two floors each covering an area of 1,500 sq. ft.

**Territory Covered.** Natal, Zululand, East Griqualand, Basutoland, Transvaal and a portion of the Mozambique district.

**Staff.** 9 Europeans and a staff of natives. Manager: Mr H. J. Wood.

**Address.** -10, Fisher Street, Durban.

**Cables.** "Umengine," Durban. Codes: Western Union 5 letter and Bentley's.

#### JACK WEERHEIJM.

**Inception.** Established comparatively recently by Mr. Jack Weerheijm, commercial agent and broker, this firm possessed the happiest augury for success in the long and varied experience of its founder. World-wide travel had provided Mr. Weerheijm with practical knowledge of European, United States and Australian markets, and particularly (consequent on a long stay in the Malay Archipelago) of East Indian products.

**Activities.** The firm specialises in East Indian produce, comprising chiefly tea, coffee, cocoa, spices, sugar, rice, ground nuts, copra, fibres, coconut oil, citronella and kenanga oils, rattan, rubber, kapok and seeds. It acts in addition as a buyer of such South African products as maize, cotton, wattle bark and extract, and seeds. Transactions in these

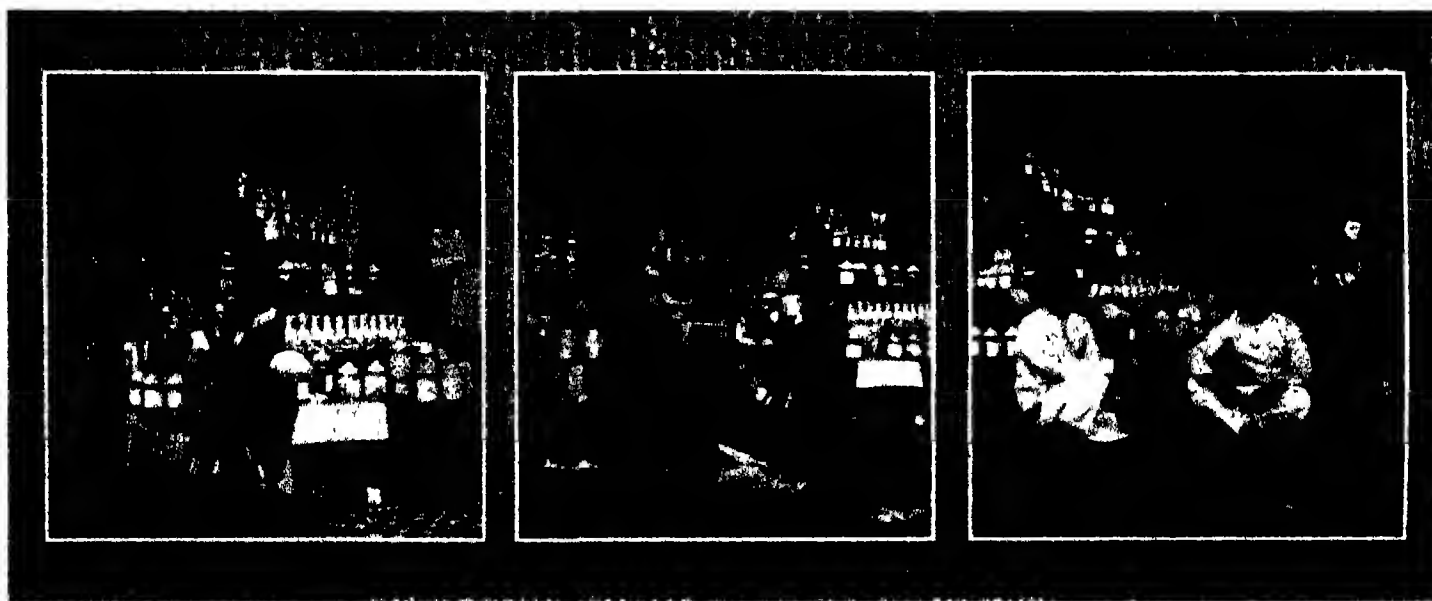
goods are effected on a small commission basis, and a valuable trade, stimulated by the circulation of a regular market report, has been built up with the leading towns of the Union. At a recent exhibition in Durban the firm's stand devoted to East Indian produce received very favourable comment.

**Agencies.** Leading East Indian firms such as the Catz Java Trading Co. and Gyselman & Steup of Batavia are represented by this enterprise.

**Offices.** Colonization Chambers, 355, West Street, Durban.

**Cables.** "Jackagency," Durban. Codes: A B C 6th Edition and Bentley's Phrase.

**Bankers.** The Netherlands Bank of South Africa, Ltd., the Standard Bank of South Africa, Ltd.



JACK WEERHEIJM, Durban.  
Stand at Agricultural and Produce Exhibition.

**FOADEN & KENT.**

**Inception.**—This is a comparatively new firm, having commenced business in 1922. Its recent foundation does not, however, imply immaturity in trade operations, both partners having had long and varied experience among the largest wholesale houses of Durban.

**Development.**—The reputations for integrity and acumen acquired in the course of previous dealings have contributed largely to the success of this new joint concern, which has built up the soundest connection with local and up-country storekeepers.

**Address.**—The firm's premises, held on a long and valuable lease, are situated at 42-44, Commercial Road, Durban.

**Cables.**—"Twinkle," Durban. Codes A B C 5th Edition and Bentley's.

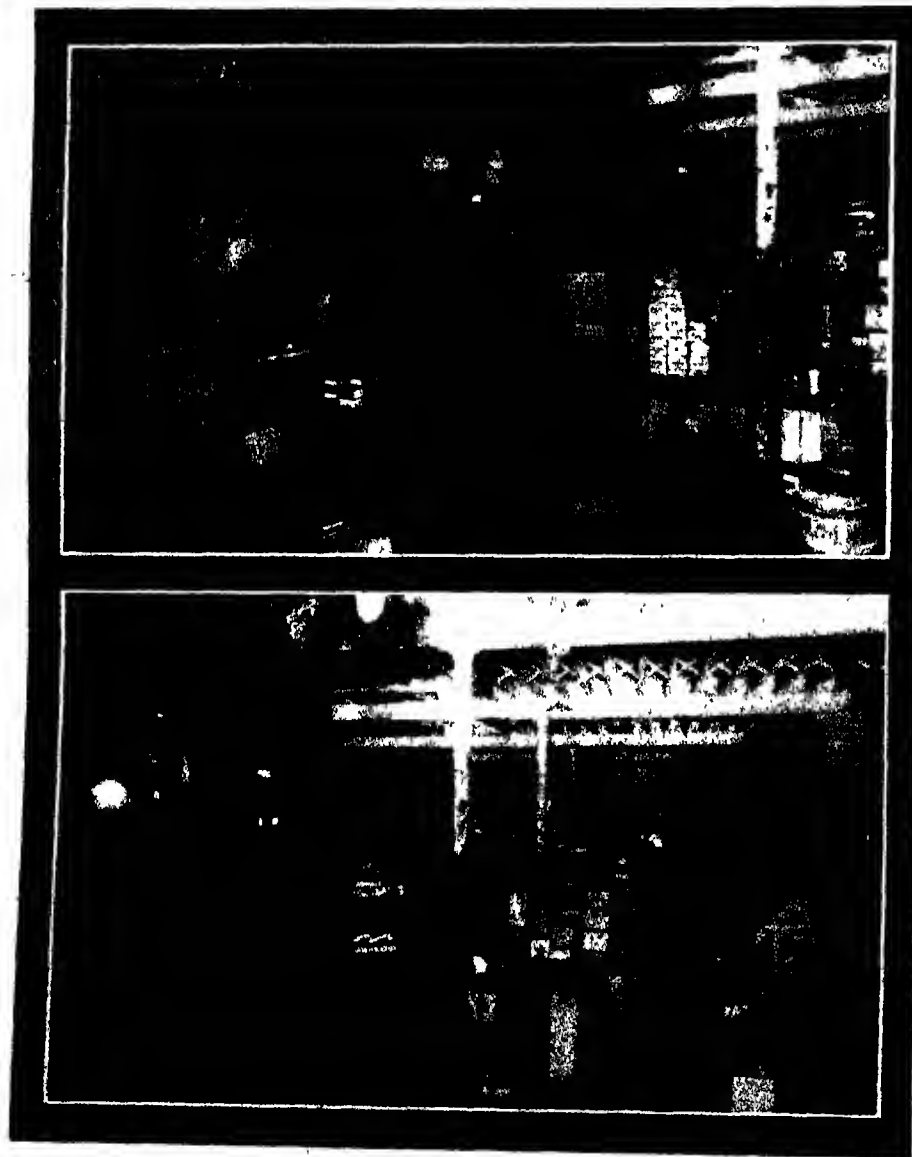
**Bankers.**—The Netherlands Bank of South Africa, Ltd.

**ARMSTRONG, HEMS, LTD.** This firm of advertising agents, contractors and consultants, which was established in Durban by Mr Thomas A Armstrong in 1920 on his return from active service in Europe, was previously known as Thomas A Armstrong. Though backward in the past as regards

has been associated with publicity work for many years, and is one of the most popular men in his sphere. Mr Armstrong, the managing director of the firm, personally controls three publications—"The N A C Review," a popular Natal motor publication, "The South African Cotton Growers' Journal," a most authoritative leading cotton publication, and the "African Trade Organiser," which has no superior as a trade journal in the country. The firm is always willing to supply any information on South Africa or adjacent territories, and enquirers will be placed under no obligation in seeking its assistance in this particular. Head Office—33-41, Acutt's Arcade, Gardiner Street, Durban, Natal. Cables—"Goodads," Durban. Codes Bentley's and A B C (5th Edition). Bankers—The National Bank of South Africa, Ltd.

**CLARK & THISELTON.** This company was established in the year 1880, and operates as customs, shipping, forwarding and general agents, bonded warehousemen, cartage contractors, Government baggage agents, coal and fire insurance agents. The docks are situated about two miles from the town, and goods for delivery to Durban merchants have, therefore, to be carted to their destination, but shipments for rail are forwarded from the steamer side to destination. The firm owns extensive bonded and free store warehouse accommodation. The sole partner and proprietor is Mr F J Lennox, who has been connected with the firm for over 35 years. The staff comprises 35 Europeans and a large number of Indians and natives. Agencies are held for the South African Collieries Ltd, the Phoenix Assurance Co Ltd, and the firm acts as distributing agent for Messrs William Cooper & Nephews Ltd, who manufacture sheep dips, for the Nestle & Anglo Swiss Condensed Milk Co Ltd, and for Messrs John Dewar & Sons Ltd. Offices Lennox Building 30, Gardner Street, Durban. P O Box 927. Branch Office Wharfside Point, Durban. Telephones Head Office 245, Branch Office, 523. Bond 570, Mr Lennox's (private number), 2449, Baggage department, 571, and stables, 110. Cables—"Vigilant," Durban.

**H. J. STRANACK & CO. LTD.**—This firm of machinery importers, merchants, representatives and exporters was founded by Mr H J Stranack in 1899. The showrooms and offices (owned by the company) are situated at 287, Pine Street, Durban, and are located in a double-storeyed building measuring 150 by 33 feet. The firm also occupies the adjoining premises, which are leased. The workshops, which are under the supervision of a qualified engineer, with a staff of skilled mechanics, are replete with the most modern machinery, and any kind of repair work can be undertaken. The staff numbers 28 Europeans and a proportionate number of natives. Representations are held for the following firms: Merryweather & Sons, Ltd, John Whitehead & Co, Fairbanks Morse & Co., Delco Electric Light, Akron Light (petrol gas light), Radio Technique, Barford & Perkins, Ltd, and the Melotte cream separators. H J Stranack & Co. Ltd, are interested in the representation of overseas manufacturers of general machinery, and are in a favourable position to cater for them. Exports comprise: corundum, kieselghur, fireclay, bricks and tiles (see article "Industries"). The company is a private one with a capital of £28,000, and has an annual turnover of £80,000. The directors are Mr. H. J. Stranack and Mr. C. Okell, M.C., A.M.I.E.E., A.R.T.C. Cables: "Stranco," Durban. Code: Bentley's.



FOADEN & KENT, Durban.  
Two Views in the Firm's Warehouse.

**Activities.**—The firm specialises in the supply of groceries and provisions, together with household hardware, brushware and oilmen's stores.

**Proprietary Brand.**—Particular attention is paid to the marketing of commodities bearing the firm's own trade-mark, "Twinkle." Under that brand are distributed several high-quality lines in groceries, hardware, brushware and disinfectants. Messrs Foaden & Kent are open to accept agencies for any of the foregoing lines, of which they carry stocks.

advertising, many up-to-date agencies have been established in the country, with the result that South Africa is now becoming known throughout the commercial world for the general excellence of its publicity work, and Armstrong, Hems Ltd have had much to do with this gratifying progress. They are the recognised agents of the Newspaper Press Union of South Africa, and handle the largest volume of business in the country. Mr. Armstrong has been connected with advertising practically all his life, while Mr. William Hems, who recently joined the firm,

**SYKES, WOOD & WILLS LTD.**—In South Africa, with its mixed races, speaking different languages, having different habits, each possessing distinctly different views, advertising requires a specialised knowledge if the best results are to be obtained. In the case of the European population alone there are two races to be considered—the English and the South African Dutch, the latter speaking the language known as “Africans.” All Government and official notices are printed in these two languages. In addition to the European population, there is also an immense native community, which is fast becoming an important buying factor, so that the problems relative to advertising are more complex than in other countries. It is therefore most important that any selling campaign should be based on actual knowledge of the prevailing conditions, and instructions should be placed with a competent firm of consultants in close touch with local conditions. In this connection the firm of Sykes, Wood & Wills Ltd. can offer special advantages, for it has been established for a considerable time, and, handling as it does a large number of important South African as well as overseas accounts, it is in a position to assist those who contemplate extending their market to Africa or the East. Capt. R. G. P. Wood is the managing director, and Mr. Stanley F. Ashmead-Bartlett, M.L.S.A.C. (Lond.), is the consulting director. Both have had many years’ experience in publicity work in South Africa, and Mr. Ashmead-Bartlett has held responsible positions as an advertising and sales manager both in England and America. The firm undertakes complete advertising and sales campaigns, including preliminary investigations, statistical reports, etc., controls

a well-equipped and efficient studio, and employs a thoroughly competent staff of copy-writers. Address: Gersigny Buildings, Leslie Street, Durban. P.O. Box 1647. Cables: “Propaganda.” Code: Bentley’s.

**AFRICAN SHIPPING LTD.**—Head office: Hatfield House, President Street, Johannesburg. Commenced operations as shipping forwarding and customs agents at Johannesburg in 1902. Durban branch opened in 1913. Cables: “Afriship.” All branches (See “Transport.” Shipping, this section).

**BEAUMANN, KNOWLES & CO.**—Hulston’s Buildings, Smith Street, Durban. Manufacturers’ agents. Represent the Ogilvie Flour Mills Co. Ltd., of Montreal. Cables: “Bomanoles.” Durban. Code: Bentley’s.

**BROWN, JAMES, LTD.**—Point Durban. Established 1878. Shipping and general engineers, metal foundries, blacksmiths, boiler-smiths, copper-smiths, fitters, turners, oxy-acetylene and electrical welders and ship-repairers. Also agents for the Phoenixcroft marine motors. Cables: “Bouler.” Durban. Codes: A B C 5th Edition and private.

**DUNDEE COAL CO. LTD.**—Durban. Commenced operations 1889. Owns leases and freehold property to the extent of about 19,500 acres, with a coal output of over half-a-million tons per annum. Telegraphic address: “Redstar.” Durban. Cables: “Coal.” Durban.

**DURBAN NAVIGATION COLLIERIES LTD.**—Durban. Owns two well-equipped collieries, producing about 60,000 tons per month. The coal is shipped to India, Ceylon, etc., and is also consumed locally, and supplied for bunkering to many steamship companies.

**MILLER, WEEDON & CO.**—Point, Durban. Established in 1806 by Messrs. Spence and Weedon. Landing, shipping, forwarding agents and bonded warehousemen. Cables: “Weedon.” Durban and Lourenço Marques. Codes: A B C (4th) and A 1.

**NATAL STEAM COAL CO. LTD.**—Leuchars’ Buildings, 320, Smith Street, Durban. Colliery: Wessels Nek. Operations commenced in 1897. Produces high grade steam coal. Telegrams and cables: “Steam.” Durban.

**PARRY, LEON & HAYHOE LTD.**—P.O. Box 998, Durban. Established at Johannesburg in 1904 as Parry, Leon & Co. Act as shipping, steamer, forwarding and insurance agents. Branches at East London, Port Elizabeth and Johannesburg. Telegrams and cables: “Freights.”

**SAVORY, WM. H., & CO.**—Southern Place, Smith Street, Durban. Established 1819. Clearing, shipping, forwarding and commission agents, and cartage contractors. Bond and duty paid warehouses in Shepstone Street and Hospital Road respectively.

**STEEL, MURRAY & CO.**—325, Smith Street, Durban. Established 1870. Steamship agents, general merchants, importers, and exporters. Branch at Pietermaritzburg. Agents in the United Kingdom, Webster, Steel & Co., London and Glasgow.

**TSHOBA COAL SYNDICATE LTD.**—9a Leuchars’ Buildings, Durban. Conduct an export and bunkering coal business, owning a colliery in the Vryheid district which produces 9,000 tons of first grade Natal steam coal per month. Cables: “Tshoba.” Durban.

## OTHER CITIES AND PORTS

### DUNDEE

The town of Dundee, which dates from 1882, is situated on the Biggarsberg Range, in the heart of the Natal coalfields. The present population is roughly 4,000. Dundee acquired early notoriety in the South African War, the battle of Talana Hill being fought there on October 20, 1899, when the gallant General Penn-Symons met his death. The town is well lighted by electricity, and has an ample and pure water supply from the Impati Mountain. King Edward’s Park, the Coronation Gardens and the Berea provide splendid facilities for sport and recreation, and there is a good golf course. There are several fine public buildings, the Court Buildings, Post Office, Municipal Offices and St. James’ Church being prominent. Outside the station is a handsome War Memorial to those who fell in the Great War.

### ESHOWE

The capital town of Zululand and interesting by reason of its associations with former wars, Eshowe is 109 miles by rail from Durban, and is the centre of a large district under sugar cane, cotton, and tobacco.

### ESTCOURT

Estcourt lies among the hills at an altitude of 3,138 ft., in the centre of the maize fields of Natal. The town, which is a rapidly developing industrial centre, has an assured future, being able to supply cheap electric power and water, and to offer exceptional educational and building facilities.

### GINGINDHLOVU

Seven miles from the coast, Gingindhlovu, in Zululand, derives its name from an important battle during the Zulu war. Most of the country round is under sugar cane.

### GLENCOE

A railway junction on the Natal main line, and the centre of a coal mining district, Glencoe was the scene of one of the earliest battles in the South African War.

### GREYTOWN

The centre of a fine farming district and of a growing wattle-bark production, Greytown lies at an altitude of 3,581 ft., and has a population of about 3,300. At a small farmstead a mile and a half from Greytown one of the greatest of all South Africans—General Louis Botha—was born.

### LADYSMITH

This is one of those towns whose size and population bear no relation to its importance in history. Named after the wife of Sir Harry Smith, famed for his gallant ride from Capetown to Grahamstown in six days, Ladysmith became a municipal borough in 1891, and was for many years the terminus of the railway to the Transvaal. But in 1899, when the South African War broke out, the town found the eyes of the world focussed upon it and the dogged courage which for four months the defenders put up. Since those days Ladysmith has grown in size and activity. The town lies at an altitude of 3,284 ft. above sea-level, and is considered to be exceedingly healthy. The Corporation controls the electric lighting and power, and has built one of the finest Town Halls in South Africa. Within 40 miles by road is the Great National Park (see “Tourist Resorts”), and its proximity is a great factor in the popularity which Ladysmith now enjoys as a holiday resort. The population in 1921 was 6,807.

### NEWCASTLE

Situated on the main line midway between Johannesburg and Durban, this pretty

and growing town lies at the foot of the Drakensberg range of mountains. Newcastle is one of the busiest centres of the Natal coalfields, and is acquiring increased importance as a pioneer of the iron industry.

The population in 1924 was 5,784. The Municipality controls the water supply, electric light and power and fire brigade, there is a large Government hospital, and the many handsome public buildings include the Town Hall, Public Library, Newcastle Club, and Masonic Hall. Then there is the beautiful Lynch Gate War Memorial.

The large and attractively laid-out Park along the banks of the Incaandu River provides every facility for cricket, football and hockey, while tennis, golf, bowls and racing flourish. The nearby collieries are the most important feature of Newcastle’s industrial activities, but mention must be made of the fine works of the Newcastle Iron and Steel Company Limited, and the important carbide factory at Ballengeich. There are also up-to-date brick making, furniture making, and tanning plants, and two large cereal mills.

### PORT SHEPSTONE

Port Shepstone is situated at the mouth of the River Umzimkulu in the south of Natal, and was created a full fiscal port in 1893. Its trade is mostly with Port Natal, and is carried on by local small craft. The entrance to the river is choked by a sand-spit, and the open channel to the sea is very narrow, with an average depth of from 4 ft. 9 in. to 5 ft. 3 in. The port is, however, being rapidly improved. Port charges are the same as at Capetown.

### VRYHEID

An important railway junction on the Natal line, the Hlobane collieries being 17 miles distant, Vryheid is some two miles from that junction. Population over 4,000.





PICKING COTTON, EAST TRANSVAAL.

## AGRICULTURE

### GENERAL DATA

**S**OUTH AFRICA is a country of infinitely varied conditions, having climatic relations with both the South Pole and the Equator. In the past the mining activities of the Transvaal have bulked largest in the story of the country's development, but it is by agriculture that the latter must eventually primarily stand, and it is to the agricultural possibilities of the four Provinces that the eyes of the most far-seeing of their statesmen are turned.

At present it may be said that the agricultural industry is largely in its infancy. Many causes have militated in the past against successful farming, the principal being an inadequate rainfall, the low yield per acre, the impoverishment of the soil by overstocking and grass-burning, and an indifference to scientific methods of soil fertilisation. Increased irrigation procedure, intensive farming, and a growing attention to scientific husbandry have, however, during the present century accomplished great things, as the growth of the Union's maize crop and the enormous development of fruit farming (to mention only two instances) testify.

In the last year for which complete statistics are available the total value of the agricultural production of the country at market prices was £81,578,000, while according to the last agricultural census there were 88,340 occupied farms and agricultural holdings in the Union. The area of farms was approximately 200,000,000 acres, of which less than 10,000,000 acres were under cultivation.

#### DEPARTMENT OF AGRICULTURE.

Under the South African Act the Union Parliament has the power to administer agricultural affairs itself or to delegate the whole or any part of the work to the Provinces. When the Union was established the Government thereof decided to exercise that power itself, and a Minister of Agriculture was appointed, with a fully equipped Department of Agriculture. That Department is organised

on lines similar to those which characterised the former Transvaal Department the latter having been modelled largely upon the Department of Agriculture of the United States of America. As the head of the Department, the Minister is responsible to Parliament for the acts and policy of his Department, and next in authority is the Secretary, who is the permanent head of the Department and Accounting Officer, being assisted by an Under-Secretary. The activities of the Department are maintained by 18 Divisions and Offices, presided over by scientific and technical officers. The headquarters of the Department are at Pretoria.

**EDUCATION.**—There are two Universities in South Africa having Faculties of Agriculture and five Schools of Agriculture. These institutions are geographically situated so as to serve definite objects applicable to the climatic conditions prevailing in their respective areas. The Stellenbosch University, in the town of Stellenbosch, about 17 miles from Capetown, serves that portion of South Africa which enjoys a temperate climate and a winter rainfall. The Transvaal University College, in Pretoria, deals with conditions where the climate is sub-tropical, and the heaviest rains fall during the summer months. These two main areas are subdivided amongst the five schools of Agriculture situated at Elsenburg, Grootfontein, Glen, Potchefstroom and Cedara respectively. South Africa justly prides herself on her admirable system of education, and these schools, by devoting a great deal of time to the investigation of conditions peculiar to the areas they serve, have done a great work in advancing agriculture generally. Teaching activities have also been extended beyond the confines of the schools to the doors of the farming population by means of itinerant lectures and co-operative experiments; while short courses of instruction for farmers and their wives draw them to the schools.

**IRRIGATION.**—Irrigation farming in South Africa is as yet somewhat limited. Vast

### PRODUCTS

tracts of country are entirely devoid of perennial streams, and though in the aggregate quite a large amount of spasmodic irrigation has been done with the aid of dams across veld drainage-lines, windmills drawing upon borcholes, and flood systems, the tremendous area of the Karoo still remains un-irrigated. The present policy of conservation may be said to have begun with the end of the War, and already there are nearly a score of projects completed or under construction. Excluding private undertakings, well over £10,000,000 has been invested in these storage schemes, and the irrigable areas totalled in 1925 more than 250,000 acres.

The largest and costliest schemes are the Hartbeest Dam, on the Crocodile River, between Pretoria and Rustenburg, the impounded waters of which are calculated to suffice for 31,800 acres, the Sundays River works known as Lake Mentz, which extend 30 miles inland from the mouth of the stream, and the scheme which derives water from the Olifants River, near Van Rhyn's Dorp grazing grounds. There are also large acreages under irrigation on the Upper Modder, near Graaf Reinet, and in the Cradock section of the Fish River. Courses of instruction in irrigation and its significance in the exploitation of Union lands are part of the curriculum of the agricultural colleges.

**LAND BANK.**—The Land and Agricultural Bank of South Africa was established in 1912, its operations and policy being controlled by a central board consisting of a Managing Director and five ordinary members, each of whom is nominated by the Governor-General. The central board meets in Pretoria, where the bank's head office is situated. The main business of the bank is to make advances to farmers on first mortgages, and for fencing and dipping purposes, and also to finance co-operative societies formed by farmers within the Union.

During the year 1925-26 some 3,400 applications for ordinary loans were received, representing £2,366,315, of which

number 2,800 applications for an aggregate amount of £1,665,785 were granted. The total outstanding advances on mortgage at March 31, 1926, were over £8,000,000, for fencing of farms £783,880, and to co-operative societies and companies £1,066,500. In its 13 years the bank has advanced just under £13,000,000 on mortgage to 24,187 applicants. The bank's capital on January 1, 1926, was £7,698,304, to which must be added £742,883 received under Parliamentary votes.

**LAND SETTLEMENT.** Under the various Land Settlement Acts which have been passed by the Union Parliament, the Minister of Lands is empowered, on a recommendation from the Land Board of the Province in which the land is situate, to allot Crown Lands and to purchase, from funds appropriated by Parliament for the purpose, privately owned land for sub-division into suitable holdings for agricultural and pastoral purposes. Advances may be made to allottees for the purpose of acquiring stock, equipment, and other things necessary for the development of their holdings; permanent improvements may also be effected on holdings by the Government and the cost

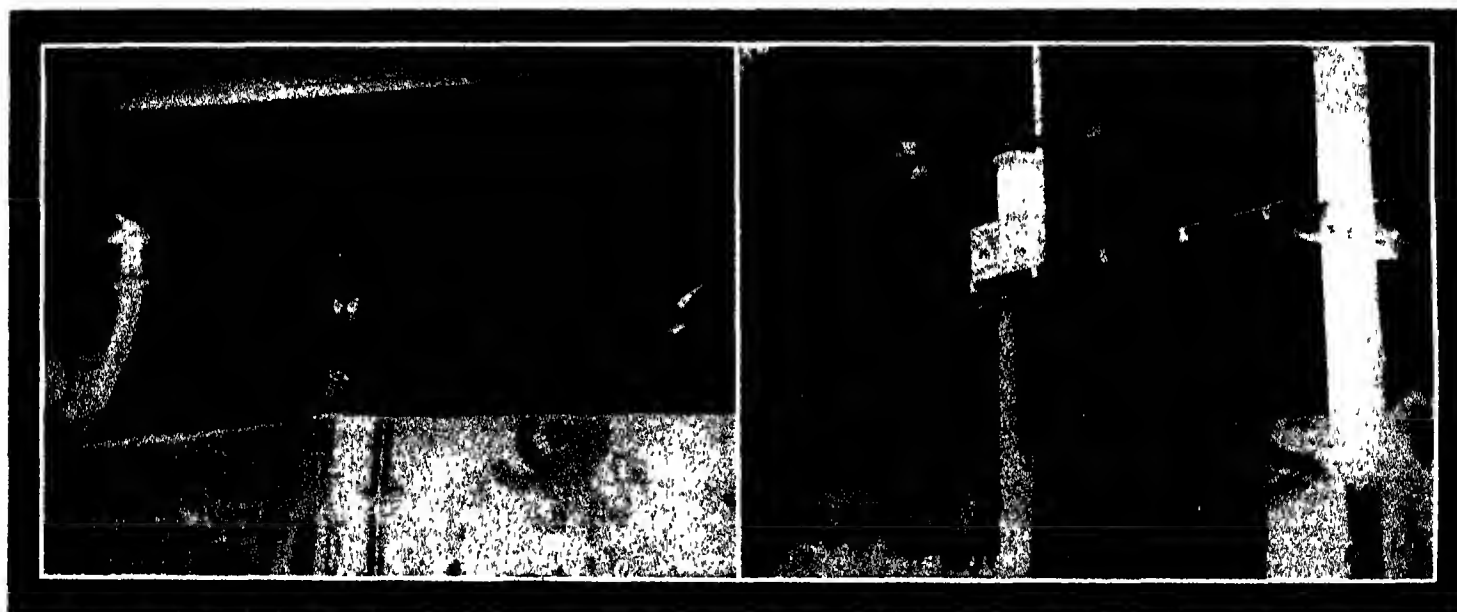
**SOCIETIES AND UNIONS.**—The importance of agriculture to the Union is reflected in the activities of the rural community in safeguarding and furthering their many interests through the medium of societies of farmers formed for co-operation with the Government and generally for mutual assistance in coping with the problems of the industry. There are altogether some 400 Agricultural Societies and Farmers' Unions, having as members a great many farmers representing the most influential and progressive section of the agricultural community. An important function of these bodies is the promotion of the various agricultural shows, of which those organised by the following societies at the places mentioned are the most popular: Western Province Agricultural Society (held at Rosebank about the end of February), Port Elizabeth Agricultural Society (held at Port Elizabeth in March), Central Agricultural Society (held at Bloemfontein in March), Witwatersrand Agricultural Society (held at Johannesburg at Easter), Pretoria Agricultural Society (held at Pretoria at the end of May), Royal Agricultural Society (held at Pieter-

## PRODUCTS

The principal agricultural products of the Union, in order of commercial importance, are maize, wheat, and the various fruits for which South Africa is so well known. These are dealt with as follow:—

**APPLES.**—These grow in many parts of the Union to perfection, more especially on the cold high veld of the Transvaal and the Orange Free State and in the southern coastal districts of Cape Province. In the former Provinces there is some risk of damage from hail. There are over 2,500,000 trees in the Union, and the value of fresh apples exported in 1924 was £4,625. Some 200,000 lb of dried apples were also produced.

**APRICOTS.**—Apricots are grown chiefly in the Paarl, Tulbagh, Stellenbosch, Robertson, Worcester, Malmesbury, and Somerset East districts of the Cape. They are largely cultivated for the dried fruit trade, 1,143,115 lb being so produced in a recent year. Exports of fresh fruit increased in value from £1,769 in 1922-23 to £3,225 in 1923-24.



Opening of the Rosebank Show at Capetown, 1925, by His Excellency Major-General the Right Honourable the Earl of Athlone, G.C.B., G.C.M.G., G.C.V.O., D.S.O., Governor-General

thereof added to the purchase price of the land. All leases are for five years. No rent is payable during the first year, two per cent per annum, calculated on the purchase price, is payable during the second and third years, and 3 per cent during the fourth and fifth years. A lease may, at the discretion of the Minister, be extended for a further period of five years, in which event rent at the rate of 4 per cent per annum is payable. If the option of purchase is exercised during or at the expiration of the lease period, the purchase price becomes payable over 20 years in equal half-yearly payments, interest on the purchase price being calculated at the rate of 5 per cent per annum. The limit of the advances that can be made to a settler for the purchase of stock and equipment is £500. Settlers are not necessarily entitled to receive advances, which can only be granted on the recommendation of a Land Board. All rights to minerals, metals, mineral oils, and precious stones are reserved to the Crown, the lessee's or grantee's rights to compensation being prescribed.

maritzburg at the end of June), and Durban and Coast Agricultural Society (held at Durban about the beginning of July). Most of the Societies are affiliated to one or more of the four provincial Agricultural Unions, which function from Port Elizabeth, Durban, Bloemfontein, and Pretoria respectively. From each of these provincial Unions ten delegates are chosen to form the South African Agricultural Union, which meets annually for the purpose of deliberating on matters affecting agriculture generally throughout the Union.

**CO-OPERATIVE MOVEMENT.**—There has lately been a great development of the co-operative movement in every province of the Union, and farmers of all kinds are keenly interesting themselves in the formation of co-operative marketing associations. An Act regulating the constitution of Co-operative Agricultural Societies and Companies came into operation on August 14, 1922, and is administered by a Registrar.

There were registered in June 1925 over 270 co-operative associations, with a total membership of 39,804.

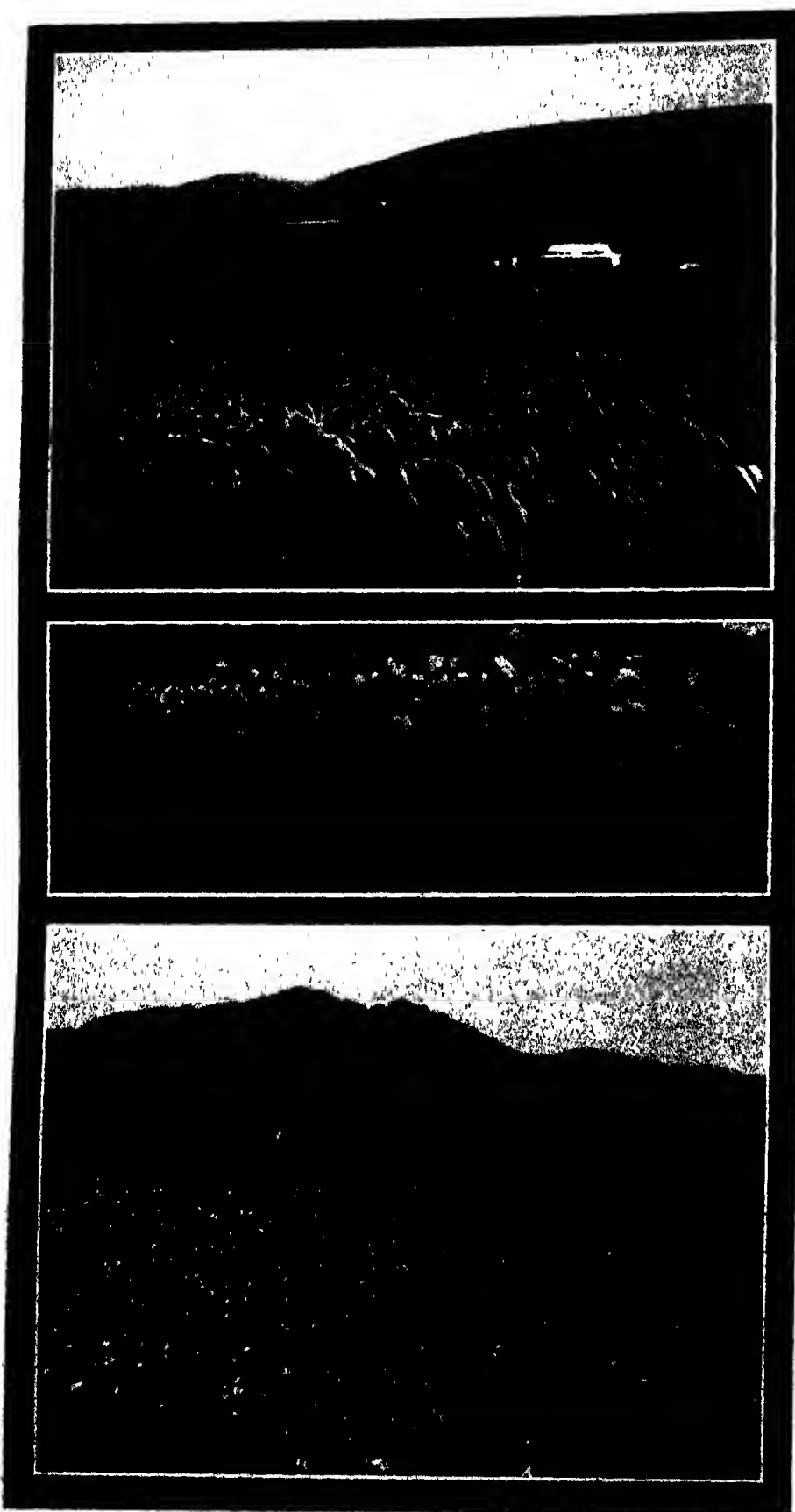
**BANANAS.**—These are chiefly grown in Natal, and also on certain portions of the South Eastern Coastal district of Cape Province. Their cultivation is largely in the hands of Indians. There is only a very small export trade, the demand for the fruit within the Union being a large one.

**BARLEY.**—The conditions which favour the growth of barley are those which obtain most in the western and south-western district of Cape Province. In 1923-24 there were 58,992 acres under cultivation, of which some 50,000 acres were in Cape Province. The total production of grain in that year was 50,154,450 lb, compared with 58,235,000 lb. in 1922-23.

**CITRUS FRUITS.**—See "Lemons," "Oranges," also special article on "The Fruit Industry."

**COFFEE.**—Coffee can be grown in Natal and in the warmer parts of the Transvaal, but various pests destroyed many of the plantations some years ago, and production is now almost negligible.

**COTTON.**—See special article.



1. SUGAR CANE FIELD, NATAL.  
2. MAIZE FIELD NEAR PRETORIA.  
3. VINEYARD, CAPE PROVINCE.

**DRIED FRUITS.**—See special article on "The Fruit Industry"

**FIGS.**—Figs of many varieties flourish in most parts of South Africa, and give heavy crops when conditions are specially favourable. In a recent year some 243,000 lb. of dried figs were produced.

**FOREST PRODUCTS.**—South Africa is not a well-timbered country, her acreage of forest being in the proportion of one to New Zealand's 20, Australia's 250, and Canada's 600. Timber forests are found only on the seaward slopes of the mountain ranges, usually within 100 miles of the coast, the best timbered areas being in the neighbourhood of George and Knysna, in Cape Province. The principal species comprising these and other forests are the yellow woods, used for flooring and other building timbers, assegai and black ironwood, used for wagon building, black stinkwood, used for furniture, and kamassi-wood, or "knysna" boxwood, which is exported to Europe for weavers' shuttles. In the scrub and savannah forests of the veld country of the Transvaal, Natal and Cape Province various kinds of acacia predominate, but timbers of good quality, such as wild olive, karee-boom, camel-thorn, knoppiesdoorn, African teak, and kajatenhout, are produced. At the beginning of 1924 the forest reserve areas under the control of the Forest Department comprised 1,738,834 acres demarcated and 893,145 acres undemarcated, representing a total of 2,631,979 acres. The total yield of timber from Government forest reserves and plantations for a recent 12 months amounted to 5,039,669 cubic feet.

**WATTLE BARK.** This is by far the most important of the forest industries of South Africa. It is now a well-established one, and promises to have a future of continued expansion and prosperity. It is centred chiefly in Natal, which province contains some 230,000 acres out of the total of 300,000 acres in the Union planted with wattles. These are privately-owned plantations, the area of wattle on the Government plantations being insignificant in proportion. So successful has the cultivation of wattle (a native of Australia) in Natal become that exports of bark are made yearly to the Commonwealth. The principal use of the bark is for tanning purposes, and the waste wood of the plantations is now being utilised for the distillation of acetic acid, alcohol, and other products.

**FRUITS.**—See special article on "The Fruit Industry" also separate fruits, e.g., "Oranges"

**GRAPE FRUIT.**—This citrus fruit (locally known as pampelmoes) has never been extensively grown in South Africa, but an assured place for it is now being found on the London market and exports are increasing.

**GRAPES.**—See "Viticulture."

**GROUND NUTS.**—These are known also as peanuts and monkey nuts. In South Africa it is a crop of increasing importance in the veld areas and in many parts of the middle veld, the leading areas in production being Pietersburg, Waterburg, Zoutpansberg, Barberton, and Pretoria, in the Transvaal. The nuts are used in the preparation of products for human consumption, while the cake resulting from the expressing of the oil makes a palatable and nutritious cattle-food. Production grew from 7,301,000 lb. in the year 1922 to 11,785,000 lb. in 1923 and 14,378,000 lb. in 1924, of which last total 9,165,000 lb. came from the Transvaal.

**HOPS.**—Hops were at one period grown at Newlands, near Capetown, and at George,

but after a time their cultivation in both localities was discontinued. In recent years efforts have been made by a large brewery company to re-introduce the hop into South Africa, and good results have again been obtained in the George district. (See also under "Commerce.")

**JUTE.**—The plant *Juncus cannabinus*, which is described as a jute substitute, grows wild in parts of the Transvaal, and its cultivation is now being undertaken. It is considered possible that within a few years South Africa may be able to produce from locally-grown material the bags and sacks now imported annually in large numbers. (See also under "Commerce.")

**KAFFIR CORN.**—In South Africa the term "Kaffir corn" is applied to all the grain sorghums, the reason being that red and white Kaffir corns comprise the bulk of the sorghum production. These have long been used by the natives as a food and also in the preparation of an alcoholic drink. On the farms kaffir corn is grown for hay, fodder, silage, or grain production. It now ranks as one of the "World's Crops," and increasing interest is being taken in it throughout the

Union, the acreage devoted to it having increased, while production grew from 188,000,000 lb. in 1904 to 246,000,000 lb. in 1923-24.

lucerne was estimated at some 91,000 acres, and the output of seed, which is now exported in considerable quantities, at 1,755,000 lb.

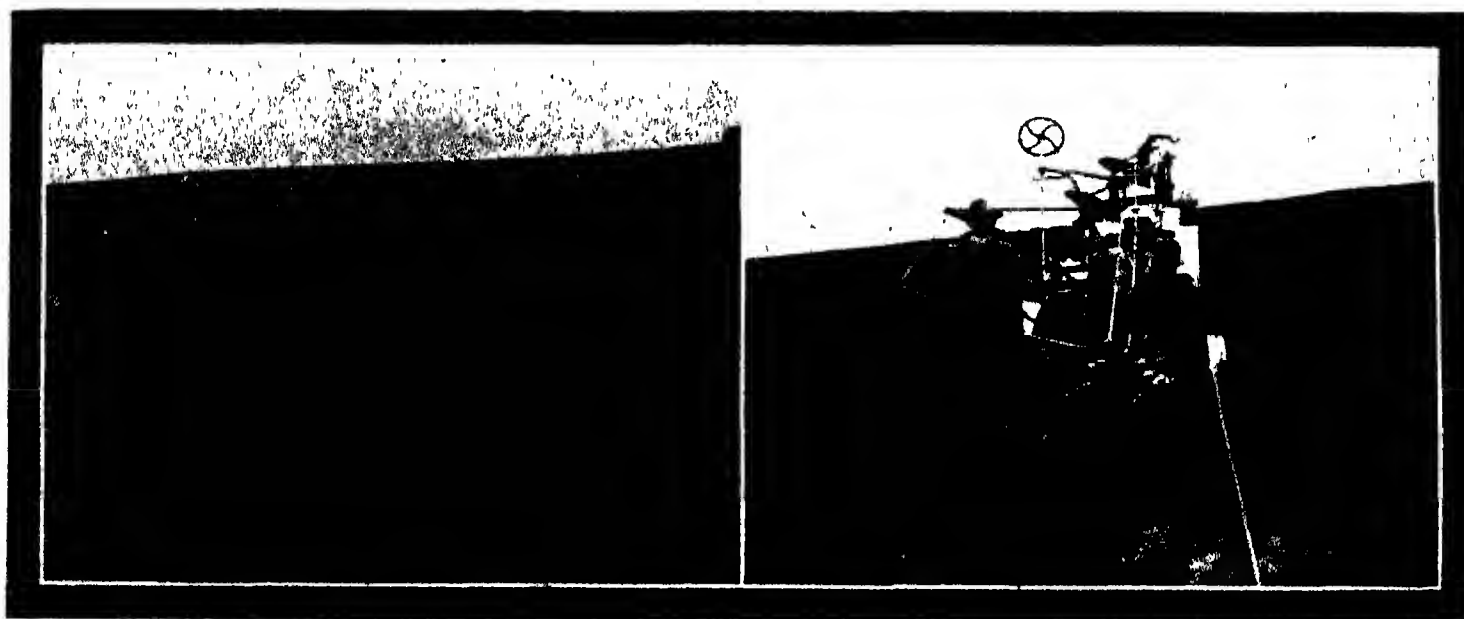
**MAIZE.**—This is by far the most important agricultural crop produced in South Africa, firstly because it is the staple food of the larger part of the population, and secondly because of the enormous economic value of the product as a stock-feed and for export. Prior to the Anglo-Boer War (1899-1902) insufficient maize was produced to meet local requirements, but maize-growing afterwards assumed great importance, and now occupies the same position as wheat does in Australian and Canadian agriculture. That the industry has made rapid strides is shown by the fact that the total production increased from 301,109 tons in 1904 to 2,416,200 tons in 1925. In just over a score of years, therefore, production increased by over 600 per cent. In 1925, when the output totalled 24,162,000 bags, there was an increase of 12,923,000 bags, or 115 per cent, over 1924, and an increase of 4,308,000 bags or 22 per cent over 1923. The crop of 1923 was the largest then recorded, so that 1925 established a new record. The

pherie conditions in the Union produce a grain with a lower moisture-content, and this grain, thereby less liable to injury during transit, is more suitable for export as well as for manufacturing purposes.

**GRAIN ELEVATORS.**—See under "Railways."

**MARKETING.**—The marketing of maize in the Union, from the farmer's point of view, is rapidly becoming revolutionised. The old system of disposing of the crop for cash to the local storekeeper is giving way to marketing through the co-operative societies and similar organisations. The elevator system will still further improve marketing, to the advantage of the producer. In the past the farmer in many cases had to dispose of his crop as soon as he had reaped it, at a time when prices usually are lowest. With the elevators this difficulty is largely removed by the issue of negotiable certificates for the maize delivered to the elevators, which provide good security for advances from the local bank.

**MANNA.** Known elsewhere as millet, manna was probably the first fodder crop to be grown in the Transvaal, and in that



PLOUGHING WITH OXEN IN SOUTH AFRICA.

TRACTOR PLOUGH.

**LEMONS.**—Lemons are successfully grown in South Africa, though the fruit has not yet been exported in any quantity, the value of exports in 1924 being only £125. The best lemon orchards are in Cape Province and the Transvaal.

**LUCERNE.**—Lucerne (known in South America as alfalfa) is a heavy perennial which provides the best of South Africa's forage crops. It defies heat and grows to perfection in the arid and semi-arid areas of the Karoo. The hay is used for feeding dairy cattle and young growing animals, as pasture it has a high carrying capacity and produces large gains. It is also unexcelled as a green feed for dairy animals. Ostrich farmers consider lucerne pasturage essential in order to produce first-class feathers. The districts of Oudtshoorn and Graaf Reinet are recognised as important lucerne-growing regions. In 1923-24 the total area under

crop for that year was distributed as follows: European-grown, 20,964,000 bags; native-grown, 3,198,000 bags. By provinces, the output in 1925 was: Cape Province, 3,083,000 bags; Natal, 1,924,000 bags; Transvaal, 8,161,000 bags; Orange Free State, 10,994,000 bags.

The 1926 maize crop was expected to exceed 1,150,000 tons, or 44 per cent of the 1925 yield.

**DISTRIBUTION.**—Maize (or mealies) is grown in almost every district of the Union, but the main area of production lies roughly east of a line drawn between East London and Mafeking, which contains the important maize growing districts of Heidelberg, Ladybrand, Thaba Nchu, and Winburg in the Orange Free State, and Bethel, Heidelberg, Krugersdorp, Lichtenburg, and Standerton in the Transvaal. The maize zone in South Africa possesses two distinct and valuable advantages over the famous corn-belt of the United States. The growing season is longer by from four to seven weeks, and this makes the season for planting a considerably more extended one. Again, the drier atmos-

province and the Orange Free State it is extensively raised in dry areas, especially where the soil is poor. Of the 67,000 acres under manna in a recent year, some 44,000 were in the Orange Free State and 16,000 in the Transvaal.

**MARKET GARDENING.**—The local demand for vegetables of all kinds is good. Naturally the best markets are to be found in the largest cities. The business is primarily in the hands of Asiatics, with whom the whites find it hard to compete. Rates for the conveyance of vegetables come under the heading of "South African Produce" and are extremely reasonable.

**MANGOES.**—This most attractive fruit has only been exploited in South Africa during the past few years, but local prices proving remunerative, many hundreds of trees have been planted, the total number in 1924 being roughly 140,000, while the value of exports was £175.

**MELONS.**—The variety known as the Winter Melon is successfully cultivated. In 1924 exports were valued at £620.

**NECTARINES.**—These are grown in almost every district in the Union, and are a profitable culture. In 1924 the value of the 15,055 boxes exported was £3,883, as against £6,783 in 1923.

**NUTS.**—The walnut and the almond are the only nuts planted on a commercial scale, but the supply of both is as yet quite unequal to the demand.

**OATS.**—Oats in South Africa are largely grown for forage, and the crop is sometimes even more valuable than wheat. In 1923-24 the area under crop totalled 346,837 acres, of which 296,240 acres were reaped and 50,297 acres were fed off by stock. Production of grain increased from 165,959,000 lb in 1922 to 183,285,000 lb in 1923, and 211,069,350 lb in 1924. More than two-thirds of the total production is from Cape Province.

**OLIVES.** The olive in South Africa has passed the experimental stage, and the best European varieties are grown satisfactorily in the Paarl District of the Cape and the Waterberg District of the Transvaal. There is a large demand for the pickled olive in Johannesburg, and success has attended the production of olive oil on a small scale in the immediate neighbourhood of the Paarl.

**ORANGES.**—Oranges and naartjes (tangerines) have been grown in South Africa ever since the time when Van Riebeeck, the first Dutch Governor of the Cape of Good Hope, laid out a garden on the slopes of Table Mountain about 1655. The different varieties of orange have always done well, large areas having been planted in Cape Province, the Transvaal, and Natal, the mandarin and tangerine varieties coming especially from the last-named Province. The most popular and generally planted varieties throughout the Union are the South African Seedless (known also as the Washington Navel), Valencia Late, Du Roi, Jaffa, St Michael, and Mediterranean Sweet. There are also the pineapple orange, blood orange, and many others.

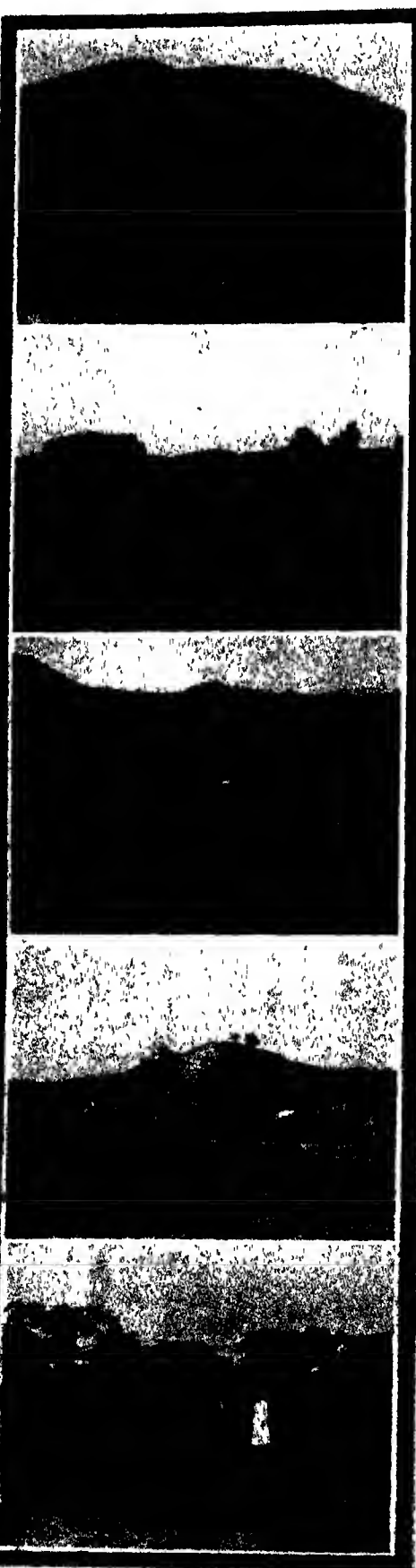
There are approximately 1,500,000 grafted and 500,000 seedling orange trees in the Union, and about 450,000 naartje trees. The export values in 1924 were Oranges £197,278 and naartjes £12,182, compared with £193,715 and £6,245 respectively in 1923.

**PAPAWS.** This is a semi-tropical fruit extensively planted in the Eastern Transvaal for the Johannesburg market. The first crop is usually harvested at the end of the first year, after two or three years the trees become unprofitable.

**PEACHES.**—This is the most widely distributed of South Africa's deciduous fruits, the main districts of cultivation being Stellenbosch, Paarl, Ceres, Worcester, Tulbagh, Caledon, and Robertson in Western Cape Province, Estcourt, Newcastle, and Utrecht in Natal, Potchefstroom, Pretoria, Rustenburg, Middelburg, Heidelberg, Krugersdorp, Ermelo, Johannesburg, and Wakkerstroom in the Transvaal, and Bethlehem, Bloemfontein, Kroonstad, Frankfort, Senekal, Harrismuth, Vrede, Lamburg, and Ladybrand in the Orange Free State. Over 6,000,000 trees are in existence, and the value of fresh fruit exports in 1924 was £23,652, as against £40,132 in 1923. In addition, some 2,500,000 lb of dried fruit were produced.

**PEANUTS.**—See "Ground Nuts."

**PEARS.**—Pear-growing is carried on to a much greater extent in the Western Cape Province area than in any other part of the Union. Fresh fruit exported in 1924 was valued at £82,450, as against £153,510 in 1923.



1. Citrus Farm, East Transvaal.  
2. Transporting Lucerne.  
3. A Settler's Holding, Northern Transvaal.  
4. Spraying Trees, Cape Province.  
5. Papaw Tree, East Transvaal.

**PINEAPPLES.**—These grow in different parts of South Africa to perfection, the best being produced in the Albany District of the Cape, whilst in Natal a fine variety of the Queen Pine is grown. Exports in 1924 were valued at £12,660, compared with £9,914 in 1923.

**PLUMS.** Plums and prunes are grown principally in the Western Cape district and round Pretoria, Johannesburg, and Potchefstroom in the Transvaal. The Japanese varieties are in favour, and there is a small export trade worth about 120,000 a year. In a recent year over 1,300,000 lb of dried prunes were produced.

**POTATOES.**—The potato ranks third in importance among the crops produced in the Union, being exceeded only by maize and wheat. It is grown in every Province, the leading districts in production being Humansdorp and Stellenbosch in the Cape, Newcastle and Estcourt in Natal, Pietermaritzburg and Ladybrand in the Orange Free State, and Bethel and Middelburg in the Transvaal. The total yield in 1924 was 211,770,600 lb as against 211,085,000 lb in 1923.

**RICE.**—Chiefly owing to the absence of swampy land, rice has not been cultivated to any great extent in South Africa. Trial crops in Natal, however, between the Tongaat River and Stanger have shown good results, and there is a future for the crop if planted under suitable conditions and prepared for the market with special machinery.

**RYE.** Of the smaller cereals, rye is the least grown in South Africa, the variety in general use being known as Early Cape Rye. It is raised almost exclusively in the Cape Province for feeding purposes, and has taken an important place on sheep farms to provide green feed for lambing ewes. Production fell from 41,804,000 lb in 1923 to 37,825,200 lb in 1924.

**SUGAR.** The culture of sugar in the Union is confined to the Province of Natal, where it was introduced in 1848, when a few canes were imported from Bourbon. For many years the progress of the industry was slow, due principally to a restricted market. Even after the Anglo-Boer War, when increased cultivation resulted, the industry suffered severely from the dumping of German beet-sugar, and the acreage of cane reaped showed a gradual decline. Since 1910 there has been a steady development of cane growing in Zululand, and in the whole Province production, which was 82,000 tons in 1910, reached in 1924 a total of approximately 200,000 tons of sugar, the area under cane being something over 200,000 acres. In 1925 production showed a reduction of about 40,000 tons, falling to 160,250 tons, due to unusually dry weather in the early part of the season.

The total output for the 1925-26 season amounted to 239,463 tons, a record in production.

**CRUSHING PLANTS.**—Milling units vary in size from small plants turning out from 500 to 1,000 tons of sugar to large modern factories with outputs up to 20,000 tons. The tendency to-day is towards decreased number and increased size of units. There are at present 27 sugar mills between the Umzimkulu and Umfolosi, of which five are in Zululand, fourteen between the Tugela and Durban, and eight between Durban and the Umzimkulu. One of the north coast mills is a small plant purchased a few years ago by Indians. All others are European-owned. The total crushing capacity is approximately 2,500,000 tons of cane for the season from May to December inclusive. Although many years ago efforts



were made to interest natives in the manufacturing side of sugar, and at least one mill was erected by the Government of the day for their use, no progress whatever was made, the mill ultimately coming into European ownership. With one or two exceptions, the mills are equipped for making white sugar. Up till two years ago two refineries on the environs of Durban were supplied with refining crystals from certain of the mills, now only one refinery is working. All the mills employ the sulphitation process, with the exception of one, which has adopted carbonatation.

The total capital in this industry is estimated at little short of £5,000,000, and employment is afforded to at least 50,000 persons. The industry is also of course, the foundation of numerous associated industries, such as jam making, fruit canning and confectionery manufacture, all of which are rapidly expanding.

**LABOUR.** At one time the labour employed in the sugar industry was mostly Indian, but during recent years the proportion of Indians has rapidly decreased. At present the majority of the labourers employed both on the estates and in the

of one sixth of the duty given to Empire grown sugar puts other buyers out of the market. To South Africa this preference is of great importance, representing as it does roughly 3s 10d per 100 lb on sugar exported.

**SUNFLOWERS.** These are grown for seed in parts of the Transvaal and in Southern Rhodesia, some 4,000,000 lb of seed being produced annually.

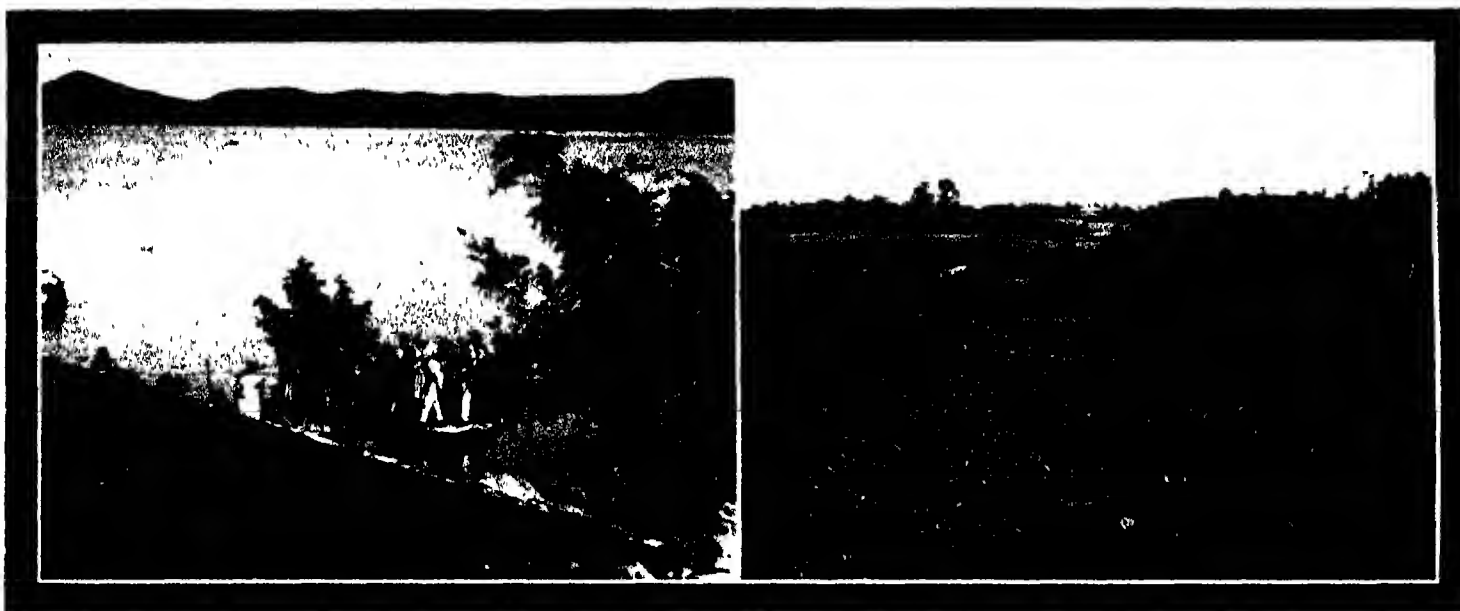
**TEA.** Tea is grown at present only in Natal, where it thrives best at an altitude of about 1,000 ft in the neighbourhood of Stanger. The restrictions placed on Indian immigration into Natal by the Government of India have seriously hampered the industry, the output of green tea having fallen from 7,166,364 lb in 1915-16 to 2,861,745 lb in 1922-23. In 1923-24 output was increased to 3,514,967 lb. This resulted in the production of over 900,000 lb of manufactured tea.

**TEFF GRASS.** This is an introduced hay grass, and has become very popular in South Africa, being sown as a rotatory crop with maize. Owing to the extreme smallness of the seed, great care is needed in sowing and

that almost any kind of wine can be produced. The most important viticultural districts are Paarl, Worcester, and Stellenbosch. Less important are Robertson, Montagu, Ceres, Malmesbury, Caledon, Tulbagh, Piquetberg, and Cape. Outside of these areas the industry is negligible. Vines are also grown to produce table-grapes and dried raisins. Groot Constantia, the homestead of the Government wine-farm near Wynberg, was unfortunately destroyed by fire on December 19, 1925.

**PESTS.** Phylloxera first attacked the Cape vineyards in 1886 and spread with great rapidity, disease-resisting vines being introduced from France in 1892. Most of the vineyards have been reconstructed with American vines, on which wine-making varieties have been grafted. The climate of South Africa generally does not favour the development of diseases, and the worst fungoid and insect pests of Europe are unknown.

**PRODUCTION.**—The following are the latest available figures of production for the year ending August 31, 1924: 492 leaguers of brandy, 240 leaguers of grape brandy, 631 leaguers of vinegar, 720 leaguers of



1. HARTEBEESTPOORT DAM, NEAR PRETORIA.

2. ON A NATAL FARM

mills are natives, of whom about 40,000 work during the cutting season. Europeans are employed on the large estates as managers, chemists, engineers, and overseers, and in work of a technical nature in the mills and refineries.

**MARKETING.**—Natal's production of sugar has increased at greater ratio than South African consumption, exports having risen from 2,790 tons in 1910 to 39,181 tons in 1922-23, while the amount retained for consumption in the country increased from 111,531 to 133,687 tons during the same period. Until July, 1923, Mozambique had the privilege of sending sugar into the Transvaal on equal terms with Natal. Since then Mozambique has had to pay customs duty and has lost the advantage of preferential railway rates. The consequence has been an additional absorption of from 15,000 to 20,000 tons of Natal sugar, raising the annual quantity to be supplied to between 145,000 and 150,000 tons. Exports are now in the region of 50,000 tons, most of these going to the United Kingdom, where the preference

establishing the crop, but once established it is a rapid grower and yields a palatable and nutritious hay. Some 250,000 acres were under production in 1923-24.

**TOBACCO.**—See special article.

**TOMATOES.**—Tomatoes are at present grown as a market-garden product, production for the Rand markets being a considerable industry in the Barberton district. It is hoped in time to build up an export trade, there being no reason why South Africa should not be able to supply English requirements.

**VITICULTURE.**—The vine has been cultivated in South Africa from as far back as 1653, and at one time South African wines had a deservedly high reputation in Europe. The demand then fell off, owing largely to failure to supply a uniform quality. To-day, however, it is possible to secure large quantities of wine which will compare favourably with the same type of wines produced in any other country. The most modern methods of wine-making are in force, and the climate of the country is such

mos komfyt. 24,069 leaguers of superior wine, and 33,167 leaguers of other wine. (A leaguer equals approximately 120 gallons.)

**WHEAT.**—Wheat can be grown in many parts, but, generally speaking, South Africa is not a wheat-country, and cultivation is confined almost entirely to Cape Province, the South Western and Queenstown regions being the best wheat-growing districts. In 1923-24 the area under crop amounted to 380,610 acres, of which 367,994 acres were reaped and 12,616 acres were fed off by stock. The following table shows the production of grain by provinces in the years named—

PROVINCE	1922-23 lb	1923-24 lb
Cape Province	298,578,600	305,056,200
Natal	652,600	490,200
Transvaal	44,003,000	33,405,000
Orange Free State	17,343,000	13,747,000
Native Reserves and Locations	14,793,800	5,693,800
Total Union	376,271,000	358,392,200

# THE FRUIT INDUSTRY OF SOUTH AFRICA

(By G. W. KLERCK, Editor, "Journal of the Department of Agriculture.")

**T**HE Union of South Africa is world-famed for the excellence and variety of its fruit, which is grown under ideal conditions in a glorious climate. In this country fruit growing is an important industry, and provides lucrative enterprise for a large body of farmers. The export industry is developing on sound lines, all fruit (fresh and dried) being subject to rigorous Government inspection, and nothing is admitted to export that does not conform to definite standards as set out in the Government regulations. The packing of South African fruit is of a high standard, and most growers belong to a large Co-operative Company, the funds for which are met out of a levy of 5/- per ton on all exported fresh fruit. There has recently been established also a Fruit Control Board, which controls all shipments of fruit from

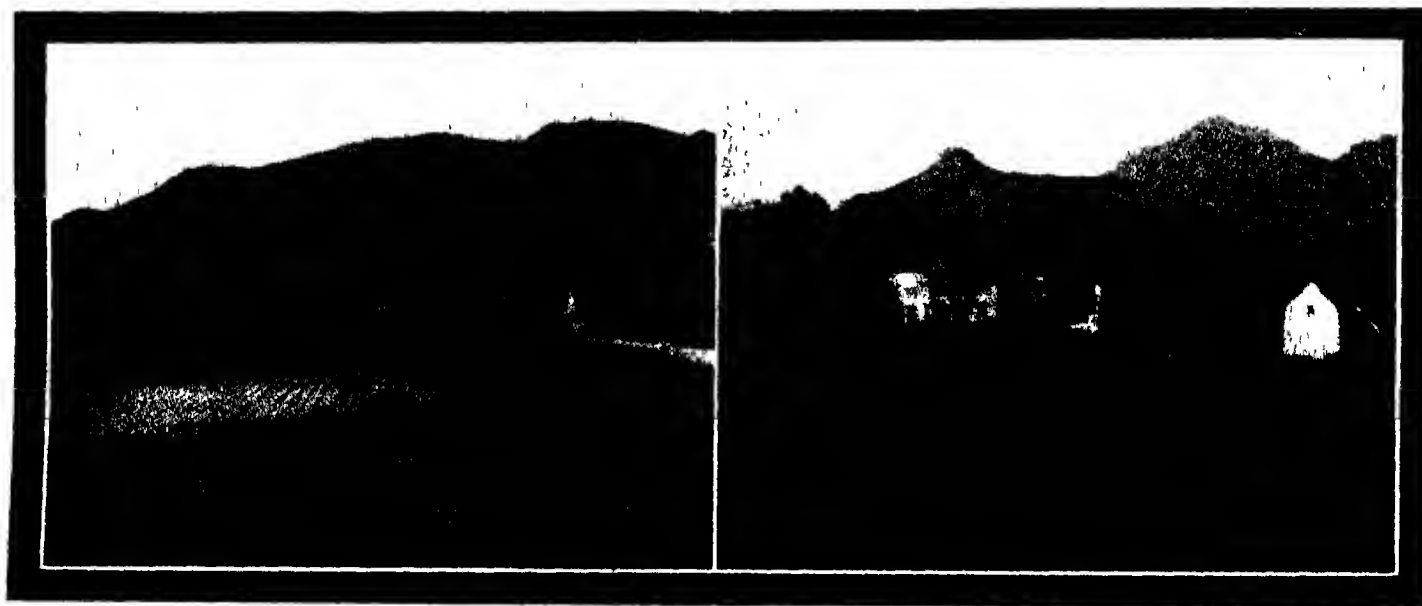
- (a) Citrus
- (b) Deciduous, Vines, etc.
- (c) Sub-tropical

The first class comprises those lucious soft fruits that first brought South Africa into prominence as a supplier of high grade fruit in overseas markets. It includes the grape, the peach, the nectarine, the pear, the plum and the apricot. There are also in this class the melons, pomegranates, persimmons, quinces, granadillas, cherries, cape gooseberries, guavas, figs and strawberries that grow in profusion in many parts of the country. Special mention must also be made of the apple, the growing of which is rapidly being developed throughout the country.

**Seasons.** Broadly speaking, the seasons when the two main classes of fruit are in bearing are Deciduous from December

Hemisphere producers to the European market, and its oranges reach the overseas market during the northern summer when the fruit with its refreshing health giving properties is most acceptable.

Yearly South Africa's citrus groves extend. The industry has received the attention of well known authorities, there is no doubt it is laid on sound foundations and that the country is destined to become one of the great world producers of citrus fruits. The market is almost inexhaustible, and it caters for the multitude. The fruit is rich in vitamins, that necessity of life which science has recently revealed, and in that respect alone the orange will rank among the most favoured fruits of the world. The year 1925 marked a great forward stride in the orange export trade, and it is estimated that in three years' time there



GOVERNMENT WINE FARM, CAPE PROVINCE.

MODERN CAPE FARM.

the Union, ordering the priority of shipments and arranging refrigerated freightage on steamers.

What follows is merely an outline of the commercial side of fruit growing in South Africa, it does not deal with the culture of the fruit, which now maintains a large and growing industry with many interests. Conditions in South Africa are undoubtedly favourable to profitable fruit growing, and what adds to the attractiveness of the industry is the pleasant environment in which it is carried on. The laden orchards, the heavy bearing vineyards, and the golden fruited groves of citrus are found in surroundings of beauty unsurpassed anywhere in the world.

**CLASSES OF FRUIT.**—There are three classes of fresh fruit, all grown to perfection in the suitable areas of the country, viz.,

to April (inclusive), Citrus from May to December (inclusive). It will thus be seen that the former fruit reaches the European market during the winter months, and the latter during the summer.

**CITRUS FRUITS.**—While the deciduous fruit is of necessity a comparatively highly priced one when it reaches the overseas consumer during the winter of the Northern Hemisphere, and is confined in a measure to the more affluent section of the community, the citrus class of fruit is essentially for the multitude. It includes the orange, the naartje (known also as the tangerine), and the grape fruit. Citrus fruit grows all over South Africa, but is principally found in the summer rainfall area. Great expansion is taking place in the north, particularly in the Transvaal and Natal, as well as in the eastern districts of Cape Province. South Africa has great advantages in the growing of citrus fruit; it is the nearest of Southern

will be an annual output of three million boxes of oranges alone available for export.

Of citrus fruits the orange is pre-eminent, but the naartje and the grape fruit have their market, which is a growing one, particularly for the latter.

**DECIDUOUS FRUITS.**—South Africa may be divided into two great sections, viz. the winter and the summer rainfall areas. The former area comprises the western and south-western districts of Cape Province; and it is in this area, the oldest and most intensively cultivated in the Union, that the home of deciduous fruit growing is found. Here exist many famous orchards, and here also are still available many acres of land suitable for this most attractive of all farming enterprises. In valley and on mountain slope throughout this beautiful stretch of country are found vineyards and orchards that regularly bring bountiful harvests. The regularity of the winter rainfall and the

brilliant blue skies and ripening sun of summer combine to make this area one of the most favoured in the world for the production of soft fruits of the highest quality. From it come the table grapes that have such popularity in the overseas market.

Nor does Nature's bounty end with the winter rainfall area. Throughout the vast expanse of the country stretching east and north, where the days of winter are one succession of blue skies and sparkling sunshine and the rain of summer brings the harvest to fruition, the same deciduous fruits of the south-west are grown. Indeed, they vie with the products of the Cape in yield, appearance and flavour.

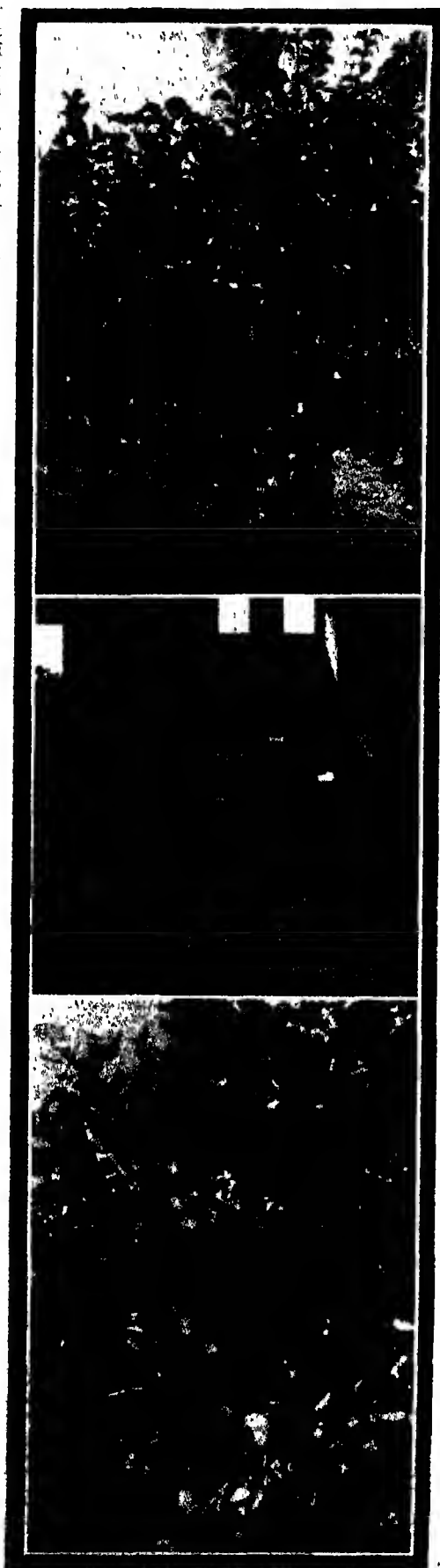
That soft fruit from this large area has not yet become established as a lucrative export trade is due principally to restricted transport facilities, and in part to the occurrence of hail, which renders the growing of it commercially a venturesome business in certain sections. But these disabilities are being overcome. Refrigerator trucks and transport facilities generally are being supplied, large areas are found to be out of the hail zone, while climatic conditions in the north favour the early ripening of the fruit before the hail period and some weeks before the same varieties in the south-west Cape are ready for picking. It was, therefore, in 1924 that the commencement of an export trade in the Transvaal deciduous fruit commenced, and future prospects are bright, opening up a wide field of enterprise for farmers in the north.

**Apple Growing.** Apple growing stands by itself. It has been demonstrated that South Africa is pre-eminently suitable for this fruit, and that it can be grown throughout the length and breadth of the country in suitable localities. The result is that commercial orchards are fast being established. Already the South African apple is known on the world's markets, and indications point to rapid expansion in the export of this most popular fruit.

Mention has been made only of the overseas market. It is natural that in a country of wide reaches and comparatively sparse population the main consideration is to cater for the great market that lies beyond its borders. Yet the local market is of no mean proportions, and a movement has now been started to stimulate demand and establish more firmly the fruit eating habit which is fraught with so much benefit to the individual and the nation.

**SUB-TROPICAL FRUITS.**—The growing of the third class of fruit, which is confined principally to the sub-tropical area of the country in the Provinces of the Transvaal and Natal, is undertaken commercially by comparatively few growers. But there are extensive areas where these fruits—mangoes, bananas, avocado pears, papaws, etc.—grow almost wild and await merely the greater demand to stimulate their production. Mangoes are exported in limited quantities, and although papaws and avocado pears would find a ready sale, the problem at present is to place them on the market in a saleable condition. Experiments in this direction are being conducted, and it is likely that the best methods of packing and transport will be discovered.

**Pineapples.**—The trade in pineapples runs concurrently with that of citrus fruits. The fresh fruit is exported in large quantities, but the canned fruit (prepared in a variety of ways) at present appears to be the more popular form, and it is not improbable that the tendency of future trade will be in the direction of the manufactured rather than of the fresh article. Large areas are under the



1. APPLE TREE, TRANSVAAL.  
2. GRADING ORANGES, RUSTENBURG, TRANSVAAL.  
3. GRAPE FRUIT, EAST TRANSVAAL.

pineapple, which grows easily and well under South African conditions.

**Tomatoes.**—In this brief review of the South African fruit industry, mention must not be omitted of the tomato, which grows luxuriantly throughout the country, and it is not unlikely that in the future trade in this fruit will open both in the fresh and canned article.

**DRIED FRUIT TRADE.**—In addition to the fresh fruit output, the drying of fruit is an important section of the fruit industry, and has developed fast in recent years. The suitability of certain areas of the Union for the production of dried fruits is unsurpassed. Prunes, dried apricots, dried peaches, etc., are being produced in increasing quantities. Throughout the southern, western and northern portions of the Cape Province sun drying is generally practised, in the eastern portion dehydrators will to a certain extent have to be used owing to the incidence of light summer rains. Ideal conditions exist for the growing and production of sundried sultanas, currants, stalk raisins, malagas and leixas of the highest class, and comparing most favourably with similar products from any part of the world. Figs also may be grown to perfection, and can be converted into a high class dried product.

An export trade in the various classes of dried fruit is developing very rapidly. There awaits the investor a wide field of enterprise in the production of dried fruit, an article of universal demand and of easy handling. The preparation of that article in South Africa, in great contrast to methods employed in some older producing countries, is carried out under the most up-to-date and hygienic conditions. The work is largely performed by white women and the fruit is practically untouched by human hands in the course of its preparation.

The farm production of dried fruit during the year 1922-23 is shown in the following table. In addition, South African factories turned out close on 1½ million lb. of dried fruit exclusive of the quantity handled in the packing houses.

VARIETY	QUANTITY lbs.
Apples	216,562
Apricots	1,143,115
Figs	242,816
Peaches	2,394,336
Pears	286,458
Prunes	1,312,405
Currants	179,364
Raisins	
Stalk	2,215,642
Loose	5,891,976
Sultanas	3,713,604
Total	17,596,368

The following statement shows the trade in dried fruit during the Calendar Year 1924.

ARTICLE	IMPORTS		EXPORTS S.A. PRODUCE	
	QUANTITY lb.	VALUE £	QUANTITY lb.	VALUE £
Currants	899,477	20,048	4,678	227
Dates	2,614,020	28,679	—	—
Figs	112,100	2,625	601	30
Prunes	8,463	298	283,400	5,108
Raisins	50,741	2,676	6,666,015	93,144
Tamarinds	430,442	2,249	—	—
Grapes	—	—	1,233,800	12,814
Other	75,617	3,306	646,875	17,015
	4,195,160	59,842	8,455,369	128,338

**FRESH FRUIT EXPORTS.**—The following table, taken from the annual Trade Statement issued by the Department of Customs and Excise, shows the exports of South African fresh fruit during the Calendar Year 1924.



A HEAVY CROP, CAPE PROVINCE

CITRUS	QUANTITY BOXES	VALUE £
Lemons	138	127
Naartjes	56 022	12 182
Oranges	399 023	197 278
Other Citrus	19 024	11 623
Total	475 107	221 210
DECIDUOUS		
Apples	11 194	4 625
Apricots	15 574	3 225
Nectarines	15 055	3 883
Peaches	96 581	3 652
Pears	491 468	8 450
Plums	114 710	19 015
Other Deciduous	2 265	734
Total	716 850	137 582
GRAPE		
Total	268 526	62 270
OTHER KINDS		
Mangoes	1 171	175
Melons	3 394	620
Pineapples	52 616	12 660
Others	1 200	130
Total	1 549 170	434 665
Grand Total	1 549 170	434 665

The year 1925 revealed an appreciable increase on the previous year amounting to 2 015 863 boxes exported or something like 43% in both main classes of deciduous and citrus. It was an increase moreover which showed every prospect of continuing in the years immediately ahead. The total production of fruit is unknown. Large quantities are grown for private consumption and these do not appear in any returns.

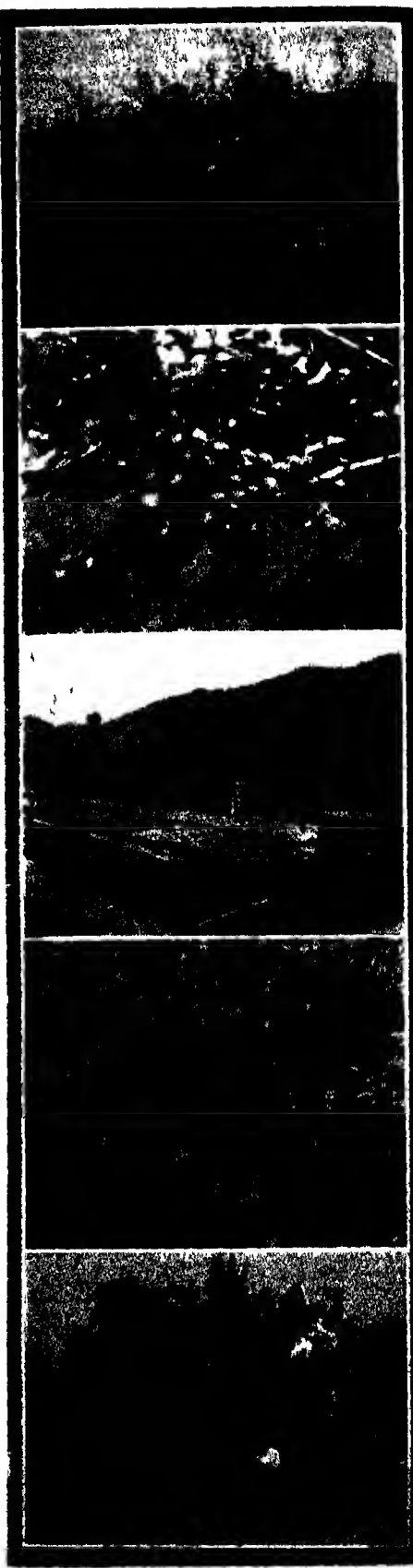
**FRUIT AND JAM MAKING.** There is considerable production of jams, jellies, fruit juices and pulp a form of industry that will naturally expand with the development in fruit growing that yearly takes place. During the War years production was stimulated by the scarcity of the imported article, but with the return of normal trade conditions the demand for certain classes of imported jams, etc. has revived. During the year 1922-23 South African factories produced 12½ million lb. of marmalade, jams and jellies valued at £251 784, nearly four million lb. of canned and bottled fruit valued at £103 219 and about 200 000 lb. of candied peel etc. to the value of £5 545.

**GRAPES FOR WINE AND BRANDY.** — Vine culture was introduced into South Africa as early as 1653 and forms an important industry in the south western districts of Cape Province. The trade in fresh grapes and in raisins has been referred to previously. Large quantities of fruit are annually converted into wine, brandy, moskonfyt and vinegar. During the year 1922-23 the farm production was as follows:—

Wine	13 395 747 gallons
Brandy	152,349
Vinegar	64 758

In addition 1,486 303 gallons of brandy were produced by professed and agricultural distillers.

**PROFITS IN FRUIT GROWING.** — Profits in any class of farming are difficult to average, for many factors have to be taken into consideration such as climate, situation and farmer himself. It is so also in fruit growing, and it is not advisable to draw up a balance sheet for any one year. The information given hereunder may, however, serve as an indication of the situation as it is to-day.



1. QUINCE TREE, CAPE PROVINCE.
2. APRICOTS.
3. DRYING FRUIT.
4. APPLE TREE, CAPE PROVINCE.
5. PICKING FRUIT.

Good virgin and unirrigated land suitable for peaches, plums and pears is obtainable in the south-west Cape at from £10 to £60 per acre. The average yield from an orchard of this type would be from £25 to £75 per acre. Working expenses would depend on the season, and once the trees are in full bearing the expenses would be about £26 per acre per annum.

An apple orchard in the Transvaal or Orange Free State with 10-year-old trees would give a yearly gross return of approximately 20/- per tree or £75 per acre, and about £53 per acre after allowing for costs. The commercial life of the trees should be from 30 to 50 years, according to the treatment they receive.

In South Africa the vine never fails—it can always be depended upon. The price of land suitable for vines varies from £15 to £50 per acre according to fertility, situation, etc. In some places it is even £100 or more. Well established vineyards are usually valued at £100 per acre. The crops harvested are often astonishing. South African vineyards producing generally 50 per cent rising to 100 per cent more per acre than the vineyards of other countries. From 6½ to 18 tons per acre of fruit are obtained, £4 to £6 per ton of grapes can be depended upon for wine making purposes, while for table grapes 1½ ton or more per acre may be expected. The crop may be reckoned as giving £50 to £100 net profit per acre per annum. Returns come to hand the third year after planting.

All citrus fruits require to be irrigated, therefore land with a sufficient supply of water is necessary. Good land of this nature costs about £30 per acre. To bring 10 acres of such land into bearing would cost about £700. Full grown trees at 100 per acre should bring in a profit of from £90 to £150 per acre.

## SOUTH AFRICAN COTTON

By C. J. HOMEWOOD,

Senior Cotton Grader, Tobacco and Cotton Division,

Union Department of Agriculture

**C**OTTON growing has made rapid strides in South Africa during the last few years, and with a continuance of this encouraging progress the prospects of the industry look particularly attractive, indeed, it is quite possible that in a few years time cotton will be the premier agricultural export of the Union.

**ACREAGE AND PRODUCTION.** The principal cotton growing areas are in Natal and Zululand, Northern Transvaal (including Rustenburg), Eastern Transvaal and Cape Province, while quite a large acreage is planted in Swaziland. In 1925 the extent under cotton in these areas was approximately 65,000 acres, and if growing conditions had been favourable the production would have been at least 25,000 bales of lint of 500 lb. each. Abnormal rains, however, reduced the crop considerably, but exports, at 6,981,000 lbs., were more than double those for 1924.\*

Farmers in the Natal and Zululand areas were likely to increase their acreage in the 1926 season by about 25 per cent, and there was expected to be a large increase also in the acreage in all parts of the Transvaal and

Swaziland. Given reasonable growing conditions, it was likely that the 1926 crop would be at least 40,000 bales.

**QUALITY.** Excellent reports on the quality and spinning results of South African cotton have been received from those British and Continental spinners who have used it. Under normal conditions the average grade is good middling (Universal Standard) and good 1½m staple, but South African cotton is considerably brighter and carries more lustre than good colour American of the same grade, and only an inconsiderable percentage is less than good 1½m staple.

### UNIQUE MARKETING METHODS.

South African methods of marketing are different from those of other countries, for in no other country is grading regulated by Government. Samples of each bale offered for sale must be sent to the Government Grader, who is an experienced and competent authority on the requirements of the Liverpool and Manchester markets. These samples are guaranteed by the grower as being truly representative of the bale, and are drawn as the lint is passing into the pressbox from the gins, layers being taken from the top, middle and bottom of the bale. This practice is insisted upon, and is uniformly followed.

Each ginner has its own ginning or trade mark, which is registered with the Government of South Africa, and every bale must, without exception, bear this stencilled mark. This ensures that any false packing, mixed packing, or incorrect marking is easily traceable to the ginner concerned. These samples are issued in duplicate, and, when graded, one is retained by the Government Grader for future reference in case of a dispute, the other is the buyer's sample and is sent to the selling rooms, duly inspected by prospective buyers, and ultimately retained by the purchaser. In case of dispute a sample is drawn from the bale by an independent party under sworn affidavit, and is sent to the Government Grader at Durban, who compares the same with his reference sample. In the event of variation the grower has to adjust the difference. The Grader's decision is final.

The majority of selling is done either by public auction or private treaty, only a small portion of the crop being sent to Liverpool on consignment. Grading is based on Universal Standards and to Liverpool's idea of stapling. These systems have proved most beneficial to everyone concerned, and have met with the approval of Liverpool merchants and then representatives. So satisfied have buyers been that up to the present not one case for arbitration has arisen.

## TOBACCO

**T**OBACCO growing in South Africa is an old established industry, dating from the early days of Dutch settlement. In those days, and indeed up to 20 or 30 years ago, the tobacco grown by the pioneers and settlers was all turned into roll or plug tobacco on the farms by being first subjected to a crude process of fermentation, the leaf being then twisted into stung. This was the old Boer tobacco which, in the form of a roll, was used for smoking, chewing, and snuff purposes. There is still a considerable quantity of roll tobacco produced in the Transvaal, but the term Boer tobacco has for some 20 years been identified with a loose pipe tobacco made from Virginian leaf grown and manufactured in the country.

**AREA AND PRODUCTION.** The total area under tobacco cultivation in the Union in 1924 was 21,635 acres compared with 19,301 acres in 1923, a considerable amount of land in Natal and the Transvaal having gone out of use since 1921, when the total area cultivated was nearly 27,000 acres. Of the 1924 total the Transvaal returned 12,821 acres, or considerably more than half. In Cape Province 2,104 acres were under Turkish tobacco. The following table gives the production by Provinces and for the Union in the years named—

PROVINCE	1923 lb.	1924 lb.
Cape Province	3,976,396	4,442,815
Natal	392,572	652,241
Transvaal	4,971,481	5,668,883
Orange Free State	131,671	112,615
Native Reserves and Locations	1,104,376	720,818
Total, Union	9,671,496	11,406,362

These totals include 518,768 lb. and 816,699 lb. respectively, of Turkish tobacco.

**DISTRIBUTION.** The principal tobacco growing areas in the Union are the Magaliesberg, Kat River, Potchefstroom, Vredfort and Piet Retief districts of the Transvaal and the Oudtshoorn, and Piquetberg districts of the Cape, where light, medium, and heavy types of Virginian tobacco are raised, the Stellenbosch, Wellington and Eilbigh districts of Cape Province, which produce Turkish tobacco only, and the strip of country between Maitzhurg and Weenen in Natal.

**CLASSES OF TOBACCO.**—The chief type of tobacco grown in South Africa is Virginian, but in addition to this kind from 500,000 to 750,000 lbs. of Turkish tobacco are produced annually in the Western portion of Cape Province. Natal produces annually some 400,000 lbs. of dark tobacco, which probably was developed from an original Cuban or Sumatran type. The qualities are somewhat similar to cigar wrapper and filler tobacco. The lighter types of Virginian are used for the manufacture of cigarettes and light pipe tobacco, and the heavier types for medium and heavy pipe tobacco. The heavier types are also used in the manufacture of chewing tobacco, which has a considerable sale at the mines and to the native trade. The Natal dark tobacco is used mainly in the manufacture of cigars and pipe tobacco.

**COST OF PRODUCTION AND PROFITS.**—Tobacco is a crop that takes practically twelve months to produce and it is also a somewhat expensive one to grow. The so-called Virginian types cost approximately £15 per acre to produce, and the Turkish types approximately £20 per acre. However, if the crops are well looked after they give a good profit per acre, the Virginian types averaging about £15 and the Turkish types £25. Excellent crops are produced which return a profit of double and quadruple the figures given above.

**CULTIVATION.**—In the Transvaal the tobacco crops are raised under conditions depending on summer rains, and are irrigated only when necessary. In the middle districts of Cape Province they are raised mainly on irrigated lands, and entirely so in the Piquetberg district. In the Western Province, where there is an ample winter rainfall and scarcely any summer rainfall, the Turkish tobacco crops are raised exclusively on dry lands.



**METHODS OF CULTIVATION -**

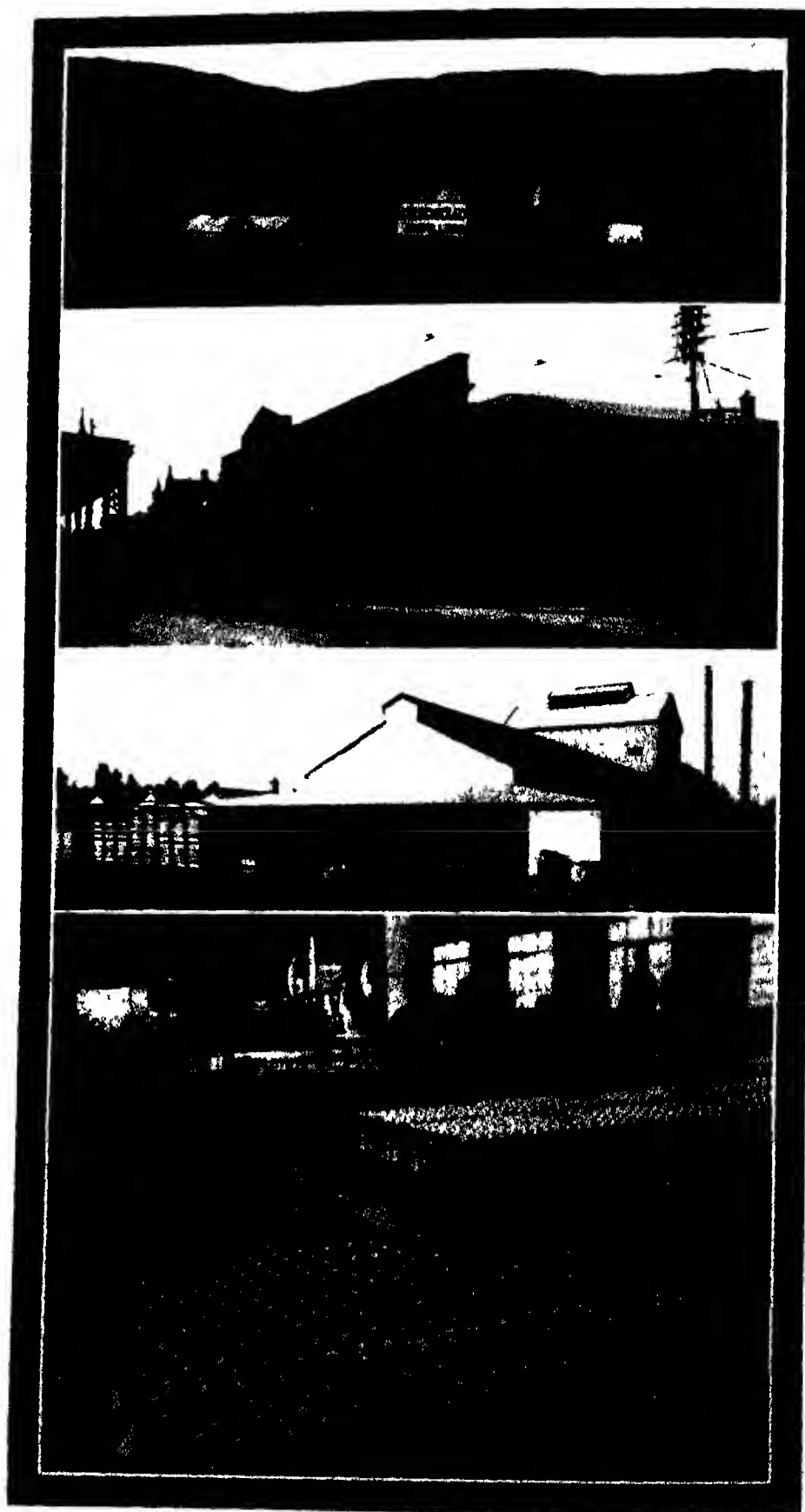
The planting season in the Union ranges from October 1 to the end of January, but in the case of Turkish tobacco the seed beds are prepared and sown during the latter part of May to the end of June, so as to have the plants ready for transplanting in September. Before the seeds are sown the beds, after being well manured, are covered over with bushes, branches, and twigs of trees, which are then set on fire. The heat of the fire is intended to penetrate the soil to a depth of four to five inches to destroy the seeds of weeds, and the eggs larvæ and pupæ of insects. When the ashes are raked off, the beds are sown with the seed, then lightly covered with sifted stable manure and watered regularly till the plants are well established. When about to flower, the top of the stem with four or five leaves (in the case of Virginian plants) is broken off, or "topped". In the case of Turkish tobacco, no topping is done, the object being to obtain a large number of small leaves instead of fewer and larger leaves.

**HARVESTING.** - The harvesting period begins from 50 to 75 days after planting, the leaves being picked off the plants as they mature, from the bottom upwards. Picking is always done early in the morning when the dew is off the leaves. The leaves of each day's picking are placed in boxes or baskets and immediately taken to the threading or working room where they are graded and sorted. The leaves of Turkish tobacco are then threaded by native women and children on strings which are separately tied to 6 ft poles and placed in a wilting room, where the temperature and moisture are regulated. The leaves of Virginian tobacco are suspended from shorter poles, and are loosely tied in bundles for drying purposes. The Turkish leaves are afterwards sun-dried, the Virginian being either cured in flue-barns or air-cured in sheds. When dried the leaves are baled and sent to the manufacturers.

**INSECT AND OTHER PESTS.** South African tobacco is affected by a number of insects and diseases, similar to those of other tobacco producing countries. The principal pests are cutworms, flea beetles, nematode, and slug, and, among diseases, wild-fire and white rust. In the case of most of these pests there are efficient control measures, which, when properly applied, keep them in check and ensure a certain crop. Fortunately the horn worm, which is so destructive to the tobacco crop in America, is not found in South Africa.

**MANUFACTURE.** - At the end of 1923 there were 62 tobacco factories in the Union, as compared with 58 in 1916. The quantity of tobacco used in the factories in 1923 totalled 11,501,000 lb, of which 8,080,000 lb were grown in the Union, 3,352,000 lb in Rhodesia, and 69,000 lb were imported from other sources. The output of the tobacco factories in the same year amounted to 7,723,000 lb of smoking tobacco, 3,925,000 cigars and cheroots, 1,607,345,000 cigarettes, 107,000 lb of snuff, and other products valued at £1,000.

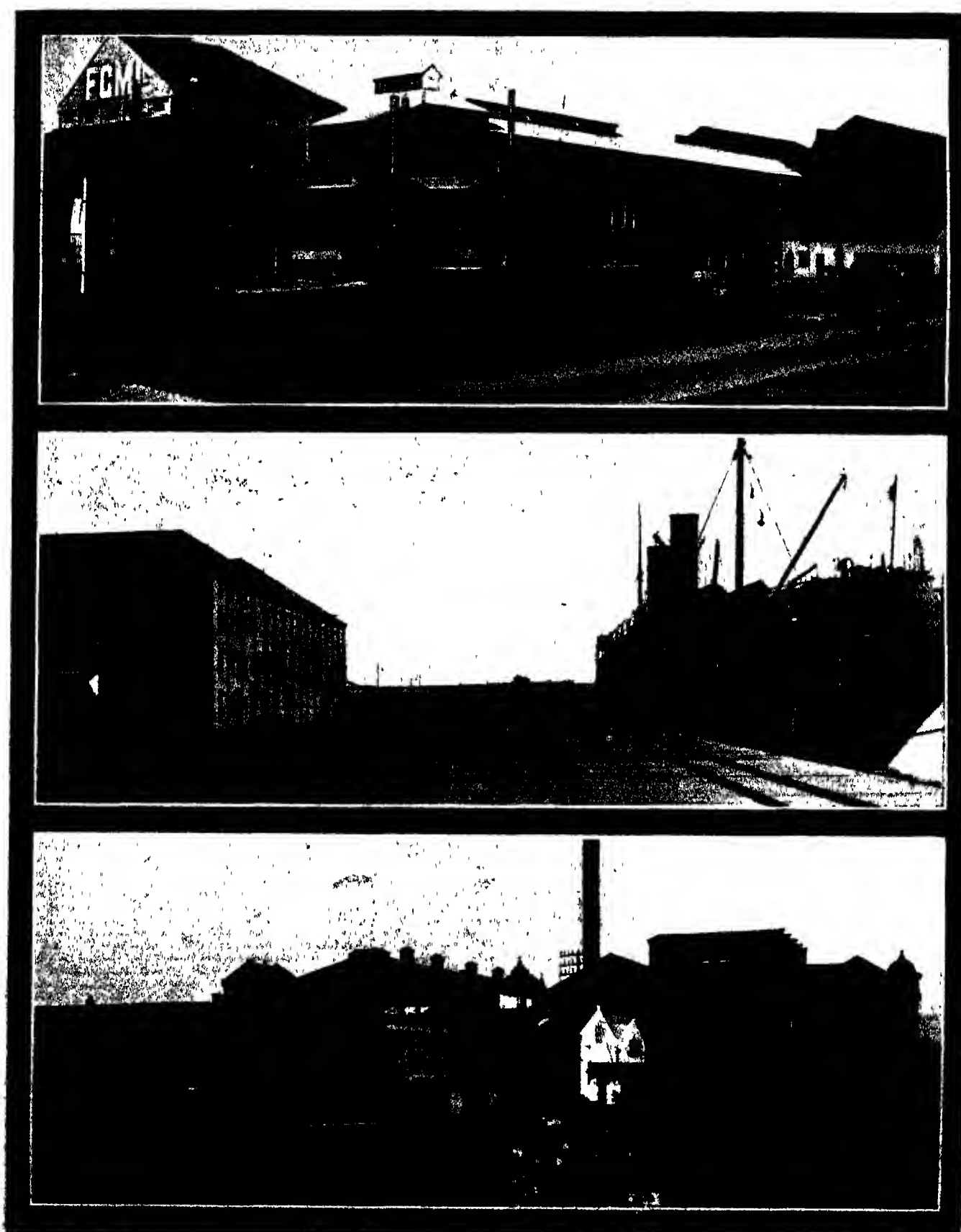
**QUALITIES OF SOUTH AFRICAN TOBACCO.** - The flavour and aroma of South African tobacco are peculiar, and, as a rule, do not appeal to the smoker who is unaccustomed to it. It is universally smoked throughout the Union, and the Empire Exhibition of 1924-5 is said to have created a new demand in the United Kingdom, many people having been surprised by the fine flavour of some brands of cigars and cigarettes. Upon an increased demand from overseas the future of the industry manifestly depends.



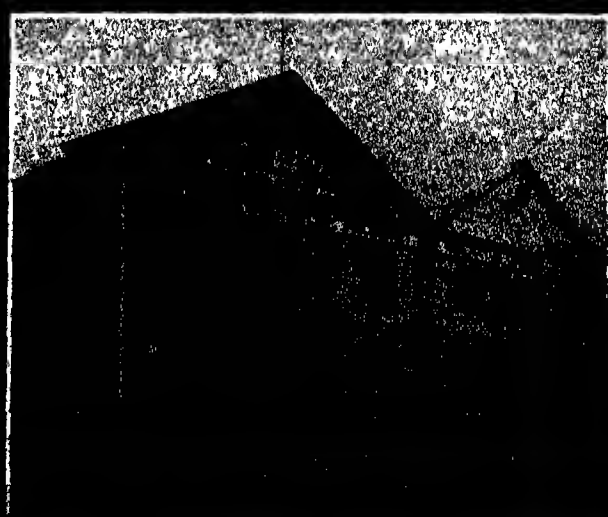
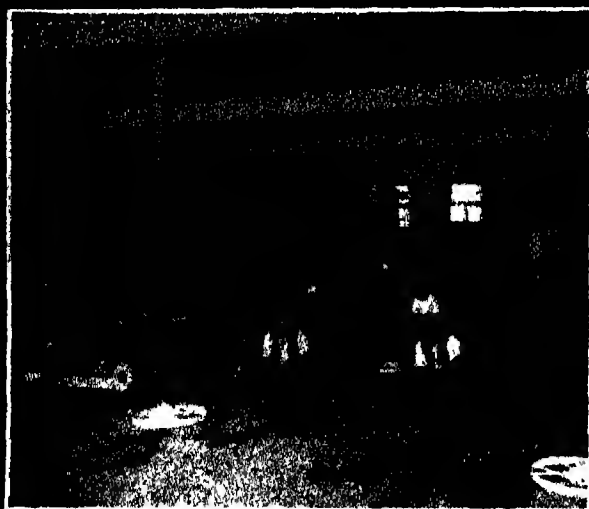
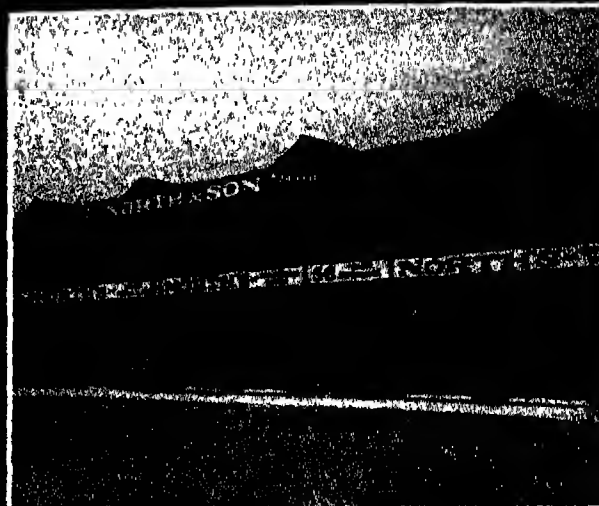
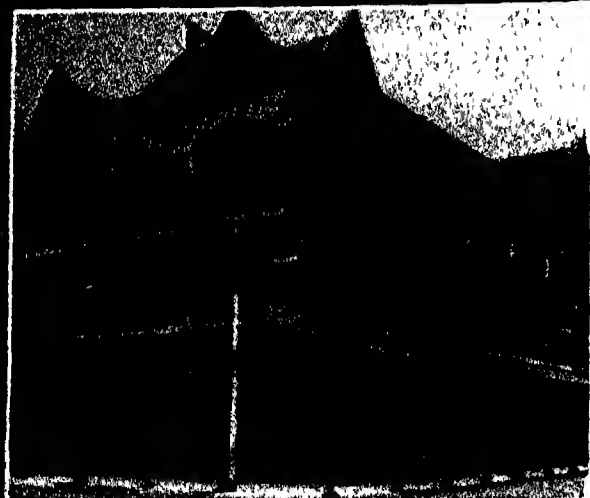
J. SEDGWICK & CO. LTD., Capetown.

1. Distillery at Wellington, Worcester, Cape Province.
2. Head Office and Cellars, Somerset Road, Capetown.
3. View of the Distillery at Goudini Road, Worcester, Cape Province.
4. Portion of the Bottling Department at Somerset Road, Capetown.

(See letterpress, page 289.)



SPARKS, YOUNG & FARMERS' MEAT INDUSTRIES LTD., Durban.  
 1. View of Farmers' Co-operative Meat Industries Plant.  
 2. Loading Meat at the Company's Private Wharf, showing section of Plant  
 3. Rear View of the Sparks, Young and Farmers' Plant.  
 (See letterpress, page 289)



1. Offices and Showrooms.
3. The Assembling Plant, Ground Floor.
5. The Premises from the Yard, showing extent of the Property and Buildings.

G. NORTH & SON LTD., Durban.

2. View of New Showrooms.
4. The Assembling Plant, Second Floor.
6. The Company's Premises at Johannesburg.

## REPRESENTATIVE VITICULTURAL, COLD STORAGE AND MACHINERY FIRMS

### J. SEDGWICK & CO. LTD.

**Inception.**—This company was founded in 1859 by James Sedgwick, a retired captain from the service of the East India Company. It maintained the status of a private concern for over half a century, enjoying a consistent measure of prosperity and consequent expansion of trade, which at length proved too extensive for the limitations of private enterprise. Accordingly the organisation was converted into a limited liability company in 1912.

**Development.** From very modest beginnings, the firm has gradually grown to its present position as one of the leading wine merchants, blenders and distillers in South Africa, with agents not only in the Union and Rhodesia, but in Hong Kong, New Zealand, Mauritius, and other parts of the world. For over sixty years the company's wines and brandies have enjoyed a high reputation, and have gained upwards of two hundred gold medals and other awards all over South Africa, and in Europe at Amsterdam, Paris and London.

**Activities.** Though all their products are uniformly esteemed alike by the connoisseur and the general consumer, Messrs J. Sedgwick & Co. Ltd. are perhaps best known for their Government House Port, Prize Cup, which is a natural white wine, made in the Nuv Valley near Robertson, Chateau Brandy which is one of the leading proprietary brands of the country and for the well-known Van der Hum, a Dutch liqueur made from the "Naartje" or Fangerne orange. The Prize Cup gained great favour at the recent British Empire Exhibition at Wembley and met with a large sale on the South African restaurant train there.

**Premises.** The offices and main cellars are situated in Somerset Road, Capetown, occupying a commanding and commodious corner building, and include maturing cellars, a fully equipped bottling department, sparkling wine cellars, a laboratory and cooperage. There are also fully equipped stores and cellars in Johannesburg, where the company has a flourishing branch.

**Distilleries.**—The company's distilleries are located at Wellington and Goudini Road, Worcester, where a railway siding adjoining the building serves to effect expeditious transport. Both these establishments, installed with the most modern appliances, are situated in the heart of the wine growing districts, and contain wine cellars and large bonded cellars for maturing brandy.

**Staff.**—The staff comprises a number of viticultural experts and wine tasters of many years' experience. The wines are manufactured under their supervision during the vintage.

**Agents.**—The following are the company's appointed agents in Rhodesia and overseas: Rhodesia—H. Behrens, Box 59, Bulawayo; Hong Kong—Caldbeck, McGregor & Co., 15, Queen's Street, Central; New Zealand—G. C. Macindoe Proprietary, Ltd., Box 815, Auckland; Mauritius—Tarby de Speville & Co., Port Louis.

**Bankers.**—The Standard Bank of South Africa, Ltd. (A.B.C. branch), Adderley Street, Capetown.

(See illustration, page 286.)

### SPARKS, YOUNG AND FARMERS' MEAT INDUSTRIES, LIMITED.

**Inception.** The amalgamation of Messrs. Sparks and Young Ltd. and the Farmers' Co-operative Meat Industries Ltd. was successful in linking up the two largest cold storage interests in Durban, one mainly concerned with the local cold storage business and supplies to shipping and the other with the export of meat. South Africa by virtue of its geographical situation is most advantageously placed as regards the supply of refrigerated material to the European continent or to the East, and is to-day in a position to export frozen meat and by-products in connection with packing house activities on quite a considerable scale. Continual expansion of such operations from year to year is anticipated.

**Activities.** Associated as Messrs. Sparks, Young & Farmers' Meat Industries Ltd. are with the Imperial Cold Storage and Supply Company Limited, their interests embrace the whole of South Africa, including South West Africa, Bechuanaland, and Rhodesia. These territories carry nearly ten million head of cattle, and the yearly increase is so much beyond local consumption requirements that the company is in a position to export frozen meat and packing house by-products on a very large scale.

**Cold Storage.** The company has two large cold storages in Durban. That in Smith Street, dealing with local refrigerator business, also undertakes ice manufacture on an extensive scale. The other cold storage premises are situated on the wharf side at Congella, and accommodate an up-to-date packing plant which is being increased annually. Here are received large quantities of live cattle from the inland areas to be dealt with by the firm's several departments, the meat being loaded direct on to steamers coming alongside the company's premises in deep water berths. There are over one and a quarter million cubic feet of refrigerated space available in the company's cold storages at Durban, and ship stores can consequently be catered for in any quantities. Stocks of victualling goods meeting the particular requirements of ships are always available.

**Enquiries.**—All trade enquiries relative to the export of meat or live cattle, or regarding the purchase of horns, hoofs, hides, skins, and other by-products should be addressed in the first instance to the Imperial Cold Storage and Supply Company Ltd., P.O. Box 680, Capetown, which has a European organisation and conducts all selling operations. Quotations can be given for full cargoes or portions of cargoes of frozen meat. Every facility is offered not only for ships which trade regularly with the Union of South Africa, but also to the large number which call at the port of Durban for coaling purposes, where a plentiful and cheap supply of coal is obtainable.

**Offices.**—Smith Street, Durban; Maydon Wharf, Durban. Managing Director—Mr S. B. Woolatt.

**Bankers.**—The Standard Bank of South Africa, Ltd.

**Cables.**—"Frigid." Code Bentley's Telegrams. "Progress."

(See illustration, page 287.)

### G. NORTH & SON LTD.

**Inception.** The origin of the business of this well-known and progressive firm of agricultural implement and machinery merchants and irrigation engineers was a small store opened in 1869 by the late Mr. George North in Commercial Road, Durban, then but a small seaport, and it was the foundation of a concern which was destined to become a forceful factor in the development of the agricultural interests of the country.

**Development.**—Operations at the outset were naturally local in character, and were limited to Durban and adjacent districts. By the "eighties," however, trade had extended throughout Natal into the Orange Free State and the Transvaal. Mr. North was at this time joined by his eldest son, Mr. George Howard North, who directed the destinies of the firm on his father's retirement in 1884 and who is the present controlling force in the business.

**Progress.** Expansion of trade necessitated a move to larger premises, and new quarters were secured in Field Street, the site affording convenient access to the railway which was then in course of construction through Natal. It was in December 1885 that the Rand goldfields were discovered, and the firm opened a branch in Johannesburg three years later. Transportation was then both costly and irregular, but this drawback was removed on the opening up of railway communication a few years later. In 1895 the firm, then known as G. North & Son, extended its operations to Rhodesia. Mr. North having in 1892 been joined by his younger brother, Mr. W. B. North. Mr. North, senior, the original founder, died in 1897.

**Later Activities.**—During the present century the firm has erected many additional stores and opened numerous branches. In 1903 a dépôt, with railway siding, was opened at Northdene, in the following year the Durban stores were greatly improved and enlarged, and a magnificent three storey building was erected on the corner of Queen and Field Streets. In 1905 branch establishments were opened at Pietermaritzburg and Pretoria, followed in 1910 by others at Harrismith and East London. In 1919 a branch was established at Nairobi. This proved a profitable venture, and two additional dépôts were opened in 1924 at Nakuru and Eldoret. (See also section "Agriculture," Kenya Colony.)

**Motors.**—Some sixteen years ago the activities of the firm were extended to the motor car trade, when the Rand Garage and Motor Works were established in Johannesburg. Further developments of this business took place in 1914, when the company established at Maritzburg a subsidiary branch to its Natal organization, known as "North's Garage." Mr. W. B. North has identified himself with this section of the business, which is now under his immediate control.

**Agencies.**—The company holds agencies for the following firms: Cockshutt Plough Co. Ltd., International Harvester Co., Ruston and Hornsby Ltd., R. Hunt & Co., Alfa Laval Separator Co., F. E. Myers & Bro. Co., The Butler Co., Fuller Johnson Mfg. Co., Martin Ditcher Co. and Smith Grubber Co.

**Directorate.** Mr. George Howard North (life and managing director), Mr. Walter B. North (life and deputy managing director), Mr. Robert Forrester (director and general manager), Mr. Fred North and Mr. Herbert S. North.

**Head Office.**—Field Street, Durban, Natal. P.O. Box 916.

**Cables.**—"North," Durban. Codes: Bentley's 5 letter, Western Union 5 letter, and private.

## PROVINCE OF THE ORANGE FREE STATE

**T**HE Orange Free State is that portion of the Union which lies between the Orange River on the south and the Vaal River on the north, being surrounded by its three sister Provinces and the Territory of Basutoland. It has a length of 360 miles, and an average breadth of about 130 miles. The area is 49,687 square miles, less than half that of the Transvaal, and about the size of England without Wales. Its population at the last census of 1921 was 628,827, of whom 188,556 were Europeans. Apart from the Vaal, the northern boundary, the only waterway of much importance to the Province is the Orange River, its main tributaries being the Caledon, Riet, and Modder. Beyond the borders of the Free State the Orange River is joined by the Vaal River in Griqualand West.

Much of the Free State resembles the Karoo, but most of it is prairie-like land—great grassy plains hundreds of square miles in area. These are diversified in places by solitary kopjes, low ridges, or even wooded river valleys, in the main, however, they are flat and featureless, almost devoid even of trees. The eastern part of the Province is well watered and by far the most productive, yielding good crops of wheat, mealies, oats, and potatoes. Westward the country is drier, and often subject to long spells of drought. Yet the Orange Free State is on the whole an exceptionally good cattle territory, with an output of about one-third of the butter and cheese and a large percentage of the wool produced in the Union. The climate is generally healthy, the Bloemfontein district from its height (4,510 ft) above the sea and dry air being especially adapted to those suffering from weak chests.

**ADMINISTRATION.**—The direction of affairs is under an Administrator, appointed by the Union Government, with the aid of the Executive Council of the Provincial Council. The latter consists of 25 members, elected for the same number of constituencies, and the franchise is strictly confined

to adult European males, the conditions governing it being the same as those in the Transvaal. The law of the Province is Roman-Dutch, as modified by laws of the Orange Free State, ordinances of the Orange River Colony under Crown Colony administration, acts of the colony after responsible government, and now by ordinances of the Provincial Council and acts of the Union Parliament. Justice is administered by the Provincial Division of the Supreme Court of the Union, which consists of a Judge President and two Judges, and by Resident Magistrates and special Justices of the Peace. The Magistrates have civil and criminal jurisdiction, and the Provincial Division controls the inferior courts. Bloemfontein is also the seat of the Appellate Division of the Supreme Court of the Union.

The present Administrator of the Orange Free State is the Hon. E. R. Grobler.

**DISTRICTS.** The Province is divided into 24 districts, as follows: Vrede, Frankfort, Heilbron, Vredefort, Kroonstad, and Hoopstad, facing the Transvaal from east to west; Boshof, Jacobsdal, Lauresmith, Philippolis, Bethulie, and Rouxville, facing the Cape Province from north to south-east; Wepener, Thaba Nchu, Ladybrand, Ficksburg, and Bethlehem, facing Basutoland from south-east to north-east, and Harrismith and part of Vrede, facing Natal. The interior districts from south to north are Smithfield, Edenburg, Bloemfontein, Winburg, Senekal, and Lindley.

**LOCAL GOVERNMENT.**—The system of local government embraces municipalities and village boards of management, the latest return giving a total of 56 municipalities and 7 village boards of management. The three areas of Witzieshoek, Thaba Nchu, and Sehba are reserved for the exclusive occupation of natives.

**AGRICULTURE.**—The main wealth of the Orange Free State has always consisted in its flocks and herds. Until lately comparatively little had been done in the way of agriculture, except in the eastern division. During the last 15 years an important

trade in maize has been developed, part of the Province coming within the famous "Maize Triangle," which produces about 60 per cent of the total yield of the Union. The average yield of maize from the Orange Free State (taking the years 1918-1923) is about 890,800,000 lb., or 4,454,000 bags. In 1924, which was an exceptionally poor year, production totalled only 2,610,355 bags, but in 1925 there was a record of 10,994,000 bags. Oats, rye, barley, Kaffir corn, potatoes, lucerne, and groundnuts are the other leading products. (See also article on "Agriculture.")

**COMMERCE.**—See general article on "Commerce."

**FINANCE.**—The total revenue of the Orange Free State for 1923-24 was £1,008,339. Of this total, £607,869 was the Union Government subsidy, the balance of £400,470 being derived from the education tax, general licences and various revenue collections. The ordinary expenditure of the province was £1,010,803. Items of expenditure were education, £833,306, hospitals and poor relief, £28,902, roads, bridges and works, £100,572. The capital expenditure in 1923-24 was £108,805.

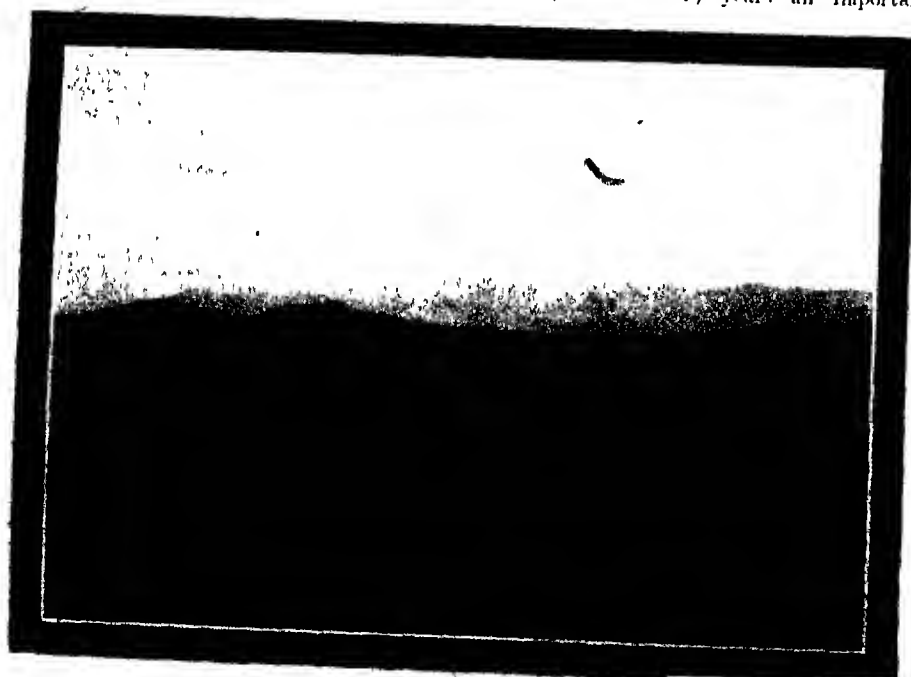
**INDUSTRIAL PRODUCTION.**—There are few large centres of manufacturing industries in the Orange Free State, the number of factories of all kinds being between five and six hundred, and the gross value of their production some £4,000,000 a year.

**LIVE STOCK.** The live stock figures for the Orange Free State in 1924 were—Horses, 245,780, mules, 18,630, asses, 40,136, cattle, 1,771,750 (Frieslands and Afrikaners predominating), sheep, 8,335,936, goats, 150,088, and pigs, 98,219. After Cape Province, the Free State is by far the biggest sheep-rearing division of the Union, and its average of such animals to the square mile is about 160, compared with only 65 in the Cape. The production of wool in 1924 amounted to 47,796,015 lb., compared with 44,344,880 lb. in 1923. (See also article on "Agriculture.")

**MINERAL PRODUCTION.**—The Orange Free State produces few minerals, but there are important diamond mines at Boshof, Koffiefontein, Jagersfontein, Kroonstad, and Theunissen, the yield from which was formerly far more considerable than it is to-day. The value of the diamond production in 1913 was £1,667,706, and £1,699,077 in 1920, but in 1924 barely £1,000,000. The Orange Free State coal-field is of great extent, but so far no more than one workable seam has been discovered at any single point, the coal hewn being only of second grade quality. About 900,000 tons were produced in 1924. (See also articles on "Mining and Minerals," "Diamonds," and "Coal.")

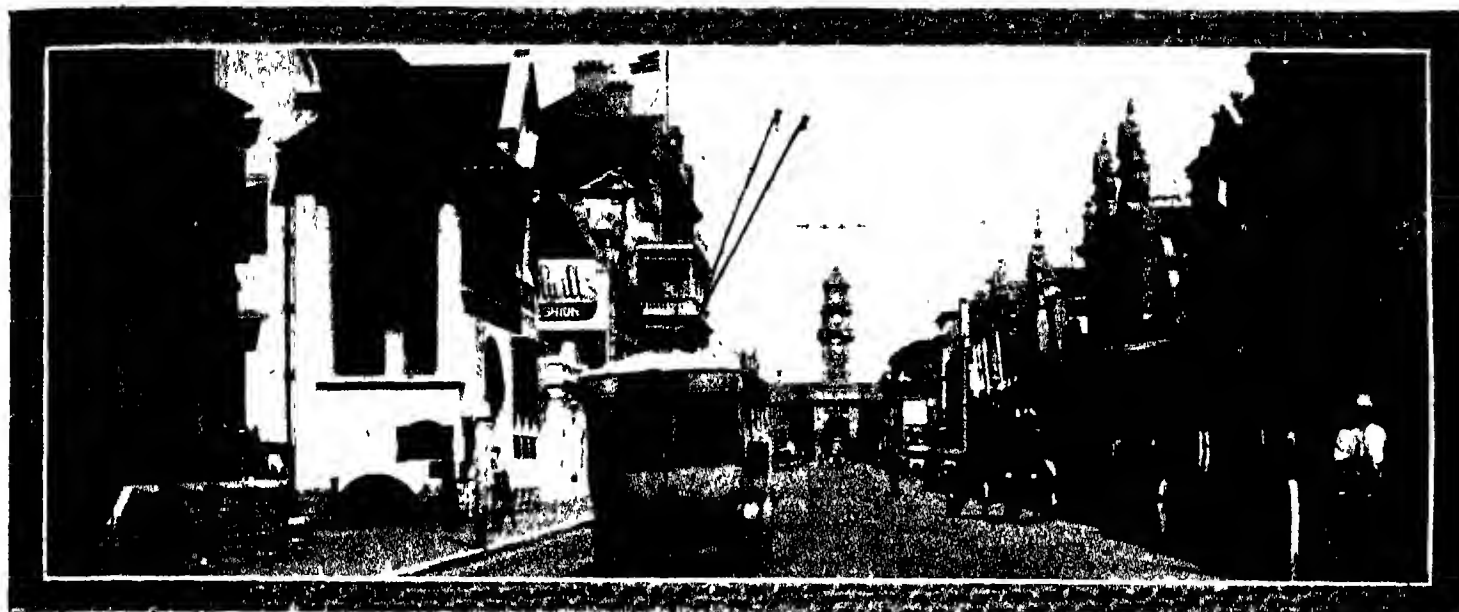
**POPULATION.**—The population of the Orange Free State increased from 528,174 in 1911 to 628,827 in 1921; of the latter total, 321,373 were males and 307,454 females, while Europeans numbered 188,556 and non-Europeans 440,271. The non-European population was made up of 421,978 Bantus, 395 Asiatics, and 17,898 mixed and other. The density of population was 12.67 to the square mile, compared with 10.05 in the Cape, 40.51 in Natal, and 18.90 in the Transvaal.

**RAILWAYS.**—See general article on "Railways."



A TYPICAL SOUTH AFRICAN FARM.





MAITLAND STREET, Bloemfontein, looking towards the Government Buildings, with a portion of the Town Hall and Board of Executors' Buildings in left foreground.

## CITY OF BLOEMFONTEIN

**B**LOEMFONTEIN, capital of the Orange Free State and seat of the Appellate Court of the Union, is beautifully situated on a watershed, and is surrounded by a network of the tributaries of two great rivers, the Modder and the Riet. Though essentially a modern city, the history of Bloemfontein dates back to the time of the Voortrekkers in 1836, when the first settlement was founded, the town becoming the capital of the newly created Orange Free State in 1854. From that period its importance steadily increased, a fact largely due to the policy pursued by the President, Sir John Brand, who held office for 24 years, and after whom the principal street is named. In 1890 Bloemfontein was connected by rail with Capetown and Johannesburg, and with the extension of lines in various directions, also as the result of its central position in the Union, the city has gradually developed into a railway centre of importance, seven lines meeting at this point.

**BUILDINGS.**—The public buildings of Bloemfontein are generally ample in size and dignified in architecture, many of them being built of a combination of red brick and a fine-grained white stone quarried in the neighbourhood. The Raad Zaal, now the House of Provincial Assembly, is a well-designed building, surrounded by Doric columns, and with a domed tower 90 ft high. The cost of this building exceeded £60,000. Government House, which was formerly the President of the Free State's residence, stands at the end of President Brand Street, and is now a Girl's School. Opposite to it is a memorial to those of the 2nd Battalion of the Seaforth Highlanders who fell in the war of 1899-1902. The General Post and Telegraph Office in Market Square is a fine building, and opposite to

it are the Mutual Assurance Company's Buildings and the Bloemfontein Club. In Warden Square are the Public Library and the Orange Free State Museum. A group of buildings, three miles to the west of the town, houses the Grey University and the Grey College Schools. St George's Cathedral, a handsome edifice, fronts on to St George's Street. The fine building of the National Bank of South Africa is on the corner of Market Square and West Burger Street.

**CHURCHES.** The principal church in Bloemfontein is the Dutch Reformed, with two spires. Next in importance comes the Anglican Cathedral of St George, with a very good interior. There are also Lutheran, Wesleyan, Baptist, Presbyterian, Roman Catholic, and other Churches, the Roman Catholic Church having a large convent attached. A Synagogue, the first in the Free State, was erected in 1902. There are also native churches of all denominations.

**ELECTRIC LIGHT AND POWER.**—These are controlled by the Municipality, the works having been established in 1900. At a recent date the total capital expenditure amounted to £248,153, while the annual revenue was £53,139 and the expenditure £49,039. The plant has a capacity of 2,650 k.w.

**INDUSTRIES.**—For various reasons, amongst others its central position, Bloemfontein offers advantages as a manufacturing centre, and the municipality is taking every possible step to encourage the establishment of local industries. At present the most important of these are milling, carriage building, and engineering. The surrounding country is amongst the best in the Union for sheep and cattle raising.

**MUSEUM.**—The National Museum of the Orange Free State is the second oldest

institution of its kind in South Africa, and dates from 1877. The original museum was notable as having in its time filled many uses, among others those of a school, a Raad Zaal, and a Court House, and as having been the scene of the signature of the British Convention in 1854. The new museum occupies a handsome building adjoining the Public Library, and contains an interesting collection of fossils, minerals, birds' eggs, and ethnographical specimens.

**PARKS AND GARDENS.**—The King's Park and Zoological Gardens, lying to the west of the city and covering 300 acres of ground, were opened in 1902 to commemorate the coronation of King Edward VII. The Gardens contain the nucleus of a fine collection of animals, birds, and reptiles. Hanilton Park, about 50 acres in extent, lies to the north of the town and at the foot of the Naval Hill. Victoria Park, about 20 acres, contains some fine old trees.

**POPULATION.**—The population returns at the Census of 1921 showed that there were 10,367 Europeans in Bloemfontein, 17,918 Natives, 126 Asiatics, and 1,623 Mixed and other, or a total of 39,034 inhabitants.

**SCHOOLS AND COLLEGES.**—Bloemfontein is one of the chief centres of education in South Africa, and in 1924 there were nearly 4,000 students with over 250 teachers and professors in the various institutions. This may be attributed to the prominence the old Republic gave to education, while later growth has been accelerated by the excellent climate the city offers for growing boys and girls.

Grey University College was founded in 1855 by Sir George Grey, and was constituted as a separate University College in 1907, being incorporated by statute



1. CHURCH STREET, Bloemfontein, looking South, with G. A. Fichardt's Premises in foreground on both sides of street.
2. Looking up EAST BURGER STREET, Bloemfontein, from corner of Maitland Street, with Polley's Bloemfontein Hotel in left foreground.
3. MAITLAND STREET, Bloemfontein. Polley's Bloemfontein Hotel and Champions Limited in left foreground.

three years later. The curriculum undertaken comprises the usual preparation for the examinations of the University of South Africa in literature and science, education and law including preliminary classes for study of medicine, engineering, agriculture, commerce, and theology. There are special facilities for research in the departments of botany, chemistry, physics, and zoology. A well-known government institution is the Eunice High School, situated in Brand Street, which provides for the education of girls from kindergarten to matriculation. St. Andrew's College for boys, on the outskirts of the town, is run on English public school lines. Other high-class schools are the Normal and Polytechnic Colleges, the Oranges Meisjes School, St. Michael's School and "Home" for Girls, and the Roman Catholic Convent School.

**SEWERAGE.**—The city has a very complete and up-to-date water-borne sewerage system, which has been installed by the municipality at a cost of £180,000. The municipality also owns the sewerage farm of 54 acres.

**STREETS.**—Bloemfontein is regularly laid out, the centre of the town being the Market Square, upon which most of the principal streets abut. A notable exception is President Brand Street, by far the finest thoroughfare in the city, which crosses at right angles to Maitland Street on the side of the town opposite to the railway station. The Raad Zaal, Government Offices, Law Courts, Government House, etc., all front on to this street. Maitland Street is a busy thoroughfare with many fine buildings and business premises, notably the Railway Station, the Town Hall, and the Queen's Hotel. Warden Street contains the Public Library.

A feature of Bloemfontein is the Spruit which runs through the centre of the city and is sometimes full of water. In January, 1904, it swept through the lower town and destroyed much property and several lives. To prevent the recurrence of a similar calamity, the course of the stream has been rectified and six stone bridges have been erected across it.

**TRAMWAYS.** A trackless system of tramways is installed in the city, the electrically driven cars running over 10 miles of route, and carrying about 1,500,000 passengers annually.

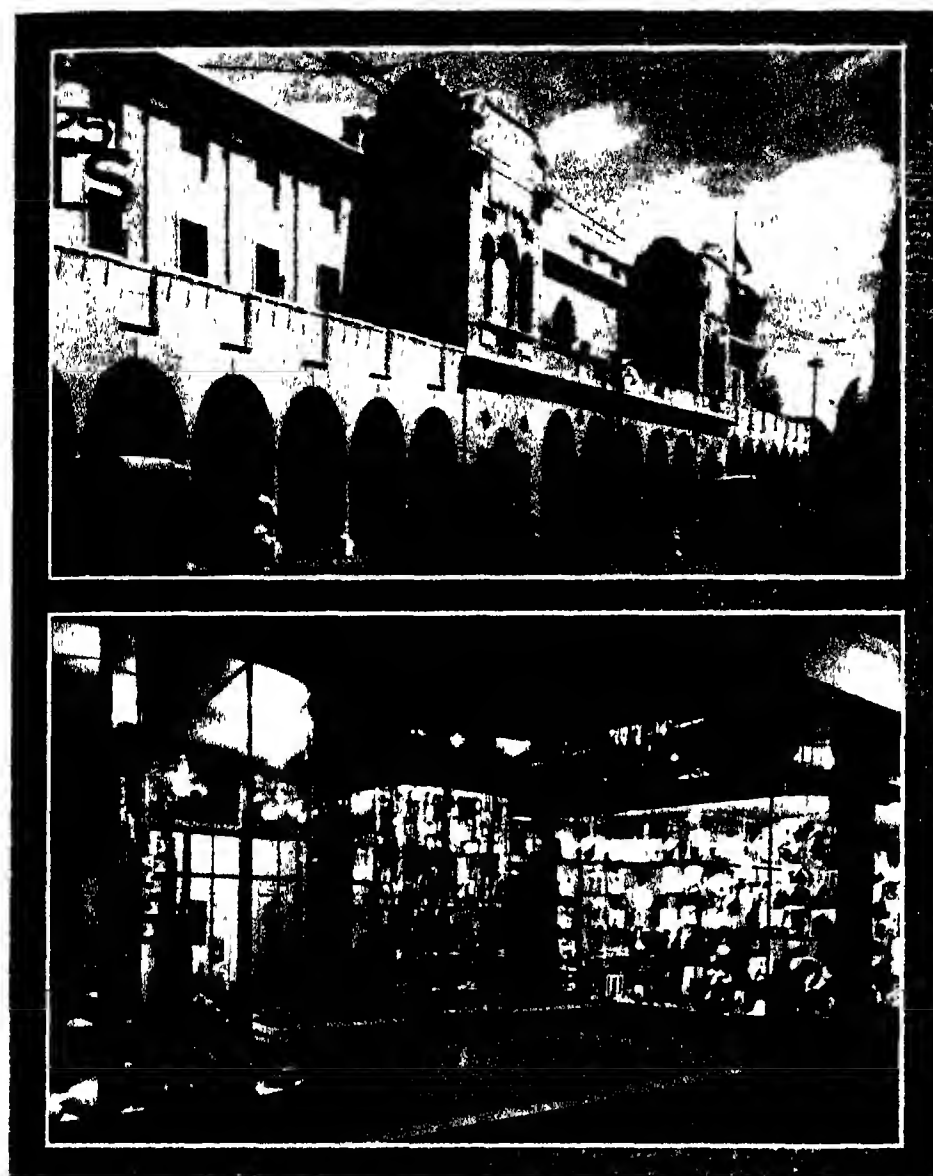
**WATER SUPPLY.**—Bloemfontein is well provided with a pure water supply from the Modder River, where two pumping stations have been erected at a cost of £480,000, with a capacity of 1,500,000 gallons a day, while extensive storage facilities exist through the association of the Council with certain large irrigation schemes, securing an independent water supply for two years.

### VISITORS' GUIDE

**CLUBS.**—Bloemfontein—corner of Maitland Street and Market Square, Commercial—52, St. Andrew Street; Ramblers'—corner of Zastron and Aliwal Streets.

**CONSULATES.**—Belgium—122, Maitland Street; Netherlands—145, St. Andrew Street, United States—Banmann Square.

**HOTELS.**—Cecil—Market Square; Garden—Church Street; Grand—Hanger Street; International—Maitland Street; Masonic—Maitland Street; Polley's—Maitland Street; Queen's—Maitland Street; Royal—Fountain Street; Russel—Fraser Street.



G. A. FICHARDT LTD., Bloemfontein.

1. Company's fine premises at Bloemfontein.
2. One of the Entrances and Display Windows, showing the diversity of Stocks carried by the Firm.

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### G. A. FICHARDT LTD.

**Inception.**—Owing its inception to the late Mr Gustav Adolf Fichardt, this enterprise was established in 1848 in Upper Church Street, Bloemfontein.

**Development.**—From its beginnings as a small, one-man concern, the business has pursued a course of ever-growing prosperity, to become the present multiple store employing over 200 persons.

**Activities.**—Operating as general merchants throughout South Africa, the firm maintains departments retailing agricultural machinery, grain and produce, hardware, furniture, men's and boys' outfitting, drapery, boots and shoes, crockery, groceries and provisions. It is also the proprietor of Fichardt's Garden Hotel.

**Agencies.** G. A. Fichardt Ltd act as distributing agents for the Chilled Oliver Plow Works, Aeromotor Windmills, and other businesses.

**Premises.**—The firm has premises in Upper Church Street, Charles Street and West Burger Street, owning also its private railway siding.

**London Shippers.**—Alex Fraser & Son, Ltd, 80, Finsbury Pavement, E C 2.

**United States Shippers.**—Dodge & Seymour Ltd, 39, West Street, New York.

**Directorate.**—The board of directors is composed as follows: Messrs L. H. Oates, W. S. Mannion, G. A. Fichardt, J. C. Daniels and A. Deale, with A. G. Wood as general manager.

**Head Office.**—Upper Church Street, Bloemfontein. Cables: "Gafco," Bloemfontein.

**Bankers.**—The National Bank of South Africa, Ltd.

### CHAMPIONS LIMITED.

**Inception.** In 1884 Mr C. W. Champion, then eighteen years of age, opened a small produce store in St Andrew's Street, Bloemfontein, to be joined in the same year by the even younger Mr Frank A. Nicolai. For over forty years, until the recent death of Mr Champion, these two men were associated in a business whose assets now approach half a million sterling. To-day the controlling interest is retained by the heirs of the late founder.

**Development.** Rapid strides in prosperity made imperative an early removal to larger premises on the Market Square, and subsequently to Marland Street. The firm then extended its activities from a purely produce business to general merchandise. In 1891 the site of the present premises was acquired, new buildings were erected, and operations extended to embrace every branch of commercial activity. The business having become too complicated for private enterprise, in 1919 the main section was converted into a limited company with an authorised capital of £400,000. A further significant step in the development of Champions Ltd was the acquisition of Polley's Bloemfontein Hotel (see page 295). A further purchase bringing the company's solid assets up to the figure above-named, was that of the residential and business premises in Upper Church Street known as Florence and Hilary Buildings. The firm has established depôts at Port Elizabeth and Durban, and owns maize mills at Kroonstad.

**Subsidiary Interests.**—Controlled by this prominent organisation are Lambons Ltd, who conduct a great motor and ammunition business (see pages 294 and 295), and Conning & Co. Ltd, produce merchants and millers, of Thaba Nchu.

**Activities.** Departments of the establishment cover agricultural implements, produce, hardware, furniture, grocery, timber, boots, outfitting, drapery, fancy goods and haberdashery, Manchester goods, millinery, crockery, motor-cars, and a deposit account department open to receive large or small sums on current account.

**Staff.**—Champions Ltd employs over 100 Europeans and 100 natives in Bloemfontein alone.

**Directorate.**—F. A. Nicolai (chairman) and H. F. Champion, joint managing directors, R. L. Champion, C. W. Champion, Mrs. M. M. Champion, and A. Neale, Secretary, L. V. Coen, attorneys, Messrs McIntyre & Watkeys, auditor, G. W. Warner.

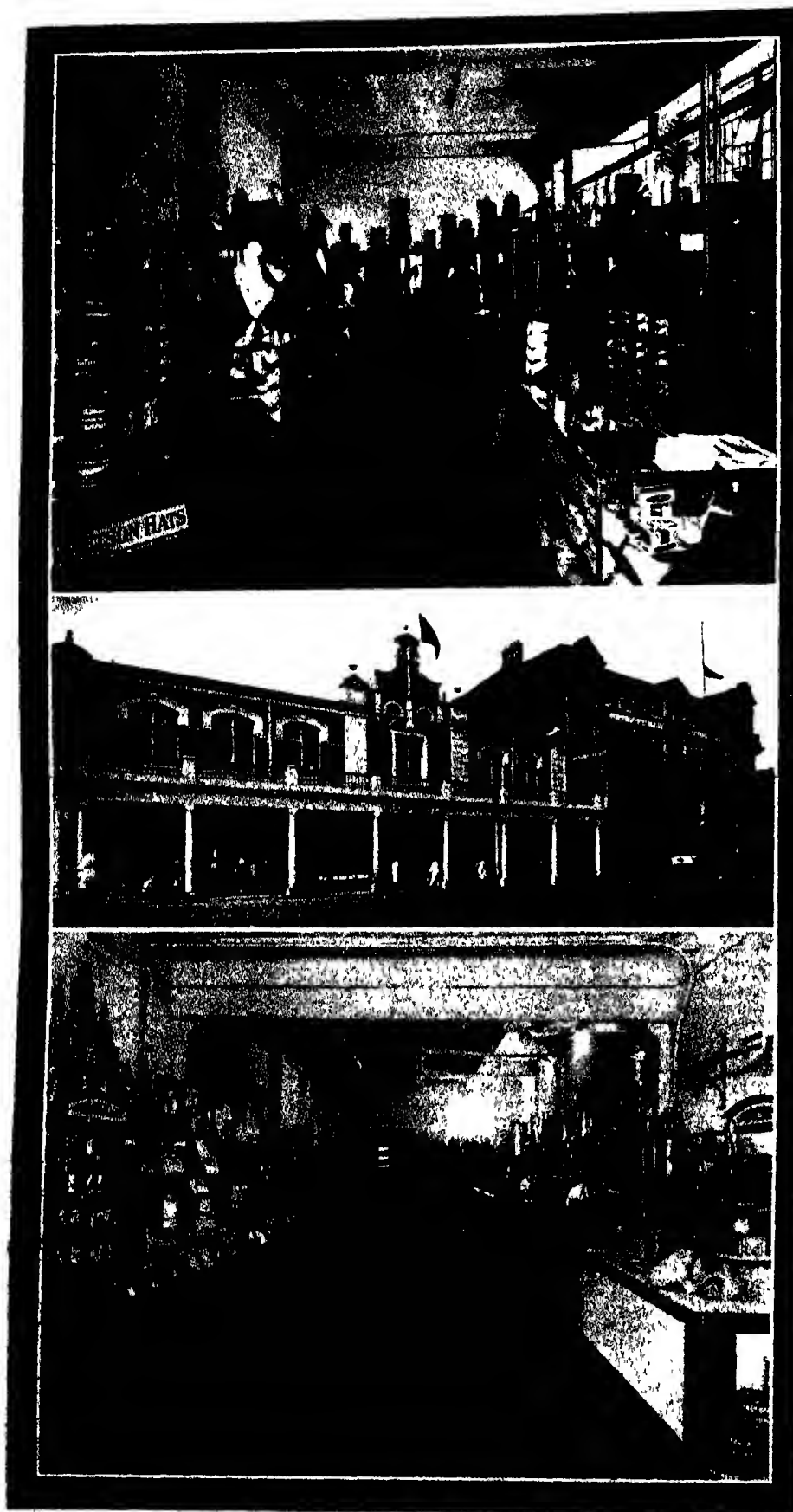
**Bankers.**—The Standard Bank of South Africa, Ltd.

### POLLEY'S BLOEMFONTEIN HOTEL.

**Reorganisation.**—Of long standing and firm reputation, this hotel was acquired in 1919 by the present owners, Messrs. Champions Ltd, who at once undertook complete renovation and structural improvements, providing 10 up-to-date sample rooms (detached from the residential portion) for commercial travellers, and adding to the main building 25 bedrooms, imposing shop-fronts, and showrooms. Equipment throughout is of the most modern pattern, while the efficient staff are solely European.

**Situation.**—The hotel occupies an ideal position in the business centre of the city, adjoining the main traffic arteries and in close proximity to the General Post Office and Railway Station.

**Patronage.**—Regarded as one of the best hotels in South Africa, the place is patronised largely by the delegates to national confer-



CHAMPIONS LIMITED, Bloemfontein.

1. Gentlemen's Outfitting Department.
2. Departmental Store and Head Office of the Company, Bloemfontein.
3. Grocery Department.

ences and congresses held at Bloemfontein, and was the venue of the farewell banquet given to H R H the Prince of Wales on his visit to the city. Replying to the loyal toast, the Prince made allusion to the genial manager, Mr James Harper, and to the excellent fare.

**Sport.** Golf, tennis and bowls are available for visitors, and ample garage accommodation is provided.

**Terms.** Residential terms are 17s 6d per day, with special rates to members of the B M and S A C T Associations.

**Address.** P O Box 506, Bloemfontein. Telephones office and trunk, 81, visitors, 1522.

**Cables.** "Polleys," Bloemfontein.

#### LAMBONS LIMITED.

**Inception.** The history of the firm known as Lambons Ltd, now controlled by the powerful concern Champions Ltd, is interwoven with the progress of the motor industry in South Africa. It was established in 1892 by the late William Lambon, Deputy Mayor of Bloemfontein and a practical gunsmith and locksmith.

**Development.** The enterprise so founded became a central depot for supplying cycles and all sporting requisites, including ammunition, to the Orange Free State. With the advent and development of the motor vehicle the business expanded rapidly, until it became necessary to make separate provision for activities in the new line. In 1913 a modern workshop and garage, fully equipped and with an accessories department were added to the property on Market Square. In April 1920 another garage, covering over 10,000 square feet, was built in Atherstone Street, followed a year later by a two storeyed, reinforced concrete erection in Fountain Street. The first floor of this building accommodates a machine shop and an enclosed painting and varnishing department while tyres, petrol and oils are stored in the basement. The fine showroom facing St Andrew's Street, ideally equipped for displaying cars and accessories, was added in 1924, an electrical department being opened later. Further extensions are in course of completion.

**Activities.** The main activities of the company embrace the supply of new and used cars, spare parts, accessories, wireless apparatus, machinery, tyres, petrol, oil, arms and ammunition, motor cycles and bicycles.

**Service.** Operated from the Bloemfontein office is an efficient mailing and advisory department for the immediate imparting of information assisting customers' own repairs.

**Branches.**—Branch houses are established at Bethlehem, Kroonstad and Frankfort, the last named in 1925, and the preceding one in 1924.

#### THE FRIEND NEWSPAPERS, LTD.—

East Burger Street, Bloemfontein. Newspaper proprietors and publishers. This firm publishes "The Friend," the "Vriend des Volks," the "Motor Weekly," the "Farmers Weekly," the "Homestead," and "De Boerenvriend Huis Almanak." London offices, 72/78 Fleet Street.

#### SOWDEN AND STODDART, LTD.—

Maitland Street, Bloemfontein. Opened at Bloemfontein in 1880 as drapers, outfitters and boot and shoe merchants. Soon afterwards a branch was established at Potchefstroom, and subsequently others at Ladybrand, Ficksburg, and Krugersdorp, and a business was also acquired at Pietermaritzburg. London office, Sowden & Stoddart (London) Ltd., 22, Fann Street, E.C.1.



CHAMPIONS LIMITED, Bloemfontein.

1. Polley's Bloemfontein Hotel: The Premises.

2. Polley's Bloemfontein Hotel: The Dining Room.

**JOHN RODERICK & CO. LTD.**

**Inception.** Prominently engaged to day as auctioneers, estate, insurance and general agents, the firm was incorporated in 1916.

**Appointments.** The company has been appointed official auctioneers to the following bodies: The Friesland Cattle Breeders' Association of South Africa, The Shorthorn Cattle Breeders' Society of South Africa, The Devon Cattle Breeders' Society of South Africa, The Stud Breeders' Association of Natal and East Griqualand, The Witwatersrand Agricultural Society, the Imperial British Authorities and the Government of the Union.

**Pedigree Sales.** Messrs John Roderick & Co. Ltd. are responsible for the sale of the best bred and the major quantity of the pedigree livestock of South Africa, holding dispersal sales anywhere in the country. The

chief pedigree sales are held at Bloemfontein, Pietermaritzburg and Johannesburg in conjunction with one or more of the above Governments or Associations.

**Other Stock Sales.** The chief ordinary breeding and slaughter stock sales by the company are held at Bloemfontein, Westminster, Sepan, Dewetsdorp, Springfontein, Petrusburg and Maritzburg.

**Advantages.** At the various sale centres the firm maintains its own well-equipped stables and farm for the care of clients' stock. It also acts for persons unable to be present at the disposal, and fosters the interests of all stock breeders.

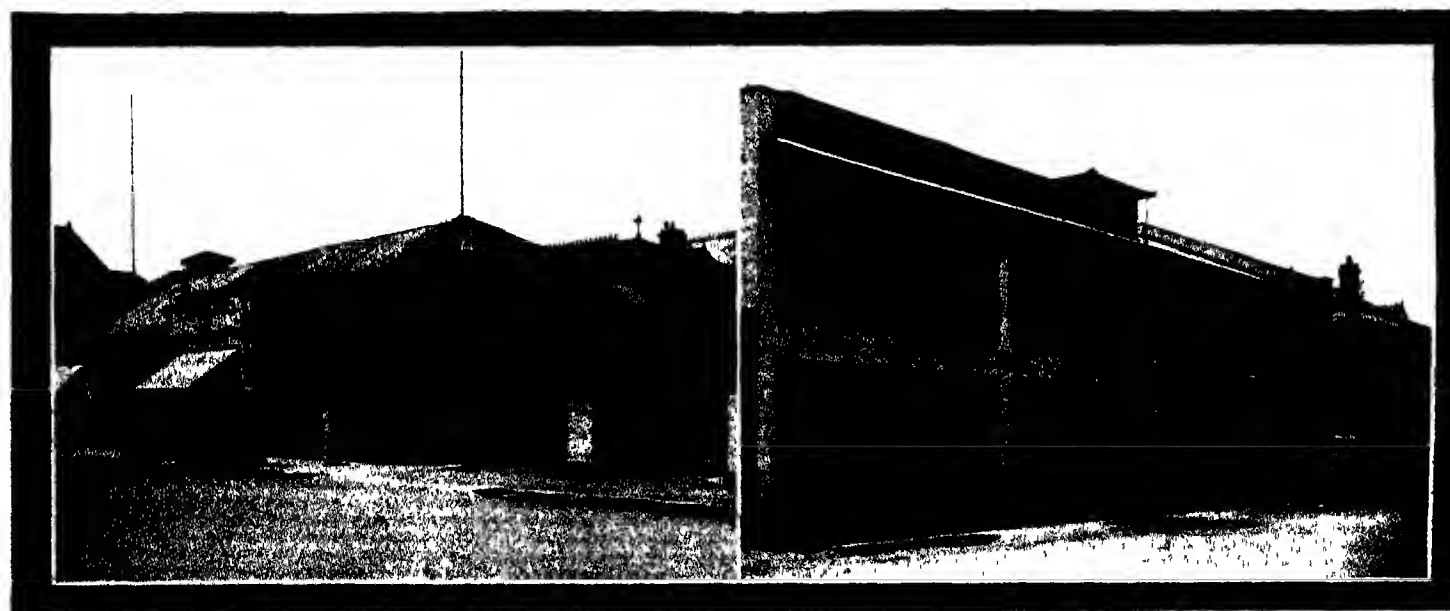
**Wool.** One of the best lighted wool warehouses in South Africa is the property of the company, which conducts weekly wool, skin and hide sales in Bloemfontein during the season.

**Estate Agency.** The company conducts the purchase, sale and letting of estates, farms and houses, and all other estate agency operations.

**Insurance.** The insurance department effects transactions of unrestricted scope, representing some of the soundest insurance companies.

**Management.** J. W. Roderick (governing director), H. W. Hickes (secretary and accountant), W. Smith (statistician), O. J. Adendorff and A. Smith (assistant auctioneers), R. Ovendale (manager, estate and insurance departments), and D. C. Gladwell (adviser on pure bred cattle).

**Offices.** Head office: P.O. Box 248, Bloemfontein; branch office (manager, Mr. A. Smith): P.O. Box 260, Pietermaritzburg. Cables: "Rodericks," for both cities. (See illustration page 296.)



CHAMPIONS LIMITED, Bloemfontein.

1. Lambons Ltd.: The Showrooms and Offices.

2. Lambons Ltd.: The Workshop, Paint and Assembly Departments.





1. Head Office.

JOHN RODERICK &amp; CO. LTD., Bloemfontein.

2 Wool leaving one of the Company's Stores for Shipment

3 One of the Company's Wool Stores.

(See letterpress, page 295)

## OTHER CITIES

### BETHLEHEM

A town of 6,500 inhabitants on the River Jordan and at the foot of the beautiful Wittebergen Range, Bethlehem was originally laid out some 60 years ago as a church village for the surrounding Boer farmers, who assembled there four times a year for Naachtmaal. With the development of the rich agricultural district, however, Bethlehem has steadily progressed. It has a large and modern co-operative creamery and cheese factory, also a grain elevator with a storage capacity of 4,800 tons.

### FICKSBURG

Situated on the Caledon River, in that portion of the Free State which was captured from the Basutos in 1866, the town being named after General Fick, the Dutch commander, Ficksburg is charmingly situated at the foot of the Imperani Mountain, and is the centre of a rich agricultural and stock breeding country.

### HARRISMITH

An important town in the Orange Free State, the population at the last census being returned at 6,234. Harrismith stands at the foot of the Platberg, an isolated mountain some four miles long and a mile in width, which rises to 8,000 ft. above sea-level. It is a growing holiday centre, and

is popularly known as healthy and happy Harrismith. The town has well laid out streets, excellent drainage, a good water supply, electric light and power, a handsome town hall, which cost £30,000, a free library, and a museum. As an industrial centre, Harrismith boasts the largest woollen factory in the Union, an up-to-date meat-killing and cold storage industry, large butter factories and a number of lesser but prosperous industrial concerns.

### JAGERSFONTEIN

This is the site of the most important diamond mine in the Orange Free State Province, the stones produced being noted for their fine quality. A flawless white stone of 634 carats found here is claimed to be the most perfect diamond ever discovered.

### KROONSTAD

The second largest town in the Orange Free State, on the main line of the South African Railways, beautifully situated on the Valsch River, Kroonstad has grown largely as the result of the fertility of the surrounding district, of which the chief products are wool, maize, and dairy produce. Diamonds are also mined to some extent, and there are valuable deposits of coal. The population numbers 9,336.

### LADYBRAND

A pretty township 90 miles to the east of Bloemfontein, Ladybrand is the centre of fine grain and pasture lands. The district is also rich in minerals. Population, 3,664.

### PARYS

Situated on the Vaal River in the extreme north of the Free State, Parys has a population of 3,653, and an increasing number of rural industries.

### SPRINGFONTEIN

An important railway junction, and one of the highest points in the Free State, Springfontein is the distributing point for a wide stretch of pastoral country.

### THEUNISSEN

A picturesque town half-way between Bloemfontein and Kroonstad, Theunissen is the centre not only of considerable farming activity, but also to some extent of diamond mining.

### WINBURG

Winburg was one of the towns founded shortly after the great Dutch trek of 1835-36. The centre of an immense sheep district, it awaits with interest the development of the large coal beds which exist in the neighbourhood.



DAIRY CATTLE, SOUTH AFRICA.

## STOCK RAISING

### GENERAL DATA

**S**TOCK raising in South Africa is conducted largely on the high veld, which vast area, comprising the Orange Free State and a great part of the Transvaal, was until the close of the last century almost entirely given up to a primitive kind of pastoral farming. Over the large Boer farms, 2,000 to 10,000 morgen (about 2 1/2 acres), the cattle ranged at will, being only occasionally rounded up and selected for breaking in to ox-teams, for sale, or for slaughter. The terrible outbreak of rinderpest which occurred in 1896-7, followed by the ravages of the South African War, not only reduced the cattle of South Africa to a very low ebb, but made the old method of allowing such stock to run semi-wild over large areas impossible. Since then the cattle have in general been confined so as to be able to isolate healthy stock and prevent the transmission of disease from one herd to another, increased attention has been paid to dipping, and the introduction of pedigree bulls has led to scientific breeding for beef and dairy purposes. As a result the stock raising industry of South Africa now approximates in some degree to that of the two great sister Dominions of Australia and New Zealand. In the south, the excellent grazing grounds of the Karoo maintain the large flocks of sheep for which the Cape Province is famous, as well as being the true home of the ostrich.

The following table gives the 1924 figures of the number of live stock in the Union.—

Horses	848,436
Mules	124,685
Asses	721,850
Cattle	9,906,271
Ostriches	206,785
Sheep (woolled)	26,937,000
Sheep (other)	5,066,000
Goats (Angora)	2,126,631
Goats (other)	5,937,123
Pigs	778,147

**DIPPING.** It has been said that gold, diamonds, and the dipping tank have been the three great factors in South Africa's prosperity, and it may be that eventually the introduction of the tank in question will prove to have been the greatest. Dipping dates from 1901, in which year the first tank was erected in Natal. Before that the cattle industry was at a standstill, the risk to imported stock being so great that any wide improvement of the South African herds was impracticable. It is only necessary to turn to the import and export tables of meat, butter, and milk (see under "Commerce") to see what has been effected. Freshly imported stock are often dipped every three days. Very wisely, the construction of tanks receives Government encouragement and assistance, and loans are granted for that purpose by the Land Bank. There were over 12,000 tanks in the Union in 1925.

**DISEASES AND PESTS.**—One of the greatest difficulties from which South African farming suffers is the prevalence

### STOCK

of disease among all kinds of domestic animals, in forms which are nearly always contagious, though they are more generally caused by some blood parasite than by the bacteria common in Europe and America. The country has been repeatedly ravaged by both horse sickness (paard-ziekte) and rinderpest. Horse-sickness is at times a terrible plague, the disease remaining quiescent for a period but usually over running the country at intervals of from 10 to 15 years, as a rule in seasons of plentiful rainfall. Horses that recover become immune, and a method of immunization which has been worked out is in widespread operation. In the low-lying and warmer districts, as in parts of Zululand and the bush-veld, horses are liable to a trypanosome disease (nagana) distributed by the bites of the tsetse-fly and horse-keeping is practically impossible in the regions where the fly occurs.

Cattle have suffered greatly from recurring attacks of rinderpest, cases having been known where 90 per cent of the stock in a district died, while the antelopes and other big game also suffered severely. Rinderpest, however, is a plague that sweeps through a country and does not recur for some time. Far greater disaster to the cattle industry is wrought by the diseases for which certain species of grass ticks act as carriers, the so-called redwater and East African Coast fever. Cattle sometimes recover from the former, but the latter is almost invariably fatal. A preventive vaccine has been

prepared against redwater but the stamping out of East Coast fever depends upon the preliminary eradication of the tick. Other tick-borne diseases exist, and cattle in South Africa also suffer from anthrax and blackwater, animals freshly imported from Europe are particularly liable to attack, and great care should be taken to get them through the early months after arrival by preventive vaccinations and to keep them free from ticks. Dipping the animal in some arsenical solution at comparatively short intervals has been proved the only way of killing off the ticks before they can inoculate the beasts with the disease. Another difficulty with imported cattle arises from the presence in the veld vegetation of various poisonous plants (tulips), which acclimatised cattle have learned to avoid or to eat with impunity. Sheep in South Africa are also subject to a number of diseases besides scab, several of them being transmitted through ticks like the cattle diseases.

### STOCK

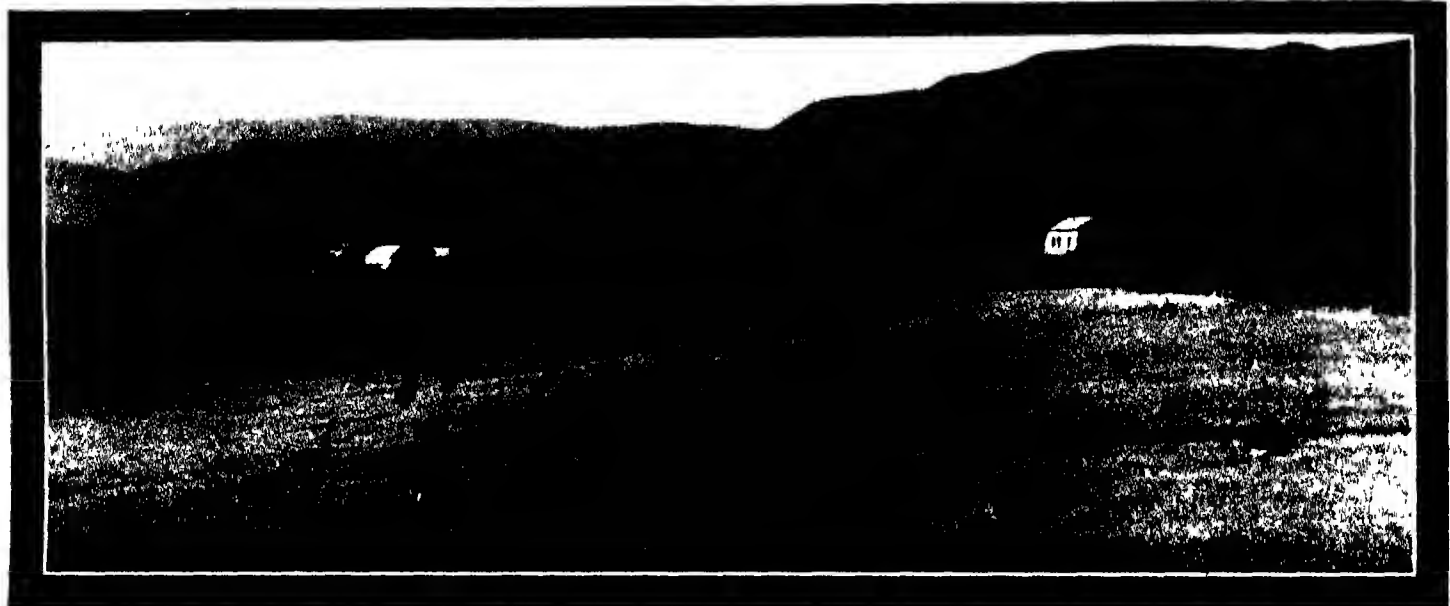
**CATTLE.**—From the days of the earliest settlement in Table Bay the ox has been the most important draught animal of South Africa, and throughout the Union the breeding of cattle for transport purposes has been a feature of the country. To-day whilst this still goes on, the raising of cattle for beef export and dairying purposes is receiving considerable attention. Great advances are being made in the science of cattle breeding, and some of the finest ranches in the world are to be found in the northern Transvaal and Bechnanaland.

In 1924 there were approximately 9,607,000 head of cattle in the Union, the stock being densest in the Eastern Transvaal, Orange Free State high veld area in Natal, and in the eastern coastal district of the Cape Province. The distribution by Provinces in 1923 was as follows: Cape Province, 3,212,225; Natal, 1,789,471; Transvaal, 2,743,518; Orange Free State, 1,862,122; total for the Union, 9,607,336.

nearly exterminated in the Transvaal and Orange Free State during the South African War. Of European breeds, the Friesian is the favourite in South Africa, and deservedly so because of its adaptability to climatic and other conditions.

During the last ten years a marked improvement has been noticeable in the herds throughout the Union, brought about by the importation of pedigree sires and by the establishment of pure-bred herds, from which bulls in considerable numbers are now bred and used for the grading-up of ordinary herds. Each of the following breeds has its own Breed Society: Friesian, Shorthorn, Hereford, South Devon, Aberdeen-Angus, Ayrshire, Afrikaner, Sussex, Red Polls, Jerseys, and Devon. Other breeds to be found in the country, though in comparatively small numbers are Brown Swiss, Siementhaler, Kerry, and Galloways.

**DAIRY FARMING.** The dairy industry in South Africa first received serious attention in 1896, since when it has made



OSTRICH FARM, CAPE PROVINCE.

**EDUCATIONAL FACILITIES.** At the various schools of agriculture of the Union valuable instruction in the methods of stock farming is given, especially at the Grootfontein School, which serves one of the finest sheep-raising areas in the country. The Angora goat and ostrich industries are also given special attention here, Grootfontein being the only institution in the world which offers a course of instruction in ostrich farming. Cattle ranching is taught at Potchefstroom, and both Glen and Cedara specialise in dairying instruction.

**PASTURE.**—The grazing capacity of the South African veld is low, and has actually been depreciated by European occupation, so that the difficulties of the stock farmer, due to the long dry summer of the inland districts, must be overcome by the planting of such hay and ensilage crops as the rainfall for irrigation permits, and by supplementing these with plantations of spineless cactus for prickly pear. The most important hay crops are derived from lucerne, Sudan grass, teff grass, Guinea grass, pasapum, and manna. For sheep the Karoo bush provides food where the veld grass cannot find enough moisture.

**BREEDS.** The horned cattle of South Africa represent only a small proportion of the existing European breeds. The Afrikaners are direct descendants of the indigenous native beasts, improved by European and English blood, notably that imported from Holland and Devon. This breed exhibits quite a distinct type of an almost solid red colour, possessing a wonderful power of impressing its characteristics on the progeny when foreign blood is introduced. These Afrikaner cattle are a true product of the veld, and have many virtues when judged from the standpoint of the South African farmer, who desires hardiness and ability to withstand all the vagaries of the South African climate without artificial feeding. The cows are poor milkers, as far as quantity is concerned, but they yield a surprisingly rich milk, containing a large percentage of fat. The oxen are slow in maturing, but when grown they are excellent for work, being fast and able to travel long distances without food or water. A full grown ox in good condition will weigh about 900 to 1,000 lb. There are not many herds of pure bred Afrikaners left in South Africa, the breed having been

rapid strides, but an enormous amount of pioneering work had to be carried out before the enterprise was placed on a satisfactory basis. In 1896 one or two small creameries were established in the Cape, followed shortly afterwards by two in Natal. In 1924 there were in the Union 73 creameries, 45 cream depôts, and 126 cheese factories. The industry has been to a considerable extent fostered by the Division of Dairying in the Union Government's Department of Agriculture, the compulsory grading of butter and cheese for export, and the spread of co-operative organisations. As showing the advance in dairy farming since the establishment of the Union, the total production of butter increased from 11,350,000 lb. in 1911 to 22,415,000 lb. in 1923, and that of cheese from 545,000 lb. to 5,659,000 lb. during the same period. The year 1923-24 was a bad one for the industry, butter production (farm and factory) dropping to 20,690,000 lb. and that of cheese remaining nearly stationary at 5,889,000 lb. The figures of factory production for 1923 showed a decided improvement in butter, output amounting to 13,185,590 lb., and that of cheese to the record figure of 1,941,050 lb.

**MEAT PRODUCTION** During recent years the prospects of an export trade have stimulated breeders in South Africa to improve the type of cattle bred for beef purposes, and the fattening of stock is receiving increasing attention. The Department of Agriculture has at its agricultural schools and experimental farms conducted upon oxen of different types and ages a large number of feeding experiments which have proved of great value, and experimental shipments of the meat of these oxen to the London market have provided useful information. Good breeding stock is in considerable demand, but prices since the War have ruled low, though there was a noticeable improvement both in the quality and value of beef exports in 1924 (See also under "Commerce").

**GOATS.** The common goat was found in the Cape when Europeans first occupied it, but the breed has since been greatly improved both in size and appearance. South African goats are bred chiefly in the

In the year 1838 South Africa possessed two pure-bred Angoras, in 1868, no fewer than half a million, and in 1924 the number had increased to 2,120,631. Cape Province returning over two million of the total. South Africa has produced two-thirds of the world's supply of mohair, the balance coming from Turkey. Practically all produced in the Union is shipped overseas, the principal market being Bradford where the fleece is spun into yarn and distributed (See also under "Commerce").

**HORSES.** The open grass-lands of South Africa are extremely suitable for horse breeding, and this was realised from the earliest times. The Cape horse has developed into a distinct type of a high average standard. It is typically a light, medium sized sure-footed animal with wonderful staying power and is descended chiefly from Arabian and English thoroughbred stocks. At one time South African horses were in demand in India as racers, and the first horses introduced into Australia were

**OSTRICHES.** The ostrich in its natural state at one time abounded over the habitable parts of Africa, and was hunted for its plumes. With a continuation of such conditions, and an increasing demand for feathers it would most likely have become extinct had not its domestication been undertaken. Wild ostriches are still found in certain parts, but the birds kept in captivity in the Union greatly increased at one time (1913) numbering about 776,000. The totals since then have gradually dwindled by two thirds as a result of the drop in the prices of feathers. Ostrich farming was first seriously undertaken in South Africa about 1863 the export of feathers from the domesticated birds increasing very rapidly from 17,522 lb. value 165,736 in 1865, to 1,023,307 lb., value 12,953,587, in 1913. To-day the trade in the feathers of wild birds is negligible and South Africa is practically the sole producer of the beautiful ostrich plumes employed for decorative purposes the world over.



AFRICANDER CATTLE.

VALUABLE STOCK

dry Karoo districts to the north and north-west of Cape Province, in the various native areas, and in the bush country where sheep do not thrive. These goats are hardy animals, grow to a considerable size, and multiply rapidly, hence they are the most profitable stock which can be raised in districts where there is a demand for their mutton. The number of goats (other than Angora) in the Union in 1923 was 6,030,601, of which total 4,101,450 were in Cape Province and 1,005,179 in Natal. In 1924 the number fell to 5,937,123.

**ANGORA GOATS.** The Angora goat is the result of a cross between the ordinary Boer goat ewe and high-class Angora rams, first introduced at great expense and trouble from Asia Minor in 1838. Most of the imported rams went to the Graaf-Reinet, Somerset East, Bedford, and Adelaide districts of Cape Province, where the best quality mohair is produced, and where the goats do well. The purest flocks of the Union are now greatly superior to any that can be found in Turkey. The South African goat carries a much heavier and more uniform fleece, showing greater character combined with a fairly even covering from head to tail.

supplied by South Africa. Owing to the long distances and scanty railway communications, fast travel was formerly done on horseback, or in the horse-drawn two-wheeled Cape cart, but the increase in railways and the advent of the motor car have largely replaced the horse for such purposes. Some native tribes, e.g. the Basutos, live to a large extent on horseback. In 1923 there were 922,310 horses in the Union, distributed as follows:—Cape Province, 408,489, Natal, 102,180, Transvaal, 149,317, and Orange Free State, 262,324. In 1924 the total had fallen to 848,430.

**MULES.** The ass was introduced into South Africa at a very early date from Cape Verde Islands, and mule-breeding appears to have been taken up during the 18th century, especially in the Malmesbury District. Ultimately the industry became general throughout the country, with intensive areas in the best districts. The South African mule, although somewhat light, is a hardy and most useful animal, and good beasts fetch high prices. In 1924 there were 124,685 mules and 721,850 asses in the Union.

**DISTRIBUTION.** The districts of Oudtshoorn, Ladismith, and Calitzdorp in Cape Province with their large irrigation schemes and extensive lucerne fields, have always taken the lead in ostrich farming. There are however many other districts of Cape Province which are also well suited to the industry and at one time were prominent in it. Among these may be mentioned Uitenhage, Albany, Somerset East, Graaf-Reinet, Alexandria, Middelburg, Humansdorp, Cradock, Swellendam, Fort Beaufort, and Robertson. In 1924 there were in the whole Province some 205,000 ostriches out of the total of 206,785 which the Union carried.

**FEATHER PRODUCTION.** South Africa is unique in the quality and beauty of the ostrich feathers produced, the latter being largely due to the good treatment and the rich pasture provided for their birds by the farmers. This ensures a uniform and perfect growth of feathers. The South African ostrich has been described, not inaptly, as "the most pampered animal in existence." As already stated, the maximum of production was reached in 1913, after which year a set back in prices

and the European War successively dealt severe blows to the industry. At the close of hostilities matters improved somewhat, but the industry has not yet really recovered, and exports since 1919 have shown a diminishing tendency (See also under "Commerce").

**PRICES.** In recent years the highest prices obtained for feathers were secured in 1913, when an average of £2 17s 9d was recorded. The lowest average prices have been 15s 8d in 1915 and 10s 3d in 1919. By 1919 prices had been restored to a basis which again made ostrich farming a profitable proposition but since that time they have steadily fallen.

In 1923 in order to provide funds for the rehabilitation and organisation of the industry, a levy of 2 per cent on the declared value of ostrich feathers exported from the Union was instituted.

**Prospective Rise in Prices.** At the end of 1925 it was announced that the majority of the ostrich farmers had formed a Co-operative Society and had fixed the prices of all pluckings after January 1, 1926 at a minimum of £3 per bird which is nearly

three times above the rates which obtained on October 1, 1925. Further, the Union Government, through the Land Bank, will advance the society half the value of the pluckings that is, 30s per bird which will assist it to hold the feathers for one or two years if necessary until the market is ready to take them at the price. This scheme has been rendered possible owing to the diminution of ostriches in the Union and it is confidently expected that very high prices will prevail.

**PIGS.** In 1924 there were 778,147 pigs in the Union, the returns showing a steady decrease since 1919. Pig farming in South Africa has been given serious attention only during the last ten years and there can be no doubt that the Union offers excellent opportunities for the building up of a bacon industry and an overseas export trade. Maize and lucerne, two of the most valuable pig foods, can be economically produced and the cheapness of labour in South Africa renders pig farming more profitable than in most other countries. In 1925 the factory production of bacon and ham was 1,301,513 lb.

**POULTRY.** The poultry industry is being steadily developed in South Africa and its importance as an adjunct to farming operations is becoming more generally appreciated every year. Egg production has so far been the chief aim, the prices realised for first quality eggs always affording a substantial margin of profit, but with the development of an export trade in table poultry, more attention is being paid to this branch of the industry, there being an increasing demand for table birds of high quality, both for export and home consumption. In 1922 a levy of 9d per case was placed upon all eggs exported from the Union, the proceeds being devoted to the development of the industry. The establishment of this fund enabled the dispatch of a poultry officer to England in 1924 with a view to obtaining the most up to date information in regard to marketing and opening up fresh markets for South African poultry produce.

The poultry figures of the Union in 1922 (the last year for which figures are available) were: fowls, 9,181,824; ducks, 115,810; geese, 201,238; and turkeys, 262,541.

**SHEEP.** See article following.

## SHEEP AND WOOL

**S**OUTH AFRICA is one of the five great wool-producing countries of the world, ranking fourth in order to Australia, Argentina and the United States. It must also be remembered that the greatest wool-producing country—Australia—owes the foundation of its industry to the Merino sheep which it obtained from Cape Colony.

The first Merinos were imported into South Africa in 1785, having been presented to the Dutch Government by the King of Spain. Development at first was slow, as is shown by the fact that early in the 19th century an average of 3½ lb per sheep was considered an excellent yield, whereas to-day the average is 100 per cent more, with vastly improved quality. About this time a number of fine-bred, well-woolled sheep were brought to the country by the English settlers who were located in the Albany District, and these were most successful. A new effort in 1827, still further inland, was even more successful, and laid the foundation of the pastoral prosperity of the Eastern Cape Province. From then onwards frequent importations from Saxony and France, and, later on, from Australia, have greatly improved the character of the South African flocks, the present wool industry of the Union (the value of which has increased from £1,887,459 in 1905 to £14,616,000 in 1925) having been built up by the careful selection of rams and the breeding of pure merinos.

**DIFFERENT TYPES OF SHEEP.**—Generally speaking, on account of pastoral conditions the greater part of South Africa is better suited to the ranging merino than to the majority of English breeds or cross-breeds, which are more at home under rich agricultural conditions. In parts of the Union with a heavy rainfall and suitable agricultural conditions, high-class mutton sheep can be raised successfully. There are from five to six millions of Persian and Afrikaner (non-woolled) sheep, which, crossed with certain of the English breeds, will give a good foundation on which to

build a profitable mutton industry. The Karakul sheep, whence the "Persian" lambskins are obtained, has been found to be the hardest sheep in the country yields good mutton, and can be crossed successfully with the native Cape sheep.

**DISTRIBUTION.** Each of the three distinct types of country into which South Africa is divided, the Karoo mixed veld, and grass country, is well suited to sheep breeding. The Karoo comprising some of the best sheep country in the Union, is a semi-arid and an extremely healthy region with an altitude of from 2,000 to 4,000 ft above sea level. The annual rainfall varies from 10 to 15 inches. Its vegetation consists chiefly of numerous varieties of highly nutritive edible shrubs, much relished by sheep and having great drought-resisting qualities. The mixed veld (Karoo and grass), also excellent sheep country, comprises a large area in the midlands of Cape Province and in the western and south-western Orange Free State. It has an altitude of from 3,000 to 6,000 ft, with an average rainfall of from 15 to 22 inches per annum. The carrying capacity of this country is somewhat higher than that of the Karoo. The grass veld comprises the bulk of the pastoral area of the Union, viz. the coastal belt of the western Cape Province, the whole of the eastern Cape Province, central and eastern Orange Free State, the whole of the Transvaal, and Natal. The rainfall in this area is considerably greater, ranging from 18 to 36 inches.

In 1924 there were 32,002,848 sheep in the Union, an increase of 584,382 on the figure of 31,418,466 returned in 1923. In the latter year the distribution of sheep by provinces was as follows:—

	WOOLLED SHEEP	OTHER SHEEP
Cape Province	14,083,571	4,082,646
Natal	1,286,579	318,112
Transvaal	2,852,361	649,047
Orange Free State	7,601,428	544,722
	25,823,939	5,594,527

**LABOUR.** Labour conditions in the Union are all in favour of sheep farming on a large scale since the South African native furnishes an almost inexhaustible supply of cheap labour and makes an excellent shepherd. Wages approximate from £2 to £3 per month including keep. Practically all the shearing which usually takes place in November and December is performed by native labour, and though not so fast as the Australian shearer, the South African native's work leaves little to be desired. The cost of shearing in the Union ranges from 10s to 15s per 100, as against 7s to 30s in Australia.

**PRODUCTION OF WOOL.**—The following table shows the production of wool by provinces during the years 1921-1924.

	1921-22 lb	1922-23 lb	1923-24 lb
Cape Province	71,340,877	72,045,812	77,674,058
Natal	5,660,092	5,555,543	6,204,061
Transvaal	15,147,702	15,271,370	15,910,541
Orange Free State	47,895,218	44,344,880	48,070,833
Total	140,052,949	137,217,585	147,865,493

To these totals must be added a considerable amount of wool pulled from slaughtered sheep and sheep which have died from disease, as also of wool shorn by speculators and held for a rise in the market, figures of which are not shown in the production returns, but which account for the seeming discrepancy between the latter and the export returns. (See under "Commerce.")

**QUALITY OF SOUTH AFRICAN WOOL.**—For climatic reasons the greater portion of the Union is best suited to the production of wools of 64's to 70's quality. The western and eastern districts of Cape Province, the eastern Orange Free State, the eastern Transvaal, and the whole of Natal and East Griqualand are capable of producing superfine wools of the highest quality. Undoubtedly, a great improvement in the





MERINO RAMS.

RANCHING SCENE.

general character of South African wool has been brought about during recent years through the judicious classing and mating of sheep and much good work has been done by the sheep and wool experts of the Agricultural Department in advising farmers in this direction. An improvement has also taken place in the classing and get-up of the clips so as to make them more attractive to the buyers when the wool is displayed for sale, a result for which the work of the various Wool Growers' Associations is largely responsible.

#### **SOUTH AFRICAN WOOL-MARKET.**

In former days it was customary for South African sheep farmers to sell their wool or barter it to up-country storekeepers, merchants, or speculators, many of whom were supported by large mercantile or broking houses on the coast. These buyers then forwarded the wool to the coast for disposal. Of recent years, however, the majority of sheep farmers, having failed to get the true value of the wool from these buyers, have adopted the more business-like method of forwarding their wool direct to wool-brokers at the principal ports, who sell the clip on a commission basis.

The systems of wool selling in vogue at the different ports are not uniform. In Durban, all wool must in the first instance be offered for sale at public catalogue sales. If the reserve price is not reached and the wool is declared unsold, the highest bidder

has the option until the following day of taking over the wool if desired, but should he not avail himself of this option, the wool may be sold by private treaty between the broker and the buyers. At Port Elizabeth wool is sold either by private treaty or at public catalogue sales, but there is no compulsion, as in Durban, first to offer it at the public sales. In East London and Cape-town wool is at present sold only by private treaty between the brokers and the buyers. Previous to the European War public sales were held in East London, and have since been resumed.

In certain up-country towns in the Western Province of the Cape, viz., Swellendam, Heidelberg, Riversdale, Caledon and also the coast town of Mossel Bay, one public sale per annum is held comprising the various clips grown in those districts. The custom of holding these annual sales has been in vogue for many years. Periodical public wool sales have been started more recently in Bloemfontein and other places in the Orange Free State.

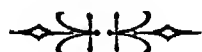
**PRICES** — There has been a great deal of fluctuation in the wool market from time to time. The average price paid for grease wool gradually rose from 6 01d per lb in 1908 to 29 30d in 1920. A great depression in the wool trade then set in, the average price paid in 1921 being only 7 90d per lb, this rising in 1922 to 11 93d. With the development of a world shortage

in the supplies of wool, the price has since moved steadily upwards, averaging 20 5d in 1924, as against 17d in 1923, the prices in 1924 being, with the exception of 1920, the highest ever obtained.

**PRINCIPAL MARKETS** — Prior to the War the bulk of the Union's wool was shipped to the United Kingdom, where a large proportion was marketed and distributed. During the War the usual trade channels were disturbed, and the produce was to a large extent diverted to other centres, notably Japan and the United States. Japan has now almost fallen out of the market, and the trade done is, first and foremost, with the United Kingdom, which in 1924 took more than half the total shipments, and afterwards with Germany, France, and Belgium in the order named. (See also under "Commerce.")

#### **WOOL-GROWERS' ASSOCIATIONS.**

These associations, which have been established throughout the country, in 1925 numbered 35. They are not co-operative societies in the sense only that they do not sell on behalf of their members. They exist for the purpose of enforcing correct skirting, classing, and packing of wool in order to secure a good name for their members by winning the confidence of buyers, and they are doing very valuable work. It is proposed to form a National Wool Growers' Association, to which the local associations will be affiliated.



# SOUTH-WEST AFRICA

**S**OUTH-WEST AFRICA, which is a Protectorate of the British Empire, administered by the Union of South Africa under a mandate from the League of Nations, embraces an area of 322,303 square miles (including the Caprivi Zipfel), lying between latitudes 17° and 28° 57' S. and between the Atlantic Ocean and longitude 21° 1'. As the Caprivi Zipfel for administrative purposes has been transferred to the Protectorate of British Bechuanaland, and Walvis Bay (which is 374 square miles in extent) is administered by the Administration of South-West Africa, the total area of the Territory now under the direction of the Union is 312,104 square miles. The country forms a large plateau on an average 3,600 ft. above sea-level, interspersed with small mountain ranges.

The most mountainous district is that of Windhoek, to the north-east and that of the Aas Mountains in the south and south-east, where each of the principal rivers, the Kunene, the Fish, the Elefant, the Nosob, the Swakop, and the Auob, has its source. The waterways which form three of the boundaries of the Protectorate, the Kunene, the Okavango, and the Grange Rivers, are large and perennial streams. The climate is hot and dry, but healthy, except in the northern districts where malaria is very prevalent during the autumn.

**ADMINISTRATION.**—The mandate under which the Territory of South-West Africa (formerly German South-West Africa) is vested in the Government of the Union of South Africa bears date December 17, 1920, and is exercised by the Governor-General, who delegates most of his powers to an Administrator appointed by the Union Government, who, in turn, had, prior to 1920, the sole power of legislation and the control of all governmental activities in the Territory, except so far as regarded the railways, which are worked in conjunction with the Union Railways and Harbours under the Union Minister of Railways. In terms of the South-West Africa Constitution Act passed by the Union Parliament in 1925, the Territory has now a Legislative Assembly of 18 members, 12 elected and six nominated by the Union Government, the Assembly dealing with all subjects not specifically reserved to the Union Government. The Executive consists of a committee of five—the Administrator, who is chairman with a casting vote, and four members elected by the Legislative Assembly, who may, but need not, be members of the Assembly. In respect of the reserved subjects, the Administrator has an Advisory Council consisting of the four members of the Executive, together with three other members to be appointed by the Administrator, one of whom is to be chosen for special knowledge of native affairs. The franchise is strictly limited to adult male Europeans, who number rather less than 7,000. While not given the status of an "official language," liberal provision is made for the use of German in the Courts and Assembly.

The general system of administration in the Territory is the same as that existing in the Union, and the country, exclusive of Ovamboland, which is a native reserve, is divided into 17 magisterial districts, the magistrates exercising certain adminis-

trative as well as judicial functions. The principal towns have municipal councils, which it is intended shall at no distant date, be wholly elective.

The present Administrator of the Territory is the Hon. A. J. Werth.

**COMMERCE.** There was a gratifying increase in 1924 in the Territory's volume of trade, as will be seen from the following table:

IMPORTS	1923	1924
Direct from overseas	£359,120	£628,020
From Union of S. A.	850,966	1,071,066
Total merchandise	1,210,086	1,699,086
Government stores	82,434	76,420
Specie	8,900	1,112
Grand total of imports	£1,301,404	£1,777,164
EXPORTS		
To overseas destinations	2,110,934	2,243,888
To Union of S. A.	500,060	600,305
Total merchandise	2,670,994	2,850,193
Government stores	—	—
Specie	2,000	1,280
Grand total of exports	£2,672,994	£2,851,473

During the period January-July, 1925, imports into and exports from South-West Africa amounted to £1,076,971 and £1,519,906 as against £1,027,441 and £1,060,219 respectively in the first seven months of 1924.

It will be noticed that the Union furnished by far the greater proportion of imports. Germany, Great Britain, and the United States contributed between them over 90 per cent. of the trade from overseas countries. There is apparently a growing tendency to buy direct from overseas, such imports having risen in value from £283,072 in 1922 to £359,120 in 1923 and to £628,020 in 1924. An even greater increase was foreshadowed in 1925. At present South Africa acts as a species of "clearing house" for South-West Africa, but if direct relations are cultivated between merchants in Windhoek, Luderitz, Swakopmund, and other towns and general shippers and manufacturers in Great Britain, South-West Africa will assuredly assume an important commercial standing when its vast mineral and other natural resources are more thoroughly exploited.

**CUSTOMS AND EXCISE.**—For the purposes of the collection of customs and excise duties the Territory of South-West Africa is regarded as part of the Union, and all customs and excise laws of the Union are applicable to the Territory. The duties collected are paid into the Consolidated Revenue Fund of the Union, out of which fund there is disbursed towards the cost of the administration of the Territory a revenue approximating to £75,000 a year.

**COMMUNICATIONS.**—Besides railway communication with all parts of the Union (see "Railways" following), there is regular communication by sea between South African ports and Luderitz and Walvis Bay maintained by the Woermann Line, which also arranges a three-weekly

sailing between Hamburg and Luderitz and Walvis Bay, the time occupied being usually 19 to 21 days. The Holland Africa line also makes Walvis Bay a port of call once a month, sailing from Rotterdam via Hamburg, Las Palmas, and Tenerife. Union Castle cargo steamers call regularly at Walvis Bay.

**POSTS, TELEGRAPHS, AND TELEPHONES.** Postal, telegraphic, and telephonic facilities and rates are the same as in the Union except that the Agricultural Parcel Post is not available. In 1924 there were 271 centres within the Territory where post or telegraph facilities were at command, included in this number being 27 post offices conducted by full-time officials, transacting all kinds of post, telegraph, telephone, money order, postal order, savings bank, and cash on delivery business. The number of letters posted in 1923 was 2,053,116, while 1,380,392 were in transit and 2,080,796 were received. The total number of telegrams dealt with in 1923-24 was 575,289, and the number of cable messages despatched 4,483. On March 31, 1924, there were 698 telephone exchange connections and 174 extensions. The Walvis Bay Wireless Station, which has a normal day range of 750 miles and a night range of 1,500 miles, dealt with 3,878 messages in 1924. The total expenditure of the Posts and Telegraphs Department in 1923-24 was £51,111, postal revenue amounting to £67,229, while customs collections on parcels and sales of revenue stamps brought in £13,742.

**FINANCE.** Under German administration the Territory was never self-governing, and all estimates of revenue and expenditure prepared therein required the sanction of the Imperial Reichstag. Since 1920 the Administration has been financed from revenue raised in the country, the Territory having been relieved of the burden of maintaining the railways.

The revenue of the Territory for 1922-23 amounted to £853,708, as against £870,924 for 1921-22, and the expenditure to £834,350, compared with £1,116,768. The principal source of revenue is the tax on the diamond mines at Luderitz, which in 1922-23 realised £591,385. An important item of expenditure was the S.W.A. Police £138,042.

**BANKING FACILITIES.**—Immediately after the occupation of the Territory by the Union Forces the National Bank and the Standard Bank of South Africa each established branches, and these institutions have now such branches in all the larger towns. The German banks continued to carry on their business, but the largest of these, the Deutsche Afrika Bank, went into liquidation in 1922, when also several smaller German banks were liquidated.

**HISTORY.**—The first European to land on the shore of what is now South-West Africa was the Portuguese navigator, Bartholomew Diaz, who in 1486 erected an iron cross (the remains of which can still be seen in the Capetown Museum) at Angra Pequena—now Luderitz. For three hundred years afterwards the country attracted no attention, but towards the end of the 18th century the discovery of copper mines excited the interest of explorers, and the rich but hostile Herero tribe of natives was met with. During

the first half of the 19th century missionary activities established thriving stations at most of the important native villages in Great Namaqualand and Damaraland, and whalers also visited the coast with great profit. Missionary labour opened up a field to commercial enterprise, the potential riches of the country began to be talked about, and in 1878 Walvis Bay, the only large and safe harbour along the whole of the South-West African Coast, was annexed by the British Government. Annexation of the whole country was asked for by the Hereros, the Bastards of Rehoboth, and several Hottentot tribes, and was strongly urged by the Cape Government, but the British Government was deaf to these representations, and it was left to the more enterprising Government of Germany to take the important step of proclaiming a protectorate over the whole coastal belt of South-West Africa, the German flag being hoisted on August 6, 1884, at Luderitz. In 1890 the country was formally annexed by Germany, eight years later the discovery of diamonds at Luderitz caused a great influx of immigrants and capital, and progress, which had been seriously interrupted by a revolt of the Hereros and Hottentots (1904-07), was rapid. Luderitz and Swakopmund became flourishing sea-ports, while the construction of railway lines opened up the interior to trade. Then came the outbreak of War in Europe in 1914, one of the earliest results of which was the invasion of German South-West Africa by the Union Forces at the end of that year and its complete surrender a few months later. In 1919 the Territory was handed over to the Union Government as a Mandated Territory, but certain difficulties regarding the status and treatment of Germans naturally took some little time to adjust. The passage of the South-West Africa (Naturalisation of Aliens) Act through the Union Parliament in 1925 put an end to all controversy, and there seems every likelihood that this former German colony will develop on lines which are common to South Africa as a whole. In 1926 German settlers in the territory became, and with their own consent—British citizens, and South-West Africa itself received a form of local self government which would seem to be only preparatory to its future entry into the Union as a fifth Province.

**LAND SETTLEMENT.**—The total area of South-West Africa is roughly 200,000,000 acres, of which rather less than one-sixth was alienated, or in progress of being alienated, during the German regime. Since the country was taken over by the Union Government, 931 farms with a total area of some 2,300,000 acres have been allotted under the two Land Settlement Proclamations in force in the Territory. The number of settlers to whom farms had been allotted up to the end of 1924 was 1,135, and the total valuation of the land so affected amounted to £650,936. Advances totalling £224,267 had been granted to settlers, apart from an amount of approximately £151,458 spent upon boring operations on Government lands on behalf of settlers. There was in 1925 still an area of roughly 129,000,000 acres of vacant Government land, of which rather less than half is suitable for settlement. Under the Union Land Settlement Acts, land in South-West Africa is from time to time advertised as available for settlement purposes by notice in the "Official Gazette" and in newspapers circulating in the Territory and Union. The farms are

advertised for eight weeks, after which period all applications are considered by the Land Board.

**PEOPLES.**—The following table shows the population of South-West Africa as revealed by the last census of 1921—

RACE	
European	19,432
Bantu	177,462
Other Coloured	39,845

Total 227,739

Excluding a certain number of Cape coloured people and non resident native labourers, the purely native population is estimated to number 195,000, namely: Ovambo, 102,000; Herero, including Ova-Hemba and Ova-Mbandero, 43,000; Khip-Kaffirs or Berg Damaras, 21,000; Hottentots, 21,000; Bushmen, 4,000; and Rehoboth Bastards, 4,000. These races afford the main sources of the labour supply for domestic agricultural and industrial purposes. The Ovambo work chiefly in the mines, railways and other industrial concerns, the Hereros and Hottentots on stock farms and the Berg Damara at jobs involving hard manual labour. The Bastards, the descendants of a cross of Cape European farmers and Hottentots, are superior in intelligence to the other natives, and are successful cattle breeders and hunters. The Ovambo, many of the Bushmen tribes in the Kalahari region, and a small section of the Ova Herero in the Kaokoveld still retain their tribal life and customs.

**PRODUCTION.** South-West Africa is essentially a cattle raising country, the climatic conditions adversely affecting many agricultural crops. The country is well mineralised throughout, but its mineral possibilities have as yet only been partially explored.

#### AGRICULTURAL PRODUCTION

In the northern portion of the Territory the short rainy season, excessive heat, and early frosts often affect the crops seriously, but in the south along the banks of the Orange River, where the land is under irrigation and in the Auoh and Lower Nossob valleys, where artesian water supplies are being developed there are great possibilities in the way of maize and wheat crops. Cotton, beans and fibre crops are receiving increasing attention, the cotton land in the territory having the advantage of being cheap at present, while the climate is healthy for white and coloured residents.

**INDUSTRIAL PRODUCTION.**—An industrial census taken in 1923 showed a decline in the number of factories in South-West Africa since the previous census, but an increase in the gross value of output and in the value of the plant and machinery in use. In 1923 there were 34 factories producing articles of food and drink, five working in stone and clay, 12 turning out vehicles, 18 metal-working and engineering establishments, and eight furniture and woodworking concerns, while 27 other firms manufacture a wide variety of goods.

**MINERAL PRODUCTION.**—The most valuable of the minerals and metals mined in South-West Africa up to the present have been diamonds and copper. The diamonds are found only on or near the Atlantic coast, in no place more than 12 miles inland, between the Orange River and a point south of Swakopmund. They are of alluvial origin, and the stones, though small, are of excellent quality and command

a good price. Since the discovery of the fields in 1909 about 219,000,000 worth of diamonds have been exported, the estimated value of the output in 1923 being £1,056,700. Copper is found all over the territory, but the only mines worked in 1924 were those at Tsumbichi, Asis, and Guchab, all in the Grootfontein District in the north. The output in 1923 was 43,317 tons, valued at £446,210, as against 34,351 tons in 1922, valued at £274,808. The extraction of tin ore, which is found mostly in the area round the Frougou mountains, has gradually developed, the value of the output in 1924 being £31,399. Gold is known to exist either alone or in conjunction with other metals in various parts of the country, but has not yet been commercially developed, nor have the extensive non-ferrous deposits received much attention, owing to the distance of the fields from sea or rail. The export of vanadium, which occurs in the Grootfontein District, is becoming of increasing importance, the value of exports in 1924 being £83,443. Other minerals and metals which have been located, but not yet exploited, are—Apatite, asbestos, beryl, corundum, cobalt, haematite, iron, lead, limestone, marble, mica, molybdenite, monazite, mottamite, nickel, oil (shale), rock salt, rose quartz, salt, scheelite, silver, topaz, tourmalines, uranium, wolframite and zinc.

**PASTORAL PRODUCTION.** Live stock thrive everywhere throughout the Territory, which is not only self-supporting in regard to beef and mutton, but has been for some years a source of supply of cattle and small stock for the meat trade in the Union. The whole country is admirably suited to stock farming, cattle doing best in the north and sheep and goats in the south. Several companies and many private individuals owning over a thousand head of large stock are established as ranchers in the Territory. The value of this industry is shown by the exports of live cattle to the markets of the Union and overseas. In 1923 there were exported 55,000 head of cattle, valued at £276,670, in 1924 the figures were 31,330 and £156,655 respectively.

A census of live stock taken at the end of 1923 showed the following figures: Cattle, 530,355; horses, 21,336; mules, 1,760; donkeys, 35,873; pigs, 5,886; woolled sheep, 38,095; Karakul sheep, 58,097; other sheep, 840,962; angora goats, 23,130; other goats, 900,627.

**RAILWAYS AND ROADS.** At the outbreak of war in 1914 the railway system in what was then known as German South-West Africa comprised in all 1,434 miles of line, of which 98 were private. In 1924 the mileage (the railways having been incorporated in the Union system as from April 1, 1922) was 1,697 miles, made up of 1,329 miles broad gauge and 368 narrow gauge. The estimated damage suffered by these lines during the War was approximately £350,000, and up to March, 1922, £150,000 had been expended on necessary repairs and works. The question of the development of the system in the direction of feeder lines is in abeyance, pending more accurate knowledge of the mineral resources of the territory. Railway revenue increased from £379,000 in 1923-24 to £395,000 in 1924-25, in which year goods traffic totalled 391,753 tons, an increase of 24,555 tons over 1923-24. (See also general article on "Railways.")

**ROADS.**—The Territory has always been well served by roads, the principal main trading routes running inland from the

south while Windhoek is the centre of a system of well kept highways trending east, north and west. These main roads are linked up by minor roads. There are good road motor-services connecting with the railways at the following points: Windhoek-Gobabis, 145 miles; Moriental-Malahoe, 75 miles; Keetmanshoop-Aroab, 110 miles; Kalkfontein-Warmbad, 40 miles; and Otjowarongo-Waterberg, 60 miles. In addition, there are some 20 cart services to the smaller settlements off the main lines of communication.

### WINDHOEK

Windhoek is the capital of South-West Africa and the seat of the Administration. It is pleasantly situated in a position dominated by a circular chain of hills, which protect it from high winds but render it very hot in summer. At the outbreak of war in 1914 the powerful wireless station erected here by the Germans was one of the first to be marked out for destruction or capture, and this was accomplished by the Union forces in 1915. It is said that on favourable nights messages could be exchanged with Berlin. Since its capture it has not been in use.

The population of Windhoek at the last census was 7,859, of which number 3,400 were Europeans.

**BUILDINGS, ETC.** The town was well planned by the Germans, and much has been done to improve it since British occupation. Besides the handsome Government buildings, which are commodious and solidly constructed, the Administration owns a large number of substantial houses which are allotted to Government officials, and there are also many fine business premises in the centre of the town. There are three hospitals (two for Europeans and one for natives), as well as a Maternity Home. The Lutheran Church is the principal ecclesiastical building. Large and up-to-date school buildings have been erected, with hostels attached for both the new and the old population, and in addition the Church of England has opened a school and hostel for girls. House building for the increasing population is progressing rapidly. The streets, which are broad and well laid, are now planted with shade trees and a light railway runs the length of the main street. There is a Municipality, which is taking vigorous steps to improve both the streets and the water supply.

**PARK.** A small public park, of which the Zoological Gardens, with the nucleus of a fine collection of African fauna, are the principal attraction, has been laid out. The park is planted with beautiful trees and flowers of every variety, and is a popular resort during the hot summer months.

### GROOTFONTEIN

This is the terminus of a branch line of railway in the rich Otavi copper district, in the extreme north of the Territory. The neighbouring country, besides being highly mineralised, has good agricultural possibilities. In 1921 the population of Grootfontein was 4,892, of whom 1,232 were white.

### KEETMANSHOOP

A town of some 3,000 inhabitants, Keetmanshoop is on the main line of railway connecting South-West Africa with the Union, and in the middle of the best sheep grazing district of the Territory. There is a finely constructed bridge over the Fish River, and the Railway Engineering shops are here.

### LUDERITZ

The town and port of Luderitz (known under the German occupation as Luderitz-bucht) is situated in lat. 26° 35' S. long. 15° 10' E., on the South-West African coast about half way between Walvis Bay and Port Nolloth. Originally named Angra Pequena by the Portuguese navigator, Bartholomew Diaz, as far back as 1486, it acquired its present name from a merchant of Bremen, Adolf Luderitz, who established a trading station there in 1882, from which developed two years later the German protectorate.

The fortunes of Luderitz as a trading centre and port were made by the discovery of alluvial diamonds in 1908 in the adjoining Kolmanskop and Pomona districts. The trade of the port has increased considerably during the last three years and improved facilities are being provided to cope with it. At present vessels discharge into lighters, but the construction and purchase of a new reinforced concrete jetty 540 ft long a shipway for lifting tugs, lighters and small craft and new steel lighters, each of 170 tons capacity have been sanctioned. Important fish canneries have been erected in the town and a considerable amount of trade through the port is anticipated from there. There is a population of rather more than 2,000, of whom one-half are Europeans.

**PILOTAGE.** Not yet compulsory, charge, £2 10s. each way.

**PORT CHARGES.** Luderitz is a free warehousing port for the purpose of warehousing and securing goods.

**BALLAST** 8s. per ton free alongside.

**RIFT OF HEALTH** 0s.

**TOLLAGE.** For vessels up to 750 tons, 17 10s.; from 751 to 1,500 tons, 112 10s.; over 1,500 tons, £15, all each way.

**WATER** £1 10s. per ton, free alongside.

### OMARURU

With a population of 4,000, Omaruru on the Otavi Railway is the nearest station to the tin mines of Okombahu and is likely to develop. The Waterberg near by was the scene of much fighting between the Germans and Heteros.

### REHOBOTH

This is a town lying 60 miles due south of Windhoek, at the head of the great Fish Valley, and is interesting as being the seat of the Bastard Government, the Bastards being ruled by a chief with the title of "Captain," supported by a Raad or Council partly hereditary and partly chosen every five years by the "Burghers" of Rehoboth. The population in 1921 was 9,727.

### SWAKOPMUND

The town and port of Swakopmund, on the Swakop River, is 21 miles north of Walvis Bay, with which there is communication by rail. An open roadstead, Swakopmund was a prosperous and busy seaport during the German regime, but since the British occupation its trade and shipping have gradually been diverted to Walvis Bay, and the future of Swakopmund would seem to lie more in the direction of a seaside resort, for which its temperate climate, long stretch of beach, admirable bathing facilities, and opportunities for sport so admirably fit it.

### WALVIS BAY

Walvis Bay (formerly Walvisch Bay), situated almost in the centre of the coast line of South-West Africa, was for a long time an isolated British enclave in foreign

territory. It was naturally cut off from commercial communication with the hinterland, and was only occasionally visited by British ships of war. When the German colony surrendered to the Union forces in 1915 Walvis Bay was at once connected with Swakopmund to the north by a railway, and thus became the principal seaboard terminus of the South-West African Protectorate Railway system. The whole of the shipping activities of Swakopmund have been transferred here and Walvis Bay is now a regular port of call for mail steamers of the German and Holland Lines.

**ACCOMMODATION.** Considerable development of the harbour works has taken place, additional temporary wharves having been run up, a new slipway constructed and improved and extended goods and station yards provided. Provision has been made for the dredging of a channel and the construction of wharves to enable ships to be brought in to discharge and load. At present this is done by means of small lighters. The pier, which is 200 ft long, has a depth at its end of 7 ft at low water.

By 1927 there will be deep water berth accommodation alongside the jetty now in course of erection, with two berths for steamers drawing up to 34 ft of water. The jetty is to be 1,000 ft long and ample provision has been made for further extension when the requirements of the port demand it. There will also be room for coasters. Extensive reclamation work has been undertaken in the vicinity of the new cold storage buildings to be completed in 1926. These will be fitted with all the latest refrigerating machinery for dealing with beef, butter, fish, etc. and will be the most extensive of their kind in the Union.

**ANCHORAGE.** The bay is a large and safe one, with an entrance 3 miles wide, and protected from all winds except N. and S.W., which rarely blow. The soundings are regular, from 3 to 8 fathoms. The anchorage is in 4 to 7 fathoms, about a mile off shore.

**COMMUNICATIONS.** There is steamship communication with Capetown every three weeks. Railway communication with the Union is via Windhoek, Nakop and De Aar. The construction of the line from Windhoek to Gobabis has greatly improved the prospects of Walvis Bay as a shipping port, a scheme being now under consideration to extend the track from Gobabis 500 miles to Mahalapye, a station on the Rhodesian Railways. Should this proposal be carried out, Walvis Bay would be brought into direct communication with Bulawayo (1,150 m.) and Francistown (1,050 m.), and would become the chief cattle port in South Africa. A further extension of only 100 miles from Mahalapye to Vaalwater, in the Transvaal, would link up Walvis Bay with Pretoria (about 1,100 m.), when the importance of the port to the mail boat services between Europe and South Africa would be at once established.

**PORT CHARGES.**—These are on goods landed 1s. 6d. and 16s. 8d. per cent ad valorem. Sand ballast is charged for at 4s. per ton, not including the cost of digging and placing in lighter, including such labour, 6s. 6d. per ton.

**TRADE.**—Copper ore to the extent of 46,000 tons per annum from the Otavi Minen- und-Eisenbahn-Gesellschaft, Tsumbeh, is exported. A meat canning factory has recently been constructed, and the whaling industry gives employment to a certain number of persons in the reduction of the oil and guano. It is hoped to develop the mineral export trade.

# THE NATIVE PROTECTORATES



Of the native States that at various times have come under direct Imperial protection and control, some on the outskirts of the old Cape Colony and Natal are now absorbed in these Provinces, the tribes forming them having in great measure lost their entities. Only three now remain amenable to the Imperial Government, viz., Basutoland, Bechuanaland, and Swaziland. The Government of each is vested in the office of a High Commissioner, who, since 1910, has been the Governor-General of the Union.

## BASUTOLAND

Basutoland occupies the crown of the great African range of mountains known as the Drakensberg, which extends from the Cape to Rhodesia. The Protectorate lies between the three Provinces of the Cape, Natal, and the Orange Free State. Its area, 11,716 square miles (about the same as that of Belgium), consists for the most part of continuous mountain plateaux of the rugged and broken type, only about half the total area being habitable. The temperature here ranges from 10° F. in winter to 90° F. in summer, and the average rainfall over 10 years is between 30 and 40 inches per annum.

**ADMINISTRATION.**—The territory is governed by a Resident Commissioner under the direction of the High Commissioner for South Africa, the latter possessing the legislative authority, which is exercised by proclamation. The chiefs adjudicate on cases between natives, with a right of appeal to the Magistrates' Courts, where all cases between the natives and Europeans are tried. The present Resident Commissioner (1926) is Mr. John Christian Ramsay Sturrock.

**CAPITAL.**—The capital town is Maseru, which is the headquarters of the Government. It is situated on the Caledon River, 80 miles by rail east of Bloemfontein. The population in 1921 was given as 399 Europeans, 1,890 natives, and 30 other coloured persons. Maseru, which possesses a large industrial school, a public hospital, and an ample water supply, is becoming known as one of the best centres from which to explore the Maluti Mountains, the highest peak of which, Machacha, is nearly 11,000 ft.

**COMMERCE.**—The trade of Basutoland is largely dependent on the seasons and the success or failure of the grain crop. In 1924 exports from the Protectorate exceeded imports by £16,531, imports totalling £942,279, as compared with £827,054 in 1923, and exports amounting to £958,810, a considerably higher total than the figure of £803,769 recorded in 1923. The principal exports are wool and mohair, which both show a rising tendency. Dutiable imports consist chiefly of cotton and woollen goods, haberdashery, saddlery, tinware, agricultural implements and groceries, and are mostly of British origin. Both imports and exports are practically all carried via the Orange Free State. The customs tariff in force is the same as that for the Union.

**FINANCE.**—The revenue of the Protectorate, which is derived from customs, native tax, income-tax on Europeans, post-office, and licences, amounted in

1923-24 to £252,300, expenditure for the same year totalling £241,570, showing a credit balance of £10,730. Under the native tax law every adult male native pays 25s. per annum, and if he has more than one wife by native custom he pays 25s. per annum for his wives up to a maximum of £3 15s. 0d.

**PEOPLES.**—The total population of Basutoland at the last census, taken in 1921, was 498,781, having grown from 404,507 in 1911. In 1921 the number of Europeans in the territory was returned at 1,603. Taking into account the habitable area only, Basutoland is the most thickly populated State in South Africa, all arable ground being under cultivation. Europeans are not allowed to settle in the country without special permission.

The Basutos, of Bantu origin (495,937), form the bulk of the population. They are a healthy and virile race, having, after long years of sanguinary struggle with the Zulus under Chaka, been welded together under a remarkable chief named Moshesh. Every Basuto is a farmer or a labourer, and those who do not cultivate their own land seek work, mostly at the mines of the Orange Free State and Kimberley.

**PRODUCTION.**—There is no private ownership of tenure of land in the Protectorate, land being held on the communal system and apportioned to the people by the chiefs. The principal agricultural and pastoral products are wool, mohair, wheat, maize, Kaffir corn, cattle, sheep, and horses. The country is said to be considerably overstocked at present. The Basuto wool the quality of which has been improved by the introduction of several thousand well-bred Merino rams some years ago, commands a good price. Basutoland possesses neither mines nor forests, and no industrial development has as yet taken place.

**TRANSPORT.**—There are no railways in the territory, but a line crosses the border and connects Maseru, the capital, with Bloemfontein. The roads are, on the whole, good, a main road running from Leribe in the north to Quthing in the south, and connecting up all Government stations, with the exception of Qacha's Nek, which is situated on the Drakensberg on the south-eastern border, and is only accessible to wheeled traffic from East Griqualand. All the District Stations lie on or near the Free State border, and are connected by good roads with the nearest Union town or railway station. The rivers are not navigable, but most of those on the main road are bridged.

## BECHUANALAND PROTECTORATE

The Protectorate of Bechuanaland must not be confused with Bechuanaland proper, which was joined to Cape Colony in 1895, and is now a fiscal district of that province. The Protectorate comprises about 275,000 square miles north of the Matopo River and Mafeking, and extending to the Chobo and Zambesi Rivers. It is bounded by Rhodesia on the north and north-east, by the Transvaal on the east, by Cape Province on the south, and by South-West Africa on the west. The country is, over a large extent, a great waterless tract, forming part of the South African tableland at a level

of between 3,000 and 4,000 ft., covered extensively with small thorn bush. Being in the Tropics, it is hot, but the heat is dry and not oppressive, and the climate, though in parts malarial, is not generally unhealthy.

**ADMINISTRATION.**—The form of Government is very similar to that which obtains in Basutoland, the territory being administered by a Resident Commissioner (Colonel Jules Ellenberger, I.S.O.), whose headquarters are at Mafeking, in Cape Province. Assistant Commissioners are in residence at Francistown and Gaborone. During the rule of Sekgoma, the late Paramount Chief of the Bamangwato, and since the installation of Tshkedi as Regent (during the minority of the heir), certain native leaders have agitated for a more democratic form of administration, and it is said that the idea is favourably viewed by Imperial officials. The native capital is Serowe, probably the largest native town in South Africa. It is well laid out, and contains a fine church and schools.

**COMMERCE.**—The trade of Bechuanaland is confined to exports of horned cattle, small stock, hides, skins and wood, and to imports of a few manufactured goods, such as blankets, articles of clothing, ploughs, iron and tin-ware, and groceries. Trade in 1923-24 was bad, exports of cattle being particularly affected by the overstocking of the Johannesburg market, and many traders' stores had to close down.

**FINANCE.**—Previous to the year 1915-16 the excess of expenditure over the revenues of the Protectorate was met by an Imperial grant-in-aid, since which date the revenue of the Territory has usually exceeded the expenditure. In 1923-24 revenue amounted to £99,994 and expenditure to £81,574, these totals comparing with £91,994 and £82,430 respectively for the preceding year. The principal heads of revenue in 1923-24 were: Hut tax, £31,999; customs, £22,810; income-tax, £14,054; and posts, £13,403.

**PEOPLES.**—Many tribes go to make up the population, which at the census of 1921 totalled 152,983, including 1,743 Europeans (an increase of only 51 over the figures for 1911) and 52 Asiatics. They have never been consolidated under one chief, and are composed of many clans, of which that of the Bamangwato has become the most conspicuous, in the past largely because of the progressive tendencies and temperate habits of their chief Khama, who died in 1923. Taken as a whole they are a non-warlike, pastoral, undemonstrative people, whose main pursuit is ranching cattle and sheep.

**PRODUCTION.**—Bechuanaland is not an agricultural country, owing to an insufficient and ill-distributed rainfall, which renders cultivation a hazardous occupation. When seasons are favourable, maize, Kaffir corn, beans, pumpkins and melons are reaped in fair quantities. Cattle thrive everywhere, and have increased in a wonderful manner since 1896, when they were almost killed off by rinderpest. Between 1904 and 1921 there was an increase from 139,071 to 495,062, and the number in 1923 was put at over 520,000. Sheep and goats also do well. There are large areas of forest, and a great quantity of dead wood for fuel is exported from the Southern



Protectorate, as well as timber for pit-props. Gold has been mined on a small scale in the Tati district for many years. The output for the year 1923-24 was 3,040 oz. of gold and 661 oz. of silver of a total value of £12,838.

**TRANSPORT.**—The section of the Cape-town Bulawayo Railway running through the Bechuanaland Protectorate has an extent of 403 miles, including about 70 miles through the Francistown District. The line enters the Protectorate at Ramathlabana Spruit 16 miles north of Mafeking, and 886 miles north of Capetown, and leaves it at mileage 1,289 (about half way between Ramakubane Siding and Plumtree). There is no other railway in the Protectorate. The roads from railway stations and sidings to the principal villages serve for motor transport but about 50 miles west of the line ox transport becomes a necessity.

### SWAZILAND

Swaziland is the smallest of the South African Protectorates, occupying an area of only 6,678 square miles between the Transvaal and Portuguese East Africa with Zululand as its southern boundary. No country in South Africa has a greater mixture of good and bad land and of climate. The western portion is a high plateau elevated to over 5,000 ft., but in the east which is heavily bushed, malarial fevers are rife, and horses, cattle, and sheep are all infested by a variety of diseases.

**ADMINISTRATION.**—Since 1907 the Territory has been administered by the High Commissioner, who appoints a Resident Commissioner, the present holder of that office being Mr de S. M. G. Honey C.M.G., with headquarters at Mbabane. In 1921 an Advisory Council of nine members was instituted to advise the Administration in matters relating to Europeans. The tribe known as the Abakwangwane or Amaswazi is ruled by the Paramount Chief or his representative appeals lying to the Resident Commissioner. There is a Special Court, with an Advocate of the Provincial Division of the Transvaal as President, which holds Sessions twice a year.

**CAPITAL.**—Mbabane, which is really no more than a small village, was constituted a township in 1912. It is picturesquely situated on the hills, at an altitude of 4,000 ft., and overlooking the middle veld. It is reached by good roads from Ermelo, Breyten, and Carolina in the Transvaal, the latter town distant about 90 miles. It can also be reached from the Portuguese railhead at Goba, by road through Bremersdorp, the former capital.

**COMMERCE.**—By agreement with the Government of the Union Swaziland is dealt with for customs purposes as part of the Union and no statistics of imports and exports for the Protectorate have been kept since 1912. The principal export is cassiterite tin and the imports consist principally of maize, flour, groceries, wearing apparel hardware, spirits tobacco, and kaffir truck. Most of the ocean-borne merchandise enters directly via Delagoa Bay.

**FINANCE.** The revenue for the financial year 1924-25 amounted to £89,710 compared with £90,897 in 1923-24 and the expenditure to £87,597, as against £93,127. The public Debt at March 31 1925 stood at £92,500, being made up of £72,500 Swaziland Consolidated loan at 3½ per cent and £20,000 Swazi Nation Trust Fund at 4 per cent. The National Bank of South Africa Limited has branches at Mbabane and Hlatikula, the bank note issues, etc. being carried out under Union laws.

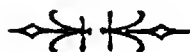
**PEOPLES.**—The total population of Swaziland in 1921 was 112,951, made up as follows: Europeans, 2,205; Bantu, 110,295; Asiatic, 7; other coloured, 444. The Swazis are akin to the Zulus and other tribes of the south-eastern littoral, a small percentage of the natives in the extreme south being pure Zulus. The Swazis are of good physique and good workers, many going to labour in the Transvaal Mines. During the European War Swaziland contributed in personnel 47 officers and 93 other ranks from among the white population, while the Swazis were represented by a small contingent of 67 men who were attached to the Native Labour Contingent

in Flanders. The Chief Regent and Chiefs raised a fund on their own initiative as a contribution to the expenses of the War. A total of £3,000 was subscribed by them, and was devoted to the purchase of two aeroplanes for the Royal Air Force.

**PRODUCTION.**—Unlike Basutoland and Bechuanaland, Swaziland grows barely enough grain to subsist on, and exports little or no agricultural produce. Maize is grown in all parts, Kaffir corn extensively by the natives, and wheat, oats, rye and barley to a limited extent by European farmers with facilities for irrigation. All classes of fruit do well, and the cultivation of cotton is being developed. Some 245,000 lb. were produced in 1923. There are large numbers of horned cattle in the Territory and the bushveld, or midland area, is one of the finest cattle raising centres in South Africa. Here are several large ranches, one of which in 1924 ran approximately 13,000 head of mixed breeding stock. The exportation of cattle to the Union, except for slaughter purposes is prohibited. About 300,000 sheep come into Swaziland annually from the Union for winter grazing.

**MINERAL INDUSTRY.**—Swaziland possesses what the other Native Protectorates do not, a valuable mining industry carried out under concessions granted to Europeans. The industry is confined principally to gold and tin, the latter (alluvial) being found in payable quantities in the vicinity of Mbabane. The production of cassiterite tin in 1924 was valued at £59,082, a considerable increase on the previous two years' figures, which were £29,250 in 1923 and £16,420 in 1922. The value of the gold produced fell from £62,783 in 1912 to £417 in 1923. Large deposits of coal are known to exist in the low veld.

**TRANSPORT.**—There are no railways in the Territory and the lack of them greatly hinders the development of the country. The main roads are gradually being improved, and it is possible now to motor through the Protectorate from the Transvaal to Delagoa Bay.







# SOUTHERN RHODESIA

## PHYSICAL GEOGRAPHY



**S**OUTHERN RHODESIA is that part of Rhodesia lying south of the Zambesi River, which is the northern boundary separating it from Northern Rhodesia. On the south the Limpopo River divides Southern Rhodesia from the Transvaal. The Bechuanaland Protectorate bounds it on the west, and Portuguese East Africa on the east, the Colony having no direct access to the sea. Together with Northern Rhodesia, Southern Rhodesia forms part of the great South African plateau, which extends northwards from within a short distance of the coast, on its southern, eastern and western sides, beyond the region of the great African lakes, whence issue the Congo and Nile rivers.

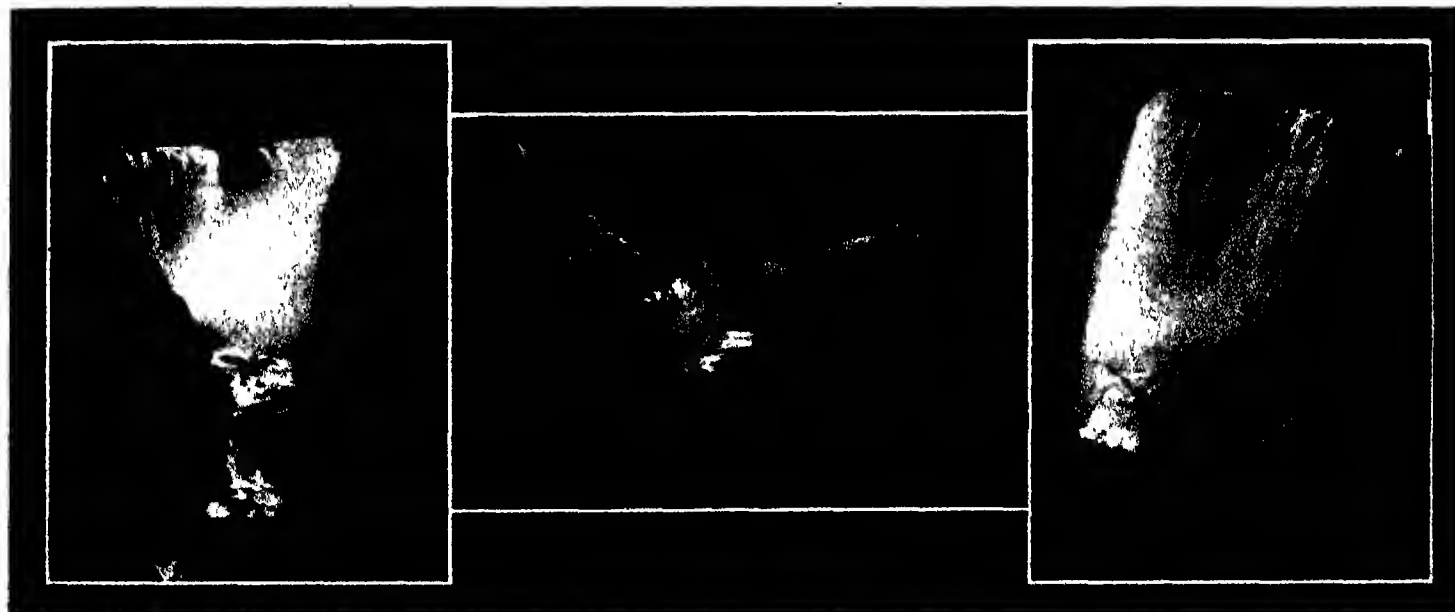
well-defined series of ranges running north and south, and practically forming a continuation of the Drakensberg Mountains of the Union. In parts these mountains reach a height of upwards of 8,000 ft., but in general their summits vary from 4,500 to 6,000 ft. Except along the eastern border of the country, altitudes of more than 5,000 ft. are very rare.

**RIVERS.**—By far the greatest river of Rhodesia is the Zambesi, about two-thirds of the combined territories of Southern and Northern Rhodesia lying within its basin. Nevertheless, in common with most other South African rivers, it suffers from not being navigable in the commercial sense, a defect which accounts for the fact that it is only since the middle of the 19th century that the geography of this region has been unfolded to the civilised world. It is only up to Tete, a Portuguese settlement and government centre some 250 miles from its mouth, that the Zambesi is navigable, and then simply for small shallow-draught steamers. Its total length is 1,700 miles.

## CLIMATE

The general climate of the settled areas of Southern Rhodesia approximates to that usually associated with countries in the temperate zone. The winter is very nearly ideal, with warm sunny days and cold nights. During the months of September and October the days are unpleasantly warm at times, but the nights are cool, and the greatest daily range of temperature occurs during these months. Speaking generally, the climate is admirably suited to a white population. Women and children thrive in the towns with a reasonable amount of attention to health, and even in the more remote districts the incidence of malarial and other fevers can be foiled by ordinary precautions.

**RAINFALL.**—Southern Rhodesia has only two seasons. The wet season, or summer, starts in October and lasts intermittently until the beginning of April, when the dry season, or winter, begins. The rains of the wet season do not come on in real earnest until the middle of December, though before



VICTORIA FALLS.

1. View from Western end, showing Cataract Island.

2. Railway Bridge below the Falls.

3. View opposite the Rain Forest.

The greater portion of the country is of an undulating character, studded with moderately-sized rocky hills ("kopjes"), and grass is everywhere abundant. It is as a whole well wooded, being covered more or less with the tree and shrub growth which is known as "bush," and is, generally speaking, freely watered by a series of streams and springs, particularly in those parts which are mainly of granite and sandstone formation. The total area of the colony is 148,575 square miles.

**MOUNTAINS.**—Rhodesia cannot be termed mountainous, although it is abundantly furnished with chains of hills and contains much broken country. The greatest heights lie along the eastern border, where there is a

Included in the river's course are the famous Victoria Falls (see "Tourist Resorts") discovered in 1885 by Livingstone. The most important tributary of the Zambesi is the Kafue, whose sources lie on the frontier of the Congo State, and whose basin includes the greater portion of the central districts of Northern Rhodesia. On the south bank are the Gwaai, the Sanyati, the Hunyani, the Mazoe and a number of smaller streams. The only other rivers of importance are the Sabi, which receives the waters of the southern half of the eastern and central districts, and the Limpopo, which has a large number of tributaries on its northern bank, and by their agency drains the southern districts. Few of these streams, however, flow for more than six months in the year.

that there are occasional heavy thunderstorms. During January and February the rains are at their greatest, sometimes 5 or 6 inches falling in a single day. In March and early April there are occasional thunderstorms. During the dry season rain falls on a few days in May, and scattered thunder showers in September are usual. The mean annual rainfall over the whole country is 28.7 inches, and the standard divergence from the mean is only 7 inches, that is, in any season but an abnormal one the mean rainfall over the whole country can be relied upon to be between 21 and 35 inches. Indeed, the regularity of the Rhodesian rainfall in most years is a marked feature of the climate, and in that respect it has a decided advantage over many parts of South Africa.

**TEMPERATURE** — The mean annual temperature of different parts of Rhodesia depends largely upon their altitude, latitude and distance from the coast. The mean temperature of the very small portion of the colony which lies under 1,000 ft is  $82^{\circ} 76''$  F, while that of the small area at an altitude of over 5,000 ft is  $65^{\circ} 60''$  F. The mean annual temperature of the central Rhodesian plateau is  $66^{\circ}$  F, with a mean annual maximum of  $78^{\circ}$  F and a mean annual minimum of  $54^{\circ}$  F. A feature of the climate is that the night temperatures in Southern Rhodesia are very much cooler than in other localities with similar day temperatures.

### GEOLOGY

A geological survey of Southern Rhodesia was begun in the year 1910, and there are in existence accounts of the geological formations in which the various metalliferous mines of the country are found. The field is, however, so wide, and the quantity of work

country. In other parts of the colony the schists afford the finest scenery, and display deeply serrated ridges of mountains and countless pointed peaks. Sandstones and basaltic rocks also occur, and in many places furnish scenery the principal feature of which consists in long flat-topped hills. The magnificent gorge of the Zambezi River below the Victoria Falls is cut in basalt. Most of the gold mines of the country are found either in the schists or in a younger sedimentary formation of banded ironstone or conglomerate. The mode of occurrences of the gold is mostly that of quartz veins lying in these or other formations of a metamorphic character. Occasionally however, quartz veins containing gold are found in a granite contact.

### FAUNA

The advance of civilisation has not yet robbed Southern Rhodesia of a distinguished place among the chief big game countries of the world. The larger animals and birds are

**BIRDS.**—Of the birds of the country, the largest is the ostrich, which is strictly protected by law, although in Rhodesia it has not yet been found to thrive in captivity. Of other large birds, the eagle, vulture, stork, crane, and hawk are seen in large number and several varieties, the secretary-bird is found everywhere, and may be seen stalking majestically over the veld in search of food. Of game birds, the chief are bustards, francolin (locally known as partridge and pheasant), guinea-fowl and sand grouse, usually spoken of as Namaqua partridge. Of small birds, there is a very large number of species, most of them brilliant in colouring. The handsomest of all is that usually known as the blue jay. Occasionally large bags of snipe can be obtained.

**FISHES.**—Most of the Rhodesian rivers have plentiful stocks of fish, the larger ones being infested by the dreaded crocodile. From a sportsman's point of view the most interesting inhabitant of the rivers is the



VICTORIA FALLS.

1. The Bed of the River at the bottom of the Falls.

2. View from Cataract Island

3. The Main Falls and the Boiling Pot.

done relatively so small, that any account of Rhodesian geology must be very incomplete for many years to come. To the unscientific observer the most prominent geological feature is the large area of granite country, this occupying about 49.5 per cent of the total area, while the Karoo sedimentary rocks take up a further 15.3 per cent. Here and there throughout the territory are immense rounded hills, sometimes very steep, at times sloping gently, composed of unbroken granite masses, more widely distributed are the gigantic boulders piled high and perilously balanced, which give to much of the scenery a characteristic castellated appearance. The granite is coarse-grained and is usually grey, but occasionally has a slight yellowish or pinkish tinge. The most familiar instance of such scenery occurs in the Matopo Hills, where interest centres in the ring of massive rounded boulders which fringe the last resting place of Cecil John Rhodes, the founder of the

generally those of Tropical Africa, but these are gradually becoming rare, except in the quite unsettled parts of the colony.

**ANIMALS.**—In the purely native districts the elephant, the hippopotamus, the rhinoceros, the buffalo, the zebra, and the larger varieties of antelope are still to be met with, while the lion and leopard prowl about the cattle and sheep folds in the remoter parts. Of antelope there are said to be not less than 30 different varieties, amongst them being the steenbuck, klip-springer, duiker, oribi, reedbuck, bushbuck, kudu, waterbuck and the roan and sable antelope. The largest of the antelopes, the eland, is also found in considerable numbers. Jackals, ant-bears, badgers, and meercats (the latter a close relation to the Indian mongoose), as well as the more dangerous varieties of wild vermin, inhabit the country in large numbers, but in all cases they are shy, so that they are not often seen. In Southern Rhodesia the jackal is hunted by organised packs of hounds as is the fox in England.

tiger-fish, which weighs up to 13 or 14 lbs. when fully grown and in good condition; when hooked, it will fight with all the gameness of a salmon.

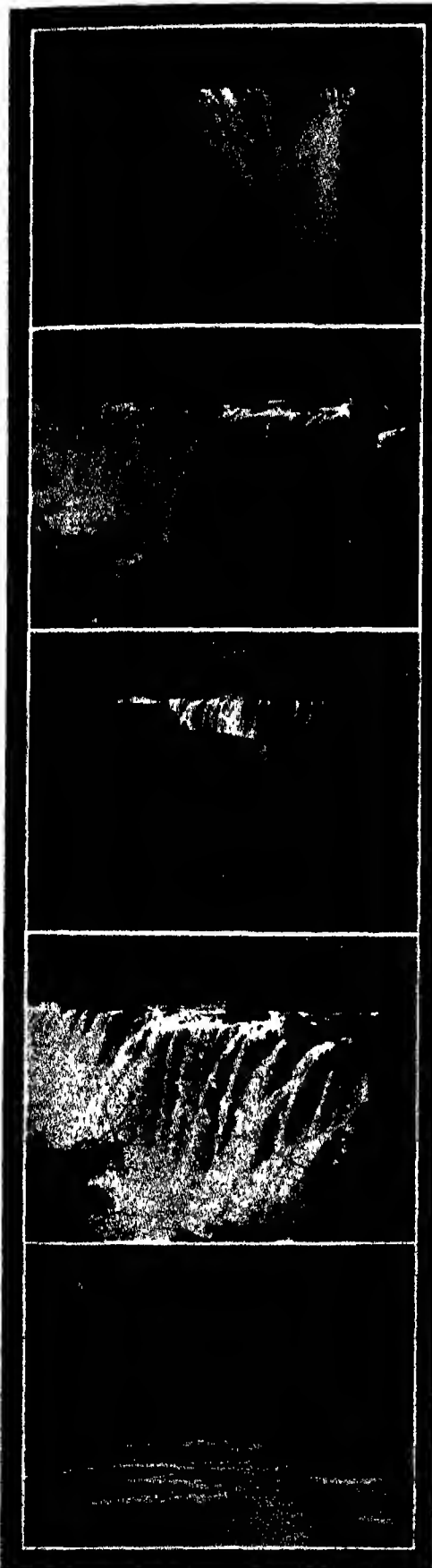
**INSECTS.**—See under "Agriculture. Insect Pests."

**REPTILES, ETC.**—Of creeping things, snakes and lizards, worms and beetles, there is a vast variety, and several kinds of snakes carry a deadly poison. Besides poisonous snakes, the python, which seizes and kills its victim by constriction before swallowing it whole, is found, and occasionally pythons of great size, up to over 20 feet in length, have been shot.

### FLORA

The general aspect of the surface of Southern Rhodesia has already been described, and it may be said here that over the greater part of the country luxuriant vegetation and a very rich supply of indigenous trees add greatly to the charm of the scenery. Com-





VICTORIA FALLS.

1. Main Falls, looking East.
2. Rainbow Falls, from the opposite side.
3. The Boiling Pot.
4. Another view of the Main Falls.
5. The Zambesi below the Victoria Falls.

pared with the Provinces to the south, Rhodesia is very heavily wooded, but the majority of the native trees are stunted and gnarled, owing to the ravages of fires which from time immemorial have swept over the country, destroying the more delicate grasses and seriously thwarting the growth of timber. The long droughts of winter and, in some parts of the country, the nearness of the underlying rocks to the surface, cause the trees to grow slowly and prevent their attaining to a great height. There are, however, exceptions to this rule. Along the eastern border there are small patches of magnificent tropical forest, similar in type to the dense forests of Central Africa, and in certain districts, notably between Bulawayo and the Victoria Falls, and over a large portion of the uplands of Northern Rhodesia, there are numerous forest trees providing fine timber of the hardwood varieties. In contrast with the rugged grandeur of the Matopos are the richly wooded hills of the Selukwe and Intaba districts, which in many other localities a further contrast is provided by long stretches of undulating country, whose hollows are filled with rich blue and green marsh grasses, and in certain seasons a great wealth of brightly tinted blue, purple, scarlet and yellow flowers.

**EARLY FOLIAGE.** One special characteristic of Rhodesian scenery not otherwise usual in South Africa is the magnificent colouring of the wooded country in September when the sap is running anew in the trees. Instead of the tender greens of the temperate zone, the young foliage assumes brilliant shades of red and yellow, and rich tones of brown and copper. The whole effect in a hilly, heavily-wooded country is superb and neither the pen nor the camera can do justice to it. At the same season, weeks before the early rains begin, from the dry earth springs a great variety of bushes and wild flowers, many of the latter remarkably beautiful, but nearly all without scent.

## HISTORY

**T**HE history of Rhodesia offers features that are probably unique in the world's annals. It is a country without a recorded past, though for nearly a thousand years there had been rumours in the outside world of the wealth and wonders to be found within its borders. Even before the Norman conquest, Arabs heard of it and bought gold found in its rivers. Their boats called at Sofala, in what is now Portuguese East Africa, and for succeeding centuries Arabs and Persians told tales of the wonderful hinterland where gold lay in abundance. Early in the 16th century the Portuguese were in touch with the coast, and from then onwards missionaries and prospectors made their way into the interior. The great traveller, Dr Livingstone, discovered the Victoria Falls in 1855, two years after the birth of two men who were to make Rhodesia. Cecil John Rhodes and Leander Starr Jameson. It is about this period that the recorded history of Rhodesia begins.

**1870-1888. : LOBENGULA AND THE CONCESSIONS.** From 1870 Lobengula ruled over the Matabele, a warlike offshoot of the Zulu nation. He had hardly commenced his reign when the concession hunters began to besiege him, more than one European Power being anxious to establish itself there. Minor concessions (afterwards purchased by Rhodes) had been granted in 1871 and 1872, but by far the most important was that conceded in 1888 to Messrs C. D. Rudd, Rochfort Maguire, and F. R.



VICTORIA FALLS.

1. The Devil's Cataract, Western end.
2. Drop of 400 feet in the dry season.
3. Eastern end.

Thompson. The Rudd concession was the basis on which the British South Africa Company was formed.

**1889-1892: FORMATION OF THE CHARTERED COMPANY - THE OCCUPATION** - In 1889 Lobengula despatched two indunas to England to appeal for help and protection from Queen Victoria, and in the same year Mr J. S. Moffat was sent to reside in the country as Assistant Commissioner. But before his arrival the efforts of Cecil Rhodes had led to the formation of the British South Africa Company, which was incorporated by Royal Charter on December 29, 1889. The Company, having decided on the advice of Lobengula to open up Mashonaland first, organised a Pioneer Expedition, which proceeded as far as Salisbury and then began to occupy the country. The next four years saw the development of Mashonaland and the south-east portion of Matabeleland, such well known districts as Melssetter and Charter being among those settled.

**1893-1894: THE MATABELE WAR** - Signs of restlessness among the natives owing to the influx of so many Europeans had been apparent for some time, those in Matabeleland being united under the warlike Lobengula, who watched the progress of occupation with jealous eyes. On July 8, 1893, one of his impi having raided the Victoria district, two columns of police and settlers were hastily organised and marched towards Bulawayo, where was the King's Kraal. The Matabele massed rapidly, and on October 24 a force of 5,000 engaged the united columns at Shangani, but were defeated. A week later a further heavy defeat was inflicted on a force of 7,000 strong at the Bembezi River. On November 4 the columns occupied Lobengula's Kraal at Bulawayo, but the huts had been burned and the King had fled northward. (He died on January 23, 1924). With the occupation of Bulawayo, the war was practically ended. A tragic incident of the campaign was the annihilation by the Matabele of a small body of men under Major Alan Wilson. This force had followed Lobengula, but was cut off by the rapid rising of the Shangani River, and though there was a desperate resistance all were killed. Their bodies were buried near Zimbabwe and later the remains were removed to the Matopos, where they rest under an imposing monument.

**1894-1897: NEW CONSTITUTION - MATABELE AND MASHONA REBELLIONS** - With the occupation of Bulawayo the war was practically ended, and Matabeleland was brought under the administration of the British South Africa Company, a new Constitution being drawn up and sanctioned in 1894. A feature of this was the Rhodes Clause, under which customs dues might not be levied on British goods in excess of the rates then in force in Cape Colony, Mr. Rhodes' object being to secure the trade of Rhodesia to Great Britain for ever at a low tariff rate. Prosperity and peace marked the years 1894 and 1895, but the ill-starred Jameson Raid at the end of the latter year not only deprived the territory of its Administrator, but also for the time being of its police protection. The Matabele were not slow to seize the occasion, and in 1894 both they and the Mashona rebelled, no fewer than 141 white settlers being massacred on March 20, 1896, in Matabeleland, while 104 met their death later in Mashonaland. Imperial troops under Colonel (now Lord) Plumer were sent to Matabeleland and the Matabele were driven to the hills. A large party sought shelter in the Matopos, from which they could be dislodged only by a lengthy campaign. Cecil Rhodes, however, solved the problem

by going into the hills unarmed, with three companions. His fearlessness and the respect the chiefs had for his word enabled him to get into touch with them, and, after several conferences, to secure their submission on October 13, 1896. The Mashona rebellion was not finally quelled until the following year. The settlers had taken a prominent part in putting down these rebellions, and the Chartered Company compensated them for their losses to the extent of £360,000.

**1898-1913: ESTABLISHMENT OF LEGISLATIVE COUNCIL - ANGLO-BOER WAR AND DEATH OF MR RHODES** - In 1899 Southern Rhodesia obtained a Legislative Council, the settlers having long wished to have some voice in the Government of the country. This may be regarded as the first step towards the attainment of Responsible Government. The South African War saw large numbers of Rhodesians serving with the British troops at the front, and the assistance given by the Territory and the Chartered Company to the Imperial cause was very considerable. The war was drawing to a close when the death of the great founder of the country, Cecil John Rhodes, occurred on March 26, 1902. Pre-eminently among the builders of the Chartered Company, he had always regarded Rhodesia as an addition to the Empire rather than as a commercial venture, and the mourning for his death throughout South Africa was very real. His burial in the lonely and beautiful spot selected by himself in the Matopos has been described as one of the most impressive ceremonies on record. The years following were noticeable mainly for the entrance of Rhodesia into the South African Customs Union in 1903, and for her refusal to join the Union of South Africa in 1910, though a section of the Act left the door open for future admittance should it be desired. Gradually the elected representation of the Legislative Council was increased, and the years immediately preceding the Great War brought into public prominence the burning question of the ownership of the unalienated lands of the Territory, the claim to which by the Chartered Company had so often caused friction with the settlers.

**1914-1918: EUROPEAN WAR** - With the possible exception of Newfoundland, no British possession contributed a greater proportion of its population to the great cause than did Southern Rhodesia, 6,831 Europeans, out of a total eligible male population of 10,658, having been on active service. In addition, 2,753 natives were enrolled in the Rhodesia Native Regiment and other Corps. The 1st Rhodesia Regiment took a prominent part in the South-West African campaign, while the 2nd Rhodesia Regiment had two years' hard fighting and service in East Africa. Many of the officers and men of these units afterwards saw service on the European fronts. On all fronts 732 Europeans were killed or died from wounds or disease, and two V.C.'s were won by Southern Rhodesians.

**1919-1924: RESPONSIBLE GOVERNMENT OBTAINED** - A movement towards Responsible Government had begun as far back as 1913, strengthened no doubt by the fact that the British South Africa Company's Charter expired in 1914 and came up for renewal or revision. The Imperial Government confirmed the Charter for a further period of ten years, but with the important proviso that if, at any time before the expiry of the Charter, the people of Southern Rhodesia desired Responsible Government, and were able to satisfy the Imperial Government as to their fitness, financially and otherwise, to control their own

affairs, it would be granted. This clause was inserted with the approval of the Company. In 1918 an important decision was given by the Judicial Committee of the Privy Council that the unalienated land of the colony was the property of the Crown, at the same time holding that the Company (as agents) was entitled to dispose of it until the amount realised re-imbursed it for its outstanding advances to the Territory in the early days of its administration.

The way to Responsible Government was now paved, and of the new Legislative Council elected in 1920 (the last under the B.S.A. Company's administration) all the members but one were pledged to ask for it. Conferences with the Colonial Office as to the form of Government were held, and a Commission, presided over by Lord Buxton, reported favourably in 1921. There remained only the question of inclusion in the Union of South Africa, but this was decided by a Referendum taken on October 27, 1922, the result of which was a majority of 2,785 in favour of Responsible Government. On September 12, 1923, Southern Rhodesia was formally annexed to Great Britain, and on October 1 Responsible Government was established, the Chartered Company having relinquished all financial claims against the Imperial Government in consideration of a cash payment of £3,750,000, the confirmation of the Company's mineral rights, and a title to the land it was occupying for commercial purposes. By the payment of £2,000,000 to the Imperial Government the new Rhodesian Government received a clearance from all past liabilities, and free and full title to all the unalienated lands of the Crown.

Upon the inauguration of Responsible Government, Sir Charles Coghlan, the leader for many years of its advocates, was called upon to form a Cabinet, and this Cabinet remained in office without an elected Assembly until April 1924, when the first elections held under the new Constitution confirmed it in power. The years 1924 and 1925 witnessed the steady political and economic development of the colony, the outstanding event of the latter year being the visit paid to Southern Rhodesia by H.R.H. the Prince of Wales, who was received with enthusiasm by Europeans and natives alike.

## PEOPLES POPULATION

THE census taken in 1921 showed the total population of Southern Rhodesia to be 899,187, the numbers of the different races being as follows: Europeans, 33,620; Coloured (mixed races), 1,998; Asiatics, 1,250; Bantu (natives of Southern Rhodesia), 761,790; Bantu (aliens), 100,519. The total for 1911 was 771,077, and the increase in ten years was, therefore, 128,110, or 16.61 per cent. In 1921 natives formed 96.50 per cent. of the total population, as against 96.56 per cent. in 1911, and Europeans 3.74 per cent., against 3.06 per cent.

**EUROPEANS.** - In 1891 the total European population of the colony was estimated at 1,500; the census taken in 1904 showed that it had increased to over 12,000. Between 1907 and 1911 the number rose by 9,000, but owing to wastage due to the European War and the financial stringency that succeeded it, this rate of increase was not maintained during the ten years 1911-1921, in which period the European population grew in numbers by 10,014, or at the rate of 42.42 per cent. Of the European population in 1921, British numbered 32,203 (of whom 513 were natural-

used), or 95.79 per cent. Greeks totalled 299 and Italians 190.

**NATIVE POPULATION.**—The earliest inhabitants of Southern Rhodesia of whom there is definite evidence were the people now generally called "Bushmen," the "Abatwa." Of their occupation of the country the numerous rock paintings in Central Mashonaland and Matabeleland afford undoubted proof. The Bushmen appear to have been displaced by successive waves of Bantu migration from the north, and the native population of the country to-day consists of a large number of tribes of the Bantu race, most of them with distinct names. (See also sub-section "Bantu Race" under "Union of South Africa" "Population.")

### IMMIGRATION AND LABOUR

The immigration law of Southern Rhodesia differs in one important respect from that of the Union in that it operates irrespective of nationality, its sole object being to prevent the settlement in the colony of persons who, on account of their physical or mental condition, or their standard or habits of life, or their criminal antecedents or tendencies, are considered to be undesirable and may become public charges. Immigrants must have in their possession and for their own use a sum of money not less than £50, or definite evidence of the immediate availability of such a sum within the colony, or must satisfy the Immigration Officer that employment is awaiting them for a period of not less than six months.

**ASSISTED SETTLEMENT.**—Hitherto settlement in Southern Rhodesia has been occasional, depending largely upon individual efforts. In a desire to obtain settlers of independent means much stress has been laid on the possession of ample capital. It is now hoped to attract also men of equal worth, if of less means, and there is a growing desire that the colony should share in the benefits of the Empire Settlement Act.

The proposal of the Government is to pursue a policy of assisted settlement, and for this purpose a small residential depot is being established at the Gwebi Farm. A limited number of new arrivals who desire Government help will be directed there, and will find comfortable quarters ready for them. They will be at once introduced to up-to-date farming, and will receive advice on stock-breeding, tobacco, cotton, etc. Having chosen their line of farming, they will be invited to reside with a well-established farmer of known experience in that particular line. Others may go direct to the practical farmer without a preliminary stay at the Gwebi. In either case, for a modest charge of about £5 a month they will be boarded, lodged, and given the first-hand knowledge which only a practical man can impart. After at least one full season the newcomer will be assisted to acquire the land he needs, usually obtainable at from 4s to 7s per acre. Moreover, advances will be offered for permanent improvements, so that the settler will be able to live on his own money until the land begins to pay him. Repayment of advances and payment for the land, with a strictly moderate rate of interest, will be made by uniform instalments spread over a number of years.

**IMMIGRATION RETURNS.**—Immigration returns for 1925 show that, apart from visitors and travellers, 2,166 persons entered the territory with the definite intention of becoming permanent settlers. Of these, 899 were British born, 676 British South-African born, 219 Dutch South-African born, 62 Indians, 44 Russians, 38 Germans, 34 Americans, 29 Greeks, and 21 Australians.

**INFORMATION FOR SETTLERS.**—In London, the High Commissioner for Southern Rhodesia and his staff are ready to give the fullest advice and provide the latest literature on the colony and its agricultural possibilities. In Rhodesia there is a Settlers' Board (Official), with headquarters in Salisbury and representatives in all the farming districts, which will give information and advice to intending or incoming settlers free on application.

**LABOUR.**—Labour in Southern Rhodesia is plentiful, cheap, and comparatively good. Practically all manual labour is performed by the natives, many of whom attain to great proficiency. This applies to both farm and housework.

### EDUCATION

In view of the fact that Rhodesia has only been occupied by Europeans for a little over 30 years, the rapid development of educational facilities is highly creditable to the colony and its administrators. The problem all through has been largely that attaching to a sparsely settled population. Wherever ten or more children can be gathered together the Government offers every facility for the establishment of "Farm Schools," of which in 1924 there were 55. In the larger centres of population the facilities offered to Europeans are, of course, larger, and at Salisbury, Bulawayo, Umtali, Gwelo, Plumtree, Smoia, Enkeldoorn, and Hartley there are exceptionally good schools with boarding houses attached, while public schools (without boarding accommodation) have also been built in other towns and mining centres. The number of European pupils in Government and aided schools rose from 6,283 on December 31, 1923, to 6,596 on December 31, 1924, an increase of 313 pupils, the average attendance for the latter year being 87.7 per cent of the possible number of attendances.

**CURRICULUM.**—The programme of work in public schools includes complete departmental syllabuses in all the ordinary school subjects up to Standard VII and thereafter prepares pupils for the University of South Africa Junior Certificates and Matriculation examinations. In addition to the ordinary school curriculum, pupils are instructed in commercial subjects, science, carpentry, botany, dressmaking, and domestic science. School gardening, nature study, and hygiene are encouraged whenever possible, and most schools possess good libraries.

**EXPENDITURE.**—The expenditure by the Government on schools in Rhodesia, apart from capital expenditure, in 1900 was £1,302, in 1910 £23,980, and in 1924 £233,223.

**NATIVE EDUCATION.**—In 1924 there were 1,216 schools of all classes for native children, with a total enrolment of 77,610, an advance of 7,619 during the year. The expenditure on these schools totalled £23,099, compared with £19,419 in 1923. For coloured children there were 6 schools open in 1924, with 379 scholars on the roll.

**SCHOLARSHIPS.**—Forty-eight scholarships, provided by the Beit (Rhodesia) bequest, are open for competition annually to enable promising Rhodesian children to obtain secondary education in the higher schools of the Territory, each of the value of £32 for boarders or £16 per annum for day pupils, and tenable for 3 years. Rhodesian boys are eligible to compete for three Rhodes Scholarships, each of the normal value of £300 per annum for three years, tenable at Oxford University. Rhodesian candidates for Rhodes Scholarships are now required to complete at least two years at a South African

University after leaving school, and must have completed their 10th year before proceeding to Oxford. There are also several bursaries and scholarships available to Rhodesian scholars of either sex at South African Universities and University Colleges.

### SPORT

Climate and other conditions in Southern Rhodesia favour all forms of athletic recreation, while as a centre for big game hunting the country is almost unrivalled.

**BIG GAME SHOOTING.**—The game found in Rhodesia may be broadly divided into four classes—the carnivora, the larger mammals, the antelopes, and the birds. Of the first named, lions are still to be found in the south-east and in the north; in the second class, the elephant, giraffe and hippopotamus are to be met with, and it is hardly necessary to state that the different varieties of antelope for which Rhodesia is famous all provide excellent shooting. Game birds abound, and there is no lack of occasional sport for the man with the gun in almost any part of the country.

**CRICKET.**—Cricket is played during the summer months, that is, from October to March. The grounds, with the exception of one at Umtali, which is grass covered, are hard. The wickets consist of gravel or ant-leap, covered with coconut matting.

Occasional visits by teams from the Union and Great Britain have done much to foster the game, which is controlled by the Rhodesia Cricket Union, in affiliation with the South African Cricket Association.

**FOOTBALL.**—Both Rugby and Association football have been played in Rhodesia ever since the occupation. The controlling authorities of both codes owe allegiance to the parent bodies in the Union of South Africa, which, in turn, are affiliated to the amateur associations at Home. Rhodesian teams compete in the inter-provincial tournaments in the Union.

**GOLF.**—This has become a most popular game throughout the colony, and fine 18-hole courses have been laid out at Salisbury, Bulawayo, Umtali and Umvuma. There are 9-hole courses at Gatooma, Gwelo, and other centres.

**LAWN TENNIS.**—Lawn tennis flourishes not only in the larger towns, but also in the smaller ones and villages, as well as at most police camps and mining centres. A championship meeting is held annually.

**POLO.**—In early days Rhodesia laid the foundation of polo in her larger settlements, at Salisbury, Bulawayo, and Umtali polo grounds were reserved in the planning of the town sites, and the game was in active progress 25 years ago. Unfortunately severe epidemics of horse-sickness made it difficult for the clubs to carry on. Since the War, however, polo has been revived, and at Salisbury the Polo Club is able to organise four separate teams.

### PRESS

The principal newspapers published in Southern Rhodesia are the "Rhodesia Herald" (Salisbury), founded in 1891, daily and weekly, the "Bulawayo Chronicle" (1893), daily and weekly; the "Rhodesia Advertiser" (Umtali), founded in 1893, daily and weekly, and the "Gwelo Times" and "Gatooma Mail and Mining Gazette," which are both weeklies. The "Rhodesia Agricultural Journal," published by the Agricultural Department, and the "Rhodesian Poultry Magazine" are monthlies which appeal specially to the farming community.

## ADMINISTRATION AND COMMUNICATIONS CONSTITUTION AND LAW

**R**ESPONSIBLE Government was granted to the colony of Southern Rhodesia on October 1, 1923, the supreme executive authority being administered by the Governor, who is advised by an Executive Council. This attainment of full constitutional privileges was achieved at the close of a period of nearly 30 years' existence as a British Protectorate

is composed of six members, who are chosen by the Governor to hold office during his pleasure. The system of Cabinet Government conforms in all essentials to the practice under the British Constitution. The first Ministry of the Colony, which assumed office in October, 1923, consisted in 1925 of the following: Premier and Minister of Native Affairs—Sir Charles P. J. Coghlan, Colonial Secretary, Minister of Health, Education and Internal Affairs—Mr. J. W. Downie, Treasurer—Mr. P. D. L. Flynn, C.M.G., Attorney-General and Minister of Defence—Major R. J. Hudson, M.C., K.C., Minister of

merge into the Rifle Companies. All burghers are liable to be called upon for service in case of need by any Justice of the Peace.

The Defence Bill introduced into the Legislative Assembly in 1926 provides for a workable and mobile system of defence on the following lines—(1) Every citizen between the ages of 18 and 60 to be liable for service in time of war. (2) Every citizen between his 20th and 24th year to undergo peace training for military service in the Defence Force. (3) All not included in No. 2 to be enrolled as members of the Territorial Reserve Unit, with the exception of those living more than ten miles from a rifle range. The organisation of the Defence Force is to consist of a Permanent Force, a Territorial Force and any Special Reserve that may be established, and a Headquarters Staff and instructional and administrative staffs for military districts are to be created.

**FRANCHISE.**—Southern Rhodesia has an adult male and female franchise for all British subjects or those who intend to reside permanently in the colony and take the oath of allegiance. Female suffrage was granted in 1919. Natives can obtain the vote under certain conditions, but very few avail themselves of the privilege.

**LEGISLATIVE ASSEMBLY.**—The first Legislative Assembly was elected in 1924, and consists of 30 members representing 15 electoral districts. Ten members constitute a quorum. The Assembly has power to make a law constituting a Legislative Council, or Upper House, whenever it shall deem it advisable.

## LAW

Laws in Southern Rhodesia are based on those operating in Cape Colony in June 1891, modified by legislation to meet local requirements, with the right of appeal to the Appeal Court of South Africa in cases where the matter in dispute exceeds £100 in value, with a further appeal to the Privy Council on the same conditions as are composed in the Union of South Africa.

**JUDICATURE.**—There are two Judges of the High Court, who are appointed by the Governor in Council. Resident Magistrates administer the law in the District Courts and Native Commissioners that of the Native Reserves.

## PUBLIC HEALTH

The Public Health Department of the Colony of Southern Rhodesia is in the Ministerial Division of the Colonial Secretary, the staff consisting of a Medical Director with a clerical staff stationed at Salisbury, an Assistant Medical Director stationed at Bulawayo, a Bacteriologist with two assistants, and 21 District Government Medical Officers. These latter accept private practice within their districts. The general health of the colony is good, the European birth-rate in 1922 being 26.09 per thousand, and the European death-rate in the same year the lowest on record, viz., 8.98 per 1,000.

**DISEASES.**—With the exception of the large river basins, the greater part of Southern Rhodesia is classified as sub-tropical highland, eminently suitable for the settlement of white races. There has of recent years been a marked diminution in the prevalence of both malaria and blackwater fever, the death rate having fallen from 18.8 per 1,000 in 1904 to 8.98 per 1,000 in 1924. To-day malarial fevers are seldom contracted in the towns and villages, though they have to be guarded against in the remoter districts.

**HOSPITALS.**—Except at Bulawayo and Rusape, all general hospitals are maintained and administered by the Government. In 1924 there were 12 general hospitals with full



GOVERNOR AND COMMANDER-IN-CHIEF, SOUTHERN RHODESIA.  
His Excellency Lt.-Col. Sir J. R. Chancellor, G.C.M.G., D.S.O., R.E.

under the administration of the British South Africa Company. For ten years the movement towards Responsible Government had gathered strength, a Referendum on that question or union with South Africa resulting in 1922 in a majority of nearly 3,000 for the former.

The present Governor of the Colony is His Excellency Lieutenant-Colonel Sir John Robert Chancellor, G.C.M.G., D.S.O., R.E.

**ADMINISTRATIVE COUNCIL.**—The Executive Council, or Ministry of the Colony,

Mines, Public Works and Industries—Mr. H. U. Moffat, Minister of Agriculture and Lands—Mr. W. M. Leggate, C.M.G.

**DEFENCE.**—The defence of the colony and the preservation of peace and order are, in the first instance, undertaken by the B.S.A. Police, a remarkably fine body of men, of which the European element is over 600 strong. Rifle Companies have replaced the old Volunteer Force, and there is a voluntary system of Cadet Corps connected with the schools, the members of which eventually

staffs, well equipped, and with separate accommodation for Europeans and native patients. At Ingutsheni, on the outskirts of Bulawayo, is a large Mental Hospital, and at Morgenster, near Fort Victoria, a settlement for native lepers. Many of the larger mines maintain hospitals for their own European and native employees.

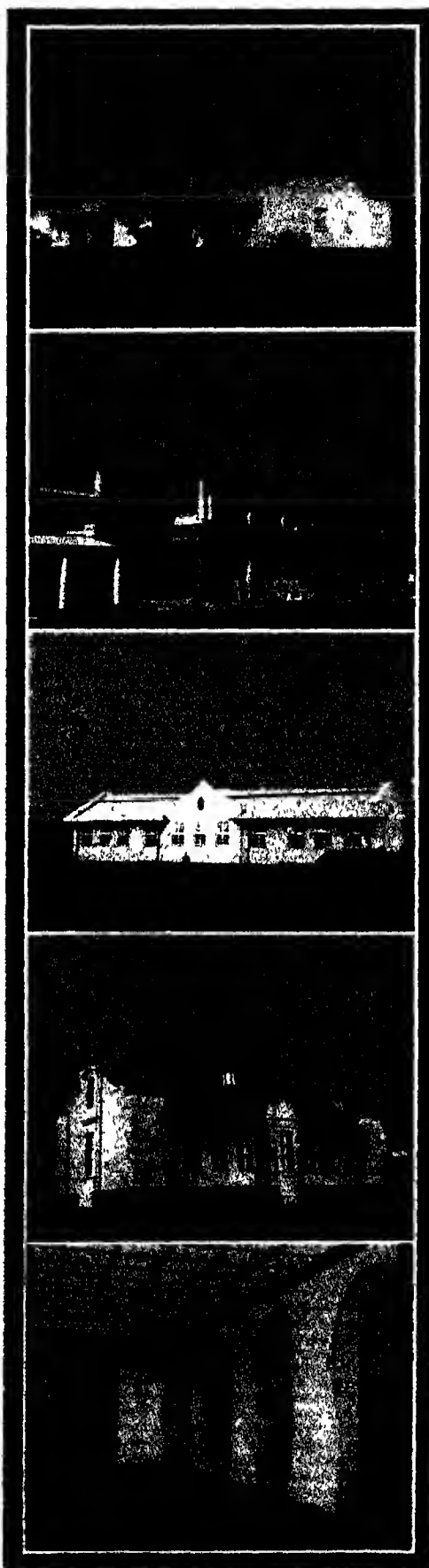
**NURSING SERVICE.**—The Southern Rhodesia Nursing Service consisted in 1924 of a senior matron, seven matrons, seven nurse-matrons, 36 qualified nurses, and 23 probationers, who are attached to the various Government hospitals throughout the Colony.

### PUBLIC WORKS

The Public Works Department of Southern Rhodesia controls the construction and maintenance of public buildings and the management of Government houses, hired premises and insurance, the records of moveable assets, sales and land reservations for buildings, the inspection of magazines for explosives, the provision and maintenance of fire appliances, and the payment of municipal rates and fees. The work of building since September 1890, though never rapid, has been very definitely progressive, and at the end of 1923 there were in the colony hospitals with 227 beds for Europeans and 128 for natives and coloured people, gaols accommodating 2,500 prisoners, schools for over 4,000 pupils, exclusive of privately owned or rented buildings, and public buildings and works in all of a value of approximately £1,000,000.

**EXPENDITURE.** The total expenditure incurred by the Public Works Department for the year ended December 31, 1924, was £63,073 10s 1d, the principal items being Rents, £10,003; maintenance, £15,300; salaries, £9,450; construction, £9,000; furniture, £5,412; and rates, £2,330.

**GOVERNMENT BUILDINGS.** The first government buildings erected after the occupation consisted of pole and dagga huts (poles plastered with mud) to accommodate the various offices. They were built in the vicinity of the original police lines, a little to the east of the present Salisbury Club. In 1891 the building now occupied by the Chief Native Commissioner's Office was commenced, and contained rooms for the Administrator, the Chief Accountant, the Public Prosecutor, and the Standard Bank. Local timber was cut for use in building these offices, and most of the furniture was made in Salisbury. In 1924 the Residency at Salisbury was privately built, and afterwards purchased by the Administration. In the following year the old Salisbury Hospital was erected, to become in 1922, when the new hospital was completed, the offices of the Agricultural Department. The rebellion of 1896 to some extent checked building, but in that year Government House, Bulawayo, was commenced. Dr Jameson's old residence was imported and erected in 1898. Building went on apace after the South African War, the year 1903 being marked by the erection of the Drill Hall at Salisbury, but for some years afterwards few important buildings were constructed. The Government House at Salisbury was built in 1910, a year notable by the erection of several schools. In 1912-13 the very handsome and spacious Post Office, Customs, and Municipal Buildings in Bulawayo were put up by the Department. Since the Great War many new important buildings have been constructed, the chief of these being the Memorial Library at Plumtree School, the Salisbury Medical Research Laboratory, Salisbury Police Station, Gatooma Post Office, Beit Hall, Bulawayo, and several school premises.



1. Police Barracks in the Camp at Bulawayo.  
2. Town Police Station, Salisbury.  
3. First Wing of the Agricultural School at Matopos.  
4. Dining Hall for the Matopos School.  
5. Open-air Dormitories of School at Umtali.

## POSTS, TELEGRAPHS AND TELEPHONES

### POSTS

On April 1, 1897, the post and telegraph services of Southern Rhodesia were organised under Mr G. H. Eyre, of the Cape Post Office Department, who was appointed Postmaster General. The staff at that time comprised 76 European officials and 103 natives, as compared with 242 Europeans and 270 natives employed by the Department in 1925. The revenue of the Department rose from £45,023 in 1897 to £157,538 in 1924, and the expenditure from £37,848 to £125,091. The Postal Department now deals with all matters relating to the postal, telegraph, and telephone services of the colony, the conveyance of mails and parcels, money orders and postal orders. Mails between England and Salisbury are usually conveyed in 21 days.

**POSTAL FACILITIES.** The number of offices open for the transaction of post office business at recent date was 155, and at the same period 463 private bags were in use by persons living at a distance from post offices. Posting boxes are fitted to the mail trains for the convenience of those who live along the railway lines where there is no post office. During the ten years 1914-1923 there were posted 88,507,511 articles of mail matter, including letters, postcards, newspapers, book packets, etc. This total included 64,400,446 letters, 2,031,063 post-cards, 6,012,014 newspapers, 14,587,313 book packets, 425,252 parcels, and 1,049,023 registered articles. In 1924 the figures were: Letters, 8,263,204; postcards, 255,104; newspapers, 804,622; book packets, 2,501,052; parcels, 66,878; registered articles, 142,798; the total number of articles posted being 12,033,658, as against 10,794,118 in 1923.

**POSTAL RATES.**—For letters 1d per oz, for delivery in same town as posted, 1½d for other places in Southern Rhodesia, 1½d for Northern Rhodesia, the Union of South Africa, the Bechuanaland Protectorate, and the Province of Mozambique, 2d for the United Kingdom and all British Possessions, 3d for foreign countries, including the Belgian Congo. For newspapers ½d per 4 oz for delivery in any part of South Africa, and ½d per 2 oz elsewhere. For parcels 1s for first lb and 6d per lb thereafter in Southern Rhodesia, 1s 6d per lb and 6d per lb thereafter in Northern Rhodesia, 1s 1d per lb elsewhere in South Africa except South West Africa, to which the rate is 1s 4d per lb, 1s 4d per lb to the United Kingdom via Union of South Africa, and 3s 6d per 3 lbs, 4s 6d per 7 lbs, and 5s 6d per 11 lbs, via Beira. For parcels sent by agricultural parcel post within Southern Rhodesia only, the rates are: not exceeding 1½ lbs, 3d; not exceeding 2½ lb, 6d; for every additional lb up to 11 lb, 3d.

**SAVINGS BANK.**—The Post Office Savings Bank of Southern Rhodesia first operated in 1905. In 1923 deposits totalled £87,862, and there was a balance due to depositors at the end of the year of £101,617.

### TELEGRAPHS

In 1897, when the post and telegraph services were organised under one executive head, the Rhodesian telegraph system consisted of 1,028 miles of pole line, with 1,028 miles of wire, and 14 offices. On December 31, 1924, there were in operation 3,162 miles of pole line carrying 7,085 miles of wire, with 121 offices. The number of telegrams dealt with increased from 900,972 in 1923 to 977,814 in 1924, and the revenue from £28,922 to



£30,804. The value of the cable traffic increased in 1924 by £1,392 over 1923.

In addition to the lines within its own borders, the Government of Southern Rhodesia owns and operates 576 miles of pole line and 1,785 miles of wire in the Bechuanaland Protectorate.

**CABLE SERVICES.** Cables can be sent either via the Union or Beira. The charge to the United Kingdom is 2s. 2d. per word for ordinary and 1s. 1d. per word for deferred cablegrams. Deferred letter cablegrams, subject to a delay of 48 hours, carry a minimum charge of 11s. 8d. for 22 words, with 7d. for each additional word.

**WIRELESS.** Wireless telegraphy is mostly confined to amateur enthusiasts, but there are plants at the Drill Halls at Salisbury and Bulawayo erected by the Defence Department, which have proved useful for the instruction of cadets. It is proposed to erect a powerful station at Salisbury.

### TELEPHONES

The first telephone system in Southern Rhodesia was erected during the Matabele Rebellion in 1896, and was of a most primitive nature. In 1898 the initial departmental exchange was opened at Salisbury with a capacity of 30 lines, and a slightly larger one was installed at Bulawayo some time later. In 1924 there were 40 central stations working, with 1,507 subscribers, and 341 sub-stations, whilst there are 200 farms, stores, and other places in every district with which telephonic communication is maintained. Trunk line communication is available practically throughout the colony, and a 24-hour service is provided at Salisbury and Bulawayo both for local and trunk calls. An extensive programme of telephone development has been framed, for which loan funds amounting to nearly £50,000 have been provided.

## FINANCE

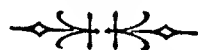
**T**HE financial position of Southern Rhodesia showed remarkable improvement during the years 1923-24 and 1924-25, substantial surpluses having been recorded in each. The year which closed on March 31, 1925, marked the first year of account under Responsible Government the estimates for the preceding year (1923-24) having been formed under the direction of the British South Africa Company. The credit of the colony may be gauged by the fact that the first loan of £3,000,000 was issued at 98, bearing interest at 5 per cent, and is now quoted considerably above par.

**PUBLIC DEBT.** The public debt of the colony on March 31, 1925, stood at £3,000,000.

**REVENUE AND EXPENDITURE.** The revenue of the colony is derived mainly from income tax, customs dues, native taxes, mining fees, postal business, trading and other licences, land sales and rents. Mining royalties are payable to the British South Africa Company. The following table shows the revenue and expenditure for the years 1920-21 to 1924-25.

YEAR	REVENUE £	EXPENDITURE £	SURPLUS OR DEFICIT £
1920-21	1,307,828	1,350,005	42,177
1921-22	1,488,006	1,335,041	152,965
1922-23	1,320,460	1,357,442	36,982
1923-24	1,521,881	1,355,029	166,852
1924-25	1,508,303	1,504,137	4,166

It will be noticed that during the first year in which the Ministry under Responsible Government had full control of the finances of the territory accounts showed a balance of revenue in excess of expenditure, this in spite of the fact that the latter was nearly £240,000 in excess of that for any previous year, and included a new item of £150,000 in respect of the interest on the loan of £3,000,000.



## CITY OF SALISBURY

**T**HE City of Salisbury, capital of Southern Rhodesia, was so named after Lord Salisbury, who was Prime Minister when the town was founded in 1890. For many years Fort Salisbury was little more than a name—a collection of dagga and thatch huts with a few wooden buildings nestling under the shadow of the Kopje. Ox-transport was the only means of communication with Bulawayo and the outer world, until in 1899 the railway linked it with Beira and in 1902 with Bulawayo.

Slowly but surely from these modest beginnings a fine modern town has been built, possessing broad and well laid out streets, attractive suburbs, an almost perfect climate, and a chain of municipal activities hardly excelled in Africa. Its citizens are provided with a variety of opportunities for sport and recreation, and it may be added that the importance of Salisbury as a cattle-breeding and agricultural centre is noticeably on the increase.

**BUILDINGS.**—Considering that prior to 1890 Salisbury was non-existent, the size and number of its important buildings are remarkable. Government House, the residence of His Excellency the Governor, is an imposing structure of effective design, and among other buildings the Government Offices, the Town House, the Drill Hall, Queen Victoria Memorial Library, and the

as yet unfinished Cathedral stand out pre-eminent. The British South Africa Company's commodious premises lie to the north of the town, in Manica Road are the handsome Standard Bank Buildings, and the striking and palatial structure of Meikle's Hotel would do justice to a town of twice Salisbury's size.

**EDUCATIONAL FACILITIES.**—Salisbury offers to its residents complete and varied educational facilities. In 1924 there were nearly 1,000 children attending the schools in the town and suburbs, the Boys' and Girls' High Schools alone claiming an enrolment of over 700. The high schools have separate boarding houses for the older and younger pupils, and are thoroughly well staffed and equipped. In these and other secondary schools pupils are prepared for the Cape University Matriculation Examination, University Junior Certificate, and Best Scholarship examinations.

**INDUSTRIES.**—Salisbury has become the centre of several industrial undertakings, portions of the town lands having been set aside as industrial sites, and it is the considered policy of the Municipal Council to encourage such enterprises. A tobacco warehouse has been established for some years, and it handles yearly well over 3,000,000 lb. weight of tobacco leaf, chiefly grown in Mashonaland. Other important industries

Revenue for the ten months ended January 31, 1926, was approximately £200,000 more than for the preceding corresponding period, expenditure for the same time also increasing by £100,000.

**TAXATION.** Income tax was first levied under the provisions of an ordinance promulgated in 1918, and the present rate is 1s. for every £ of the taxable amount, provided the latter does not exceed £500. If the taxable amount exceeds £500, the rate is increased in respect of the whole amount by one two-hundredth of a penny in the £ for each pound or fraction thereof up to a maximum of 3s. in the £. There are abatements of £1,000 in respect of married persons and £500 in respect of bachelors, £100 on account of life insurance premiums and £50 for children and dependants. Collections of income tax for the year ended March 31, 1925, amounted to £261,838, compared with £221,406 for the preceding year.

By far the greater part of income tax (approximately 75 per cent) is derived from companies which are also taxed in the United Kingdom, and which receive from the Imperial Government a refund of half the tax levied by that Government on income derived from sources in Southern Rhodesia. These companies also receive from the Southern Rhodesian Government the difference between the colony's tax and the amount refunded by the Imperial Government.

### BANKING

Branches of the Standard Bank of South Africa, Ltd., and the National Bank of South Africa, Ltd., operate in Salisbury and Bulawayo, and at all the other larger centres. The Land and Agricultural Bank of Southern Rhodesia was established in 1923, principally for the benefit of agricultural pursuits. (See also under Union of South Africa Finance and Banking.)

are those of milling, bacon curing and oil manufacture, brewing, and furniture making.

**LIBRARY AND MUSEUM.**—A fine double-storeyed building situated on the west side of Moffat Street, immediately opposite the Public Gardens, was erected by public subscription in 1902 as a memorial to Queen Victoria, at a total cost, exclusive of furniture and fittings, of £9,000, and is utilised as a Museum and Public Library. It contains a news room, circulating library of 14,000 books, and a reference library. The Museum has a very valuable lot of birds and insects, with a good collection of the fauna and minerals of the country.

**LIGHT AND POWER.**—The town is lighted by electricity from two 300 kw. alternator sets at a cost of £50,000. The units generated in 1923 were 452,499, being an increase of 61,502 units over the preceding year. The charge for lighting is from 1s. 6d. per unit on a sliding scale to 6d. per unit. Electricity for power is supplied at 3½d., but it is anticipated that with the up-to-date plant recently installed a great saving in fuel will result, and that it will be possible to sell power at 1½d. per unit.

**MUNICIPALITY.**—When the Prince of Wales visited Salisbury in 1925 it was in the 28th year of its existence as a municipality, the first Town Council having been elected at the end of 1897, with Mr. W. E. Fairbridge as

the first Mayor. How great has been the progress of Rhodesia's capital since then may be gauged from the fact that the total revenue for the initial municipal year was £7,753, of which £6,316 was raised by an assessment of 2s in the £ on a rateable value of £757,000, whereas in 1925 the rateable value of the town as fixed in 1922 was £2,078,823, and the revenue from rates alone was approximately £25,000. The municipal services, water, light, sanitary fees, etc., yielded in 1923-24 a revenue of close on £45,000, the total revenue from all sources being between £90,000 and £100,000. In addition to water, lighting and sewerage, the Municipality controls the swimming baths, stockyards and abattoirs, fire brigade and the public gardens and commonage. The present Mayor is Mr J. Reid Rowland, the Council consisting of eight members.

**PARKS AND GARDENS.**—The principal open space in Salisbury is the Public Gardens, which were laid out by the Town Council in 1901 and serve as a favourite resort for visitors and citizens. The nucleus of a zoological collection, thanks to the generosity of Lady Chaplin, has been started at this location, and here, too, are the Municipal Swimming Baths. The handsome War Memorial, a granite obelisk nearly 50 ft in height, has been erected in the centre of the Gardens to the memory of all Rhodesians who fell in the Great War. Other public spaces are the Cecil Square where the flag was first hoisted by the pioneers in 1890, Greenwood Park, which is set apart for the cultivation of botanical specimens, and Alexandra Park, in the neighbourhood of Hartman Hill.

**POPULATION.**—In 1897 the white population of Salisbury was roughly 1,500, in 1904 it had grown to 1,725, in 1911 to 4,911, and at the last census of 1921 to 6,462.

**WATER SUPPLY.** Salisbury is provided with an excellent water supply, which is obtained from the upper reaches of the Makabusi River. On a reserve situated about seven miles from the town a dam has been erected having a capacity of 200,000,000 gallons, and the water is conveyed by a 10-inch steel pipe by gravitation to a service reservoir on the north side of the town, capable of holding a three day's supply. The total cost of this undertaking was £68,868. The filtration of the water is carried out, in addition to two primary and secondary sand filters in the vicinity of the dam, by two of Bell's latest high-pressure filters. The charge for water is from 5s per 1,000 gallons on a sliding scale to 2s per 1,000 gallons.

#### FARMERS' CO-OP. LTD.

**Inception.**—This company was established in 1903 with an authorised capital of £250,000, of which £27,047 10s has been issued, the reserve standing at £14,664 10s 8d. The shareholding is confined to maize growers in Mashonaland, the membership numbering about 400.

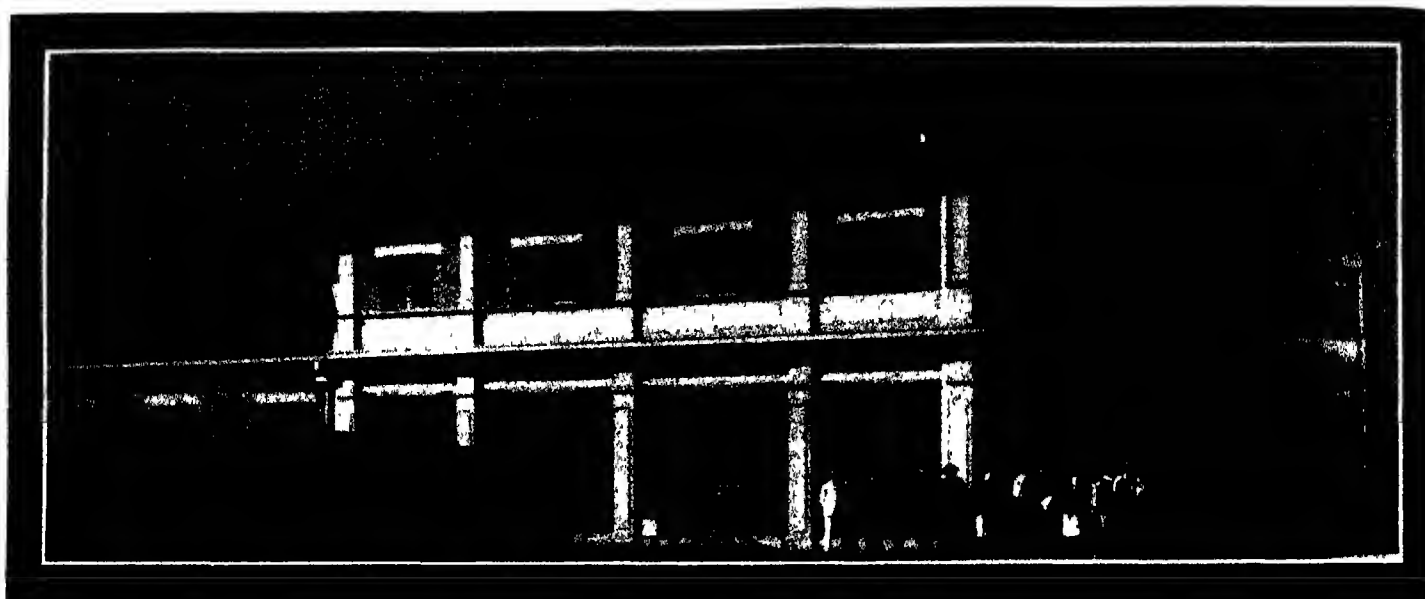
**Activities.**—The principal business is the distribution of maize, agricultural products and seed maize. The turnover is from half to three-quarters of a million bags of maize annually, 10,000 bags of sunflower seed, 25,000 bags of ground nuts, 10,000 bags of potatoes, and large quantities of beans, forage, wheat, barley, oats, farm seeds, etc. The company also acts as purveyors of rough goods, agricultural hardware, fertilisers, etc., to members only.

**Branches.**—There are depôts at Sinoia, Mapunga, Glendale, Concession, Passaford and Selby.



1 and 3. MANICA ROAD, SALISBURY, RHODESIA.

and 4. FIRST STREET.



FARMERS' CO-OP LTD., Salisbury  
Head Office  
(See letterpress page 315)

**Directorate.** Messrs J. Pascoe, D. Black, R. L. Gray, Chas. Sonthey, J. Black, A. R. Morkel and J. H. Farmer. General manager, Mr. Jno. Buckmaster.

**Offices and Stores.** Wenne Street, Salisbury. Cables "Maize" Salisbury.

#### RHODESIAN FARMERS' CO-OP. INDUSTRIES, LTD.

**Inception.** Established in 1919 with an authorised capital of £75,000, of which £45,000 has been issued, this company is the proprietor of the Salisbury Oil Factory, Salisbury Bacon Factory, Gwelo Creamery (Salisbury Depot) and Gwelo Creamery, Gwelo.

**Activities.** The oil factory produces edible refined monkey nut oils, oil cake and soap, having a capacity of 60,000 bags of ground nuts and sunflower seed per annum. The bacon factory has a capacity and cold storage for 12,000 pigs per annum, while the creamery has cold storage accommodation for 20,000 cases per annum of its "Marigold," "Model Dairy" and "Myrtle" brands.

**Directorate.**—Messrs J. Pascoe, W. P. Chappell, T. J. Rooney and H. Martyn Green.

**Head Offices.** Farmers' Co-op, Ltd., Salisbury (Managers and Secretaries). Cables "Farcoopind," Salisbury.

**London Agents.**—Overseas Farmers' Co-op Federations, Ltd., 88-90, Chiswell Street, E.C.1.

**MEIKLE'S HOTEL.** The position of this hotel leaves nothing to be desired, as it is near the business centre of the town and all Government offices, at the same time it is within two minutes of the station, so that both for residents and visitors it offers every convenience of situation. The finely-designed structure, erected in 1915, covers one of the largest areas of any hotel in Africa, and

visitors are always surprised both at the size of the building and at its graceful exterior. The interior arrangements of the hotel are no less commendable. The public rooms are spacious and splendidly furnished; there is a staff of over one hundred, and the service is all that the most exacting and experienced traveller could wish for. Every attention is paid to the comfort of guests, and provision made for all possible requirements, with a cuisine above reproach. The dining hall is cool and airy, and there is a luxurious lounge, while the ballroom, which is a recent addition to the attractions of the hotel, may be hired on special occasions and for theatrical performances. There is also a well-equipped billiard room, and in the grounds a good tennis court for the free use of guests. The hotel contains 160 rooms, comprising double and single rooms, bedrooms with private bathrooms attached, and suites consisting of double bedroom, sitting-room and bathroom. The charges are reasonable, ranging from 17s. 6d. for a single room upwards. All trains are met, the hotel running its own car to and from the station. Other cars are available for hire if required, and private garages are also provided. The manager is Mr. J. G. Robinson. Cables "Traveller," Salisbury.

**ANGLO-AFRICAN TRADING CO. LTD.**—P.O. Box 394, Salisbury. Est. 1897. General merchants and importers of agricultural implements, timber and building material, hardware, fencing, liquors, groceries, etc. Head office 9, Billiter Square, London, E.C.3. Cables "Anglo," Salisbury.

**BRITISH SOUTH AFRICA CO.**—Charter House, Salisbury. Inc. by Royal Charter 1889, administered S. and N. Rhodesia from 1890 to 1923. Present most important assets: Mineral rights, proprietary interest

in railways, also estates, principal activities being development of estates and ranches. Head office: Rhodesia House, 2, London Wall Buildings, London, E.C.2.

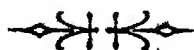
**BAIN, WILLIAM, & CO. (RHODESIA), LTD.**—Corner Second Street and Forbes Avenue, Salisbury. Fencing material and agricultural machinery merchants, including dairy apparatus, etc. Extension of Wm. Bain & Co. Ltd., of Lochmaben Works, Carlisle, Scotland. Cables "Lochrin," Salisbury. Codes A.B.C. 5th Edition, Western Union, and Private.

**CENTRAL COTTON GINNERIES (SOUTHERN RHODESIA), LTD.**—Head office, Salisbury. Formed 1924, reg. in Rhodesia. Ginneries at Salisbury, Umtali and Gwelo. Total capacity 300 bales of lint per diem. Oil press capacity 25 tons of seed per diem. Cables "Ginnery," Salisbury.

**RHODESIAN MILLING & MANUFACTURING CO. LTD.**—Salisbury. Produce and general merchants, manufacturers of flour, maize products, soap, candles, glycerine, salad oils, oil cakes, etc. Mills at Salisbury and Bulawayo. Cables "Atlas," Salisbury. Code Bentley's.

**SYKES (RHODESIA) LTD.**—P.O. Box 110, Salisbury. Originally S. Sykes & Co. Ltd. Rhodesian company formed 1924, maintaining principal agencies of old company. Engineers, contractors and machinery importers. London office 79, Gracechurch Street, E.C. Cables "Psyche," Salisbury. Codes A.B.C. 5th Edition, Lieber's, Engineering, Telegraph 2nd Edition, and Bentley's.

**VASSILATOS & VENTURAS.**—Salisbury. Direct importers of all kinds of soft goods. London representatives: G. Cambitzi & Co., Moorgate Station. Partners: Messrs. P. H. Vassilatos and Ch. Venturas. Cables: "Venturas," Salisbury. Codes A.B.C. 4th and 5th Editions.





GENERAL VIEW OF BULAWAYO, LOOKING SOUTH ALONG MAIN STREET, SHOWING GATLING GUN AND RHODES MEMORIAL

## CITY OF BULAWAYO

**B**ULAWAYO is a Zulu word, which, literally translated, means "the place of the killing," the reference being to the famous Indaba Tree under which Mosilikatse and Lobengula, the great Matabele chiefs, administered their rough and ready justice. This was prior to the Matabele War of 1893, at the close of which a small township of tents was set up on the site of Lobengula's Kraal, where now stands Government House. In 1894 the present town was surveyed and laid out a mile or so to the south, to become within twenty years a busy city containing 46 miles of main streets and a commercial importance unrivalled in the country.

Bulawayo to-day covers an area of 1,400 acres, and is surrounded by a commonage of 22,734 acres, the boundaries of which are from three to four miles away. Healthy in its climate and picturesque in its setting, the town has well kept thoroughfares, electric lighting, a water supply which is being steadily improved, innumerable facilities for sport and recreation, and tremendous industrial possibilities, these latter being largely due to the position it occupies on the line of railway communication between South Africa and the great territories to the North, and to the fact that it is the centre of the largest gold mining activities in the colony.

**BUILDINGS, ETC.**—Government House, which was built by the late Mr Rhodes, is connected with Bulawayo by a magnificent avenue 2,540 yards long and 130

feet broad. It is now used as a residence by H.E. the Governor and by distinguished official visitors. In Main Street are the Municipal Buildings and Government Offices, also the Market House, while the Court House, the British South Africa Company's office, the Stock Exchange, and the Police Station are located within a short distance of Market Square. At the corner of Rhodes Street is the Anglican Church, of local (Paspas) sandstone. The Palace Theatre, in Abercorn Street, accommodates over 1,000 people and possesses the largest stage of any theatre in South Africa. The Empire Theatre, opposite the Grand Hotel in Main Street, can seat 500 persons.

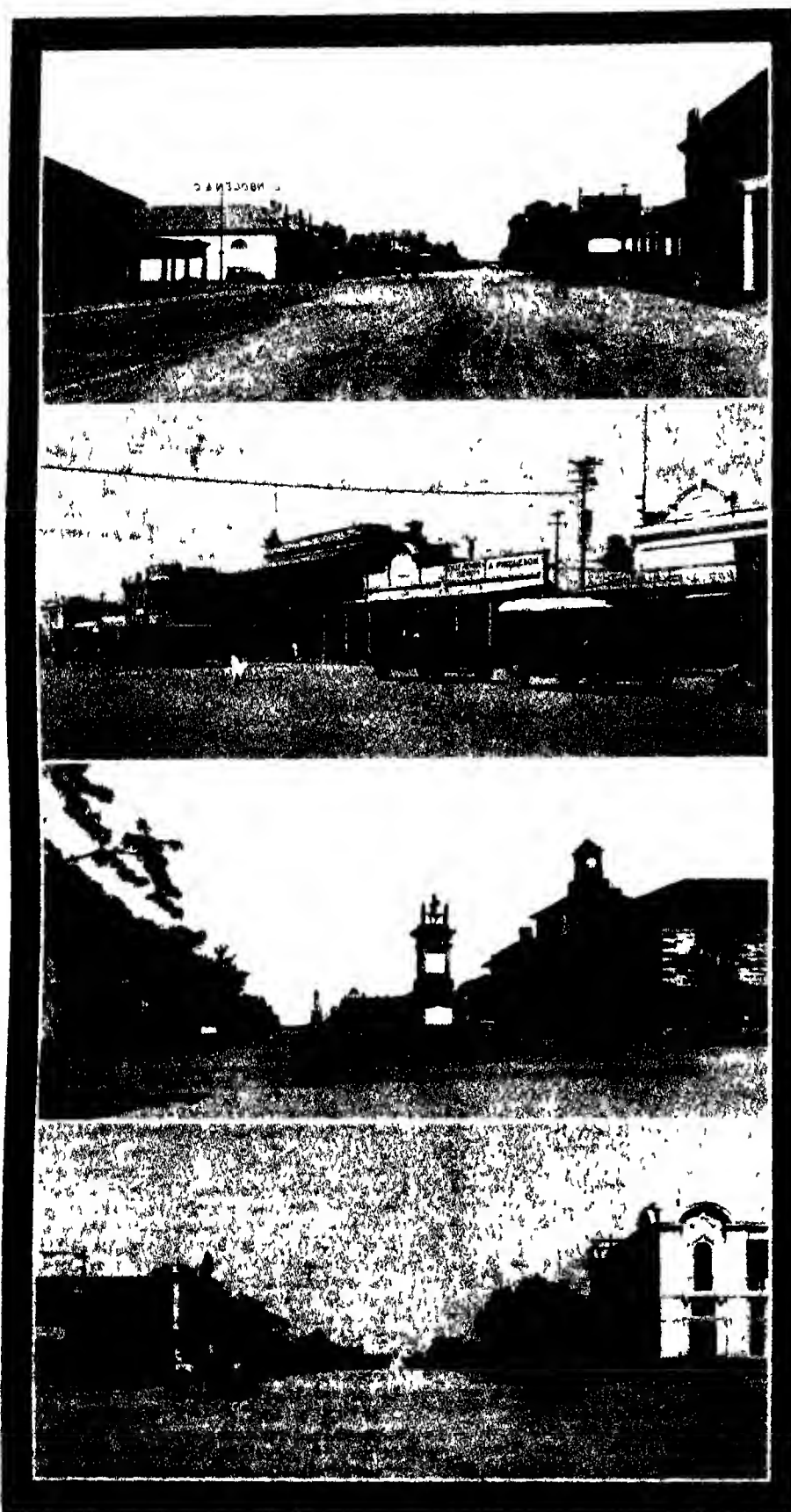
At the juncture of Main Street and Eighth Avenue stands the impressive statue of the late Cecil John Rhodes, "ever looking to the North." The statue, which is of bronze, 12 ft. high, and mounted on a 10 ft. 6 in. pedestal of Matopo granite, is the work of Mr John Tweed of Chelsea. The cost was borne by the Bulawayo Town Council and by the public, and the statue was unveiled on July 4, 1904. Immediately on the left is the Bulawayo Club, with the Rhodesian Museum and the Public Library only a few yards away. The handsome monument near by, surmounted by a Gatling gun, stands as a memorial to the "257 pioneers of civilisation who lost their lives in the Matabele Rebellion of 1896."

**EDUCATIONAL FACILITIES.**—Educationally Bulawayo is well provided with three large and up-to-date public schools

and two hostels, one for boys and one for girls. The schools are controlled by a local Advisory Committee. There is also the St. George's Boys' Public School, under the direction of the Jesuit Fathers, likewise a Convent School.

**HOSPITALS.** The Memorial Hospital was founded in 1894 in commemoration of the pioneers and early settlers who fell in the Matabele War of 1893. The wards are named after Captains Borrow, Judd, Fitzgerald, and Kirtton, other wards are the Victoria, Grey, and Alan Wilson. The hospital, which is thoroughly well staffed and equipped and has an up-to-date operating theatre and X-ray rooms, was formerly controlled by a Board composed of six elected members and four nominated by the Government. In 1925, however, control was handed over to the Government, which has voted a sum of money for the enlargement of the building. The Town Council has recently erected an isolation Hospital on the outskirts of Bulawayo for the treatment of infectious diseases.

**INDUSTRIAL OPPORTUNITIES.**—The Council, realising the great importance of attracting industries, has always adopted a sympathetic attitude in this direction. Unfortunately, with its hands tied as regards the two great essentials—cheap water and power—it was very much handicapped in the past. Now that control is in the hands of the Council it will be possible to adopt a more active policy. Industrial sites on the commonage will, no doubt, be made



1. ABERCORN STREET, Bulawayo, with Offices of C. H. Zeederberg Ltd. in building on extreme right.
2. EIGHTH AVENUE, Bulawayo, the Centre of the Town.
3. BULAWAYO, looking south along Main Street from Selborne Avenue.
4. FIVE STREET, Bulawayo, looking south, with portion of Standard Bank Building on the extreme right.

available on very reasonable terms. In this connection also there will probably be an enlargement of the Council's powers in the near future.

**MUNICIPALITY.**—The town, which was declared a municipality on October 26, 1897, is administered by a Mayor and Municipal Council of 8 members. The rateable value of property in 1924 was £2,149,890.

**MUNICIPAL SCHEMES.** Parliamentary powers have been obtained to enable the Council to construct waterworks and supply electricity and to raise a loan not exceeding £350,000 for the following purposes: Waterworks £215,000, electricity £100,000, Town Hall and swimming bath £25,000, other public improvements £10,000.

**PARKS AND GARDENS.** The public parks of Bulawayo cover 250 acres, the three principal open spaces being known as the North, Central and South Parks. In the North Park are the Zoological Gardens, which were started in 1910, and whose collection includes many interesting specimens. The South Park is the favourite resort for rest and recreation and frequent promenade concerts are given here on Sunday afternoons and moonlight nights.

**POPULATION.** At the last census of 1921 Bulawayo had a population of well over 16,000, of whom 6,530 were Europeans, 9,000 natives and 825 Asiatics and other coloured people. Including the suburbs, the whites numbered 6,830.

**SUBURBS.**—The main suburb is connected with the town by a broad road, the eastern continuation of Selborne (7th) Avenue, which passes between Central Park and the Zoological Gardens. Many of the houses and gardens are most attractive. About 2½ miles to the south-east of the town and beyond the commonage is the suburb of Hillside, where building sites are larger and less expensive than nearer in. The reservoirs are located here. On some of the kopjes in this neighbourhood Bushmen paintings may still be seen. Raylton on the south-west side of the Railway Station contains the new Railway Shops to which water is supplied from an artificial lake, nearly two miles long, formed by the Khami Dam about 12 miles from Bulawayo.

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### HOGARTHS METAL WORKS, LTD.

**Inception.**—Early in 1910 this company was incorporated, commencing operations as constructional engineers, manufacturers and metal merchants.

**Development.**—The expansion of business was so rapid that two years after the establishment of the firm it was found necessary to build the large premises in which the undertaking is now housed. To-day it is one of the leading concerns in Southern Rhodesia, and does an extensive trade throughout the country.

**Activities.**—The chief products and interests of the company are steel-framed buildings, sands and slimes plants, steel plate work, gate making, wire weaving, etc., also all kinds of mining requisites and farming appliances. It is sole manufacturer of the following patents: the "Clutch" fencing dropper, the "Simplex" steam condenser, the "Wiry" axe handle, the "Auto" acetylene generator, and the "Domestic" iceless cooler. The Bulawayo works own and occupy two adjoining town sites, centrally situated and within a reasonable distance of the railway. The works are well equipped with modern machinery, such as plate





HOGARTH'S METAL WORKS LTD., Bulawayo  
Portion of the Offices and Works



C. H. ZEEDERBERG LTD., Bulawayo.  
Showroom.

(See letterpress, page 320)

rollers, cropping, punching and drilling machines, angle iron rollers, shearing, wire weaving, tube bending and sawing machines, forges, presses and other modern manufacturing plant. The firm makes a speciality of gate-making and produces 26 different designs at prices which compare favourably with those of the imported article. New plant was recently put down for the manufacture of wire fencing of various designs, and experiment has proved that this article also can be made in Rhodesia at a lower cost than the imported variety. There is a large warehouse attached to the main building, where stocks of imported goods are kept in great quantity and variety.

**Staff.** The staff numbers 70.

**Agencies.** The company acts as distributing agents for the "Evening Star" lamps, the "Aladdin" lamps, the "Bulala" hunting lamps, "Windolite," "Jetahna," "Holdet," etc.

**Branch Works.**—Large works have been established by Messrs Hogarths Ltd at Pinetown, Natal.

**Directorate.** Messrs T. A. E. Holdengarde (chairman), G. A. Hayler, and R. J. Thommet.

**Offices.**—Head office: Port Street, Bulawayo; hardware store: Abercorn Street, Bulawayo; Cables: "Hogarths," Bulawayo.

**Bankers.** Standard Bank of South Africa, Ltd., Bulawayo, Rhodesia; National Bank of South Africa, Ltd., Pinetown, Natal. (See illustration, page 319.)

#### C. H. ZEEDERBERG, LTD.

**Inception.** This firm is one of the oldest in Rhodesia, Mr C. H. Zeederberg having opened the first properly organised mail service between Mafeking, Bulawayo and Salisbury in 1891, with headquarters at Bulawayo, and employing the American style of stage coach.

**Development.** Until the railway reached Bulawayo in 1897 most of the transport by both oxen and mules was undertaken by the enterprise now under notice, but when long distance trips were ended the mail coaches were used for journeys from the railhead to various mines. In many districts the mails are still carried by this firm, which continues to control a large proportion of the transport in Rhodesia. As business continued to increase Mr Zeederberg leased some ground from the municipality on which to found the well-known Zeederberg stables and workshops, and for the last four years the firm has been developing, slowly but surely, an important motor and motor cycle business.

**Activities.** The Zeederberg stables and workshops are now responsible for much of the vehicular construction for Bulawayo and the surrounding district, the workshops being equipped with all modern appliances. Practically all their large fleet of trolleys for railway cartage and all the wagons for heavier outside traffic were built by Messrs Zeederberg's own workmen. The firm has a showroom devoted to the motor and motor cycle business at the corner of one of the busiest streets, and it contains everything necessary for the owner of the Essex, Hudson or Austin car and the Indian or Francis Barnett motor-cycle. The showroom, with offices attached, is connected by telephone with the workshops, stables and railways. Highly efficient services are accorded to visitors, hunters and tourists, for whom all baggage is safely received, cleared, forwarded or transported.

**Colliery Agency.**—As agents for the Wankie Colliery, the firm can supply coal most reasonably and in any quantity.

**Head Office and Garage.** Land Bank Buildings, Bulawayo. Cables: "Pioneer" Bulawayo. Codes: A B C and Broomhall. **London Representatives.** Messrs Fowhe & Boden, Ltd., 29-35, City Road, E.C.

**Bankers.**—The Standard Bank of South Africa, Ltd. (See illustration, page 319.)

#### A. F. PHILIP & CO. LTD.

**Inception.** This business founded by a member of the Philip family, a name associated with South Africa for a great number of years, especially in the field of missionary endeavour, is almost as old as Rhodesia.

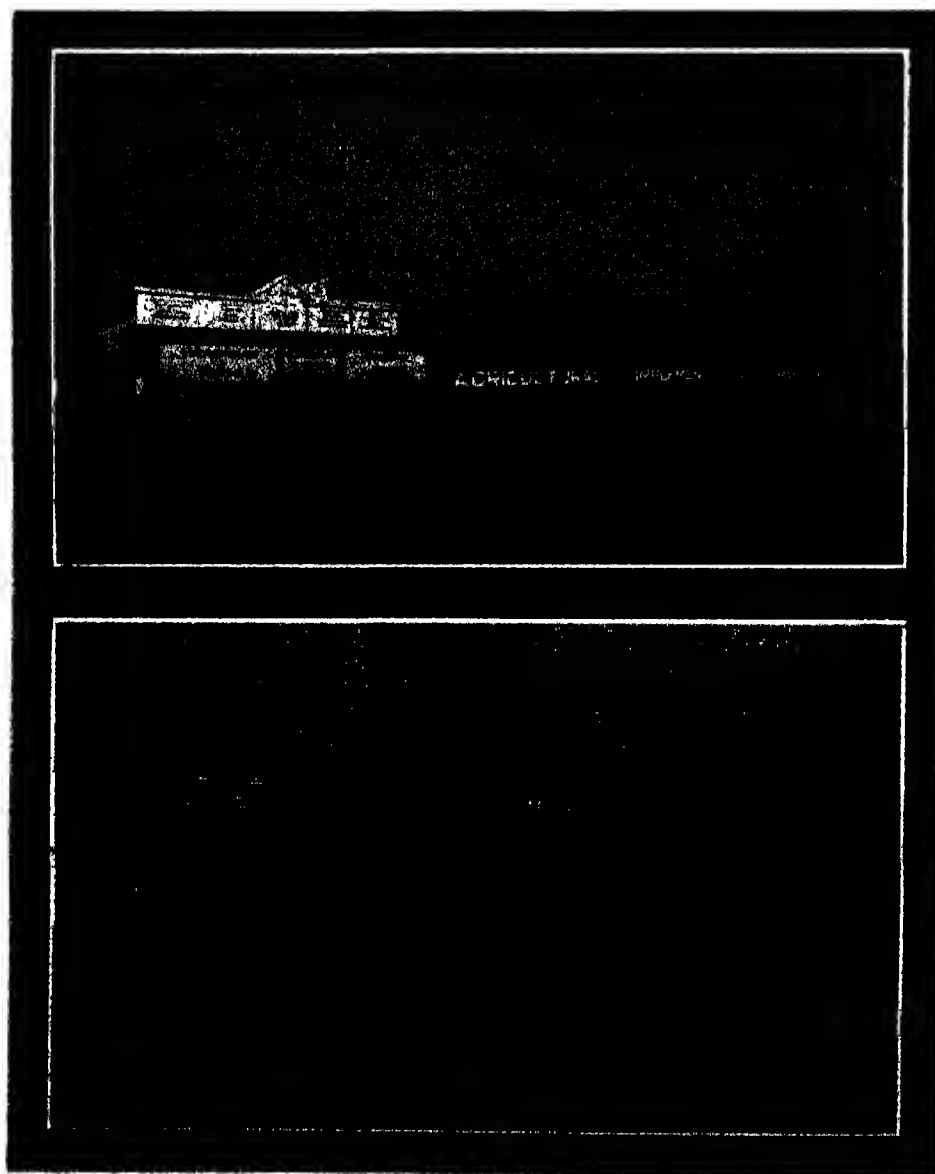
**Development.** With the progress of the country came corresponding expansion of business, with the result that the company is to-day among the leading concerns dealing in the lines in which it specialises, an important branch having been established at Salisbury the centre of agricultural activity.

**Activities.** The firm deals in almost every description of settlers' requirements with the exception of food, drink and clothing. Building materials form the principal line of business, followed closely by agricultural

implements and machinery. In addition, well assorted stocks of hardware, tools, paints and distemper, fencing materials and wagon building and blacksmith's requirements are regularly carried. The branch at Salisbury, owing to its situation, carries the widest range of agricultural implements. Remote as this district is from sources of supply, the customers of A. F. Philip & Co. Ltd. are never in difficulties for want of a spare part for any implement sold by the firm.

**Agencies.** Amongst the most important agencies held are the following: International Harvester Co., of America (whose manufactures include the McCormick line of mowers and reapers), the Bulldog line of ploughs (made in Canada), the Melotte cream separator, Petter oil engines, the original Ruberoid roofing, Hall's sanitary distemper, Sissons' Bros. paints, Stanley tools, Disston's saws, Lamhn's incubators, etc.

**Branches.** The firm has agents and correspondents throughout Northern and Southern Rhodesia, and Mr J. McFadden has a "service" station at Gwelo for the supply of implements and spare parts.



#### A. F. PHILIP & CO. LTD.

1. Company's Yard and Premises at Bulawayo.
2. Company's Premises at Salisbury.

**London Agents.**—Messrs. Julian Stephens, Ltd., 19a, Coleman Street, E.C. 2

**New York Agents.**—Smith, Kirkpatrick & Co., Inc., 115, Broad Street, New York

**Directorate.**—Mr. W. F. Tongue (managing director), Mrs. F. N. Philip and Mr. F. J. Burgess

**Offices.**—Head office: Five Street, Bulawayo. Cables: "Phillip," Bulawayo and Salisbury. "McEdden," Gwelo. Codes: A B C 5th Edition, Bentley's, Engineering Telegraph Code

**Bankers.**—The Standard Bank of South Africa, Ltd.

#### JOHNSON & FLETCHER, LTD.

**Inception.**—Founded by the two senior partners Messrs. George Johnson and H. Clarkson Fletcher, this firm commenced business in Bulawayo in July 1897 as engineering and mining machinery suppliers.

**Development.**—In 1899 a branch was opened at Salisbury, in 1901 at Beira, and in 1923 at Gatooma. Fifteen years ago a special timber and building material department was added in conjunction with Messrs. Hunt, Leuchars and Hepburn, Ltd., Durban, and this side of the business is being strongly developed also at Beira.

**Activities.**—The firm played a pioneer part in the introduction into Rhodesia of machines designed for service in gold-mining. It was likewise responsible for installing the first gold-mining machinery successively in British East Africa (1911) and on the Kilo goldfields, N.E. Congo (1918). Special plant was also supplied to the Shamva Mine, the Wanderer Mine, the Bwana M'Kubwa Copper Mining Co., and the Ayrshire Gold Mining Co., while during 1922-24 Crossley-Premier gas engines, totalling 6,500 h.p., were installed by the firm in Rhodesia. The company has also been entrusted with the supply and erection of the generating set for the Beira Municipality.

**Staff.**—The company employs a number of mechanical and electrical engineers. The European staff numbers over 40 and the native staff approximately 150.

**Agencies.**—The enterprise represents Messrs. Belliss & Morcom, Babcock & Wilcox, Premier Gas Engine Co., Engelbert



JOHNSON & FLETCHER LTD., Bulawayo.  
Head Office.

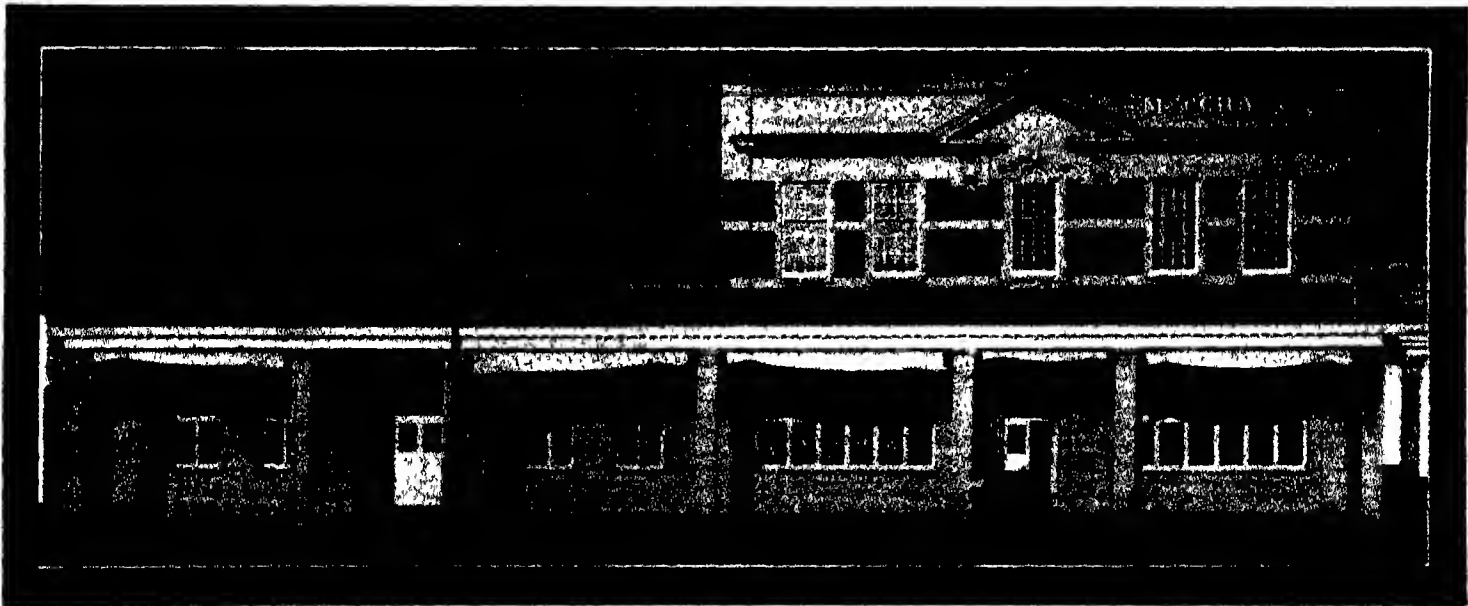
& Co. Crossley Bros. Ltd., Cameron Steam Pumps, and many other renowned businesses.

**Branches.**—At Salisbury, Beira, Gatooma, and agencies at Elisabethville, Belgian Congo, and Gwelo, Southern Rhodesia.

**Directorate.**—Messrs. Geo. Johnson (chairman), H. C. Fletcher, R. Swire Thompson, F. J. Golding and B. J. Brown.

**Head Office.**—Bulawayo, Southern Rhodesia. Cables: "Motor," Bulawayo. Codes: A B C 5th Edition, Bedford McNeil Engineering 2nd Edition, A 1, Western Union, Broomhall's, Bentley's Mining Edition.

**Bankers.**—National Bank of South Africa, Limited.



LANDAU BROS., Bulawayo.  
Firm's Premises.  
(See letterpress, page 322)

**LANDAU BROS.**

**Inception.**—The establishment of this firm of general merchants dates from the year 1897.

**Development.**—Operations were commenced in a wood and iron building, but expanded as the country was gradually opened up. In 1909 a brick building was erected, the present modern warehouse dating from 1920.

**Activities.**—The firm is primarily interested in the importation of soft goods, Kafir truck and hardware. The staff consists of ten Europeans and a number of natives, while two travellers regularly cover the whole of Southern and Northern Rhodesia and the Belgian Congo.

**Premises.**—The present warehouse, a cement building of two storeys, is one of the best in Bulawayo, and provides floor space of about 18,000 square feet.

**Branches.**—There are branches in London, Manchester, Hamburg and Paris, each being under the personal management of one of the partners. The firm has also large interests in Johannesburg.

**Partners.**—Messrs. Philip David, Morris Marks, Louis and Harry Landau. Of these, Messrs. P. D. and M. M. Landau are resident in London, Mr. H. Landau in Johannesburg, and Mr. L. Landau in Bulawayo.

**Offices.**—Bulawayo, Abercorn Street, London 41, Moorfields, where a large South African shipping business is conducted, Johannesburg, Clonmel Chambers, Eloff Street. Cables "Landau," Bulawayo, "Allowingly," London, and "Landauib," Johannesburg. Codes A B C 5th Edition.

**Bankers.**—Standard Bank of South Africa, Limited.

(See illustration, page 321.)

**PALACE HOTEL.**—Something of an historic origin attaches to this hotel, as it was built in 1897 for the reception of the guests assembled at Bulawayo for the ceremonies and festivities taking place at the opening of the railway on November 4 of that year. It is, as might be expected, near the station and in Abercorn Street, the principal business thoroughfare of the town. The building is a substantial one of two storeys, constructed of brick and stone, with a wide verandah front. The interior of the hotel possesses the attractions of large, well-furnished lounges and a fine dining room, while the accommodation for visitors comprises sixty bedrooms and nine bath rooms, all with constant hot and cold water. The baggage master and porters of the hotel meet all trains, motor cars can be hired for any length of time, and trips are arranged to the Matopos and all places of interest in the vicinity. Especial attention is paid to the cuisine, and every provision is made for the comfort and convenience of guests, the service, appointments and general arrangements being all that could be desired. The tariff ranges from 12s 6d to 15s 6d per day. The proprietor of the hotel is the Estate of the late Mr. W. R. Paterson, and the bankers are the Standard Bank of South Africa, Ltd. Cables "Palace," Bulawayo.

**C. SALOMON & CO.**—Founded in Bulawayo in the year 1897 by Messrs. C. Salomon and O. Stenham, this firm commenced operations in a small way as general merchants and importers of soft goods. As, however, the country was opened up and trade developed the business of the firm correspondingly increased, until it was found necessary in 1909 to open a branch office in Salisbury. The company now imports,

besides all kinds of soft goods for both European and native use, hardware, fancy goods and agricultural implements. Messrs. C. Salomon & Co. occupy their own premises in Bulawayo, where their warehouse has a floor space of 32,000 square feet, and in Salisbury, where there is a total of 18,000 sq ft for the accommodation of stores. Their goods are now distributed throughout the whole of Rhodesia, in Beira (Portuguese East Africa) and over the Belgian Congo, all this territory being regularly covered by four travellers, who are continually on the road. In this way the firm keeps in touch with the trade requirements of a vast region which is still in a state of development, and whose varying needs are steadily increasing. The present partners of the firm are Messrs. C. Salomon and O. Kanfman, both of whom are resident in Bulawayo, while the London representative is Mr. O. Stenham, Finsbury Court, Finsbury, E.C.2. The company's bankers are the Standard Bank of South Africa, Ltd. Head office, Fife Street, Bulawayo. Branch office, Manica Road, Salisbury. Cables "Salamander," Bulawayo and Salisbury. Code Bentley's.

**CARLTON HOTEL.** Bulawayo. Est. 11 years, situated in centre of town. Accommodation 100 bedrooms. Proprietor A. Vince. Cables "Carlton," Bulawayo. Bankers Standard Bank.

**DULY & CO. LTD.** Bulawayo. Incorporated 1912, capital, £50,000. Sole distributors of all products of Ford Motor Co. of Canada, Ltd., for Rhodesia and Portuguese East Africa, many branches

and sub-agencies. Cables "Duly," Bulawayo. Code A B C 5th Edition.

**GRAND HOTEL.** Bulawayo. Est. 25 years. Accommodation 100 bedrooms. Cabaret every Saturday. Proprietors T. McMurray and T. Meikle. Manager I. McMurray. Cables "Grand," Bulawayo. Bankers National Bank.

**PREMIER PORTLAND CEMENT CO. (RHODESIA), LTD.** Bulawayo. Producers of high grade Portland cement, capacity, about 15,000 tons per annum. Capital £100,000, of which £60,015 is issued and fully paid. Cables "Cement," Bulawayo.

**PUZEY & PAYNE.** Bulawayo. Est. 1897. Motor car and cycle agencies, bicycles, sporting goods, gramophones, etc. Representations Dodge Bros. (motor cars), Graham trucks, B.S.A. and Raleigh motor cycles and cycles. Partners A. C. G. R., H. G. and F. G. Payne. Cables "Puzey," Bulawayo.

**WILLOUGHBY'S CONSOLIDATED COMPANY LTD.** Willoughby's Buildings, Main Street, Bulawayo. Mining, land-owning, and ranching. At December 31, 1924, 2,307 gold reef claims, 10 chrome locations and 1,123,310 acres of land were held, with 30,000 cattle. Capital £750,000, of which £700,314 is issued and fully paid.

**ZAMBESI SAW MILLS, LTD.** Reg. office A. F. Philip & Co. Ltd., Stand 332, Bulawayo. Formed 1916. Mainly supply sleepers to railways. Mills and offices, Livingstone, N.R. Directors G. R. Holgate (chairman), H. Chapman, C. S. Knight and W. E. Tongue.



POST OFFICE AND MUNICIPAL OFFICES, BULAWAYO,  
with Matabele Rebellion Monument on right.

## OTHER CITIES

### GATOOMA

Gatooma ranks as the third commercial town in Southern Rhodesia, and owes its almost phenomenal rise to that position to the policy adopted by the British South Africa Company in 1904, by which prospectors became able to work their own ground under payment of a royalty upon the gold output, instead of having, as formerly, to promote companies to deal with it. It is also situated in the midst of a rich farming country, the prospects of cotton growing in the neighbourhood being extremely good. The town lies on the main trunk Bulawayo-Salisbury railway line, being 202 miles from Bulawayo and 97 from Salisbury. The white population of the township proper and of the Eiffel Flats numbered 782 in 1921, and the native population 3,200. Most of the mines are situated within easy access of the railway, the Cam and Motor property being by far the largest. Gatooma is well governed by a municipal council with progressive ideas, dating from 1917, and which has succeeded in placing the water supply of the town on a sound basis. The municipal offices face the handsome granite War Memorial in Edward Street. There is a good system of electric light, and among the many public and other institutions of the town are the Anglican and Wesleyan Churches, Public School, Chamber of Commerce, Publicity Committee, Turf Club, Golf Club, and the Rifle Company.

### GWELO

The capital of the Midland or Central District of Southern Rhodesia, Gwelo is a town of some 2,000 inhabitants (1,100 Europeans) situated on the north side of Gwelo Kopje. The original site was selected by the late Sir Starr Jameson in 1894, and the town became a municipality in 1914. The place is admirably laid out, lighted by electricity, and possesses a good water supply. Here are the headquarters of the Magistrate and Civil Commissioner of the district, and of the Mining and Native Commissioners. There is a Government Hospital, also Anglican and Congregational Churches, excellent Government and Convent Schools, a swimming bath, and a golf course. The public library is well

stocked with books, and Municipal schemes include, besides light and water supply, an abattoir, a cattle saleyard and an experimental station on the commonage. In the pretty Public Gardens is an obelisk war memorial.

### HARTLEY

The township of Hartley adjoins the railway a few miles north of Gatooma, and is two miles south of the Umuthi River. This is the largest river in Southern Rhodesia after the Zambezi and the Limpopo, and the position of the town is an admirable one for future industrial development. The European population at present numbers rather more than 100. Already Hartley possesses a fine Public School with 50 boarders and 25 day scholars. There are good cricket, football and croquet grounds, and a golf course.

### QUE QUE

This is an important mining centre, the Globe and Phoenix and the Garka Gold Mines being situated here. What was once a village has grown into a small but well laid out town on the Bulawayo-Salisbury line. The water service is supplied by the Globe and Phoenix Mine, pumping from the Schakwe River. At the Globe and Phoenix Club is a library, and there are a racecourse and good football and cricket grounds. Population 5,500.

### UMTALI

The Eastern Gate of Southern Rhodesia, Umtali is beautifully situated on rising ground between the railway station and the foot of the Ingamitseri Range to the north, being enclosed on all sides by lofty mountains. The town, which is exceedingly healthy, is the chief commercial centre for the goldfields of British Mankaland and several rich agricultural districts, and was for some time the headquarters of the Railway Administration. Large railway repairing workshops lie to the south of the place in which are several important public buildings, the Government offices, a Hospital, Drill Hall, Public Library, two banks, St John's (Anglican) and the Roman Catholic Churches being the most prominent. The town has been a municipality since 1914, the Council controlling an excellent water supply, the Botanical Gardens and Nurseries, and the Victoria Park, while other

municipal schemes for the good of the place (including swimming baths) are in course of construction. Umtali is becoming industrially important, saw mills, aerated water and ice factories, and grinding mills having been erected. The policy of the Council is to foster industrial undertakings by giving all possible facilities. The European population within the municipal area was 1,000 in 1924, natives numbered 2,000 and Asiatics 100, in all 4,000. The valuation of the rateable property was £337,573. Umtali possesses a first-rate club, a racecourse, and two of the best 18-hole golf courses in the colony.

### UMVUMA

This is a small town of about 420 European inhabitants, situated on the line running from Gwelo to Victoria, and is an important collecting and distributing centre for the Central Estates and the Rhodesdale Ranch (two of the largest cattle ranches in Rhodesia), and the Falcon Mine.

### VICTORIA

The town of Fort Victoria is situated at the confluence of the Umshagashi and Macheke Rivers, and was the first permanent settlement founded in Southern Rhodesia. It is the centre of a rich grain and cattle-producing district with enormous potentialities, and mining for gold and asbestos is also carried on in the neighbourhood. The European population is a small but increasing one, 222 in 1921. There are several fine buildings, prominent amongst which are the hotel, Standard Bank, and many business premises. Amongst public buildings are the Government School and Hospital, together with three European Churches of different denominations.

**ZIMBABWE RUINS.** About 12 miles from Victoria are the famous ruins of Great Zimbabwe, immense buildings erected in far-off times for the protection of those engaged in the gold industry. Near the ruins, which are easily reached by motor-coach, a brass tablet marks the place where Major Alan Wilson and his party, who fell on the Shangani River in 1893, were interred previous to the removal of their bodies to the World's End.

## COMMERCE AND CUSTOMS

**W**ITH the development during recent years of Southern Rhodesia's three main agricultural crops—maize, tobacco and cotton—the commerce of the colony has naturally shown an expanding tendency. Gold is still the principal article of the export trade, asbestos ranking second, but there are evident signs that in the future Rhodesia's overseas trade will be largely conditioned by the progress made in agricultural industry. The years 1923, 1924 and 1925—the first of the colony's independent existence—each showed a favourable trade balance, while the prospects for 1926 were distinctly good.

**BALANCE OF TRADE.**—In 1923 exports exceeded imports in value by £1,751,391, in 1924 by £1,510,214, and in 1925 by £792,000.

**CUSTOMS.**—The Customs Tariff of Southern Rhodesia closely follows that of the Union of South Africa. The duty on settlers' effects is 9 per cent. There is no duty on goods taken from the Union to Rhodesia, or vice-versa, except on spirits. In 1925 a Bill was introduced into the

Legislative Assembly providing for the amendment and consolidation of the Customs Laws, and was expected to become operative during 1926. (See under "Union of South Africa", "Customs".)

**EXPORTS.**—The grand totals of exports for the years named were as follow—

	1923 £	1924 £
S A Produce	4,916,121	5,120,058
Imported goods re-exported	340,535	427,488
Articles through post	3,139	3,763
Total	5,265,795	5,551,309
To other S A Govts	15,438	3,928
Specie	29,328	9,479
Grand Total	5,310,561	5,564,716

The principal exports in 1924 (figures for 1923 in brackets) were: Gold, £2,394,601 (£2,586,252), asbestos, £498,855 (£409,026), copper, £324,866 (£323,727), maize, £215,334 (£319,936); and chrome ore, £362,101 (£249,227).

Exports of all kinds during 1925 were valued at approximately £5,575,000.

**IMPORTS.**—These were as follow for the years named—

	1923 £	1924 £
From countries outside British South Africa	2,052,314	2,432,055
From other States in B S A	1,406,119	1,470,269
Total merchandise	3,458,433	3,902,324
Government stores	47,277	53,912
Specie	53,460	98,266
	3,559,170	4,054,502

The values of the leading imports in 1924 (figures for 1923 in brackets) were as follow: Textiles, apparel, etc., £955,521 (£814,372), railway material, £71,504 (£89,541), whisky, £59,854 (£43,788), sodium cyanide, £35,365 (£48,385), and fertilisers, £26,479 (£20,213).

The total value of imports (excluding Government stores and specie) into the colony for the year ended December 31, 1925, was approximately £4,783,000, an increase on the previous twelve months of about £800,000.

**TRADE BY COUNTRIES.**—By far the larger part of the trade of Southern Rhodesia is with the United Kingdom, the total





MAIZE DUMPS, SALISBURY, RHODESIA.

volume amounting in 1924 to £4,377,900, as against £5,041,205 in 1923, out of totals of £9,619,238 and £8,809,731 respectively.

Imports from the Mother Country, which amounted in value to £1,789,692 in 1924, compared with £1,501,487 in 1923, were various, cotton piece goods (£191,630), wearing apparel (£137,083), haberdashery (£59,062), miscellaneous mining machinery (£53,847), cotton underclothing (£50,101), and other machinery and parts (£44,771) being the leading items, while exports to Great Britain (£3,188,210 in 1924, as against £3,456,226 in 1923) were largely made up of the following: Gold (£2,394,601), asbestos (£395,747), maize (£181,209), maize meal (£25,630), and chrome ore (£13,895).

After Great Britain and the Union (see under "Union of South Africa" Commerce") the United States was the leading country of origin for Southern Rhodesian imports (£348,476 in 1923 and £402,399 in 1924). In the export trade the Union also ranked second to the United Kingdom, with £738,291 in 1924, an advance of £211,456 on the 1923 figures, the United States (£624,257) and the Belgian Congo (£235,460) being the nearest competitors.

**TRADING INSTITUTIONS.**—There are five Chambers of Commerce in Southern Rhodesia, namely, at Salisbury, Bulawayo, Gatooma, Umtali, and Gwelo. The primary efforts of these Chambers are directed towards improving trade relations and commercial legislation, customs and postal facilities, and the fostering of new industries. In 1919, with the object of being able when occasion required them to express the point of view of the commercial community of the colony as a whole, these Chambers formed themselves

into the organisation known as "The Association of Chambers of Commerce of Rhodesia." The executive of this Association is composed of nominees from the individual Chambers, selected to represent, as far as possible, different trade interests. The Association, which has from the first enjoyed direct and intimate relations with all Government Departments and Ministers, deals with the wide field of the country's commerce in general, and has undoubtedly accomplished a great deal of very useful work.

**TRADING METHODS.**—See under "Union of South Africa" Commerce.

**WEIGHTS AND MEASURES.**—British weights and measures are generally in use, except that the Cape linear and surface measure of roods, feet and morgen are commonly used. For the sale of agricultural produce the unit of weight is the lb avoirdupois (16 ozs.), and the usual measure of capacity in the case of grain is the sack, which holds approximately 3 bushels. The weight per sack consequently varies with the bushel-weight of seed or grain concerned. It is usual, for the sake of convenience, to adopt a uniform weight for bags of seed and produce having approximately similar bushel weights. Thus, such seeds as maize and beans having a bushel weight of 55 to 60 lbs. are sold in sacks with a weight of 203 lbs. gross while such as oats and barley with bushel weight of 35 to 45 lbs. are sold in sacks weighing 153 lbs. gross, sunflowers in 103 lbs. sacks, and ground nuts in sacks of 83 lbs. gross. The nett weight is usually 3 lbs. less than the figures quoted, the difference being that allowed for the weight of the bag. There is, however, no uniformity in this respect, and weights vary both with the class of produce concerned and the locality in which it is sold.



CHROME QUARRY, BELUWE, RHODESIA.

# TRANSPORT

## RAILWAYS

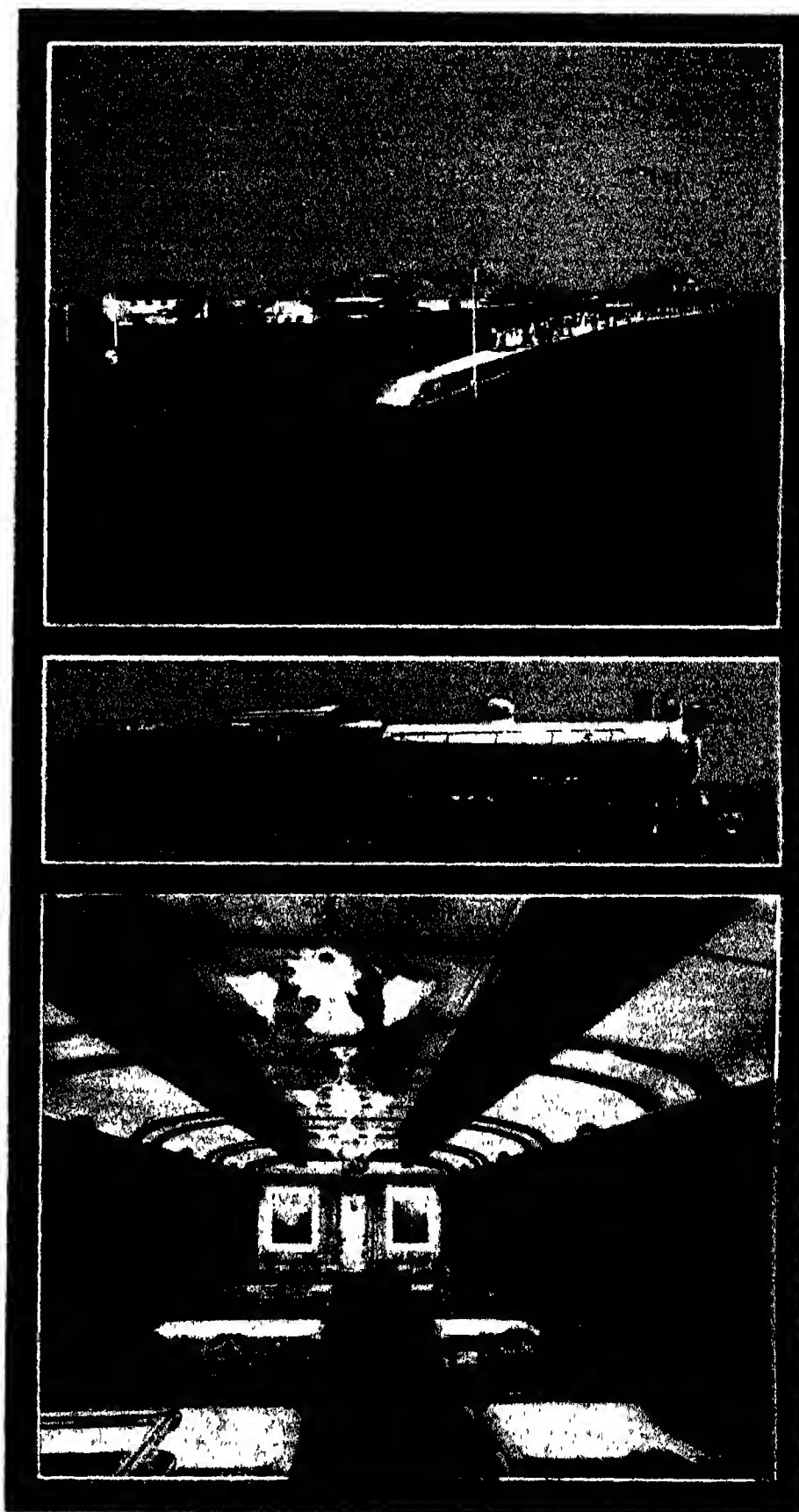
**T**HE history of the railways in Rhodesia is, to a large extent, the history of the colony itself. The Rhodesia railway system proper started at Vryburg (Bechuanaland) in May, 1893 the line being rapidly pushed on to Bulawayo, which was reached in 1897. Early in 1898 communication was established with the seaboard at Beira by the line between that port and Umtali. This line was extended to Salisbury in 1899 and that town was connected with Bulawayo via Gwelo in October 1902, thus giving Rhodesia an important alternative route to the sea. A line had been projected to cross the Zambesi in order to reach the Southern end of Lake Tanganyika, but questions of expense and the discovery of important coal deposits at Wankie brought about the adoption of the present railway north via Wankie and the Victoria Falls, the latter place being reached in 1904, and the line, after crossing the Zambesi, being carried a further 94 miles to Kalomo in Northern Rhodesia, whence it has since been extended to the Congo border. Between the three points, Beira in Portuguese East Africa, Vryburg in Bechuanaland and Ndola on the Congo border, there are no fewer than 2,462 miles of railway which stand as a truly notable example of enterprise and of the confidence inspired by the resources and future prospects of the country.

Of this total, 1,252 miles of line are in Southern Rhodesia, 506 in Northern Rhodesia, and 198 in Mozambique Territory, the remainder being distributed between Bechuanaland Protectorate and the Union of South Africa.

**ADMINISTRATION.** The railways of Rhodesia are privately owned and operated. They were constructed by several companies in which the late C. J. Rhodes was interested, but under a joint agreement, are operated by the Beira and Mashonaland Railway Company, whose chief executive offices are at Bulawayo. The railway companies and the mileage they own on the whole system as far as the Congo Border are: Mashonaland Railway Company, Limited, 607 miles; Rhodesia Railway Limited, 1,306 miles; Beira Junction Railway Company, Limited, 35½ miles; Beira Railway Company, Limited, 168½ miles; Blinkwater Railway Company, Limited (Gwelo to Victoria), 123 miles; and the Rhodesia-Katanga Junction Railway and Mineral Company, Limited, 132 miles.

**CONTROL.**—The British South Africa Company controls virtually the whole system. Various proposals of railway nationalisation have been made, and in 1925 an exhaustive report was drawn up by Brigadier-General Hammond, C.B.E., D.S.O., under the Railways Act of 1924, favouring either purchase or the acquisition of control under agreement by the Government of Southern Rhodesia. Great interest has been excited by the report and its recommendations, the general opinion, however, appearing to be that the financial and political difficulties involved in the complete acquisition of the system are too severe for a country possessing a total white population of under 40,000.

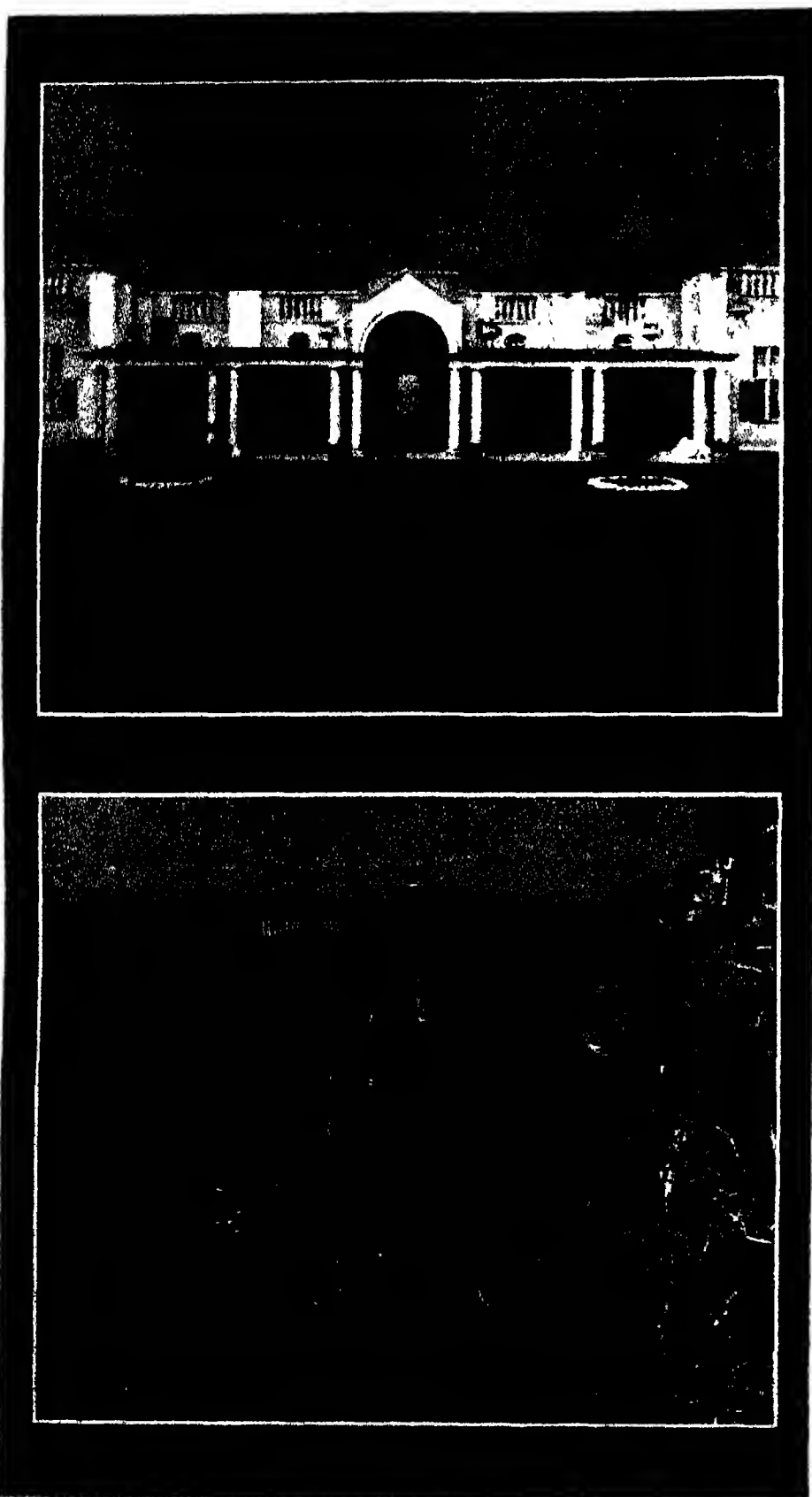
At the end of 1925 the British South Africa Company expressed its willingness to confer with the Government on the subject of full control. Early in 1926 the Prime Minister, Sir Charles Coghlan, announced the intention of the Government to obtain such control through an independent board, whose business it would be to see that the railways



BEIRA & MASHONALAND & RHODESIA RAILWAYS.

1. Christmas Mail about to leave Bulawayo Station.
2. Latest Type of Express Engine.
3. Dining Car.

(See letterpress, page 327)



## BEIRA &amp; MASHONALAND &amp; RHODESIA RAILWAYS.

1. Victoria Falls Hotel—Front View coming from the Railway Station; the Railway Bridge Spanning the Gorge is seen in background through Doorway.
2. View from the Lounge Porch, Victoria Falls Hotel.

(See letterpress, page 327)

were treated fairly and that the public was not victimised, in other words, statutory control was to be on the lines of the English Railway Act

**COST OF RAILWAYS.**—The total capital expenditure on all railways of the Rhodesian system may be summarised as follows —

	£
Rhodesia Railways, Ltd	8,499,304
Mashonaland Railway	4,349,642
Beira Railway	2,240,469
Beira Junction Railway	709,130
Blinkwater Railway	411,750
Rhodesia-Katanga Junction Railway	767,000
	— — —
	£16,977,304

The cost of the Rhodesian railways per mile of track is very low compared with that of other British African railways, being only £6,890, against amounts ranging from £10,327 in the case of the South African railways to £16,297 for the Gold Coast railways

**FINANCE.**—The total revenues for the whole system of Rhodesian Railways for the year 1923-24 were £3,411,134, compared with £3,021,634 for 1922-23. Of the former total, £383,833, or 11.25 per cent, came from passengers, parcels, and luggage, £1,237,733, or 36.27 per cent, from general goods, £477,169, or 13.99 per cent, from coal and coke, £857,000, or 25.12 per cent, from minerals of all descriptions, £87,443, or 2.56 per cent, from livestock and vehicles, and £46,885, or 1.35 per cent, from maize and maize meal for export

In 1925 the gross receipts of the railways were approximately £3,715,000, and the net receipts £1,740,000. The gross revenue thus exceeded that for 1923-24 by £304,000

Working expenditure for the year 1923-24, plus charges for renewals and interest and sinking fund, totalled £2,988,489, as against £2,884,740 for 1922-23, leaving a surplus on the two year's working of £422,645 and £136,804 respectively. For the year 1924-25 the surplus was estimated at £750,000. From October 1, 1923, to September 30, 1924, the net profits earned by the railways amounted to £1,400,000 to which may be added the estimated profit of £750,000 for 1924-25, which, when deficits amounting to £170,338 are deducted, leaves a total estimated profit to September 30, 1925, of £2,039,662

**TRAVELLING FACILITIES.** All the trains on the Rhodesian Railways are designed for long distance use, with the object of making the journeys as comfortable as possible. The cars are corridors on the English express system, with compartments opening on to a gangway. These compartments are luxuriously appointed for day use, and are rapidly converted into sleeping coaches for the night portions of the trips. Dining cars are attached to all mail trains, where excellently served meals of high quality are obtainable

**CONCESSIONS AND PRIVILEGES.**—Both for residents and tourists the railways offer special concessions and facilities. Tourists travelling through the country are granted a reduction of 20 per cent on ordinary fares. Messrs Thomas Cook & Sons and several steamship companies arrange tours under this concession, which allows tourists to enter from the south and leave by Beira, or vice-versa. Residents of Southern Rhodesia are allowed one trip to Beira or to the junction with the Union system once a year at half fare, whilst excursion tickets are issued for most public holidays and all agricultural shows, for the Victoria Falls, and for the coastal towns during their respective seasons. An average reduction of 7½ per cent. on all passenger fares came into force on July 1, 1925.

## THE BEIRA & MASHONALAND & RHODESIA RAILWAYS

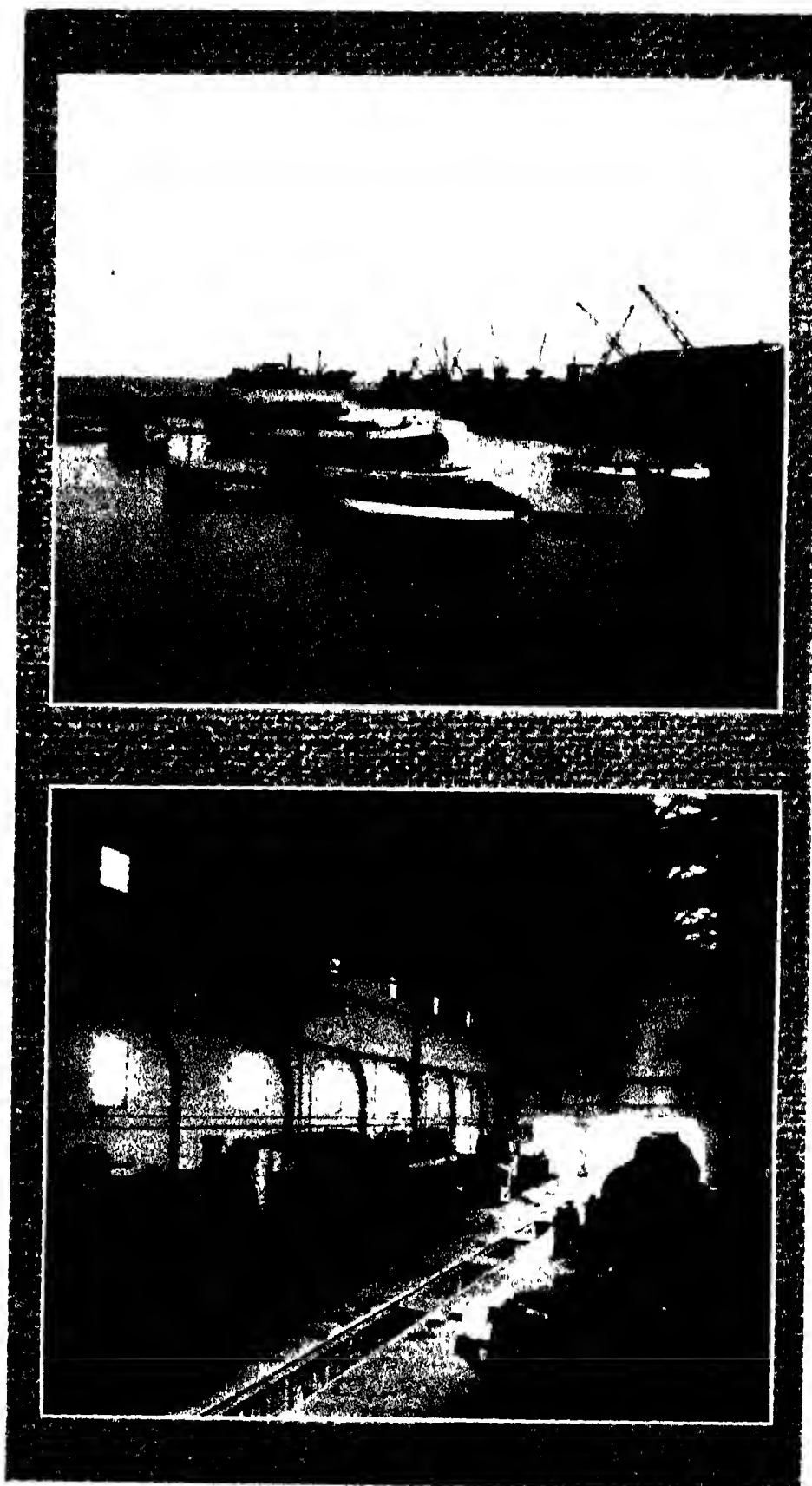
**Inception.**—In devoting himself to the development of the territory to which he gave both name and prosperity, Mr Cecil Rhodes realised the prime importance of establishing railway communications, and even before the granting of the Charter of 1889 he had obtained certain rights over the land north of Kimberley the existing terminus of the Cape system. By 1893 Vryburg had replaced Kimberley as the terminal station, and thence in May of that year the Rhodesia Railways system proper was projected. In February 1898 the section of railway linking the port of Beira via Fontesville with Umtali, on the eastern border of Rhodesia, was completed by the co-operation of the Beira Railway Company Ltd and the Beira Junction Railway Company Ltd, and at once the Mashonaland Railway Company commenced work on the Umtali-Salisbury connection. The Blinkwater Railway Company Ltd was formed to construct the Gwelo-Victoria division and the Rhodesia Katanga Junction Railway and Mineral Company Ltd to connect Broken Hill with the Congo border, in order to tap the extensive mineral deposits of the Katanga.

**Control and Operation.** Such was the inception of each of the railway concerns promoted by financial undertakings under the guidance of Mr Cecil Rhodes. Together they form a complete system virtually controlled by the British South Africa Company, and operated under agreement by the Beira & Mashonaland & Rhodesia Railways.

**Development.** The thirty-three years since the first line was begun have seen the construction of a system of efficiently-operated routes totalling 2,400 miles in length. (For chronological and financial details of the building of each main track the reader is referred to the preceding article on "Railways.") It may be said that the railway in Rhodesia has now passed out of the category of construction line, having become a highly organised business, divided into separate departments and entailing careful co-ordination and control. Among the factors contributing to that efficient service which is the achieved aim of the management are elimination of waste, more capable traffic operation and personal attention to the question of staff welfare.

**Construction Factors.** The prime consideration in the construction of the system was the element of speed, necessitating the choice of the easiest course for the track, where possible along watersheds and avoiding large rivers. The country traversed is, therefore, on the whole easy, the most difficult section being that between Beira and Umtali, built under conditions of much difficulty at excessive cost of life from the attacks of disease and wild beasts. Gradients and curves are as a general rule, excepting the Beira-Umtali line, not severe, the increase of traffic and consequent justification of further expenditure enabling many improvements in alignment from time to time to be effected.

**Line and Rolling Stock.**—The gauge of the line throughout is 3 ft. 6 ins., and the section of rail (except for about 30 miles of track near Dett, relaid with 80 lb rails) is 60 lb. For sleepers, steel is mostly employed, though native timber has been used to a certain extent. The rolling stock is modern and convenient, fitted with vacuum brakes, and most of the vehicles are with automatic couplers. Electric light is installed throughout.



BEIRA & MASHONALAND & RHODESIA RAILWAYS.

1. The Wharf at Beira.
2. Engine Repair Shop at Bulawayo.

**Special Travelling Facilities.**—In addition to those conveniences and concessions mentioned in the foregoing article on "Railways," the Beira & Mashonaland & Rhodesia Railways provide many special facilities. Generally speaking there is a tri weekly service of mail trains throughout the main line, on which compartments may be reserved for distances exceeding 50 miles upon payment of the stipulated minimum number of fares. Those proceeding on shooting trips can be furnished with private carriages having accommodation for six persons, and containing saloon, kitchen, bedroom, bathroom, etc., at an inclusive monthly rate covering haulage, attendance and catering. The administration is specially concerned with the interests of tourists, for whom whether on big game shooting or sightseeing bent, every railway convenience is available. During the summer months (September to April inclusive) reduced fares are in operation for tourists visiting the Victoria Falls, when travelling not less than 280 miles in each direction, and during the same period a reduced tariff is in operation at the Victoria Falls Hotel the company's own first-class establishment.

**Centre of Control.**—A part of the railway system now considered, viz., the section from Vryburg to Bulawayo, is operated by the South African Railways. The remainder is divided for purposes of organisation into four districts, the administrative headquarters being at Bulawayo, the most important railway centre. Here, too, are situated the company's principal workshops, by far the largest railway shops in the colony, equipped with 60-ton travelling cranes, electric traversers, and modern electrically-operated machinery. The railway water supply scheme at Bulawayo includes a dam of the Khamu River, about 18 miles out, furnishing a storage capacity of over 170,000,000 gallons. At the same centre and elsewhere a considerable number of railway houses have been built for the use of employees, involving an expenditure of nearly £500,000 sterling.

**Staff.**—The white staff numbers, according to latest available figures, 2,646, the native staff, 9,929. All clerical and skilled work is done by Europeans.

**Administration.** The principal officers of administration are, Col C F. Birney, M L A, D S O, R E, M Inst T (general manager), Mr H Chapman (assistant general manager), Mr James Buchan, A M Inst C E, M Inst S E (chief engineer), Mr E H Gray, M I Mech E (chief locomotive engineer), Mr Frank Key, F S A A Eng (chief



BEIRA & MASHONALAND & RHODESIA RAILWAYS.  
First Class Passenger Accommodation, Day and Sleeping Compartment combined

accountant), Mr T Beach Smith, M Inst T (traffic manager), Mr D Livingston (stores superintendent), Dr A G Christian, M B, Ch B Vict U (principal medical officer), and Mr A Parker, M Inst T (catering superintendent).

**Head Offices.** Bulawayo, Southern Rhodesia

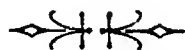
**London Office.** 2, London Wall Buildings, E C

**Capetown Office.** St George's Street

**Financial.**—The following table is a statement of the results of working all sections of the system during the five years ended September 30, 1924 --

	1924	1923	1922	1921	1920
	£	£	£	£	£
Total earnings in South Africa	3,411,134	3,021,634	2,984,911	3,102,363	2,507,120
Total gross operating expenditure in South Africa	1,022,993	1,875,181	1,909,730	2,098,215	1,722,078
Total net operating revenue	1,488,141	1,146,453	1,075,181	1,004,148	785,042
Total of all fixed charges	1,030,381	1,029,250	969,130	892,475	821,127
Balance for disposal	457,760	116,203	106,051	111,673	35,785*
*Deficit					

(See illustrations, pages 325, 326, 327)







TRANSPORTING CROP TO RAILHEAD, RHODESIA.

## AGRICULTURE AND LIVESTOCK

**S**OUTHERN RHODESIA is without doubt one of the finest cattle countries in the world, while the range of crops and raw materials which can be produced and of the food-stuffs available is very extensive. Diseases among cattle are comparatively few, and the fungoid and insect pests never do extensive damage. Maize and tobacco are the most important crops, but the cultivation of cotton and citrus fruits has lately received a strong impetus.

**ADMINISTRATION.**—The Department of Agriculture is part of the Ministry of Agriculture and Lands, and functions under a Director. Its activities are largely connected with the suppression of cattle diseases and crop pests, also with experimental work, experimental farms and stations having been established at Salisbury, Gwebi, Bulawayo, Gwelo, and Gatooma. In addition, the Department collects agricultural statistics of great value, these being published in the Rhodesia Agricultural Journal from time to time.

**CITRUS FRUITS.**—Orange growing in Southern Rhodesia is confined to those areas where irrigation can be practised during the dry months of winter. In some cases orange trees of four years old from planting have produced good commercial crops of fruit, but it is generally held that trees should be five years old before fruit suitable for exports can be expected. At the agricultural census taken in 1922 the number of citrus trees in Southern Rhodesia was found to be 166,738, of which 73,144 were in bearing. Exports of oranges

from the colony increased from 41,700 boxes in 1923 to 85,000 boxes in 1924.

**COTTON.**—See article following.

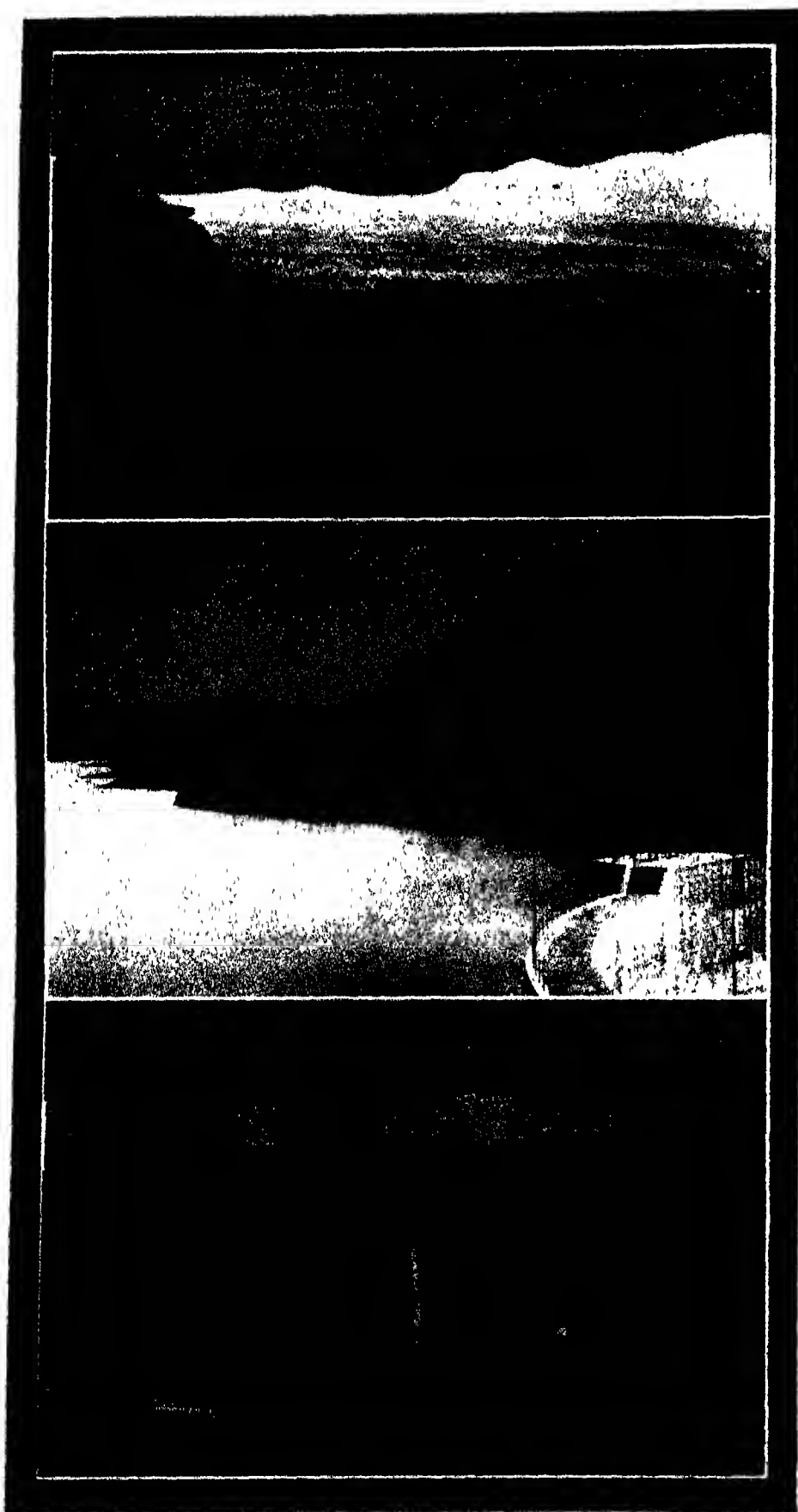
**FORESTRY.** Southern Rhodesia is generally well wooded, the forests in the main being of the savannah type, though there are also a number of high or close-type forests. Most of the timbers are hardwoods, but only a limited number of these have as yet been exploited commercially. Timber suitable for use in the gold mines has always been abundant. A Forest Officer is attached to the Department of Agriculture, the area of State Forest Reserves in his charge in 1923 being 13,236 acres, including the Forest Nursery at Salisbury.

**IRRIGATION.**—There are at present about 16,000 acres of land under irrigation in Southern Rhodesia, the largest scheme being that of the British South Africa Company on the Mazoe River. This comprises an arched concrete dam 100 ft. high, impounding about 18,000 acre feet, or 780 million cubic feet of water, about 25 miles of canals with flumes and pipe syphons, and other subsidiary works. The dam, when full, is capable of irrigating 6,000 acres of land, of which in 1924 about 1,000 acres were under established citrus trees. There are other schemes of smaller proportions embracing areas up to 200 or more acres of irrigable land. Irrigation has so far been confined largely to the growing of winter crops, consisting of citrus, wheat, oats, barley, lucerne, potatoes, onions, and general forage products. Greater attention is, however, being given to the utilisation of irrigation for

assistance in the growing of summer crops, such as tobacco, cotton, etc., especially in years of low and uncertain rainfall.

**LIVESTOCK.**—Unlike Australia and South America, South Africa at the time of its first occupation by white men possessed certain indigenous breeds of cattle. In Rhodesia, for instance, native cattle were grazed in large numbers when the Pioneer Column came up in 1890. Subsequently, owing to lung sickness, underpest, and war, their total was reduced to a small fraction, but when the country settled down after the rebellion of 1896 there still remained numbers of Matibele and Mashona cattle. To this day these native breeds, little (if any) altered, constitute one half of the cattle in the country, and the great bulk of the European-owned cattle is derived from them. Considerable numbers of breeding animals were introduced from Angoni-land, Nyassaland, and Northern Rhodesia, chiefly of the Barotse and humped Zebu types, also some slightly improved stock. Many nondescript grade cattle from the South, containing a good deal of Afrikaner, Shorthorn and Friesian blood, have come into Rhodesia at different times, but latterly only stud animals, mostly of registered pedigree, have been brought up from the Union of South Africa, and there has been some export of breeding stock to the Transvaal, Portuguese East Africa, and the Belgian Congo.

The total head of cattle in the colony at the last agricultural census was 2,008,906, of which 1,003,629 were European owned. During the year 1924 pure-bred cattle in-



1. VAST ACREAGE AWAITING TO BE DEVELOPED, RHODESIA.
2. MAZOE DAM.
3. AN EXAMPLE OF WHAT IS BEING ACCOMPLISHED IN THE COLONY.

creased by 8 per cent, while exported slaughter stock accounted for 50 776 head, an increase of 10,000 over the previous year.

**DAIRYING** — Dairying is becoming an important branch of farming in Mashonaland, both the Union and the Congo taking large and regular supplies of butter. There are four creameries now working in the colony, at Salisbury, Bulawayo and Gwelo. Rhodesian butter fetches about the same price on the overseas market as Australian butter, and considerable quantities have been exported during recent years. It is officially stated that the average farm in Rhodesia is large enough to run a dairy herd of from 30 to 40 cows (as distinct from the beef herds), from which with ordinary local low grade cows a return of from 6s. to 10s. per cow per month may be derived if butter or cream is sold, whilst if cheese is made the return will be higher. This is exclusive of the value of the progeny or of the skim milk or whey, which will be available for pig feeding. If better class cows are kept, or if the settler is so situated as to enable him to enter into a fresh milk contract, the returns may considerably exceed the figure quoted and may reach that of £20 per cow per annum.

**FATTENING FOR BEEF** — This branch of cattle raising is successfully carried on in Southern Rhodesia owing to the grazing being universally good and plentiful. Stock, however bred and treated, are usually rolling fat for at any rate a few months of the year, generally about March, April and May, falling off again from June or July to November, and picking up with the first rains. Very fine examples of stock which have been fattened according to the most approved methods may be seen at the annual Agricultural Show at Salisbury, which never fails to attract the best type of exhibits.

**RANCHING** — The term "ranching" in Southern Rhodesia is usually taken to mean the rearing of beef cattle under more or less extensive methods, whereas the term "farming" is applied to propositions on which various intensive forms of agriculture, dairying and stock raising form the main features of the work. It is not always an easy matter to draw a hard and fast line between ranching and farming. On smaller ranches, where conditions are favourable, a certain amount of intensive agriculture is sometimes undertaken as a means of paying expenses during the initial years and until the herd has reached such proportions as will give a return on the money expended on the land and its development. But as a rule the permanent agricultural operations on a Rhodesian ranch are limited to the cultivation of sufficient food for the stud stock and native labourers, and the provision of a certain amount of rough forage for use in unfavourable seasons. The two most notable ranches in the colony are those of the British South Africa Company at Rhodesdale and Messrs Liebig's Extract of Meat Company at Mazunga, each of which runs about 50,000 head.

**VARIOUS LIVESTOCK** — Pig breeding in Southern Rhodesia is on the increase, the total number of pigs in the colony being well over 20,000. Sheep are practically confined to the native Bechuanaland variety, but Merinos are said to do well in the Gwelo, Melssetter, and Inyanga districts. The number of poultry farmers is increasing every year, the climate being excellent for the purpose, and the egg-laying contests promoted by the Department of Agriculture have done much to foster the industry. There are not more than 4,000 horses in the colony, horse breeding being handicapped by the ravages of the South African disease known as horse-sickness.

**MAIZE.**—Maize may be called the pioneer crop of Southern Rhodesia, and is at once the staple and most important product of the country. It occupies 78 per cent. of the total area of land under cultivation by Europeans, and is the crop upon which a very large section of the farming community mainly relies for its livelihood.

Maize is not only the principal food of the native labourer and of the native in his kraal, but is the most used grain food for livestock, and to no small extent also enters into the diet of Europeans. As a summer or wet season grain or fodder crop for use on the farm it is grown in all parts of the colony, but grain production for sale is mainly concentrated in what is locally termed the maize belt, or those areas possessing heavier and more fertile soils and favoured by a generous average rainfall. The best maize districts in the colony are round Salisbury, Mazoe, and Lomagundi. In addition to being so important a grain crop, maize possesses a further advantage in the value of the green fodder for conversion into hay or silage, and of the dry leaves and stalks after reaping for grazing by cattle or sheep, facts which often render its cultivation desirable even on soils from which only a small yield of the grain can be expected. Maize grown for silage occupies 2.6 per cent.

production for sale is governed by various limiting factors. Amongst these the most important is the fact that it is bulky and weighty, but, comparatively, a low-priced article. It follows, therefore, that maize for market must usually be raised within reasonable distance—15 to 25 miles—of the railway, and that as an exportable crop its value to the grower is largely dependent upon prevailing railway rates and ocean freights. There is good reason to believe that as a general rule Rhodesian maize may be taken to be worth from 27s. 6d. to 32s. 6d. per quarter on European markets. Under conditions obtaining for railway and ocean freights, this represents a value of about 6s. 6d. to 8s. 6d. per bag on rail in Rhodesia. It is hoped, however, that before long both sea freight and railage may be further reduced, to the advantage of the producer. The bulk of the crop from the maize belt is handled and sold on behalf of its members by the Farmers' Co-operative Society, Limited, Salisbury. A Maize Growers' and Breeders' Association, the members of which comprise all the important maize growers in the colony, was formed some years ago. This body has done, and continues to do, much valuable educational work for the further promotion of the maize growing industry.

## COTTON

**C**OTTON has been grown in Southern Rhodesia for many years to a limited extent and with varying results. It is now established as a crop of commercial importance and with an enormous future, profitable returns having been obtained over a number of years of varying climatic conditions. The recent high price of cotton has stimulated production by Southern Rhodesian farmers, and a series of experiments carried out by the Department of Agriculture in the leading cotton growing districts has proved most valuable in testing the unsuitability of certain areas, the best cultural methods to be adopted, and the need for the careful selection of seed. Considering the fact that prior to 1919 practically no cotton was grown in Rhodesia, the return for 1924-25 of 62,858 acres under cultivation and the yield for the same year of nearly 7,000,000 lbs. of seed cotton are a tribute to the progress which this nascent industry has made.

**DISTRIBUTION.** It is a generally accepted fact that cotton cannot be grown with certainty as a commercial crop above an altitude of 3,800 ft. (excepting in very sheltered and isolated spots). For this reason cotton



COTTON EXHIBITS, SALISBURY SHOW

of the total area of arable land farmed by Europeans, while in the maize belt the dry fodder after the grain is reaped provides a great part of the winter grazing for tick oxen and other cattle.

**AVERAGE YIELD.**—The latest figures available show that some 233,000 acres are under maize cultivation, the average crop varying according to seasons from 5 to 6½ bags per acre, but this figure refers to the whole colony, and naturally includes the yield obtained alike by good and bad farmers on rich and poor soils. Many of the principal growers obtain an average of at least 10 bags in normal seasons, while on favourable fields crops of 20 to 30 bags per acre are not uncommon. It is not unreasonable, therefore, to anticipate that as more scientific methods are adopted, and as crop rotation and manuring become more general, both average and individual yields will increase correspondingly.

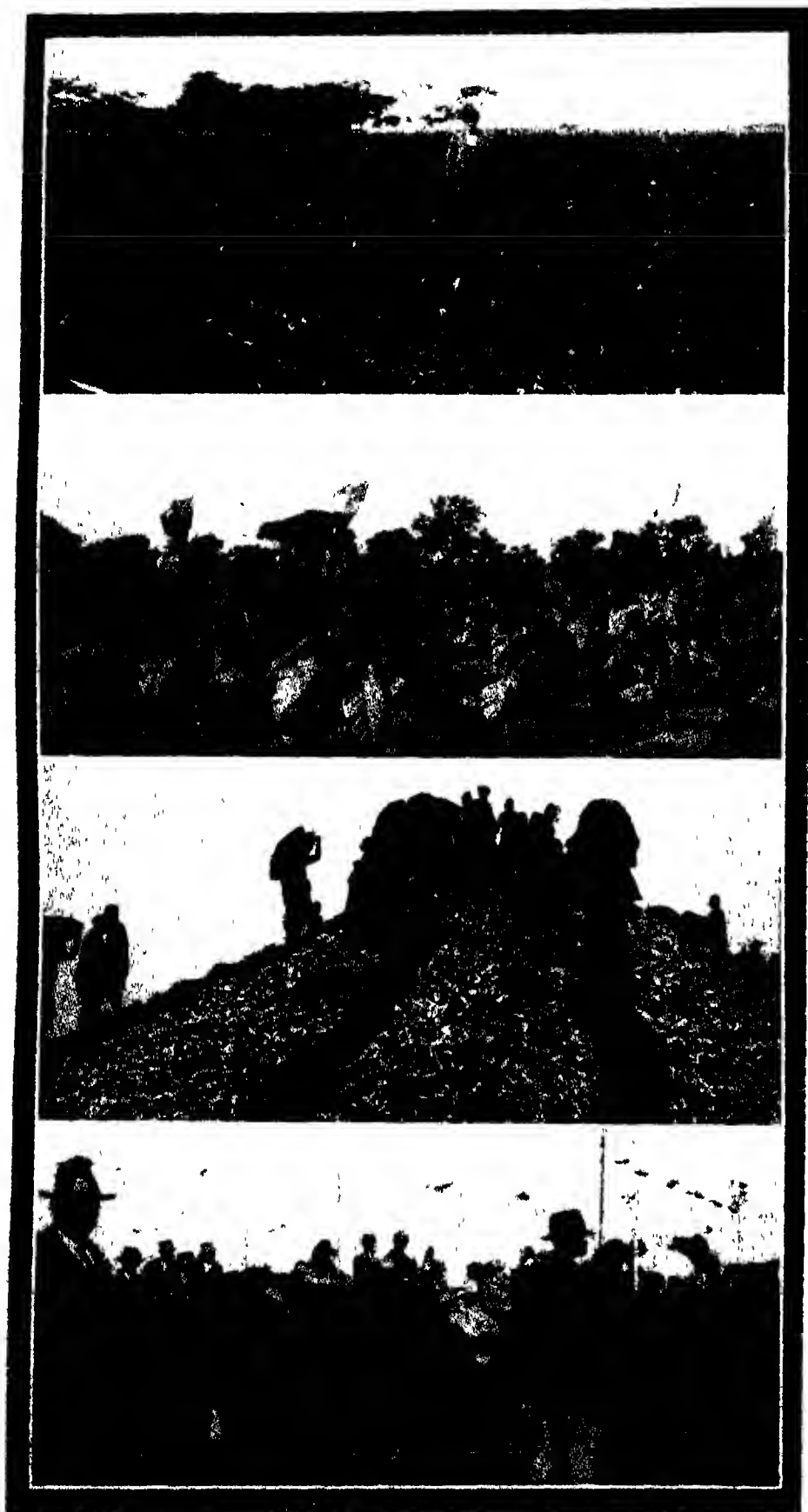
**MARKETING.**—Although maize is an essential article of diet, on every farm its

**PRODUCTION.**—The record year in the production of maize was 1922-23, when the total yield amounted to 1,505,580 bags. In 1923-24, there was a drop to 1,080,580 bags, the yield all over South Africa being much below the average. In 1924-25, owing to heavy rainfall and locust visitations, the yield was again a disappointing one, amounting to only 1,041,904 bags from 232,947 acres, an average yield per acre of 4.47 bags.

**TOBACCO.**—See article following.

**VARIOUS CROPS.**—Wheat and the other cereals are a winter crop in Rhodesia, the wheat grown being of excellent quality, barley of the malting type is in demand for the local breweries. Ground-nuts and sunflowers are becoming increasingly important, beans are grown both for human consumption and for stock feed, and sweet potatoes, cattle melons, and pumpkins are raised on most farms for stock purposes. The acreage under fodder grasses is comparatively small, teff grass being the most grown.

cannot be raised over the whole of any district in the colony. The crop requires a well distributed rainfall of from 20 to 35 inches, and this further limits its range of cultivation. Up to the present, the Hartley, Mazoe, Lomagundi, Mrewa, Mtoko, Makoni, Umtali and Victoria Districts have been found the most suitable for cultivation. The crop has also been grown successfully in parts of the Bubi, Bulawayo, Nyamandhlovu, Gwelo and Selukwe Districts. Of all these, the districts round Hartley and Gatooma have shown the most promising results. Gatooma, indeed, according to Dr. E. A. Nobbs, a former Director of Agriculture, is likely to acquire a new importance, the yield and quality of considerable acreages planted there during 1924-25 having been most encouraging. The altitude is under 4,000 feet, the rainfall is 30 inches, and the climate is fairly warm and free from frost. The Government, through the Department of Agriculture, has recently established in the immediate vicinity of



#### AGRICULTURE IN RHODESIA.

1. Cotton in Flowering Stage.
2. Virginia Tobacco.
3. Stacking Cobs.
4. Salisbury Show. Prize Winners.

Gatooma an experimental station for the culture particularly of cotton, where the trial and acclimatisation of varieties from all parts of the world are being conducted, and also the improvement of varieties by selection and breeding and experiments in cultural methods and the use of fertilisers. This undertaking should give a special fillip to cotton cultivation in the Hartley district, but is also intended to serve the whole country.

**GINNERY.**—The continued success of cotton growing in 1924 led to the erection of a ginnery at Salisbury capable of dealing with much more than the output yet in sight. This ginnery, which is the private enterprise of Major Cooper, D.S.O., consists of spacious brick buildings conveniently situated on the edge of the town, and has its own railway siding. The electric current is supplied by the municipal power plant and drives all the machinery, consisting of the delinting plant and the special 50-saw gin used for ginning selected seed, press conveyors and fans and suction cleaners. The ginning plant itself consists of a battery of three eighty 12-inch saw gins made by the Continental Company of Birmingham, U.S.A. After ginning, the lint, thoroughly cleaned, is forced by compressed air on to the condenser to which the lint adheres, whilst the dust and small particles are blown through the gauze and out through the uptakes at each end. The lint is pressed by the hydraulic press to a density of 16 to 18 lbs. per cubic foot, according to the type of cotton. After ginning the seed is taken by a system of conveyors and elevators to the delinting room where the seed is finally cleaned and bagged. The ginnery cost about £10,000, and has recently commenced operations. It is calculated that from the moment of delivery by the farmer of his cotton at the ginnery to that of its sale in England the total costs work out at 5d. per lb., leaving the balance of the price obtained to the original producer.

**INSECT PESTS, ETC.**—There are a number of plants in the Rhodesian veld sufficiently nearly related in a botanical sense to cotton to ensure that as a crop it will not be free from insect pests. Most fortunately neither the pink bollworm nor the boll weevil has shown itself yet, but the insect pests against which due precautions must be taken comprise cutworms and leaf-eating caterpillars, aphids, cotton stainers and other cotton bugs, the American bollworm, the Sudan bollworm, and the spiny bollworm. Stringent measures have been taken to safeguard the country from these evils, which, so far, have not done any serious damage. The only diseases at present noted are angular leaf spot, anthracnose, and boll rot, and these are serious only in seasons of abnormal rainfall.

**LINT (QUALITY OF).**—The quality of lint produced in Southern Rhodesia is indicated by the report of the British Cotton Growing Association on samples of lint forwarded for examination as follows:

No. 1—Middling fair in grade, rather creamy in colour; staple  $1\frac{1}{2}$  inch, little irregular, only fairly strong. Value 26 50d (750 points on).

No. 2—Middling fair in grade, very good colour, staple  $1\frac{1}{2}$  inch, but mixed with short. Value 25 50d (650 points on).

No. 3—Fully good middling in grade, stained, staple about 1 inch, soft and weak. Value 15,00d (400 points off). Based on September middling, 19 00d.

**PRODUCTION.**—The actual acreage planted with cotton in 1925 was 62,858, this figure being a very large one when compared with the 3,000 acres under cultivation in 1923. The type of seed which has so far given the best results is that designated

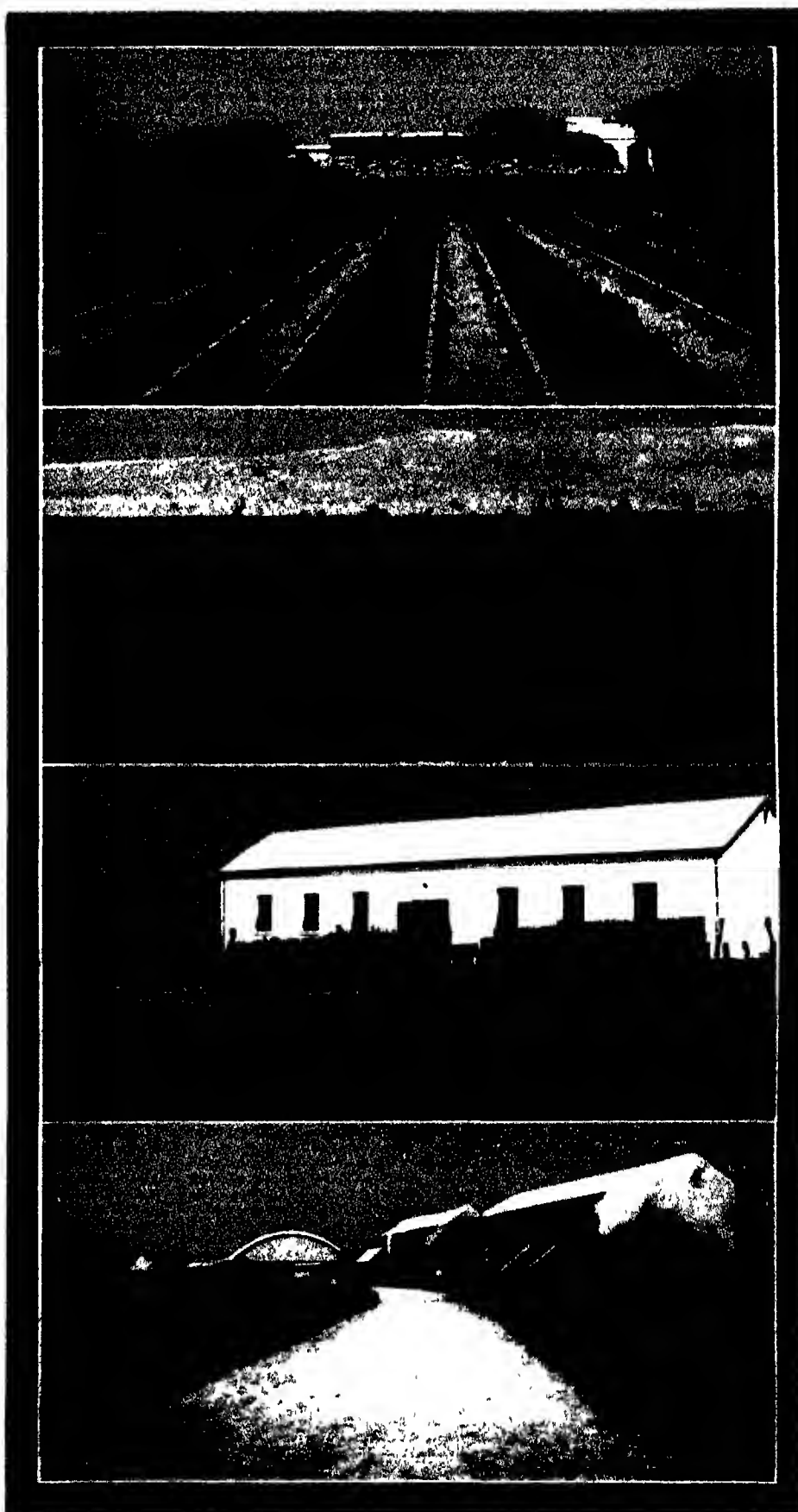
American Upland, and a variety known as Improved Bancroft is also generally grown. As much as 1,500 lb of lint have been obtained per acre, and other yields of 1,300 lb and 1,200 lb of seed cotton per acre have also been produced. The average yield is, of course, considerably below these amounts, one of 500 lb of seed cotton returning a handsome profit. The yield for the season 1924-25 was 6,958,223 lb of seed cotton, equivalent to 4,100 bales (each of 500 lbs) of lint.

**PROSPECTS.** - As will have been gathered from the facts and figures recorded previously the prospects of the cotton industry of Southern Rhodesia are distinctly encouraging. The area under cultivation is likely before long to exceed 100,000 acres, and there is hardly any limit to be placed to its expansion. For some time to come at any rate, the European farmers are likely to be the chief producers, native labour being largely employed, since it is fairly plentiful and still cheap. Possibly, when they have seen the success attained by the white men and have learned from them how to raise and handle the crop the natives may to some extent themselves take up cotton, but, judging by experience in other directions, this is not likely to be done very largely or immediately. It is not considered that the growth of the cotton industry will seriously affect the native labour question, or that the converse need be apprehended. Cotton growing is likely to be developed by able farmers with their ordinary labour, except at harvest time, when possibly natives—men, women and children living on the farms or reserves—may find profitable piece-work for a limited time working in large parties, which is always a congenial form of occupation.

Cotton will probably prove a valuable addition to the marketable crops of the colony, and instead of replacing these it is likely to lead, as a rotation crop, to an expansion of the area of cultivation of all crops. A good local outlet for the crushed seed or the cake after the extraction of the oil can be assured for cattle fattening purposes. The oil will no doubt be utilised locally in place of present imports. As a rotation for maize, cotton will occupy a most important place in farm routine. It is likely to afford a fair and safe return for a small outlay, and should prove a most welcome addition to the sources of income of many individual farmers. Ginning, in normal seasons, commences between May 15 and June 1. It should, therefore, be possible for a great part of the Southern Rhodesian crop to reach the English market some months earlier than the new American crop, and so benefit by the high prices generally ruling in August and September. As there is little prospect of a local spinning industry, all the lint ginned should be available for export.

## TOBACCO

**T**OBACCO growing has been an established branch of farming in Southern Rhodesia for many years. The natural conditions of the country are well suited to the production of this important crop, and the superior quality of Rhodesian leaf is known to smokers in South Africa and other parts of the world. Both Virginia and Turkish tobaccos are grown, the former to by far the greater extent. The original seed of the Virginia tobacco was probably introduced by the early Portuguese explorers and traders from the East Coast, but its cultivation has been greatly improved by successive importations of seed from America and by experimental work fostered by the Government Department of Agriculture. The growth of Turkish tobacco was initiated



1. TOBACCO SEED BEDS AFTER MOST OF THE SEEDLINGS HAVE BEEN TRANSPLANTED INTO THE FIELDS, RHODESIA.
2. FIELD OF TOBACCO.
3. TURKISH TOBACCO ON THE RACKS.
4. BARN FOR FLUE-CURING VIRGINIA TOBACCO.



in 1907 by the selection of fourteen Greek growers for service in the colony. Their instruction in Turkish tobacco growing has been invaluable, and the yearly crop, which averages from 400,000 to 500,000 lb., always commands a good price.

**CULTIVATION.**—Both the soil and the climate of Southern Rhodesia are particularly favourable to tobacco cultivation, two essentials to which are light sandy soil and plenty of sunshine. The rainy season in Southern Rhodesia usually begins in the early part of November and ends in April. The first frost does not usually occur before the end of May. Virginia tobacco is transplanted from the seed beds in November and December, so that the plants mature before the soil becomes dry and the nights grow cool. Turkish tobacco, being sun-cured, is transplanted during January and February, so that the rainfall practically ceases before the harvesting is commenced. The rainfall is usually lighter and ends earlier in Matabeleland or the western portion of the colony (where the best Turkish tobacco is grown) than in the Eastern section. Tobacco requires intensive cultivation and careful handling from the time the crop is transplanted until the leaf is ready for market. It should, therefore, be grown on a limited scale in order that tobacco of good quality may be produced, as inferior leaf does not realise prices which are remunerative to the grower. When grown on an intensive scale and with suitable climatic conditions, a Rhodesian crop produces high returns, as much as £75 per acre gross having been obtained. On the other hand, when grown extensively and carelessly handled, the crop is more often produced at a loss. It is a crop which can be grown by settlers with limited capital, and will produce returns within twelve months, which are often necessary to provide funds for further development.

**CURING.** Virginia tobacco is cured in specially constructed barns, equipped with furnaces and flues to provide the necessary artificial heat. The barns are built either of brick or pisé-de-terre, and if the farmer has a limited knowledge of building the erection of suitable curing accommodation does not entail great expense. For the proper handling of tobacco after the leaf is cured, a bulking shed and grading room are necessary. Turkish tobacco being sun-cured, no barns are re-

quired, but a properly constructed wilting room, bulking shed and grading room are necessary. It is officially stated that the cost to settlers of these buildings should not exceed £400 in the case of Virginia and £300 in the case of Turkish tobacco.

**DISTRIBUTION.**—The principal tobacco-growing districts are Marandellas, Mazoe, Hartley, Salisbury, Lomagundi, Mrewa, Makoni, and Bulawayo, but tobacco of excellent quality has been produced in the Nyamandhlovu, Bubi, Bulahia-Mangwe, Gwelo, Umtali, Chibmanzi, Gutu and Victoria districts. As Turkish tobacco requires less moisture and more sunshine than Virginia, Matabeleland is regarded as being most suitable for the former, while Virginia tobacco is more extensively grown in Mashonaland.

**GOVERNMENT ASSISTANCE.**—The Government of Southern Rhodesia is alive to the importance and possibilities of the tobacco industry. A Tobacco Experimental Farm has been established near Salisbury, where experiments in all branches of tobacco growing will be carried out for the benefit of tobacco growers. Provision is also being made for the training of Rhodesian youths in tobacco culture, and additional tobacco experts are being obtained to strengthen the technical and advisory staff of the Department of Agriculture.

**MARKETING.** The marketing of tobacco in the colony is well organised under the Rhodesia Tobacco Warehouse and Export Company Limited. The shareholding in this company is confined to tobacco growers, and it is operated on purely co-operative lines. The company already controls more than 85 per cent of all the Virginia tobacco grown in Southern Rhodesia, and maintains a warehouse in Salisbury, where tobacco is received, graded, conditioned, packed, classified and marketed. This organisation is of the utmost importance to the tobacco industry and of great benefit to its shareholders. It is confidently expected that every tobacco grower in the colony will eventually become a member.

Until recently the South African demand for both the Virginia and Turkish types of tobacco had been so great that the local market was able to absorb the increasing output from Rhodesia, but commercial shipments of leaf have been sent during the last

two years to England, and readily sold at prices considerably higher than those obtaining locally.

**PREFERENTIAL TREATMENT.**—The grant of a preference of one-sixth of the customs duty on Empire grown tobacco did much to stimulate the production of tobacco in British possessions. Since the preference has been increased from one-sixth to one-fourth by the Home Government, not only has production been further accelerated, but the demand in Great Britain for colonial tobacco is likely to be greatly strengthened.

Of all the colonies, none should obtain greater benefit from the preference than Southern Rhodesia. Tobacco, both Virginia and Turkish, reaches its highest stage of perfection when raised in sandy soils, and fully 75 per cent of the soil of the colony is especially suitable for growing tobacco of the highest quality in addition to which the climate over a great part of the territory is such that no irrigation is necessary. The country has a good labour supply, and the types of tobacco being grown are those required by British manufacturers and consumers. With the preference granted by the Imperial Government, tobacco growers in Southern Rhodesia can expand production with full confidence that the English market will absorb, at remunerative prices, all the tobacco which they produce.

**PRODUCTION.** The production of Southern Rhodesian tobacco is as yet small in comparison with the world's output, but a glance at the table which follows will be enough to show the substantial progress that has been made. In 1917-18, for instance, the output was only 620,171 lb., as compared with 3,878,640 lb. in 1923-24.

YEAR	AMOUNT PRODUCE POUNDS
1914-15	426,423
1915-16	637,261
1916-17	910,684
1917-18	620,171
1918-19	1,467,612
1919-20	2,947,627
1920-21	3,746,982
1921-22	3,182,259
1922-23	2,810,781
1923-24	3,878,640
1924-25	2,405,904

The decrease in production in 1924-25 was due to unfavourable climatic conditions.

## MINES AND MINERALS

**F**ROM a very early period Southern Rhodesia, though the youngest of the self-governing States of the British Empire, has been a centre of mining operations, legend even associating it with the region from which King Solomon derived his wealth. Scattered throughout the colony are the remains of ancient workings for gold, copper, and iron, which attest the activity of primitive miners; the first white settlements in the country were due to the evidences of mineral riches which explorers came across, and the British occupation and development of the colony have been to a great extent conditioned by the industrial possibilities latent in its mineral wealth. Gold is, of course, by far the most valuable metal mined; the production of asbestos and chrome ore are already considerable; enormous deposits of iron ore are known to exist, and there is quite possibly a great future for the coal mining industry. At present, owing to the prevalence of ancient workings, to the re-opening of which the white settlers have principally confined themselves, prospecting has not been carried out at all exhaustively. More modern methods are now being pursued, and, with the discovery almost every year of

new and valuable minerals, there is every reason to forecast a most favourable future for the industry.

**ANCIENT WORKINGS.**—Any mine excavated before the British occupation of Rhodesia is known as an ancient working, the extraordinary number of prehistoric mines occurring in all the gold belts of the territory being one of the outstanding features of the colony. The gold ores were mined with great dexterity down to water level, at depths sometimes of 140 feet, and there are very few of the mines being operated to-day which are not located on ancient workings. It is impossible to estimate the quantity of gold or copper which had been produced before 1890, but as the outcrops were generally rich the early workers must have extracted a considerable amount.

**CHAMBERS OF MINES.**—The Rhodesia Chamber of Mines was formed on July 26, 1895, at Bulawayo, and was incorporated by Ordinance promulgated on November 22, 1901. The Chamber was formed for the purpose of promoting, encouraging, and protecting the mining industry of Southern Rhodesia. It is governed by an Executive

Committee consisting of 15 members, including a President and two Vice-Presidents, seven members of which are elected every year at the annual meeting. There are executive meetings monthly or oftener as required, and a general meeting of all members of the Chamber is held each year. Monthly and annual reports are issued regularly, besides other publications as required. The Salisbury Chamber of Mines, which in 1925 had a membership of 16, was incorporated later.

**LABOUR.**—The average totals of persons engaged in mining during 1924 were Europeans, 1,570, and Natives, 40,048, large numbers of the latter being recruited from Nyassaland and Northern Rhodesia, while about 10 per cent came from Portuguese East Africa. Mine owners are obliged to render monthly returns of all natives employed, and if the average number of native labourers employed or under contract of employment is 25 or over, labour fees at 1s. per head per month must be paid.

**MINING RIGHTS.**—From a mining point of view the conditions for acquiring mineral rights in Southern Rhodesia are simple and satisfactory, the whole of the colony, with the

exception of certain small reservations, being open to prospecting and the pegging of rights. Unless the consent of the landowner is obtained, no claims may be pegged upon cultivated land or within 500 yards of a farm homestead, or within a radius of 100 yards of any other building or permanent improvement of a value of not less than £100. With the above exceptions the whole of the 152,000 square miles of the colony may be said to be open to unrestricted prospecting and pegging.

A prospecting licence, which may be obtained at the office of any mining commissioner on payment of £1, gives the holder the right to prospect and to locate (a) a block of 10 gold reef claims, (b) a block of 30 base mineral reef claims, or (c) an alluvial gold claim. The holder of a prospecting licence may also prospect for and peg coal and mineral oil locations. The fee for registration of a block of reef claims is 5s. for gold and 20s. for base minerals.

**ROYALTIES.** Royalty on gold won is payable on a sliding scale, no royalty being demanded if the value does not exceed £200. Above that amount the royalty ranges from 2½ per cent on gold won over £200 and not exceeding £3,000 to 7½ per cent over £3,000 when the value of ore exceeds one ounce per ton. The royalty payable on the value of base minerals won is 2 per cent on the lower priced minerals and 3 per cent on the higher.

**SMALL WORKERS.** Under this heading may be grouped the individual producers or tributors and unregistered partnership syndicates. The small worker, as such, first came into existence about May, 1903, as a result of the terms offered by the Directors of the British South African Company, whereby working for profit with small batteries was permitted without going to flotation. By March 30, 1904 there were about 20 "small workers" in existence, while a year later the number had reached 72, and in the report of the Secretary for Mines for the year ended March 31, 1906, the total was recorded as having increased to 164. Since that time there has been a steady increase with occasional fluctuations, and at the end of 1924 the number was well over 400.

**TOTAL MINERAL OUTPUT.** The grand total value of output of all minerals won since the commencement of modern mining in Southern Rhodesia had reached the figure of £74,138,426 at the end of 1924. Of this large sum, gold was the principal metal mined, accounting for £60,461,804, whilst the next metals or minerals in importance produced were Asbestos, £3,995,165, chrome ore, £3,281,465, coal, £2,837,361, and copper, £2,652,547. Other metals and minerals won in varying and lesser values were silver, arsenic, mica, lead, tungsten ores, tin, antimony, corundum, and barytes, whilst the output of diamonds and other precious stones amounted to the sum of £79,533. The following table gives particulars of the mineral output of the colony for the year 1924—

	OUTPUT	VALUE
		£
Gold (oz.) ..	627,729	2,939,562
Silver (oz.) ..	166,472	22,488
Diamonds (carats) ..	596	3,322
	TONS	
Copper ..	2,827	165,480
Coal ..	652,049	265,902
Chrome ..	172,724	432,482
Arsenic ..	588	20,780
Asbestos ..	26,141	603,423
Mica ..	150	21,674
Barytes ..	71	89
Corundum ..	42	376
Tin ..	10	2,331
Tungstic ores ..	22	500
Total values ..		£4,478,499

Production in 1924 exceeded that of 1923 by £177,853, this excess being accounted for as follows: Increase in value of gold won, £30,403, of other metals and minerals, £147,450.

In 1925 the total production was valued at £4,134,260, a decrease on the 1924 figure of £244,230. Owing to the decline in premium values during the year, the gold output fell in value by over £400,000, being estimated at £2,539,542.

### MINERALS

**ARSENIC.** A great stimulus to the Rhodesian mineral industry was given by the War prices realised for 'white arsenic' the first plant being erected in 1918 at the Bessie Mine in the Umtali district. Mispickel, the commonest source of arsenic, is abundant in

marketed at a profit, the colony's output will very probably outstrip that of Canada.

**BARYTES.** This mineral, known also as heavy spar, has been produced on a small scale since the War, the known deposits occurring chiefly at Gado Siding, on the main line of railway between Gwelo and the Globe and Phoenix Gold Mine. Other deposits are found to the south of Bulawayo. The output in 1924 (71 tons) was valued at £80, as against £70 in 1923.

**COAL.** Rhodesia is fortunate in the possession of extensive coalfields, but the returns of output, which have hitherto been only small, afford no real indication of their importance. The principal coalfields, that is to say where seams of good quality coal have been definitely proved to occur, are Wankie



THE BECHUANALAND EXPLORATION COMPANY LTD., Bulawayo.  
Working Ore down into Trucks after Blasting (Rhodesia Broken Hill Development Co. Ltd.).  
(See letterpress and illustration, page 338.)

several of the principal mining areas, and another important plant was erected later at the Champion Mine in the Gwanda district. The production of arsenic in 1924 was 588 tons, valued at £20,780, or considerably less than in 1923, when the corresponding figures were 853 and £33,605.

**ASBESTOS.** Asbestos, after gold the most profitable of Rhodesian minerals, was first worked in a small way in 1908, the output being only 55 tons. The quality of Rhodesian chrysotile asbestos is unsurpassed, and, taking all classes of fibre together, Southern Rhodesia is now the second producing country in the world, the return for 1924 being 26,141 tons, valued at £603,423. When railway facilities are afforded to the two chief producing districts and the poorer classes of fibre can be

and Sengwe in the Zambesi basin, and the Tuli and lower Sabi areas in the basins of the Limpopo and Sabi Rivers respectively. Of these, only Wankie is at present producing. It is the one field served by a railway, and is, moreover, capable of supplying all requirements, even should they largely increase. The Tuli deposits are also important, as they lie on the direct line of the projected route connecting the railway systems of the Transvaal and Rhodesia. The Wankie coal has been found to be excellent for steam raising purposes, and it also furnishes a coke of good quality. In 1923 the Wankie Colliery produced 617,207 tons of coal, valued at £252,011, which was increased in 1924 to 652,049 tons, valued at £265,902. In 1925 sales of coal and coke amounted to 402,586 and 153,234

tons respectively, the total value being £424,424.

**CHROMITE.**—After gold and asbestos, chrome ranks as Rhodesia's most valuable mineral. Many large deposits are known to exist in different districts, but the mineral is mainly worked to-day at a single property situated just outside Selukwe township, which has been in operation since 1905. It is also produced in the Lomagundi district. The world's consumption in pre-war times was estimated at a quarter of a million tons per annum, so that the production in 1924 of 172,721 tons (an increase over that of the previous year of 76,049 tons) indicates the important position Southern Rhodesia occupies as a producer. The estimated value of the 1924 output was £132,482 compared with £241,582 in 1923. The chromite mined at Selukwe and in the Lomagundi area is of fairly high grade. At present the difficulty of transport and the cost of same are great obstacles to further development.

**COPPER.** Extensive copper belts exist in Southern Rhodesia, and attention is once more being paid to them. The Falcon Mine, at Umtuma, is at present the only large producer, and it does a considerable amount of customs smelting, which has enabled small workers and others to develop their properties. In 1924 the total output of copper was 2,827 tons, valued at £105,480, or rather less than in 1923.

**CORUNDUM.** This mineral has only been developed since 1923, the output of 42 tons in 1924 coming entirely from the Rusape district. It is known to occur in some quantity at several places, and its future development is anticipated.

**DIAMONDS, ETC.** The precious stones found in Southern Rhodesia comprise diamonds, rubies, sapphires, chrysoberyls, aquamarines, topazes, and turquoise, diamonds forming by far the most important product. They are derived almost entirely from the alluvial deposits of the Somabula Forest, near Gwelo, where the gravels are of great geological antiquity. Diamonds have also been found in situ at two points between the Bemberi and Inkwekweni Rivers, but have not yet proved payable. The variety of topaz found in the Somabula gravels is either colourless or a beautiful pale blue. In 1924 the output of diamonds and other gems was valued at £3,322.

**GOLD.**—Gold is the chief mineral product of Southern Rhodesia, and its output is worth more than that of all the other minerals combined. Contrary to the conditions prevailing in the Transvaal, the occurrence of gold is widely distributed over the territory, most of the mines, however, being on the high veld and at no great distance from the main line of railway between Bulawayo and Umtali. The two largest gold mines at present working are the Cam and Motor and the Shamva, the former being classed as a high-grade mine, whilst the latter is a huge low-grade proposition. The gold values of the Cam and Motor vary from medium to very rich ore, the medium being from 28s. to 50s. per ton, the high grade from 50s. to 100s., and the very rich from 100s. upwards. The Shamva Mine is the largest gold mine in Southern Rhodesia, but its average grade of ore is only about 14s. per ton. These two mines produced in 1924 £925,949 worth of gold out of the total of £1,987,517 which was the value of the output of the 10 mines working in that year.

**COSTS OF WORKING.**—These range from 9s. per ton milled in the case of the largest low-grade mine to 24s. 8d., 37s. 5d., and 52s. per ton in the case of rich-grade mines.

**PREMIUM ON GOLD.**—At the end of 1920 the gold premium distributed was 71 13s. 5d., the highest recorded. Since that date it had, with occasional fluctuations, gradually declined until during the first quarter of 1925 it stood at no more than 2s. 1d. and with the return of gold to par value afterwards disappeared altogether. The loss of this premium will hit the mining industry seriously, and necessitates the strictest economy in working so as to reduce costs to a minimum to make up for the loss in revenue from premium.

**PRODUCTION.**—As shown before, since the commencement of mining under the aegis of the British S.A. Company to the end of 1924 no less than 160,491,804 worth of gold has been yielded by Southern Rhodesian mines out of £71,138,420 for all minerals. In 1924 the output was 627,720 fine oz., valued at £2,939,562, as against 917,491 oz., valued at £2,909,159 in 1923. Compared with the previous year, 1924 showed an increase of £30,403, but a decrease of £171,906 over the figures for 1922. As an indication of the increased gold mining activity during 1924, it may be stated, according to the Secretary of the Rhodesian Chamber of Mines, that the number of claims current at the end of that year was 45,928, as compared with 42,912 in the previous year, showing an increase of 3,016. The above figure of 45,928 is equivalent to about 92,000 acres of land covered by gold locations, and it seems reasonable to expect that in this very large area pegged for gold there are undeveloped mines which will become producers in the near future.

**IRON.** Hitherto only some few thousands of tons of ironstone have been quarried for use as a flux in copper smelting, there being at present no local market to support an iron industry. The supplies of iron ore, however, are said to be practically unlimited, the geological formation known as "banded ironstone," similar to the rich iron-bearing strata of the Lake Superior region of the United States, being the most important future source of supply.

**MICA.**—Prominent among the lesser mineral industries of the colony is mica, which is at present confined to the Lomagundi district. The production in 1924 was 150 tons, valued at £21,671 showing an increase in tonnage of 50 tons and in value of £3,022. Three of the most important factors in placing mica on the world's markets are proper grading, cutting, and packing, and as it was found that these were not receiving proper attention, the Government established towards the end of 1924 a mica grade at Miami, and has also arranged to grant cash advances on graded mica exported through recognised agencies, which should prove of considerable benefit to at least the smaller producers.

**PLATINUM.**—The probability of the discovery of platinum in Southern Rhodesia has always been recognised by local geologists who, beginning with Mr. F. P. Mennell in 1907, have urged the prospecting of the "Great Dyke" which runs through the country. This dyke forming the Doro, Selandi Mhlaba, and Umtukwe ranges, is composed of norite, pyroxenite, diorite and serpentine.

Traces of platinum have been found in the chromite mined at Selukwe. In 1918 the late A. E. V. Zealley described in Short Report No. 3 of the Southern Rhodesia Geological Survey a reef found near Indiva, Gwelo, which contained traces of platinum.

The recent sensational discoveries in the Union of South Africa have stimulated interest in the prospecting of the Great Dyke. Formerly attention was directed to the serpentine associated with the chrome deposits. Since

the discovery of platinum in norite in the Lydenburg district, the norite horizons in the Great Dyke have been systematically examined. Rocks identical with the platinum bearing norite of Lydenburg have been recorded from Makwiro, Rhodesdale, Selukwe and Belingwe districts, and low values of platinum, about 2 cwts. per ton, have been found. Development work is proceeding and it is hoped that payable mines will result.

**SILVER.**—This metal is entirely a by-product of the gold-mining industry, though it occurs in exceptional amounts in conjunction with lead ores at certain mines in the Umtali District. The output in 1924 was 166,172 oz., valued at £22,448.

**TIN.**—Tin occurs in small quantities near the Umtali River to the east of Salisbury and in the Victoria and Abercorn Districts, but the yield has been negligible. Ten tons, valued at £2,331, were produced from one property in 1924.

**VARIOUS.** In addition to the metals and minerals mentioned above many others, some of great economic importance, are known to exist in Southern Rhodesia. Tungsten ore (scheelite and wolfram) occurs in many places and was developed to some extent during the War, while only the fluctuations in market prices have operated against the working of antimony. The rare mineral tantalite has been found near Fort Victoria and molybdenum is known to occur in almost every district. Large supplies of talc are available to meet any demand which may arise.

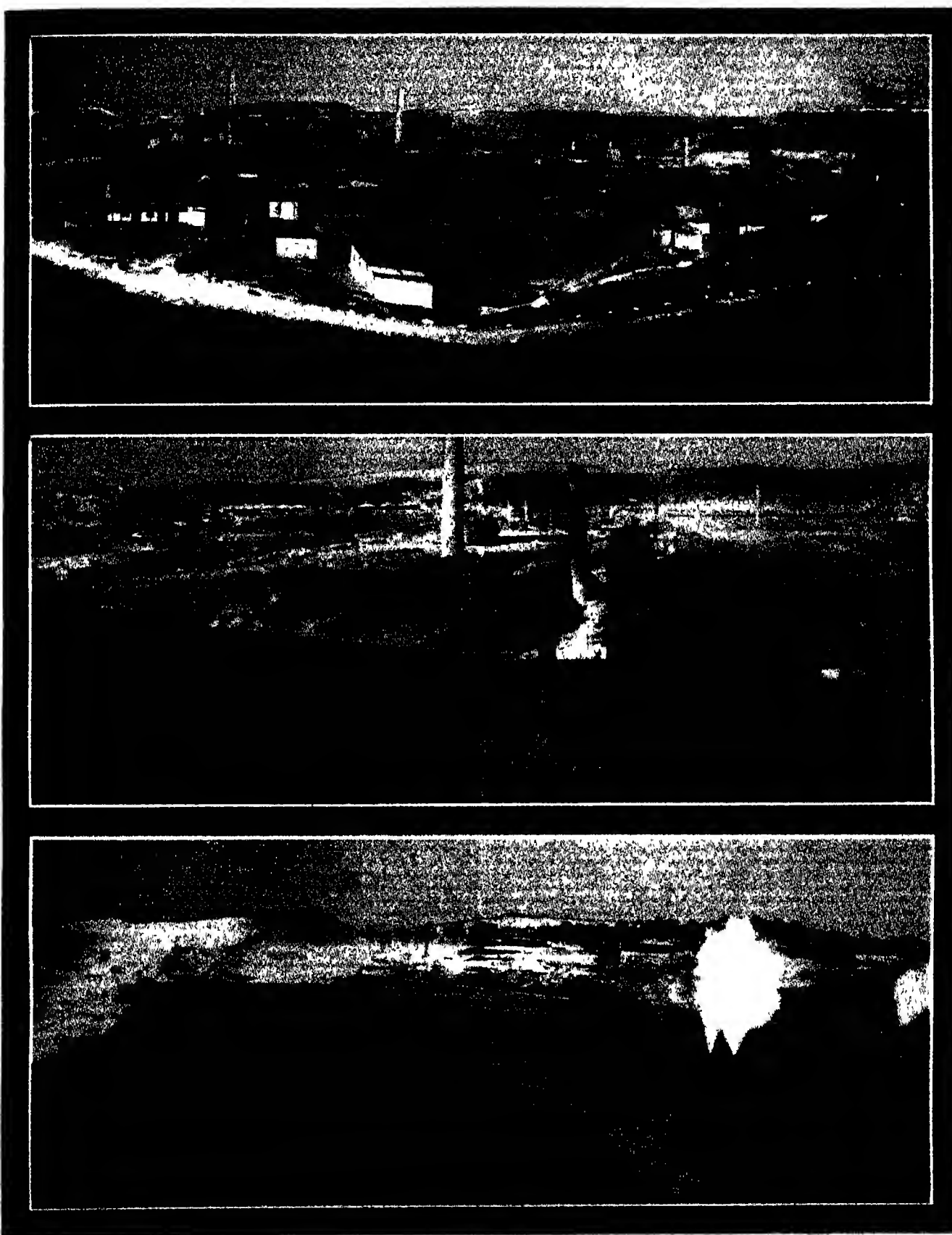
#### THE WANKIE COLLIERY COMPANY, LTD.

**Inception.** The Wankie colliery, the largest and most important of the fields worked in Rhodesia, was discovered by Mr. A. Giese, a trader, in 1894, when he pegged the original location on an outcrop of shales lying between Bulawayo and the Victoria Falls. In 1895 he returned to peg a concession of 100 square miles which had been obtained by the Mashonaland Agency Ltd. Between that date and 1900 prospecting, surveying and inspecting were carried out by experts and by January 1901 some twenty shallow shafts near the outcrop of the coal had been put down. In the same year the rights of the Mashonaland Agency Ltd. were assigned to the Wankie (Rhodesia) Coal, Railway and Exploration Co. Ltd., and the railway to the property was commenced. At length work was begun on the main drift, which reached the coal in January 1902. Development thereafter actively proceeded, and the colliery was open for business when the railway reached Wankie. In 1914 The Wankie Colliery Company Ltd. was registered to control the increasingly prosperous undertaking, the present company (incorporated on October 26, 1923) being a reconstruction of that concern under the same name.

**Capital.** The authorised capital of the company is £900,000 in 1,800,000 shares of 10s. each, of which 1,762,002 have been issued and are fully paid.

**Accounts.**—Operations for the period October 26, 1923–August 31, 1924, after allowing for depreciation, showed a profit of £138,472.

**Rights.**—The company possesses the sole right under the Rhodesian mining law to mine over an area of 400 square miles (known to contain coal throughout), and has been granted exclusive prospecting rights until 1953 over a further area of 880 square miles. It owns more than 26 square miles of surface rights under farm titles and water rights.



THE WANKIE COLLIERY COMPANY, LTD.

1. General View of Colliery.
2. Coking Plant.
3. Entrance to Incline Shafts, showing Shops and Oven Station.

**Mine in Working.** In the mine now being worked, which is situated on the outcrop, the workings of which may be said to prove an area of 2 square miles, the average thickness of coal is 9 feet, but three prospecting shafts, sunk 6, 14 and 23 miles distant, proved coal of the thickness of 46 feet, 17 feet and 16 feet respectively. The workings are reached by a main incline shaft 600 feet long forming the main outlet, and two auxiliary shafts sunk parallel thereto. At the bottom of the incline shaft, where it intersects the coal, a large space known as the Bell Station has been cut, from which diverge three main haulage ways. The centre, on main dip, haulage way is a continuation of the incline shaft, and on August 31, 1923, reached a point 550 feet from the Bell Station. The seam, which shows remarkable uniformity of width and value, has a vertical depth, at the lowest part of the workings, of about 175 feet.

**Ventilation.** Ventilation of the mine is accomplished by an electrically driven "Sirocco" fan of a capacity of 300,000 cubic feet of air per minute, with a 10 feet "Schiele" exhaust fan, similarly operated, as a standby. The coal seam is singularly free from gas.

**Coke.** Coke making, started in 1912 with a battery of 49 beehive ovens having a total capacity of 3,000 tons of coke per month, has reached such importance in supplying the constantly increasing demand for this product as to employ to-day 140 retort ovens furnishing a monthly output of 12,500 tons.

**Bricks.** From a deposit of fireclay outcropping about 5 miles north of Wankie the

company manufactures firebricks of renowned quality.

**Directorate.**—Mr Edmund Davis (chairman and managing director), Sir Henry Birchenough, Bt, KCMG, Messrs William Rhodes, D N Shaw and H L Stokes Secretary, Mr H W Lampard.

**Registered Office.**—2, London Wall Buildings, London Wall, E C 2.

**Rhodesian Office.** Wankie, Rhodesia (general manager, Mr A R Thomson, M L A) Cables "Shafting," Wankie.

**Bankers.** National Provincial Bank, Ltd (See illustration, page 337).

### THE BECHUANALAND EXPLORATION COMPANY, LTD.

**Inception.** Founded for the purpose of obtaining land and mining concessions, this company was incorporated in London on April 25, 1888.

**Capital.** The capital of the company is £350,000, divided into 700,000 shares of 50s each, of which 601,773 are issued, leaving 98,227 in reserve. The total value of the company's shareholding in other concerns taken at or under cost prices, was £144,025 3s 9d on March 31, 1925.

**Shareholding.** The company owns shares in a large number of West African, Transvaal, and Rhodesian Trust and other companies operating in finance, goldmining, base metal, commercial and industrial interests.

**Mining Concessions.** The principal mining enterprises controlled are the Rhodesia Broken Hill Development Company Ltd.,

the Bwana M'Kubwa Copper Mining Company Ltd., Rhodesia Chrome Mines Ltd., and the Rhodesian and General Asbestos Corporation Ltd.

**Land Holdings.** The land owned by the company comprises some 246,022 acres in Southern Rhodesia, 240,443 acres in Bechuanaland Protectorate, and in Northern Rhodesia 30,500 acres (25,506 acres carrying surface and mineral rights, and 14,000 acres carrying surface rights) in addition to 12,800 acres carrying mineral rights alone. Twelve stands in Bulawayo and twelve town sites at Broken Hill are also the property of the company. Together with the Bechuanaland Protectorate holdings were acquired territorial and other rights adjacent to the Cape-Bulawayo main railway line.

**Cattle.**—The live stock in charge of tenant farmers under the land settlement scheme amounted to nearly 6,000 head on March 31, 1925.

**Directorate.** Messrs Edmund Davis (chairman), Cromwell Hockley and Alexander Stewart M L C.

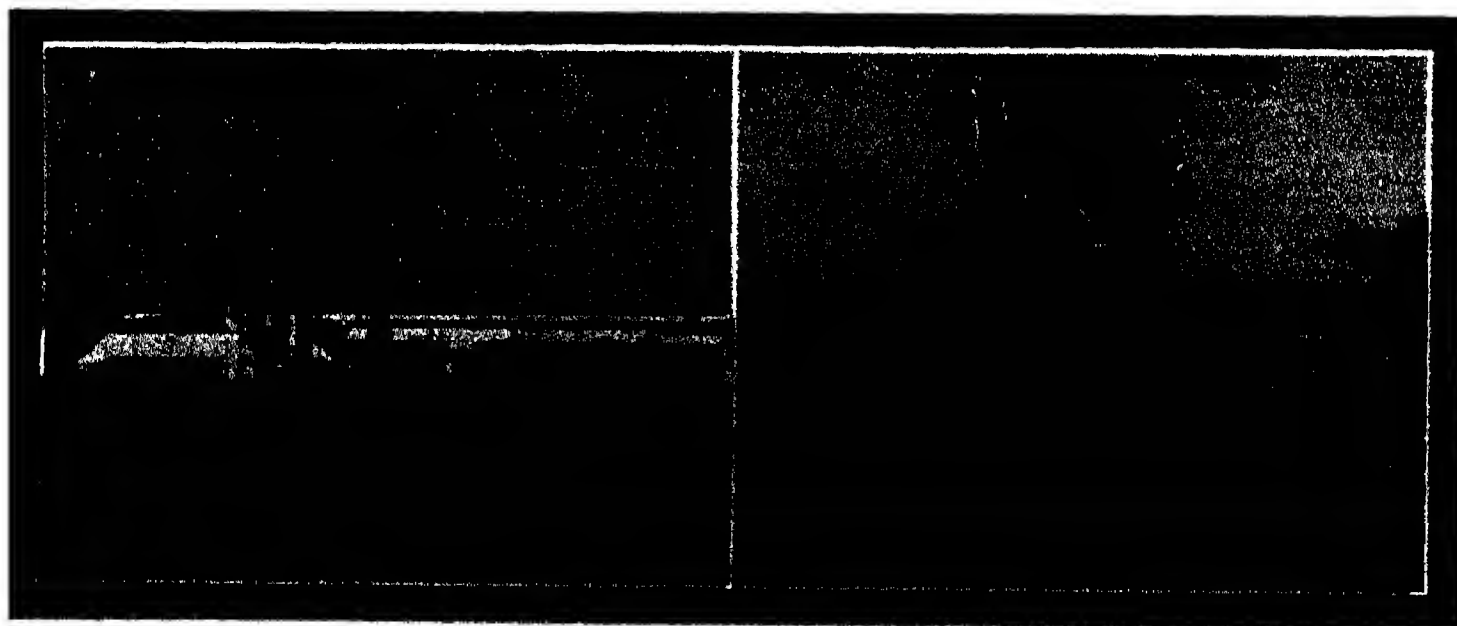
**South African Agents.** Adolph Mosenthal & Co., Port Elizabeth.

**Bankers.** Coutts & Co., National Provincial Bank, Ltd., and National Bank of South Africa, Ltd.

**Auditor.** Sir William Plender, Bt, G B F, of Deloitte, Plender, Griffiths & Co.

**Registered Offices.** 19, St Swithin's Lane, London, E C 4 (assistant secretary, A H Watts).

(See also illustration, page 335.)

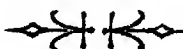


THE BECHUANALAND EXPLORATION COMPANY LTD., Bulawayo.

1. Bwana M'Kubwa Copper Mining Co. Ltd.: New Plant, comprising a building 600 ft. long, in which the ore will be treated.

2. Steam Shovel for Mining Ore, Bwana M'Kubwa Copper Mining Co. Ltd.

(See also illustration, page 335.)





# PORTUGUESE EAST AFRICA

## PROVINCE OF MOZAMBIQUE

### PHYSICAL GEOGRAPHY



THE Province of Mozambique more frequently called Portuguese East Africa to avoid confusion with the smaller units known as the Mozambique Company's Territory and the island, town and district of Mozambique—stretches coastwise from the north of Natal in the south to the southern border of Langanyika Territory, a length of nearly 1,500 miles. The total area is approximately 300,000 square miles. Of this extent 60,000 square miles and 80,000 square miles represent the areas of the Mozambique Company and the Nyassa Company respectively.

The physical features of Portuguese East Africa vary from low-lying fertile coastal plains with an exuberant tropical vegetation to mountains and plateau regions attaining an extreme elevation of 9,000 ft. North of the Zambezi River the low coastal plain is generally narrow, and behind it lies an extensive plateau from 1,500 to 3,000 ft. above sea level, intersected with numerous river valleys and broken here and there by isolated mountains or short ranges. This is the Namuli highland area, which, when connected by railway with the coast, will probably prove a valuable agricultural district. South of the Zambezi, the Manica and Gorongosa areas are noted for their fertility. The Province is exceptionally well watered throughout, many of the larger rivers such as the Zambezi, the Limpopo, the Umbeluzi, the Quelimane, the Pungue, the Buzi, the Muanango, and the Kwakwa, being also valuable arteries of commerce.

**CLIMATE.** The climate is unhealthy on the coast and along the banks of the Zambezi, where malaria is endemic. With moderate care, however, Europeans are able to enjoy good health. On the uplands and the plateaux the climate is temperate and healthy. A good deal of useful work has been done of late years to make Lourenço Marques a popular resort, and here the predominance of sea breezes results in the climate being often very pleasant.

**FAUNA AND FLORA.** Both the fauna and flora of Portuguese East Africa are largely identical with those of the northern part of Natal, Swaziland, Southern Rhodesia, and the Transvaal, but Mozambique differs from these adjoining territories in having a far greater area of forest land, much of which contains valuable timber trees, such as African mahogany, bean, stinkwood, blackwood, and many others. A notable feature of the coast is the large extent of mangrove trees. Big game exist in many parts of the province, being most plentiful in the Inhambane district, where elephants, hippopotami, giraffes, zebras, ostriches and

antelopes are met with, the Quelimane and Tete districts, and the Mozambique and Nyassa Companies' Territories. Large numbers of excellent fish are found in the waters off the coast.

### HISTORY

**B**EFORE the discovery of the mouth of the Quelimane River by the Portuguese navigator Vasco da Gama in 1497, the territory now known as Mozambique, or Portuguese East Africa, was uninhabited, so far as the coast was concerned by Arabs. By the year 1505 Portuguese influence was established at Sofala and, later in the 16th century, at Sena and Tete on the Zambezi. Successive attempts to obtain full possession of the Zambezi valley (reputed to be full of gold) failed, and for 150 years or more Portugal was unable to make any effective use of her East African possessions. In the early years of the 18th century the Arabs wrested from their former conquerors the country north of Cape Delgado, for some time the Dutch, French and British had been menacing their trade possessions in the south, and the continual state of warfare among the tribes of the interior greatly reduced the production of gold, besides causing trade to decline steadily.

**1772-1850: LACERDA'S ATTEMPTS AT REFORM.** In 1772 Francisco José Maria de Lacerda e Almeida, a man of high attainments who was made governor of the colony at his own request, endeavoured to reform the administration. Lacerda is chiefly remembered for his journey to the heart of Central Africa, where he died in 1798. He had conceived the idea of establishing a chain of Portuguese forts across the Continent from Mozambique to Angola, and his statesmanlike prescience was shown by his prediction that the seizure of Capetown by the British would lead to the extension of British rule over Central Africa, thus isolating the Portuguese possessions on the east and west coasts. After Lacerda's death a state of apathy and decay was again manifest throughout Portuguese East Africa, and during the greater part of the 19th century the country south of the Zambezi was devastated by hordes of savages of Zulu origin.

**1850-1900: ESTABLISHMENT OF THE PORTUGUESE COLONY—THE CHARTERED COMPANIES.**—The discoveries of David Livingstone in the Zambezi Basin in the period 1850-65 attracted the attention of the British to that region, and led to the establishment of British settlements at the southern end of Lake Nyassa and in the Shire Highlands. These events aroused anxiety in Lisbon, which was increased when the British obtained a preponderating influence in Matabele, Mashona, and Manica lands. With sudden energy the Portuguese engaged in the "scramble for Africa," and though

the result may have been disappointing to the patriotic feelings of the people they secured from their powerful neighbours Great Britain and Germany much better terms than might have been anticipated, having regard to the extremely limited area over which they exercised any sort of jurisdiction. Before this, Portugal had obtained in 1875, as the result of arbitration, complete possession of the fine harbour of Delagoa Bay, the southern half of which had been claimed by Great Britain in virtue of acts of annexation in 1823 and later years.

The pressure of these political events, and the commercial activity of her rivals induced Portugal to take steps to develop the agricultural and mineral resources of the territory secured to her by international agreements. Charters conveying sovereign powers were granted to the Mozambique Company in 1891 and to the Nyassa Company in 1893. Both these companies, as well as the Zambezi Company (which lacks a charter), undertook to open up the territories committed to their care. In all of them British capital is heavily engaged.

### 1900-1925: THE TRANSVAAL MOZAMBIQUE CONVENTION THE GREAT BRITAIN PROGRESS

The total decay of Sofala, the removal of the seat of government from Mozambique to Lourenço Marques, the rise of the last named port and of Beira (both largely dependent on the transit trade with British possessions), all served to mark the changed condition of affairs. An agreement concluded in 1909 with the Transvaal gave Delagoa Bay 50 to 55 per cent. of the import trade with that Province, the Portuguese agreeing further to facilitate the recruitment of natives in their Province for work on the Rand Mines. In 1914 Mozambique was granted partial autonomy, further reforms being postponed to 1920. In the Great War, Portugal proclaimed her loyalty to the British alliance on August 7, 1914, and on November 23 formally committed herself to participation in military operations. Indeed, the war was severely felt in the Province of Mozambique, especially in the north where the Portuguese territories were twice invaded by the Germans, who everywhere committed violence and destruction. Portuguese East African troops did good service in co-operating with the British forces in the rounding up of Von Lettow's army. In 1919 the Keonga triangle, some 400 square miles in size, and including the southern shore of the estuary of the Rovuma, was transferred to the Province, having formed part of German East Africa.

Since the conclusion of the War a period of acute depression has been followed by one of distinct progress. The convention with the Transvaal expired in 1921, and the urgent need for a new treaty between the Union and Mozambique is so universally acknowledged that the prospects of an agreement on mutually beneficial lines are considered hopeful.

## PEOPLES

**P**ORTUGUESE EAST AFRICA is sparsely inhabited, the estimated population being under 4,000,000. Some 90 per cent of the inhabitants belong to various Bantu tribes, from whose ranks many of the natives employed in the Transvaal mines have hitherto been recruited. The most important tribes in the northern half of the Province are the Yaos and the Ma Kwa (Makwa). The Makwa, notwithstanding the presence of Arabs, Banyans (Hindus), and Battias in all their coast districts, have preserved in a remarkable degree the purity of race, although their language has undergone considerable change. Most of the country between the Rovuma and the Zambezi is peopled by branches of this race, governed by numerous petty chiefs. The dominant race between the Zambezi and the Mazoe is the Tuvala, mainly of Zulu descent. In the district south of the Pungue, known as Gazaland, the ruling tribes are of Zulu origin, all other tribes being known as Tongas. For the most part these Tongas resemble the Basutos, and occupy themselves with stock raising and agriculture. The white inhabitants of the colony number less than 10,000, chiefly Portuguese and British, and nearly half of these live in Lourenço Marques. A large number of traders in the coastal towns are British Indians.

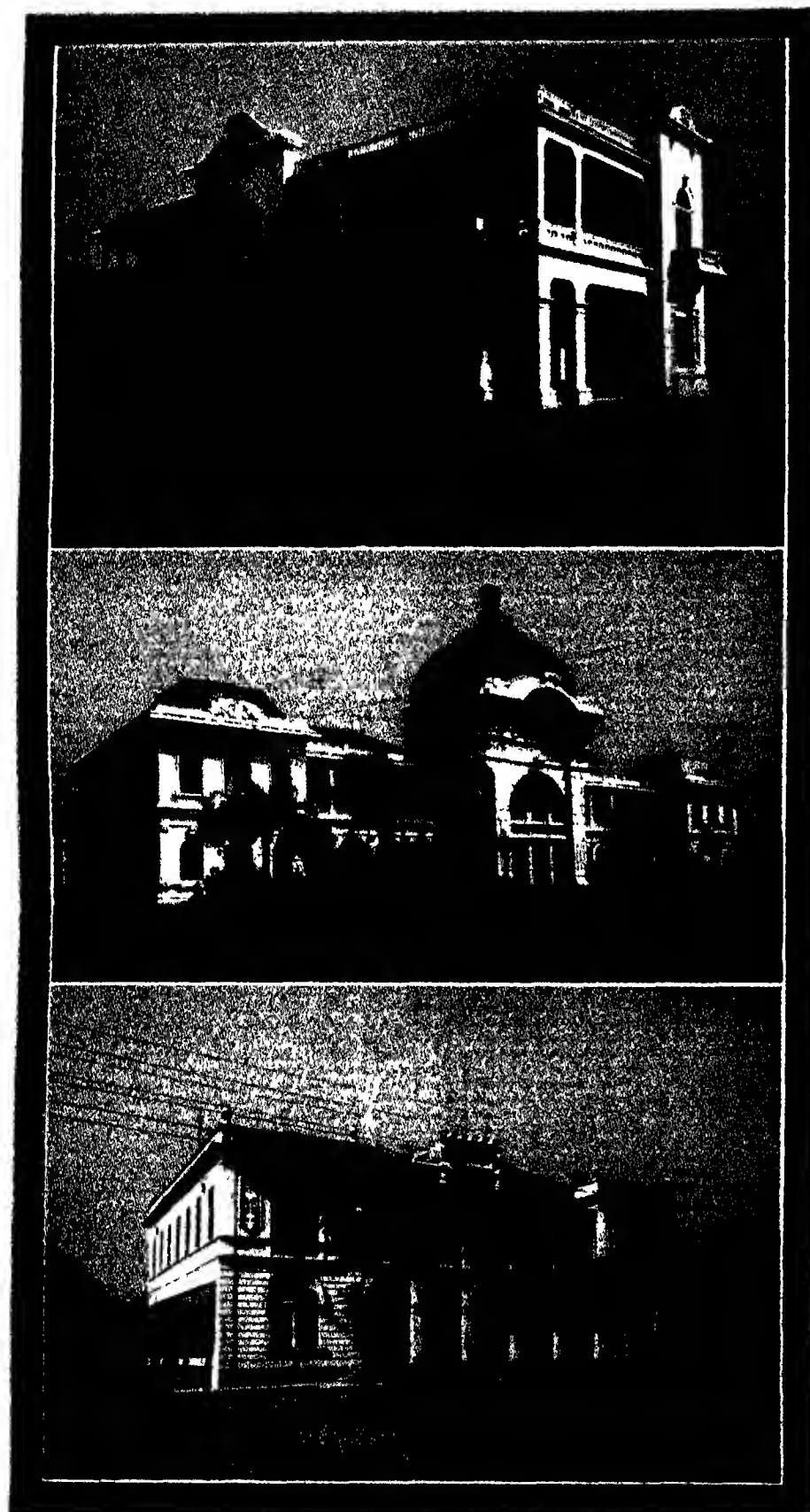
## DISTRIBUTION OF POPULATION.

An estimate made in 1924 distributed the population of the whole Province approximately as follows:

Lourenço Marques	150,000
Gaza	252,000
Inhamitanga	310,000
Tete	270,000
Chiemane	797,000
Mozambique	800,000
Mozambique Company's Territory	288,000
Nyassa Company's Territory	513,000
	3,425,000

**IMMIGRATION REGULATIONS.** — All passengers landing at Delagoa Bay may be required by the Government authorities to deposit £20 and the fare back to the port of embarkation, which will be refunded as soon as the passenger can prove that he has employment or other means of livelihood. Should he not be in a position to do this within eight days, the authorities may pay his or her fare to any convenient port, refunding the balance of the money deposited, if any, upon embarkation of the passenger. Those staying in Lourenço Marques must obtain a residential permit within five days of arrival. The above applies also to the ports of Beira and Mozambique.

**LABOUR.** — A great deal of the available native labour of Mozambique is absorbed by the Transvaal mines, the labour recruited in Portuguese territory having for many years constituted the backbone of the mining industry. For 1923-24 the figures were: Outgoing labourers, 51,248, repatriated, 40,503, while the number of Mozambique boys working in the Transvaal on June 30, 1924, was put at 96,606, of which 88,484 were employed in mining pursuits. Owing, however, to the decision of the Union Government to employ Union natives as far as possible, fewer labourers from Portuguese East Africa are now being recruited.



LOURENÇO MARQUES.  
1. Port Offices,  
2. The Railway Station,  
3. The Treasury.

**SCHOOLS.** In 1924 there were 25 primary schools, 11 under the control of civil missions, and 103 religious mission schools (a total of 138) with 13,508 scholars on their registers in the districts of the Province under the direct administration of the State.

### ADMINISTRATION

**T**HE Province of Mozambique is ruled by a High Commissioner, which office was created for each of Portugal's African colonies in 1919, the new regime concerning Mozambique coming into force at the beginning of 1921 as an integral part of the Republic Constitution of Portugal. This law gives the right of self-government, financial and administrative, to the colony, defines the powers of the Central Government, and provides for both Legislative and Executive Councils, at the same time withholding powers dealing with the question of sovereignty over territory and the delimitation of boundaries, the right to declare war or conclude peace, etc. The Central Government also has the right, upon consultation with the Colonial Council sitting at Lisbon, to approve or reject laws passed by the Colonial Government, and to substitute therefor enactments of its own. But in this case the proposals of the Central Government must be submitted to Parliament. The Executive Council is formed by the High Commissioner, the Attorney-General, four Chiefs of Departments, and a non-official member of the Legislative Council. The Legislative Council consists of one representative each of the Chamber of Commerce, the Property Owners' Association, the Shopkeepers' Association, the Labor Organisations, with the Attorney-General, Chief of Staff, Chief of Maritime Department, the members of the Executive Council, and a representative each of the districts of Gaza, Inhambane, Quelimane, Fete, and Mozambique. The High Commissioner is the President.

Each of the State-administered districts has a Governor and a District Council of a representative character. The territories of the Mozambique and Nyassa Companies are also administered by Governors. These territories possess separate Customs and fiscal regimes, but their Courts are Provincial Courts.

**DEFENCE.** The military force of the colony varies between 2,250 men (1,370 natives) and 3,004 men (2,468 natives).

**HIGH COMMISSIONER.** - The High Commissioner, who exercises the functions belonging to the Central Government, holds office for five years, and his powers are equal to those exercised by the Portuguese Minister for the Colonies, in so far as they deal with the Colony of Mozambique. In 1926 the holder of the office was General Massad Amorim, whose transfer to Portuguese India was announced in July of that year.

**POSTS AND TELEGRAPHS.** During a recent year the postal matter dealt with by the post offices of the Province amounted to 6,109,032 articles, while 4,011,018 telegrams and 34,289 wireless messages were received and forwarded. Wireless stations have been installed at Lourenço Marques, Inhambane, Beira, Buzi, Quelimane, and Mozambique, and others are in course of erection at Villa Nova de Gaza, Fete, and Mozambique Island. All these stations are provided with valve receivers, enabling them to record messages sent out by stations as far distant as Northern Europe. The telegraph lines of the Province belong to the State, the Chartered Companies, the Submarine Cable Companies and private concessionaires.

### FINANCE AND BANKING

**I**N addition to the large amount of Portuguese capital that has been directed to the Province of Mozambique, many millions of pounds of British capital are invested in Portugal's great East African colony, partly in connection with enterprises in the State-administered districts and partly in the two chartered concerns the Mozambique and Nyassa Companies, as also in undertakings in their respective territories. A certain amount of French and Belgian capital is likewise invested, mainly in the central portion of the province, the districts of Quelimane, Mozambique, and Fete. As regards the country controlled by the State Administration, it is mainly to British investors that the Portuguese have looked to supplement their own resources, which have never been fully adequate for the proper development of the colony.

At present the financial position, though not unhealthy, leaves a good deal to be desired. The conditions which have arisen in Mozambique since the War, partly as the result of the invasion by German East African troops, the whole cost of which was borne by the Mozambique Exchequer, and still more in consequence of the great depreciation in the value of the escudo, have given rise to many difficulties in the way of investment of capital. A readjustment of the currency position would seem to be the prime necessity before any real development can take place. At the same time the sterling resources at the disposal of the Government are considerable, and it was officially stated in May 1925 that the colony not only had its budget balanced, but that its revenue for the financial year was nearly £2,000,000.

**BANKING.** - Excellent banking facilities are provided by the Standard Bank of South Africa, the Banco Commercial de Mocambique, the Banco Nacional Ultramarino, the National Bank of South Africa, and the Banco da Beira. The Banco Nacional Ultramarino holds the privilege of issuing notes in the Portuguese colonies. In the Mozambique Company's territory the Banco da Beira is the bank of issue.

**CURRENCY.** The present unit of currency in all Portuguese colonies is the escudo, which equals 1,000 reis or 100 centavos, and 4s 5½d in English money with the exchange at 4500 reis to the sovereign, 3s 4d when at 6,000 reis, and so on. With the 1 sterling equal to 140-150 escudos, the exchange rate at Lisbon during a great part of 1924 and 1925, the escudo is worth about 1½d. The method of putting currency into writing is as follows: 5 \$30 = 5 escudos 30 centavos, \$60 = 60 centavos.

It would appear that, surrounded as it is by countries using sterling, it must be to the advantage of Mozambique to make the libra the unit of currency. At present national sentiment seems to be against the change.

**LOAN PROJECT.** - In 1924 the Portuguese Parliament authorised the Province of Mozambique to raise an external loan not exceeding £4,000,000, to be applied to the restoration of the currency and to public works which should increase the production of the province and so render it economically self-supporting. In the absence of power to pledge any specific asset, the rate of interest asked was considered too onerous, and, for the time being at any rate, the project was dropped.

### COMMERCE

**S**TATISTICAL records relating to the trade and navigation of the Portuguese Colony of Mozambique (with the exception of those pertaining to the territories under the administration of the Mozambique and Nyassa Chartered Companies) are kept by the department in charge of the Director-General of Customs, which has its headquarters at Lourenço Marques, the capital of the Province.

In the main the Province has recovered from the protracted period of depression which succeeded the European War, and its trade in both imports and exports shows marked features of progress.

**CUSTOMS.** Customs duties in Mozambique are almost entirely on an ad valorem basis. Merchandise originating in Portugal or Portuguese colonies, with the exception of alcohol, brandy, fermented or distilled alcoholic drinks, wine, tobacco, arms, and munitions of war, to which special conditions apply, enjoys a preference of 50 per cent. of the import duties shown in the general tariff. Duties on foreign goods of all kinds are levied at the general tariff rates, there being no exceptions arising from treaties, conventions, or most-favoured nation agreements. Under a special concession, however, certain foodstuffs originating in the Transvaal are provisionally exempted from payment of duties, as was the case previously to the denunciation of the convention with the Transvaal which lapsed in 1923, until a renewal of the convention shall be effected. (See below, "Mozambique Convention.")

**EXPORTS.** The principal exports of Portuguese East Africa are sugar, raw cotton, beans, maize, oilseeds, and sisal. Sugar heads the list, principally because of the free trade in that commodity with the Union, which under any new convention is not likely to be continued. For the last year for which statistics are available, exports were valued at £15,177,001, a considerable improvement on pre-war figures of about £9,000,000.

**IMPORTS.** The imports of the colony are many and varied, and originate to the extent of over 52 per cent. from Great Britain and her colonies (excluding the Transvaal, which supplies about 10 per cent.), 17 per cent. from Portugal and her colonies, and about 21 per cent. from other countries. An index to the development which is taking place in the colony's natural resources is afforded by the increased import figures every year in respect of agricultural and industrial machinery and equipment, coupled with decreased imports of sugar, milk, cattle, furniture, butter, maize, hides and skins, salt, tobacco, soap, etc. Imports, which in the last pre-war years had a value of only £10,000,000, rose to £16,630,150 in 1923 and exceeded £17,000,000 in 1924. Cotton goods, agricultural machinery, table wines, cement, rice, and wheat flour, in the order named, were the principal commodities.

**MOZAMBIQUE CONVENTION.** For many decades there have been close commercial and inter-trade relations between the Province of Mozambique and the Transvaal, both under the Boer regime and British rule. These relations, which also embraced native emigration and Customs matters, were regulated by an agreement known as the Mozambique Convention, signed at Pretoria on April 1, 1909, by the Earl of Selborne (then High Commissioner for British South Africa and Governor of the Transvaal) and Colonel T. A. Garcia Rosado, on behalf of

the Province of Mozambique. This Convention was given a definite life of ten years, to be renewed thereafter for yearly periods until denounced. Notice of its termination was given by the Union Government on April 1, 1922 and the agreement ceased to be operative as from March 31, 1923. More than one attempt has since been made to negotiate a new Convention, and so far as the question of labour for the Transvaal mines is concerned, a *modus vivendi* was agreed to at once.

With regard to inter-trade relations the need for a new convention is great, but the problems of tariff concessions to be accorded by each country, and of the percentage of the Transvaal's import and export traffic which is to be handled through the port of Lourenço Marques, have hitherto proved difficult of solution. It appears tolerably certain that any new convention will be far less reaching in its terms than was the old one.

## TRANSPORT

### RAILWAYS

**T**HE railways of the Province of Mozambique do not form a connected system. Based on Lourenço Marques there are about 150 miles of standard South African gauge (3 ft. 6 in.). The main line to the Transvaal crosses the frontier at Ressano Garcia, 55 miles from the capital. From a junction about 6 miles from Lourenço Marques, the Swaziland branch, 47 miles long to Goba, diverges. When this branch has been extended across Swaziland to Lothair, on the Eastern Transvaal system, a new direct route from Lourenço Marques to Johannesburg will be brought into existence, and the opening up of Swaziland, which is known to be rich in minerals as well as a fertile farming country, will add to the traffic through the Portuguese port. A second branch of the main line running inland from Lourenço Marques is the railway from Moamba, about half-way between the port and the frontier, to Xinavane. This branch, which is 55 miles long, is being extended across the Limpopo to Inharrime to link up with the existing standard gauge line 58 miles in length from Inharrime to the port of Inhambane. A direct connection between the capital and Inhambane will thus be established.

**BEIRA RAILWAYS.**—Beira is the coastal terminus of 357 miles of standard gauge track. This includes the Beira and Beira Junction Railways, which own the line to the Southern Rhodesian border, 200 miles distant. Over this railway the bulk of the heavy traffic to and from Southern and Northern Rhodesia and the Katanga passes. The Trans-Zambesia Railway leaves the Beira Junction Railway at Dondo, 18 miles from Beira, but has running powers over the latter company's track into Beira itself. It is connected by a ferry steamer with Chindio, on the opposite bank of the river, the southern terminus of the Central Africa Railway, which owns the line to Nyassaland as far as Port Herald, 61 miles to the north. Of the Central Africa Railway, 44½ miles are in Portuguese territory.

**MILEAGE.**—The total mileage of all lines in Portuguese East Africa in 1925 was 838.

**PROJECTED DEVELOPMENT.** It will be seen that, for a country covering about 206,000 square miles and containing a population of 3½ millions at a low computation, Portuguese East Africa is as yet deficient in railway communication. A great deal of construction and extension work is, however,

projected. In the Mozambique Company's Territory the lines starting from Quehmane and Mozambique are gradually to be linked up. The proposed extension of the Moamba-Xinavane line has already been mentioned. A most important development of railway facilities in the north will be the budding of the Zambezi at Murraca on the southern bank, the scheme, which has the support of both the British and Portuguese Governments, being estimated to cost about a million sterling. The Government of Mozambique has already schemes in hand involving an expenditure of from four to five millions, to be funded by means of a loan raised in Lisbon and London. Before long, also, the huge territory to the north of the Mozambique district, and controlled by the Companhia do Nyassa, is likely to embark on far-reaching schemes of railway developments, a plan to lay a line from Port Amelia on the seaboard to Lake Nyassa, 400 miles away, having reached the point of preliminary construction.

### RIVER

See under "Union of South Africa"  
"An, River, and Road."

### ROADS

Lacking really adequate railway communications recourse has to be made to the roads through the greater part of Portuguese East Africa, especially in the Chartered Companies' territories. In the Lourenço Marques district, in particular, there are now some excellent tracks, and the journey from the port to Johannesburg via Swaziland (353 miles) can be made comfortably by car. Good road making has also progressed in the Gaza sub-district, in the Mozambique Company's territory, where provision was made in the 1925 programme for a considerable mileage of new construction and better maintenance of existing roads, and in the Quehmane and Mozambique districts. An obstacle to transport in portions of the interior of the Province is the existence of fly-infested areas, which prevent the use of draught animals, a state of affairs which can only be gradually altered by the increase of cultivation. This circumstance should also help to stimulate the demand for motor vehicles, which has certainly increased during the past few years.

### SHIPPING

See under Lourenço Marques and Beira.

## THE MOZAMBIQUE COMPANY'S TERRITORY

**A**BOUT 140,000 square miles of territory, or nearly one-half of the whole of Portuguese East Africa, is divided between the two Chartered Companies, the Companhia do Mocambique and the Companhia do Nyassa.

The Mozambique Company's territory (often known as Manica and Sofala) was acquired by Royal Charter in 1891, which granted sovereign rights for a period of 50 years. It has its own customs, posts, treasury, land and mining offices, and bank, as well as its own customs tariff, land tenure, and mining laws. In 1923 the population totalled 288,039, being an increase over 1922 of 9,087, some 2,350 being whites. Years of post-war depression have since given way to a decided recovery in the financial position, and the excess of receipts over expenditure for the first nine months of 1924 amounted to £95,555. The export trade of the territory, valued at £641,446 in 1913, rose to £1,457,857 in 1923,

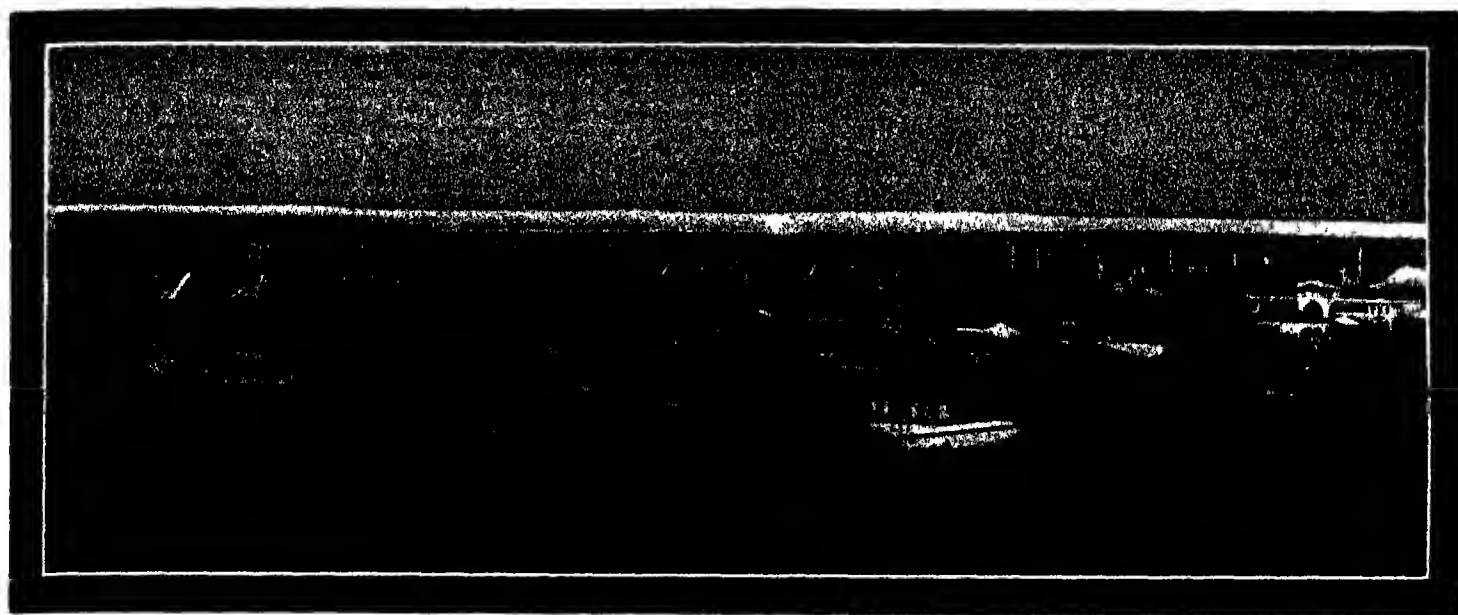
and in 1924 was estimated at £1,057,884, imports for local consumption having a value of £1,061,176. Transhipment, transit, coasting and re-export trade reached the record figure of £10,593,260, or nearly £2,000,000 more than in 1923. Agriculturally, the company's territory is one of the richest countries south of the Equator, with immense possibilities in the wonderful fertility of the soil and the valuable system of waterways for production on an extensive scale. Under the fostering care of the Administration, agriculture has of late years been the mainstay of the territory and progress has been most marked, the production (for instance) of sugar having increased from 19,504 tons in 1922 to 35,822 tons in 1924, and of maize from 282,591 bags to 559,359 bags. The production of sisal also greatly increased from 421 tons in 1922 to 970 tons in 1923, a drop to 663 tons being recorded in 1924. Cotton is chiefly grown in various districts on the Zambezi River, the largest production being from the District of Chemba where the Mozambique Industrial and Commercial Company has a ginning and baling press. Cotton has also been grown experimentally by farmers in the Manica, Chimoin, Neves Ferreira and Buzi Districts during recent years as an alternative crop to maize with very encouraging results, and it is hoped greatly to extend its cultivation in these districts in the near future. Other crops, in the cultivation of which progress is taking place, are rice, wheat, tobacco, ground-nuts, and citrus fruits. Many of the hardwood timbers of the Mozambique forests are very valuable and a considerable trade is done in railway sleepers.

## NYASSA COMPANY'S TERRITORY

**T**HE district conceded to the Companhia do Nyassa in 1893 was that known as Cabo Delgado, the northernmost part of the Province. It measures roughly 400 miles between east and west and 200 miles between north and south, with a sea frontage of 180 miles on the Indian Ocean. It is claimed that no better agricultural land exists in Africa, for practically the whole of the district is well provided with water even in the dry season, though there are no navigable rivers. In compensation for this, however, the Territory possesses in Pemba Bay the finest natural harbour on the Continent, and once the railway is constructed to Lake Nyassa, agricultural development in the interior must rapidly increase.

Under the administration of the Company, Portuguese sovereignty has been firmly established throughout the territory, and slave-raiding and tribal wars are now things of the past. Agricultural development has proceeded apace, cotton cultivation having increased both on the coast and in the interior. The whole of the sea coast is dotted with promising coconut plantations, one of the largest being a British undertaking—Nyassa Plantations. Other products are copra, sesame seed, ground-nuts and similar oil seeds, tobacco, gum copal, and ivory.

**PORTO AMELIA.**—The capital of the Nyassa Company's territory is a small settlement on Pemba Bay, said to be one of the most spacious harbours in the world, being eight by five miles in extent, with an entrance one and a half miles wide. Porto Amelia, which has good natural drainage, is a military centre, and a regular port of call for the steamers of the Union Castle line. A railway has been surveyed as far as Mtarika, with the intention of eventual extension to Lake Nyassa.



PANORAMIC VIEW OF LOURENÇO MARQUES.

## CITY AND PORT OF LOURENÇO MARQUES

### CITY

**L**OURENÇO MARQUES, besides being the capital and chief sea-port of the Province of Mozambique, the most important of Portugal's overseas possessions, is now rightly regarded as one of the leading cities in the southern portion of the African Continent, and is becoming increasingly known every year both as a busy shipping centre and a holiday resort. For many years only a centre of the whaling industry, it came into prominence with the development of the Transvaal and its natural resources, and its transformation into a cosmopolitan and handsome town may be said to date from the opening of the railway to Johannesburg in 1895. Since that date the town has extended in three available directions, and notably runs out to the eastward shores of the bay, where steep cliffs fall to a narrow but pleasant beach. Here are the suburbs of Reuben Point and Polana, which constitute the more fashionable residential quarters, and are connected by tram with the town proper. Everywhere are fine roads and shady avenues.

**BUILDINGS.** Many imposing and handsome public buildings have been erected during recent years, the most striking, perhaps, being that containing the new administrative offices of the Railway Department. Situated in the Avenida da Republica are the Post Office and Treasury (Fazenda), both of them notable structures, and between them the fine building, erected at a cost of 500 contos, of the Secretary General's, Public Works, and Agricultural and Native Departments. On the north side of Rand Square are the Union Government Buildings (where the English Club is housed), and on the south are the huge Capitania Buildings (residential), the ground floor of which is occupied by the offices of the Delagoa Bay Development Corporation and other concerns. On the top storey is the British Club. Eastwards, on the way to Reuben Point and Polana, are the offices of the

Governor General, beside His Excellency's Palace which stands back in beautiful grounds. The palatial Polana Hotel is one of the finest edifices in Lourenço Marques, commanding a magnificent view of the bay and beach and beyond is the beautiful new Club House erected for the Golf Club. Dotted over town and suburbs are other prominent buildings, including many very fine residences.

**INDUSTRIAL DEVELOPMENT.** Up to a few years ago Lourenço Marques possessed practically no industries of any consequence. The growth of its population and the ever-increasing cost of imported articles have, however, led to the initiation and development of a number of enterprises. These include furniture - some of which, made of excellent native timbers, is finding a market in the Transvaal; milling, soap making, tobacco manufacture, etc. Other important industrial activities to be undertaken shortly comprise cement and leather production, in both of which cases exclusive rights of manufacture have been secured for a period of 10 years, with option, under certain conditions, to extend to 20 years.

**LIGHT AND POWER.** Lourenço Marques is well lighted by electricity under a concession held by the Delagoa Bay Development Corporation. The public lighting covers about 18 miles of streets, in which are employed over 1,000 incandescent lamps and 12 cluster lamps. About 8,000 lamps of 30 watts are in use by private consumers. The current is supplied from the Tramway Station, but there is a separate (steam-driven) plant for the light, though this is used only in cases of emergency.

**MUNICIPALITY.** - The Camara Municipal of Lourenço Marques was established by decree of December 19, 1876, and, subject to the control of the District and Provincial Councils, administers the internal affairs of the city. The receipts for the year 1923-24 totalled 3,857,647\$35 (gold), and the expenditure 3,038,788\$41 (gold), leaving a balance to be carried over to 1924-25 of 818,858\$94 (gold).

**MUSEUM.** - The Provincial Museum is housed in a fine building situated at the eastern edge of the Municipal Gardens, and with a frontage on the Avenida Elias Garcia. It was founded in 1913, and the exhibits now exceed 2,000 in number, all having their origin in the Province. Some of the entomological exhibits are very rare, and the collection of fossils is noteworthy.

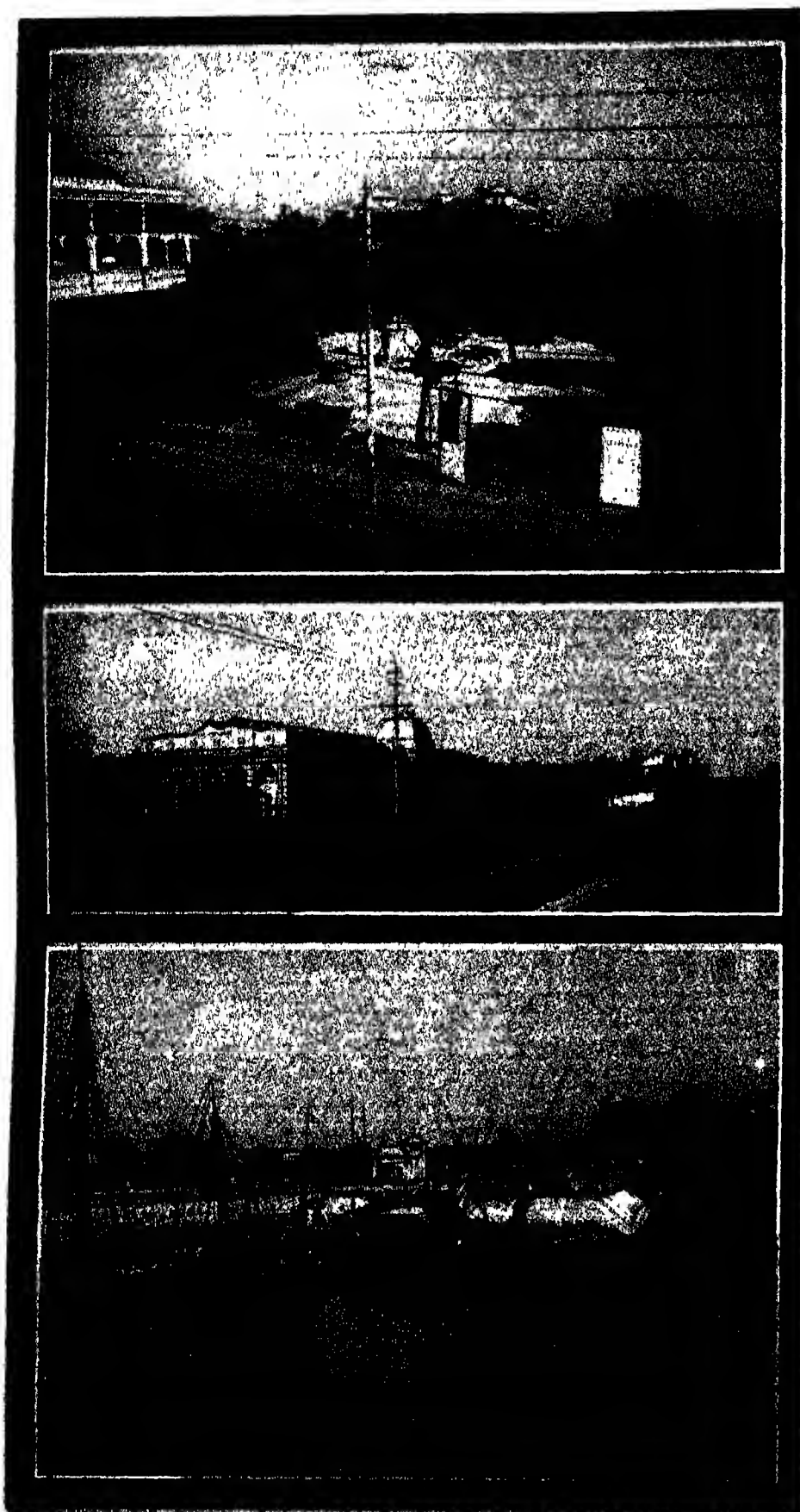
**POPULATION.** The last census of Lourenço Marques was taken in 1912, when the population was returned at 26,079. It is estimated that in 1924 the white population of the city and suburbs, which at the census numbered about 5,000, was at least 7,500.

**SPORT AND RECREATION.** - Large and small game, offering exceptionally fine sport, abound in the district, but hunting or shooting is forbidden from November 1 to April 30. Big game is only to be found some distance away from the town, but most varieties of small game, including steenbuck, duiker, reedbuck, bushbuck, and birds, can be encountered within two hours of the city by rail; guinea fowls and partridges are plentiful ten miles out of the place in almost any direction.

Of athletic sports, the favourites are tennis and golf, the new course at Polana, when completed, promising to be one of the best in South Africa, as it is certainly one of the most unique in point of situation. The Tennis Club dates from 1908 and is affiliated to the South African Lawn Tennis Union. The club's annual open tournament usually held when the winter season is in full swing - is quite the outstanding event of the year, and attracts players from all over South Africa.

At present the town lacks proper cricket and football grounds, but a flourishing Cricket Club has recently been formed. The Polana Club directs the automobile activities of the district. The two theatres, the Varieta and the Gil Vicente, are the equal of any in South Africa, but, unless overseas theatrical companies are the attraction, are usually given over to cinema entertainments.





LOURENÇO MARQUES.

1. Praça 7 de Março.
2. The Market, showing Avenida da República in the foreground.
3. The Capitania.

**TRAMWAYS.**—The Delagoa Bay Development Corporation controls the tramway system of Lourenço Marques, which has been in operation since February 1904. In 1924 the length of track was 10.475 miles of one metre gauge. Under contract the tramway concern generates energy for the power requirements of the Wharf and Railway Departments, and also for practically the whole of the industrial and manufacturing plants in the town. The total capacity of the station is 1,075 kw.

**WATER SUPPLY.**—The Umbeluzi waterworks, 18 miles distant from the town, provide an abundant supply of excellent water. This is controlled by the Delagoa Bay Development Corporation, whose concession dates from 1895.

## PORT

The harbour of Delagoa Bay, discovered in 1504 by Antonio do Campo, in command of one of Vasco da Gama's ships homeward bound from Goa, is regarded as the best in South Africa, the bay being 25½ miles long by 2½ broad. The shifting bar of sand, which is common to nearly all South African ports, is subjected to powerful dredging machinery and large vessels can easily enter the harbour. Without borrowing money, it is estimated that the Portuguese Government has expended more than £7,000,000 on the port of Lourenço Marques and its connecting railways. At present the capacity of both is much in excess of the needs of existing traffic, but there can be little doubt that in a few years Lourenço Marques will be the entrepot of an enormous and most productive region, when the magnitude of the work that has been accomplished will be more fully appreciated.

**ACCOMMODATION.** The accommodation for vessels up to the largest tonnage which the port offers has been increased during the last few years, and further expansion is in hand, details in connection with which are given in a subsequent article.

**ADMINISTRATION.**—The port (as also the railway) is administered by the Port and Railway Council, an autonomous body consisting of official delegates and four local business men, of whom one must be chosen from agents of shipping lines and another from the representatives of forwarding firms. These last-mentioned four members are elected by the permanent members every two years.

**APPROACH.**—See article following.

**COALING PLANT.**—For details of the very up-to-date and efficient coaling installations, see letterpress entitled "Ports and Railways of Lourenço Marques". It may be mentioned here that South Africa coal handled at Lourenço Marques decreased very considerably from 823,274 tons in 1923-24 to 674,778 tons in 1924-25, in the latter year 416,357 tons were exported and 258,421 tons were bunkered.

**EXTENSIONS PROJECTED.**—In March, 1926, the Government announced its intention of constructing a bridge over the Limpopo River at Messina, to take road and rail traffic. It is hoped that the Union Government will defray half the cost of this bridge, which will link Southern Rhodesia and the Transvaal, giving the colony not only a shorter route to the Rand and Natal, but also putting it into direct communication with Delagoa Bay, and thus providing it with an alternative ocean outlet to Beira. An extension is also projected from the main line south of Gwelo to Shabani, which will serve the important asbestos industry.

**PILOTAGE.** This is compulsory. A pilot boat is stationed on the north side of Inyack, where shelter is obtained from southerly winds. Pilot fees are: For sailing vessels or steamers, about 12s 6d per foot of vessel's draught. Changing anchors, 2s 6d (gold) per foot draught. In the case of ships calling regularly at intervals of not more than once a month, an allowance of 25 per cent is made; and in that of those entering the port twice within 30 days, 50 per cent.

**PORT CHARGES.** These are payable in gold at the current rate of exchange for the day.

**CRANE CHARGES.** On working days, 5-ton cranes, 6s 6d to 7s per hour, minimum 18s; 10 to 60-ton cranes, 4s 6d for first 10 tons weight up to 32s 6d for weights exceeding 50 tons; minimum 36s.

**CUSTOMS FEES.** Ocean vessels taking or landing cargo, 30s; ocean vessels not taking cargo, 4s; coasting vessels, 2s 6d; local coasters, 1s 3d.

**LANDING CHARGES.** From vessels at wharf, 4s 6d per ton. Large consignments or contracts at considerably lower rates.

**LIGHT DUTY.** Ten escudos per ton of cargo landed.

**PORT DUTY AND CLEARANCE.** 12 2s for each vessel entering or leaving the port.

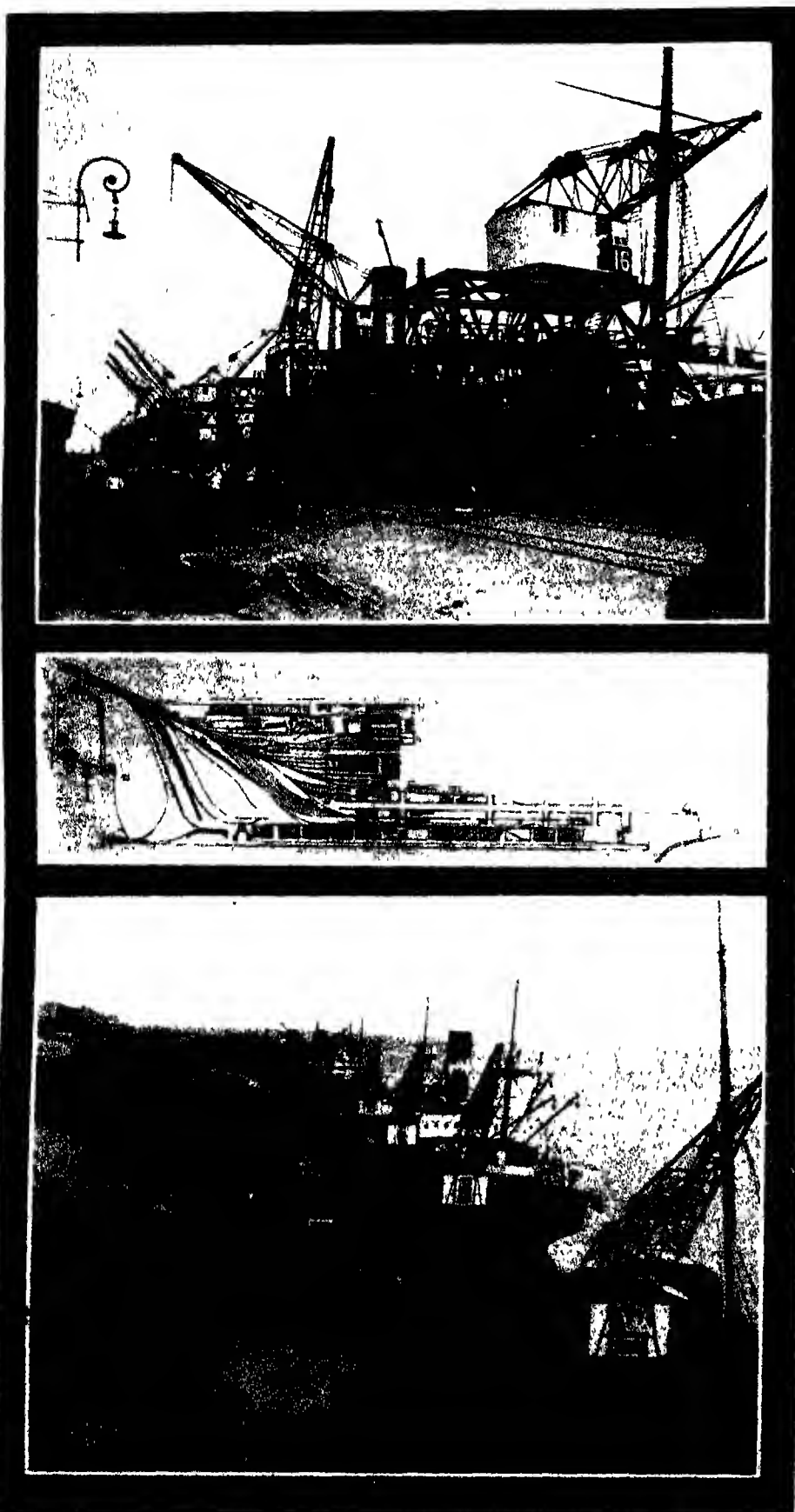
**STORAGE RATES.** Free storage at the wharf sheds is given for the first 48 hours, reckoned from the time of completion of the vessel's discharge. Afterwards the goods are removed to the Customs warehouses, and are subject to a charge of 3d per cubic metre per day for the next three days; afterwards 10d per cubic metre per day (gold). Goods



POLANA BEACH, LOURENÇO MARQUES



PORT AND RAILWAYS OF LOURENÇO MARQUES.  
A Group of up-to-date Baldwin Locomotives.  
(See letterpress, page 346.)



PORT AND RAILWAYS OF LOURENÇO MARQUES.

1 &amp; 3. Wharf Views.

Centre. General Plan of the Port.

in open pay half rates. Goods transhipped, 1d to 3d per ton. A charge of 1,200 reis per ton is made for removal to the warehouses.

**TONNAGE DUES.**—Tonnage dues are imposed only on vessels landing or loading cargo. Ocean sailors, 5d; steamers, 2½d; steamers trading regularly to and from Portugal, 1d per net registered ton. Vessels taking coal are exempt. On ocean going vessels discharging or loading cargo, 62 reis per ton.

**TOWAGE.** For sailing vessels or steamships in ordinary weather. For vessels 1,000 tons, £18; 1,500 tons, £21; over 2,000 tons, £24. Over the three mile limit, 160, 167, and 180 respectively. Shifting in port, 15 to 18 10s.

**WHARF DUES.** 2s per ton on the cargo. On vessels with coal, up to 1,000 tons of African coal, 11 25 esc per ton, for every ton above 05 625 esc, minimum 50 esc. Maximum, 50 per cent of tax collected as follows: up to 3,000 tons measurement, 11 25 esc per ton; 03 75 esc for each ton above. Steamers at the wharf are required to land an average of 350 tons and sailing vessels 150 tons per working day. The demurrage charge is ½d per net registered ton.

**SHIPPING AND TRADE.** During 1924 the number of vessels arriving at the port totalled 644 of 3,060,114 gross tonnage, with 342,054 tons of cargo landed. These figures were slightly less than those for 1923, when 660 vessels of 3,033,644 tonnage entered the harbour. In 1924 the arriving vessels were, British, 350; Portuguese, 135; Dutch, 40; German 41; Others, 66. Passengers landed in 1924 totalled 27,276.

### PORT AND RAILWAYS OF LOURENÇO MARQUES

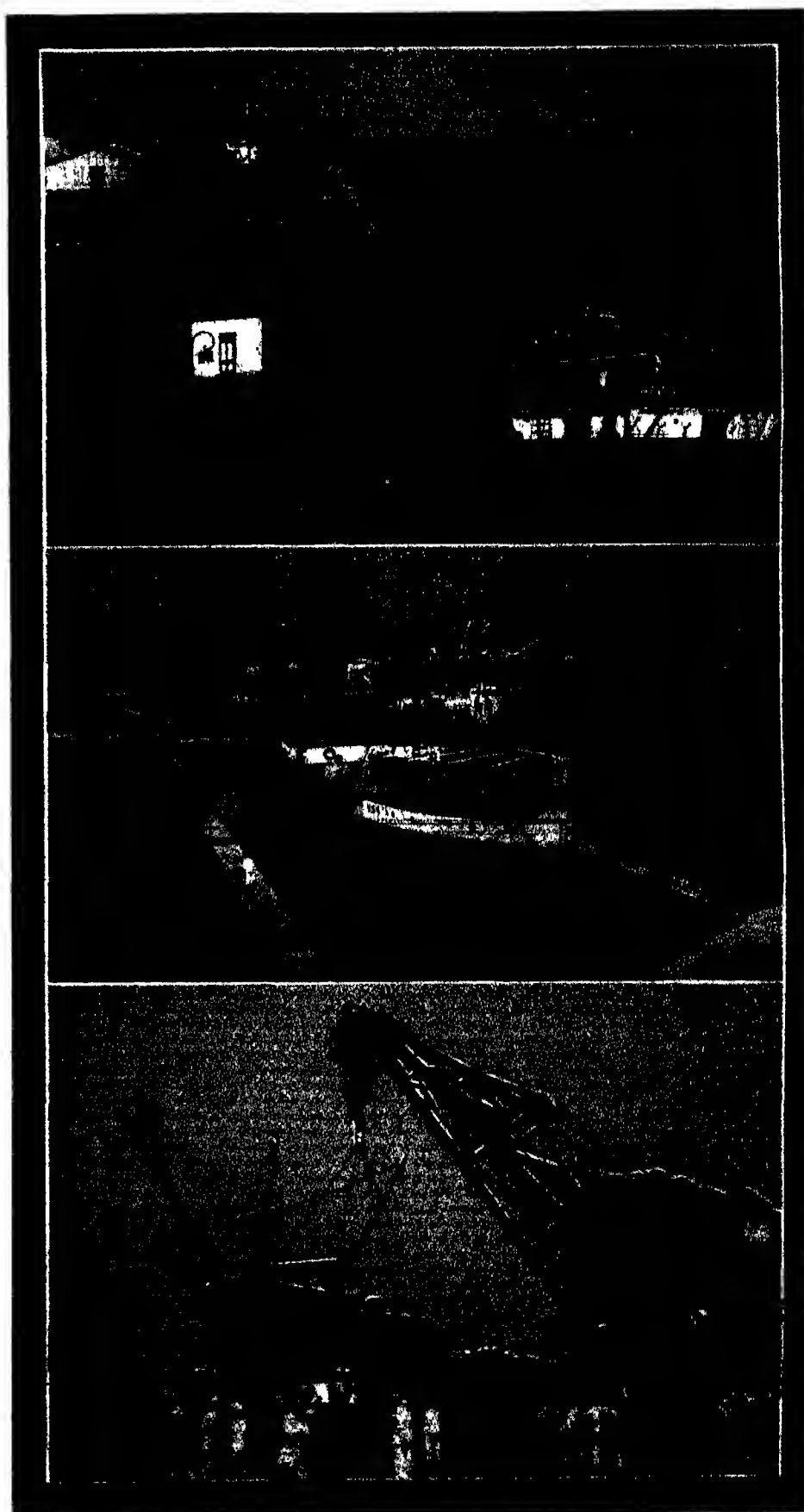
**Natural Advantages.**—The geographical advantages of the bay of Lourenço Marques place it in the very first rank of the world's great ports. It is not only a natural harbour of great size, affording easy entry and excellent shelter, but it is also, owing to its position, the natural outlet for an immense area of hinterland, including the Transvaal and Swaziland, as well as the district of Lourenço Marques itself. The bay is the estuary of three large rivers, navigable by small craft over considerable distances, so that even without the modern facilities of transport the port could serve a wide area of country for purposes of trade and distribution by means of its splendid waterways.

**Early History.**—The bay was discovered in 1502 and explored by a trader named Lourenço Marques in 1544, but very little development took place until some 30 years ago. During the 16th and early 17th centuries the place was visited by Portuguese ships at fairly regular intervals, trading for slaves, agricultural produce and ivory. As time went on, however, these visits became fewer, and though, in the 18th century, other nations also attempted to found settlements and trading stations, these were mostly shortlived and in all cases unimportant. In 1781 Joaquim de Araujo arrived from Portugal as first Governor of the military settlement at the bay, and a fortress was built on the present site of the town of Lourenço Marques, the stockade encompassing a chapel, barracks, prison and stores. Almost immediately upon the completion of these works the settlement was attacked by the natives, and from this time forward little was continued intermittently, the natives not being finally subdued until 1895. During a lengthy period of the 19th century, portions of this territory were disputed by the British

and Portuguese, the question being finally referred for arbitration to the President of the French Republic, who in 1875 awarded the rights over the disputed land to Portugal, and the whole district which is now the Province of Mozambique became Portuguese territory.

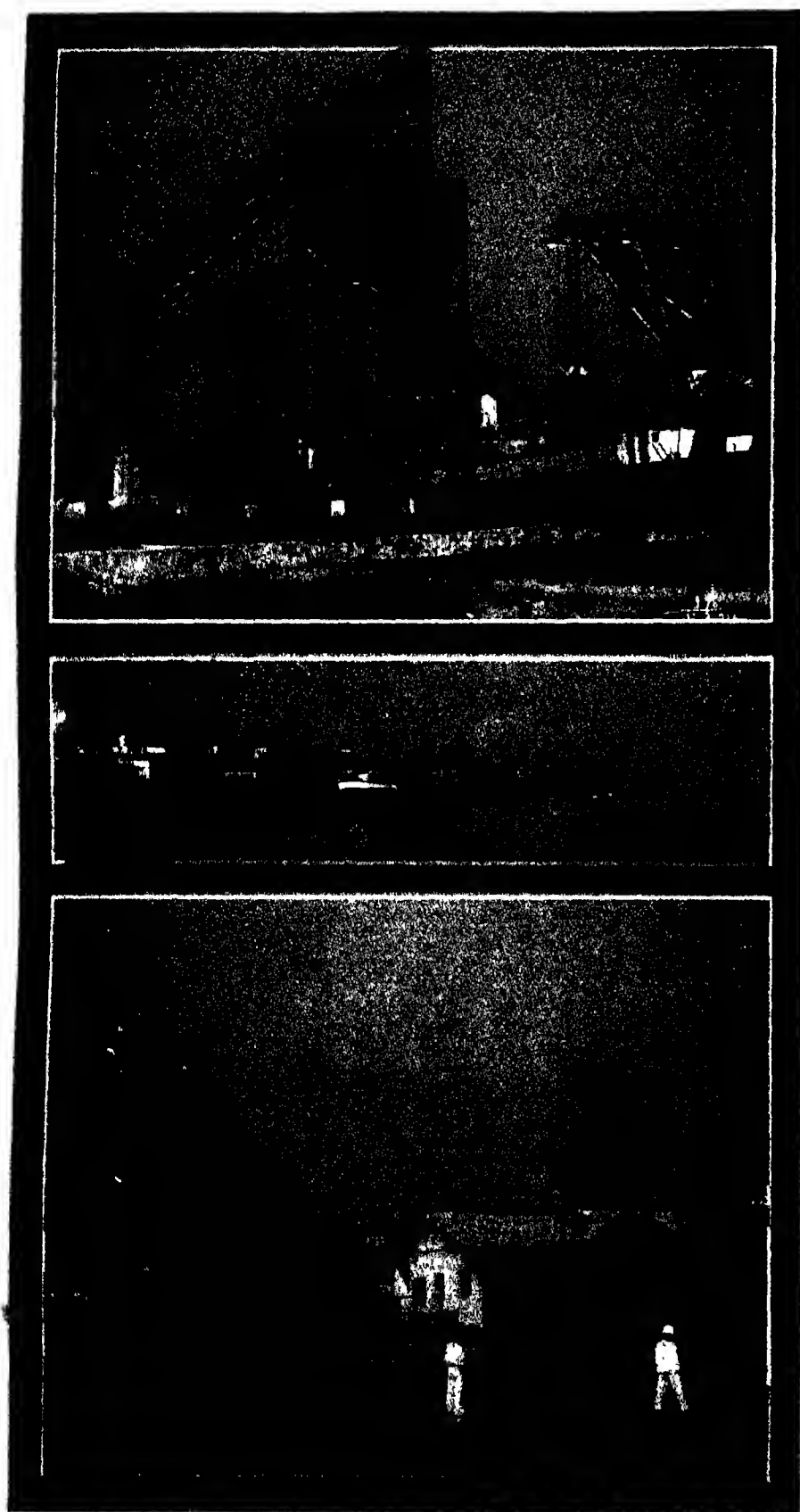
**Later Development.** In 1876 the settlement received the status of a village, and in 1887 that of a corporate town. Even at this latter date, however, Lourenço Marques was still only a small hamlet with six main streets, one square and eight side streets. The only two-storeyed building in the place was the house now occupied by the Banco Colonial Português, and the one hard road was a short stretch leading from the Governor's residence to the shore, the rest being only soft sand. In the bay a solitary boat was available belonging to the Public Works Department, kept for the use of the Governor and other officials; in the town three European firms existed, while one small hotel sufficed for the needs of the place. In 1869, however, a treaty had been made between Portugal and the South African Republic fixing the boundary line, and from this date roads were built, a more or less regular steamship service with Europe was started, and trade began to be opened up. The year 1884 was another most important date for the province, when a contract was signed for the construction of a railway by an Anglo-American company. In 1884 a dispute having arisen as to the interpretation of the contract, the Government seized the line and completed the railway, the first through train to the Transvaal being run in 1895. In 1900 arbitrators awarded the possession of the railway to Portugal, ordering the payment of 7050,000. Since that date the history of Lourenço Marques has been a record of rapid progress, until to-day it may be considered as the most valuable colonial possession of Portugal. In May 1907 the town became the capital of the Province of Mozambique.

**Trading Facilities.** The port of Lourenço Marques is now one of the finest and best equipped harbours on the East or West Coast of Africa. The Government of Mozambique has fully realised the possibilities of its natural position as the gateway of Swaziland, the Transvaal and other parts of the Union of South Africa, and it has laboured to make the port capable of dealing with the volume of trade which, from the resources of the rich lands which lie behind it, is to be expected. Such success has attended these efforts that the port is now able to handle quite easily the existing trade, and fully prepared to cope with the increased traffic which is bound to come in the near future. The entrance to the bay from the Indian Ocean is by the Polana Channel, which is over 125 yards (100 metres) wide, and has been dredged to allow the ingress of vessels drawing up to 20 ft at slack water, and up to 35 ft 6 ins at high tide. The channel is marked by the Catembe line (a lighthouse and beacon in the water) and by 6 light buoys, A G A system. The wharf, a fine piece of ferro-concrete work, is 75 feet wide and 1,624 metres long, and has a berthage capacity for 12 large steamers and 4 coasting vessels. Import traffic is off-loaded direct from the ships' holds into trucks, which are dispatched immediately to their destination, and export traffic from the trucks directly into the ships by means of electric cranes. These cranes, which have been specially installed for the purpose of quick and cheap handling of general cargo, are 23 in number, and capable of dealing with loads from 3 up to 60 tons. There is also excellent and ample cargo accommodation, with 12 large sheds



PORT AND RAILWAYS OF LOURENÇO MARQUES.

1. The Wharf.
2. S.S. "Luabo" in Dry Dock.
3. Unloading a Baldwin Locomotive complete from Steamer.



PORT AND RAILWAYS OF LOURENÇO MARQUES.

1 & 3. Showing the New Coaling Plant. Capacity 5,000 tons per diem  
Centre. The Wharf taken from the Bay.

having an area of 16,200 square metres each, and in addition extensive open ground for storage.

**Coaling Plant.**—The trade in coal from the Transvaal mines takes pride of place in the traffic of the port. To deal with this, two large and efficient coaling plants have been erected, the McMiller plant with a capacity of 150 tons of 2,000 lbs per hour, which loaded over 5,000,000 tons between May, 1914, and December, 1924, and the Provay (inaugurated on June 10, 1923), with a nominal capacity of 600 tons per hour. Siding accommodation is provided for trucks carrying 50,000 tons of coal, while other sidings to receive the empties from the coaling installation and bunkering, are available for all the trucks that can be emptied daily. As about 20,000 tons of coal per day of 24 hours can be brought by powerful locomotives with a haulage capacity of 1,200 tons, and this amount can be easily coped with by the coaling plant on the wharf, the annual total capacity of the port may be considered to be about 6,000,000 tons, an amount that is now much in excess of the actual traffic, and therefore leaves ample room for all the likely requirements of this trade for some time to come.

**Dry Dock, Tugs and Dredgers.** Next to the wharf is a dry dock, constructed in 1924 which can take coasting craft up to 1,700 tons, and also a basin for smaller vessels. The maritime equipment of the port includes three tugs, one of which has been specially built for use on the high seas, while of the two dredgers, both of which are of a very powerful type, the suction vessel "Inhaca" has only lately been acquired, and is of the newest design. Although much dredging has already been done, and the channel allows ships to enter drawing up to 29 feet at low water and to 35.6 feet at high tide, the work still goes on. It is expected that vessels drawing up to 40 feet will before long be able to use the channel. The electric power station on the wharf, which was being enlarged during 1925 to attain a capacity of 1,200 k.w., will supply all the electric power necessary to work the coal plants and electrically-driven machinery of the port, also to light the entire port enclosure.

**Shipping Returns.**—The Shipping Returns of the port for the five years 1920-21 to 1924-5 are represented by the following average figures—

	ARRIVALS	DEPARTURES
Number of ships	506	506
Gross tonnage	2,352,056	2,368,820
Tonnage landed and shipped	215,305	768,730
Passengers	35,147	39,065

Over the same period coal trade returns showed average local consumption to have been 21,474 tons, while export and bunker represented 876,456 tons.

**Railways.**—The railway system, which includes three principal lines, with a gauge of 3 ft 6 ins., is also under the control of the Lourenço Marques Port and Railways Administration. The central station may be compared, without discredit, to any other of its size in South Africa. In front of the station itself is the large building containing the offices of the Administration of the Port and Railways, while behind this block lies the station proper with two platforms and the usual waiting-rooms, cloak-rooms, etc., all spacious and well-equipped. The three principal lines are (a) the main line to the border of the Transvaal, covering from Lourenço Marques to Ressano Garcia a distance of 92.5 km. (approximately 56 miles), connecting with the railways of the Union, and providing an excellent mail train



service to Johannesburg, (b) the line to the Swaziland border (69.3 km) which gives access to an area of great agricultural activity, and (c) the Xinavane line (142.6 km), which was opened in 1914, and serves a part of the country mainly devoted to sugar-growing and other planting enterprises. It is proposed soon to extend this last route to the Limpopo Valley. There are also two narrow gauge lines, one in the north of the Lourenço Marques district with the Limpopo River port, Vila Nova de Gaza, as its centre, and the other to Marracuene. The main line trains are as well equipped as those of any country, including sleeping cars, saloon carriages, and a restaurant car-service.

**Railway Traffic.** Average figures for the last five years are as follow:—Goods, 1,208,976 tons, passengers, 303,428, revenue, £338,434.

**Conclusion.**—It is evident, from the details furnished above, that the Administration of the Port and Railways in Lourenço Marques has fully provided for the rapid and convenient handling of the traffic of the territories with which it is connected. To Lourenço Marques, the Transvaal and Swaziland may also be added Rhodesia as a district which this port may expect to serve. A port for Rhodesia on the West Coast of Africa must, it would seem, remain an unfulfilled dream, as all the natural harbours for that region lie on the East Coast, and of these Lourenço Marques is by no means the least fitted to become its chief entrepot. Thus with all the improvements and facilities, both accomplished and projected, added to its natural advantages there is no doubt that the Port of Lourenço Marques, already able to stand on an equal footing with any other South African outlet, will be the commercial centre for one of the most important and productive regions of the whole continent.

(See also illustrations, pages 345, 346, 347, 348)

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### COMPANHIA DO BOROR (Sociedade Anónima de Responsabilidade Ltda.)

**Status.** Constituted a limited company with an authorised capital of 11,000,000, of which £480,000 has been issued, this organisation holds the leases of Government concessions at Macuse, Lacungo, Boror, Namendro and Tirre, all in the district of Ondimane, besides owning coconut plantations in the Angoche district of Mozambique.

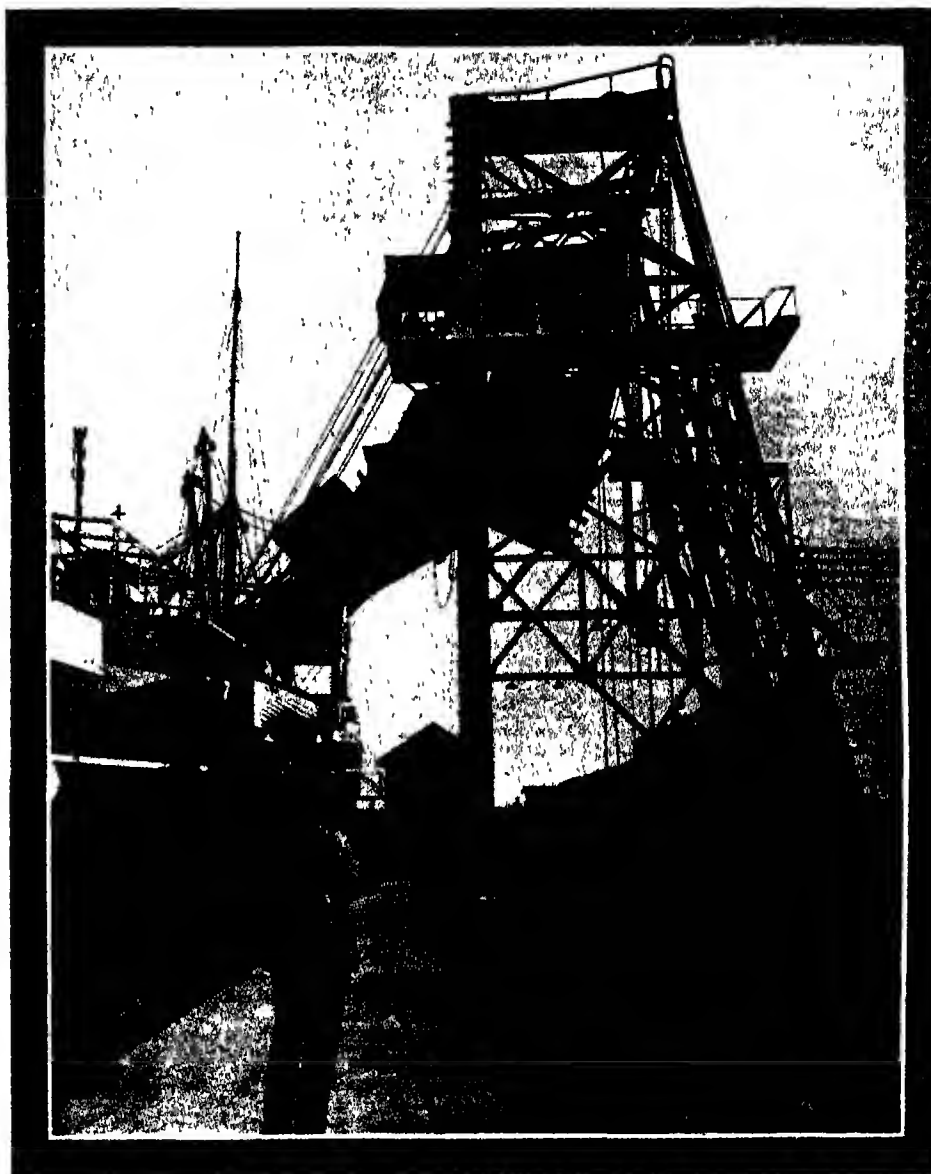
**Concessions.** Such concessions as those just mentioned, known as Prazos, are leased by the Government, usually for a period of 25 years, the rental being fixed on the basis of the amount of the native poll tax, this being collected by the leaseholder, anything over the amount assessed for rent belonging to such lessee. It is, in fact, a method of farming out the native tax. In return for all rights over the land, the concessionaire is obliged to construct roads, maintain schools and other public institutions, and in general to administer the territory leased by him through his own employees, who are, in this respect, subordinate to the District Governor.

**Plantations.**—The Boror plantations support a native population of about 100,000. Communications are maintained by some 35 miles of Decauville lines and by good roads built by the company, as well as by a barge canal joining the rivers which flow into the Macuse with the Lacungo. This barge canal, in combination with the Decauville lines, links up all the plantations with Porto Bello, where the organisation has an establishment of considerable importance,

**COCONUTS.**—The whole territory has a coast line about 40 miles in length between the mouths of the Macuse and Karaga rivers, and by far the greater part of the land is under coconuts, some 2,000,000 palms in all having been planted.

**COPRA.** The copra produced is mostly shipped to Europe, though a small share of the crop is taken by the Union of South Africa. During 1924 the yield reached a

**SUGAR.** Formerly the company conducted large sugar-growing operations at Nhamacurra, where a plant exists with a capacity of 6,000 tons per annum, but these have been abandoned consequent upon the low price of sugar, the land being utilised for other and more profitable cultures. The energies of the Companhia do Boror will therefore be devoted for the present mainly to the production of copra, sisal and cotton,



PORT AND RAILWAYS OF LOURENÇO MARQUES  
The McMiller Coaling Plant, capable of handling 3,000 tons per day

total of 4,000 tons, and further development is expected to increase this amount very materially.

**SISAL.**—Besides copra, the company grows sisal on a large scale, the two plantations in the Nhamacurra and Malaguine district now having about 6,000,000 plants, from which the output of fibre in 1924 was 1,500 tons.

**COTTON.**—Cotton is another product which has been lately taken up, and promises increasing success.

**SALT.**—A flourishing salt industry at Macuse yields about 3,000 tons a year

and of these three crops a considerably larger output is expected in the near future, as preparations are being made both for increased planting and treatment.

**General Imports.** In addition to these plantation activities the company carries on a general import business, which in all the ports of the Province where its branches are established shows a very large turnover.

**Agencies.**—The following companies are represented by the firm Holland Afrika Lijn (maintaining a coastal service in connection with a regular European service and transhipment at Beira into coastal steamer



COMPANHIA DO BOROR, Louraço Marques.

1 and 2. Coffee Plantations.

4. Sugar and Sisal Factories at Nhamacurra, P.E.A.

6. Branch House at Quelimane, P.E.A.

3. Loading Copra at Macuso.

5. Court Yard at Macuso Branch House.

7. Section at Plantation.

(See letterpress, page 349.)



MANN, GEORGE & CO. (DELAGOA) LTD., Lourenço Marques.

1. The Company's Premises.
2. Mann, George and Co. (Agents for Transvaal Coalowners' Association) Coal awaiting Shipment.

"Holland"), the Mozambique Portland Cement Co., Western Assurance Co., Vacuum Oil Co. (only at Port Mozambique), and the Incomati Brickfield at Chanculo, on the Johannesburg line, with a production of 30,000 bricks a day.

**Branches.**—The concern has opened branches at Lourenço Marques, Queimane, Inhambane, Chinde, Angoche, Mozambique and Macuse.

**Offices.** Head office: Rua do Arsenal, 54, 2°, Lisbon. Committee of Administration in Marseilles. Rue Breteuil, 12. Lourenço Marques office: Rua Araújo (P.O. Box 4), Cables: "Boror", Lourenço Marques. Codes: ABC 5th and 6th Editions, and Bentley's.

#### MANN, GEORGE & CO. (DELAGOA) LTD.

**Activities.** This organisation operates as coal merchants, steamship, landing, shipping and forwarding agents, and as insurance representatives.

**Coaling Section.** Messrs Mann, George & Co. (Delagoa) Ltd. are the sole exporting agents for the Transvaal Coal Owners' Association (1923), Ltd., and as such always have on hand large quantities of first-grade steam coal for bunkering facilities, drawn from the following collieries in the Witbank district of the Transvaal: Clydesdale (Transvaal) Colliery, Douglas Colliery, Middelburg Steam Coal & Coke Co. Ltd., S.A. Coal Estates (Landau and Navigation Mines), Station Colliery, Favistock Colliery, Transvaal & Delagoa Bay Colliery, Witbank Colliery (Witbank and Uitspan Mines).

**Coal Standard.**—The coal produced by the above-named collieries maintains a uniform standard of good quality and high steaming efficiency. Its chemical composition is such as to preclude the danger of spontaneous combustion. Evidence of these characteristics of the coal is afforded by the fact that for many years it has been regularly supplied to all the principal steamship lines trading with South Africa, both at Delagoa Bay and Capetown, also to the British Admiralty and Portuguese Government.

Other large consumers of the Witbank district coals are: The South African Railways & Harbours (about 1,600,000 tons per annum), Caminhos de Ferro de Lourenço Marques, Victoria Falls & Transvaal Power Co. Ltd., and the principal mining and industrial groups in the Transvaal.

**Bunkering Facilities.** The port of Lourenço Marques is adequately equipped with modern electric cranes and two coal loading appliances for the efficient handling of coal, hence vessels putting in for bunker requirements or for the purpose of loading coal cargoes are assured of prompt attention and rapid despatch.

**Landing, Shipping and Forwarding Section.**—A separate department is maintained to deal with the handling of general merchandise discharged at the port for despatch by rail to inland destinations; moreover, ample bonded warehouses are provided at the port for the storage of goods.

**Representations.**—Messrs Mann, George & Co. (Delagoa) Ltd. are agents for the following steamship lines and insurance companies: Peninsular & Oriental S.N. Co., Rio Cape Line Ltd., Nippon Yusen Kaisha, James Nourse Ltd., Italia Navigation Company, Katsuda Steamship Co. Ltd. (Kobe), Yamashita Kisen Kaisha (Kobe), Ocean Transport Co. Ltd. (Kobe), Scandinavian East Africa Line, Kerr Steamship Co. Inc. (New York), Stoomvaart Maatschappij "Nederland", Rotterdamsche Lloyd, National Mutual Life Association of Australasia Limited, York-

shire Insurance Co. Ltd., Royal Exchange Assurance

**Address.** Rua Arango, Lourenço Marques (P.O. Boxes 797 and 798) Cables "Banking" Lourenço Marques Codes Scott's 10th Edition, Bentley's Phrase, Standard, A.B.C. 5th Edition and Western Union

(See illustration page 351, and text pages 358 and 359 "Beira")

**DELAGOA BAY DEVELOPMENT CORPORATION LTD.** (*Compagnie d'Electricité de Lourenço Marques*).

**Inception.** The purpose guiding the inception in 1903 of this company was the acquisition of certain undertakings, concessions and properties at Lourenço Marques. Among these were the waterworks concession

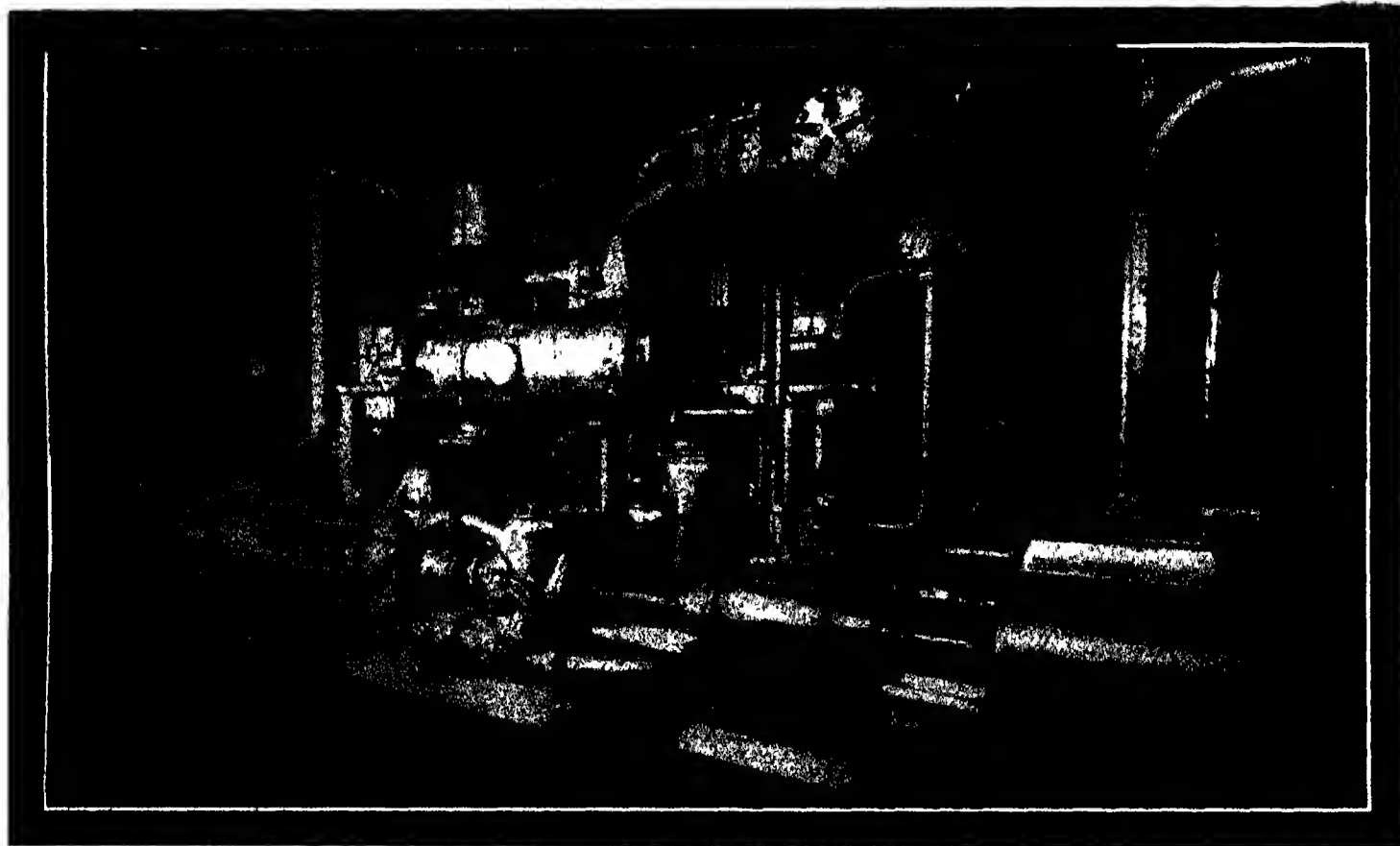
**Electric Tramways.** The tramways concession extends for 50 years from January 17, 1902. Services of 20 and 30 minutes are maintained over the system, which totals 10.475 miles in length. The power station plant, producing 1,075 kilowatts, supplies power to the Electric Light, Port and Railway Departments, and to various industries (employing over 1,500 h.p.) established in Lourenço Marques.

**Electric Light.** The electric light concession, purchased as a going concern subsequently to the company's inception, applies for 50 years from October 27, 1897. Lourenço Marques is one of the best-lighted towns in the sub-continent, street illumination requiring nearly 1,300 standards while the number of points installed in private houses exceeds 15,000.

**ALLEN, WACK & SHEPHERD, LTD.**

**Inception.** Established in the early 'eighties by Mr. Charles Wack, this firm of general merchants, shipping and forwarding agents controls one of the oldest business houses in Delagoa Bay. Mr. Wack, who arrived in 1880 from Ibo, where he had been resident for some time, was joined in 1887 by Mr. Thame Allen, one of the late Mr. Cecil Rhodes' engineers, who assisted in laying out Kimberley. Mr. Allen at that time owned ironworks in Barberton, and, when he transferred to Lourenço Marques, founded there the Delagoa Bay Ironworks, which are still in existence.

**Development.** The firm started in a small iron store, but as the business gradually increased continual additions became



DELAGOA BAY DEVELOPMENT CORPORATION LTD., Lourenço Marques.  
Company's Pumping Station on the Umbeluzi River.

for the town, taken over as a going concern, a concession for electric tramways, a plot of ground on the seafront, ultimate site of the Capitanía Building block, and several other valuable town stands.

**Capital.** - The original capital of the corporation was £300,000 in £1 shares. In March 1905 an issue was made of £180,000 in 6 per cent debentures.

**Waterworks.** - The water is taken from the Umbeluzi River at a point 19 miles from the town, and after settling is treated by three Jewel mechanical sand filters with a capacity of 1,200,000 gallons per day. It is then pumped into service reservoirs by means of two Worthington triple-expansion duplex pumping engines. Town consumption and the supply to shipping of this extremely pure, potable water together exceed 300,000,000 gallons per annum.

**Directorate.** - Mr. H. K. Heyland (chairman), the Rt. Hon. Lord Oranmore and Browne, K.P., P.C., Lt.-Col. Alexander, Dr. Balthazar Freire Cabral, Mr. W. L. Castleden and Mr. P. Murly Gotto.

**Secretaries and Offices.** - Henderson's, Transvaal Estates Ltd., 36-38, New Broad Street, London, E.C.2, and Capitanía Building, Rua Thomaz d'Almeida, Lourenço Marques.

**AFRICAN SHIPPING LIMITED.** - P.O. Box 297, Lourenço Marques. Steamship, shipping, forwarding and customs agents. Head office: Hatfield House, President Street, Johannesburg. Bankers: Standard Bank of South Africa, Ltd. Cables: "Africship," Lourenço Marques. (See this firm's notice, "Transport-Shipping" Union of South Africa section.)

necessary, until to-day the stores and offices of the company cover several acres of ground, the timber yards alone having an area of over 3,000 square yards. The present site of these stores and warehouses was formerly a mere sand heap, and the firm has spent a very large sum of money in filling up and levelling the ground. A few years ago both the partners died, and in 1913 the concern was formed into a limited company, which took over all the assets and liabilities of the late firm. Since then it has carried on business under the style of Allen, Wack & Shepherd, Ltd.

**Activities.** - As general merchants, landing, shipping and forwarding agents, the company handles practically every description of wares other than soft goods. It owns extensive floating plant, while the stores and warehouses carry consistently large stocks,

including timber, mining and building materials, hardware of all kinds, groceries and provisions, and furniture. Having its own lighters and private pier, as well as bond stores, the firm is in an excellent position to handle merchandise of every sort for the up-country trader. A wide connection has been established throughout Mozambique and the hinterland, while the company's travellers reach all parts of the Transvaal in addition to Portuguese territory.

**Staff.**—A large and experienced staff, comprising about 50 Europeans and some 200 natives, is able to cope with any commissions received without fear of mistake or delay, especially as the long standing of the firm has made it conversant with the peculiar requirements and difficulties of the country.

being Mr Robert Niven, of Messrs J & R Niven. The general manager in Lourenço Marques is Mr John Wingfield.

**Offices.** Head office Exploration Buildings, Johannesburg, Lourenço Marques, Rua Alexandre Herculanio (P.O. Box 2) Cables "Thame" Lourenço Marques Codes Bentley's, A 1, Scott's.

**Bankers.** National Bank of South Africa, Ltd.

(See also text page 359 "Beira")

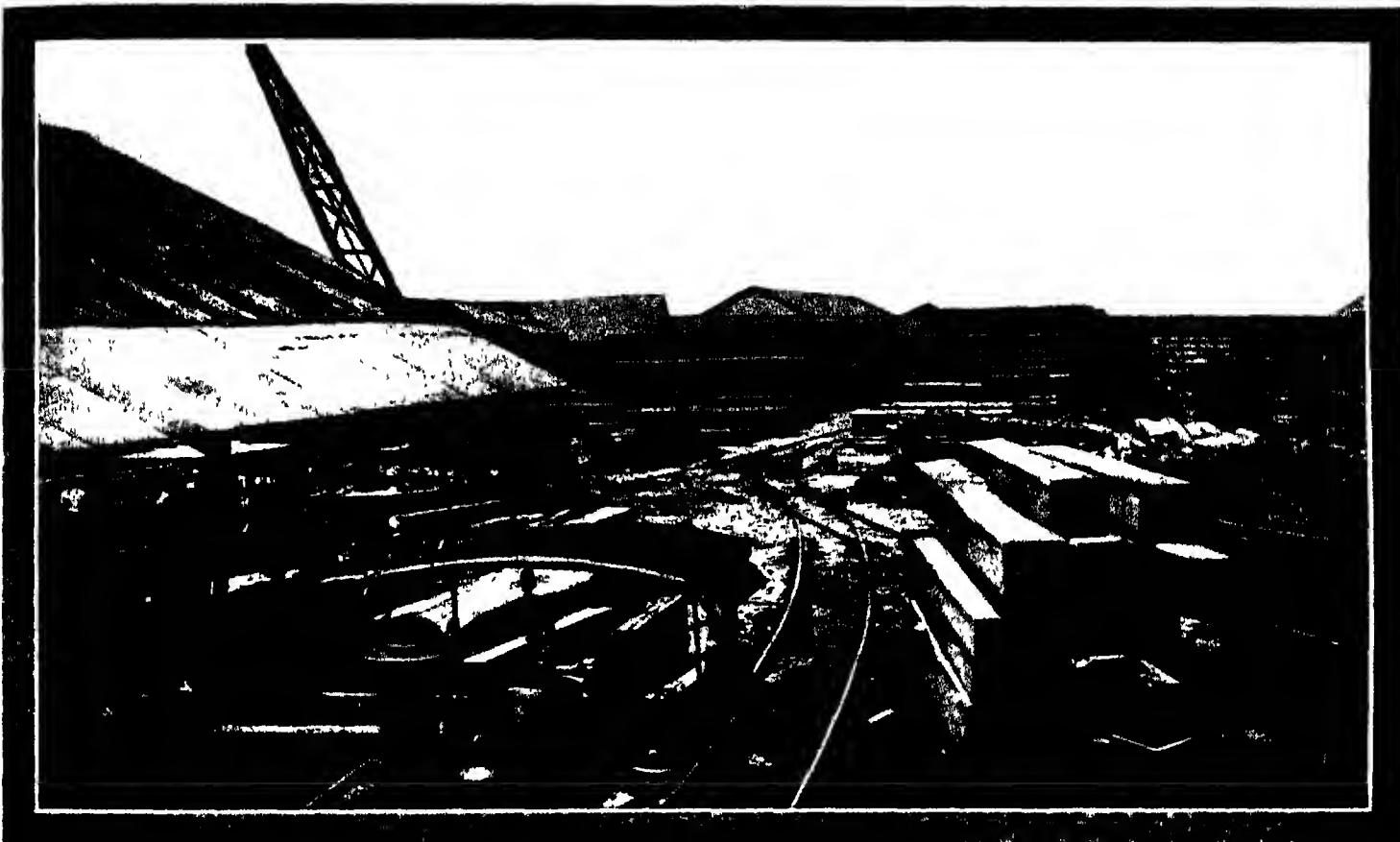
#### **P. SANTOS GIL, LIMITADA.**

**Inception.**—The establishment of this highly-reputable import and export business dates back to 1889, its initial style being Carvalho & David. In 1905 the present principal, Mr P. Santos Gil, took over the management, and on his entering into

works executed by his firm are the Government Hospital and the Machaquene Reclamation and retaining wall, respectively costing £75,000 and £125,000.

**Activities.** The company does extensive trade in railway, electrical, telephonic, building and hardware supplies, while its export business is mainly in copra, groundnuts, castor-seed, sesame seed, maize, cotton, and fine timbers (including South African mahogany), all obtained from its forests. The most up-to-date sawmill in Lourenço Marques is owned by the firm together with spacious bonded stores for imported goods or those to be exported. An experienced staff loads and forwards every class of wares at the firm's own risk.

**Foreign Agents.** In London, Lisbon, New York and Paris the Banco Nacional Ultra-



ALLEN, WACK & SHEPHERD LTD., Lourenço Marques.  
A View of the Firm's Timber Yard at Kilo 1.

**Other Interests.**—Besides this general merchandise business, the company has special departments which deal with agricultural machinery and implements, including windmills, pumps and oil engines, fencing materials, lubricating oils and greases for farms and mines, and all kinds of engineering supplies, etc. Messrs Allen, Wack & Shepherd, Ltd also undertake marine and fire insurance, shipping, bunkering, clearing and forwarding.

**Branches.**—Branches are established at Beira, and (in succession to R. S. Cotton & Co. and Cotton & Downie) at Ermelo, Salisbury and Bulawayo. The London agents of the firm are John Palmer, Jun. & Co., Dauntsey House, Frederick's Place, Old Jewry, E.C.2.

**Administration.**—The headquarters of the company are at Johannesburg, the chairman

partnership five years later the firm was renamed Carvalho, David & Co. On the retirement of the partners, Messrs Carvalho and David, in 1912 the sole ownership devolved upon Mr Santos Gil, who re-incorporated the concern as P. Santos Gil, Limitada, in 1921.

**Capital.** The capital of the company is £20,000, fully paid up, assets exceeding £80,000.

**Government Contracts.**—Since its formation the firm has executed certain important contracts with the Government of the Province. Mr P. Santos Gil was himself deputed to attend in London the negotiations for the loan of £4,000,000 for the Government, having been a member of the Legislative Council for over 12 years, and chairman of the local Chamber of Commerce among other prominent associations. The most notable

marino acts as agents for the company, which is represented also in Johannesburg and Hamburg.

**Address.**—Avenida Buildings, Avenida Aguiar 12, Lourenço Marques (P.O. Box 325), Cables "Transportes," Lourenço Marques, Codes Guedes, Bentley's, A B C 5th Edition and Ribeiro.

**Bankers.**—Banco Nacional Ultramarino, Standard Bank of South Africa, National Bank of South Africa.

(See illustration, page 354.)

#### **BANCO COMERCIAL DE MOZAMBIQUE.**

—Head office Rua Consiglieri Pedroso, No. 65, Lourenço Marques P.O. Box 144. Established 1919. Authorised capital Esc 10,000,000\$00, paid-up capital Esc 2,000,000\$00. Reserve Esc 300,000\$00. All banking operations undertaken. Branch office Vila Nova de Gaza.



**ADRIANO MAIA.**—Founded in Lourenço Marques in the year 1908 by Mr Adrian Maia, this firm carries on business as general merchants and representatives, and exporters of general produce. It has local agents throughout Mozambique, and is represented in London by Messrs. Keymer Sons & Co., 1 Whitefriars Street, E.C. 4, in Paris by M. Emile Levy, 38 Rue du Louvre, and in Antwerp by M. Devos, Bangniet, 1 Rue Arenberg, while there is also a branch of the firm at Largo do Caldas No. 1, 2do, Lisbon. In Portuguese East Africa the firm acts as agent for the following concerns: Agencia Technica e Comercial Ltda., Alfred Herbert Ltd., Automatic Telephone Mfg. Co., Barbier, Benard & Furenne, Bradley & Craven Ltd., British Aluminium Co. Ltd., British Insulated & Helsby Cables Ltd.,

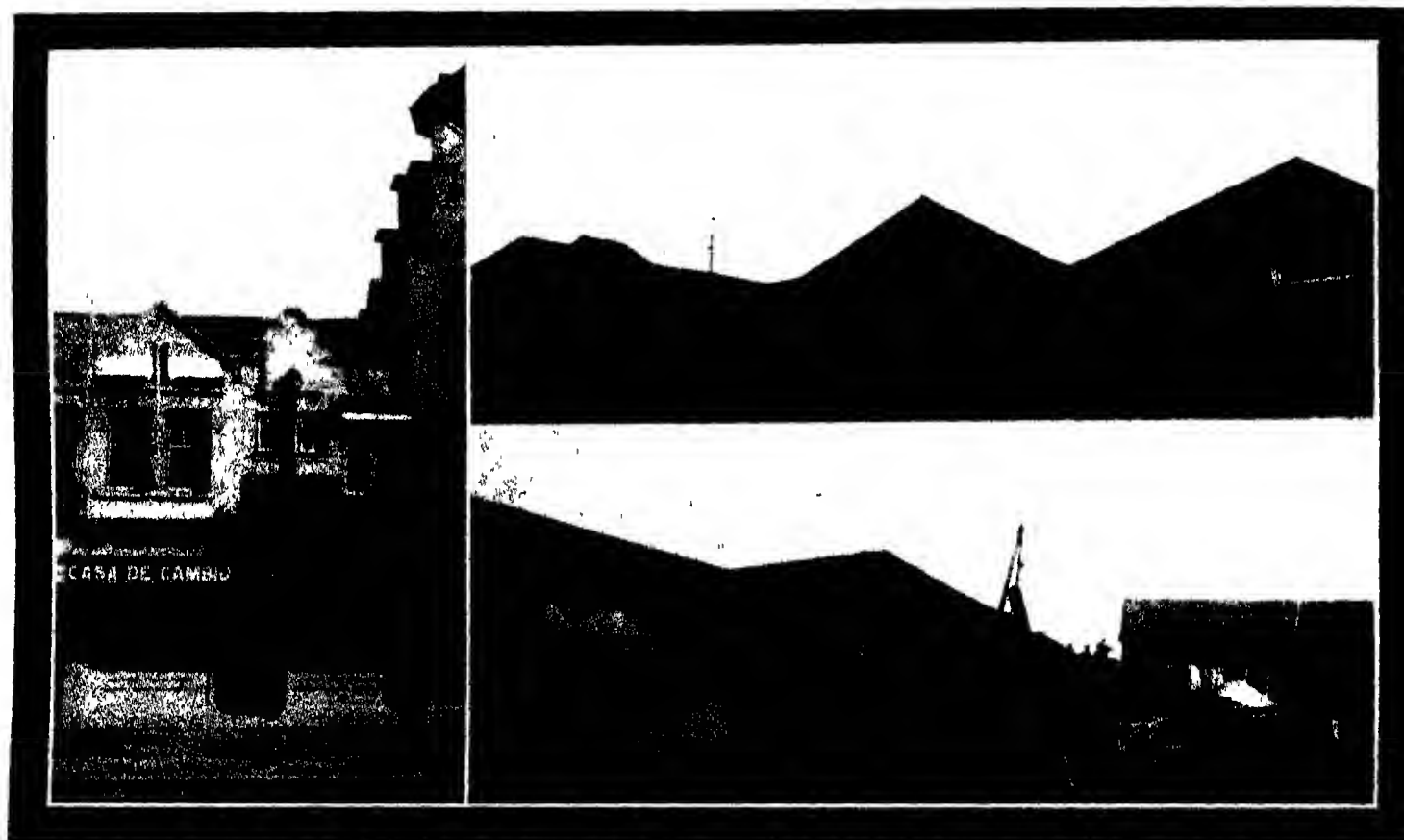
Telephones & Cables (formerly Western Electric Co.), Worthington Simpson Ltd., and the Empresa Electro Ceramica. During 1925 Mr Maia was President of the Chamber of Commerce. The head office is at Rua Consiglieri Pedrosa, Lourenço Marques. Cables: "Sweep," Lourenço Marques. Codes: A B C 5th Edition, Bentley's and Marconi Bankers. Banco Nacional Ultramarino and National Bank of South Africa, Ltd.

**F. BRIDLER & CO. LTD.** This firm, which was founded in 1890 by Mr Fritz Bridler, was formed into a private limited liability company in 1910, all the partners being of Swiss nationality. As wholesale general merchants, they are principally interested in the importation of liquors

consisting of offices, warehouses and bonded stores estimated to cover about 10,000 square yards, thus forming one of the largest warehouse spaces under roof in Lourenço Marques. Therein extensive stocks are held of all brands of liquors and provisions, also every description of soft goods for native trade. The local managing directors are Messrs. I. Kaiser and M. H. Trachsler. Address: P.O. Box 65, Lourenço Marques. Cables: "Bridler," Lourenço Marques. Codes: A B C 4th and 5th Editions, and Bentley's Complete Phrase.

**THE DELAGOA BAY AGENCY CO. LTD.**

**Inception.** Prominent among landing shipping and forwarding agents in Lourenço Marques is The Delagoa Bay Agency Co. Ltd., founded in the year 1900.



1. Company's Premises.

P. SANTOS GIL LTDA., Lourenço Marques.

2. Saw Mills at Kilo 1.

3. View of Timber Yard at Kilo 1. Note in left foreground large logs squared at Company's Saw Mills. (See letterpress, page 353)

BTH Co., C. A. Parsons & Co., Crossley Bros. Ltd., E. R. & F. Turner Ltd., Flicoteaux, Boutet & Cie., Fawcett Oreston & Co. Ltd., General Fireproofing Co., General Vehicle Co., Harrison, Son & Jobson, Hellesen's Dry Cells, Heynes, Mathew, Ltd., Holt Mfg. Co., Hotchkiss Automobiles, Ideal Concrete Machinery Co., "Indian" Motor Cycles, John Lawson Mfg. Co., John I. Thornycroft & Co. Ltd., Lightfoot Refrig. Co., L. C. Smith & Bros., typewriters, Lockerbie & Wilkinson, Monteiro Gomes Ltda., Marconi Wireless Tel. Co. Ltd., Mazda, G.E. and Edison lamps; Packard motor cars, Parlin and Orendorff, Priestman Bros. Ltd., Robey & Co., Sandycroft Ltd., Scripps Booth Motor Co., Sir W. Armstrong, Whitworth & Co. Ltd., S. A. General Electric Co. Ltd.; Telegraph Mfg. Co. (Colonial) Ltd., Standard

provisions, kaffir truck and soft goods for native trade, and in the export of oil seeds and native produce. The firm represents the Bernese Alps Milk Co., Berne, Wheeler & Co. Ltd., Belfast, Dr. A. Wander Ltd., Berne, and Henderson & Co., Colombo, holding in addition insurance agencies for the African Guarantee & Indemnity Co. Ltd., Johannesburg (marine and fire); the Switzerland General Insurance Co., Zurich (marine), and the Association of Hamburg Underwriters, Hamburg. The capital of the company is £60,000, its bankers being the Standard Bank of South Africa Ltd. (Lourenço Marques and Johannesburg branches), and the Swiss Bank Corporation, London. The firm's appointed buyers in Europe are Messrs. J. H. Trachsler Ltd., Berne. The company occupies its own buildings, erected in the year 1903, and

**Activities.**—The firm's business embraces all branches of service to shipping companies, importers and exporters. It owns, at the foreshore of the Upper Harbour, one of the largest private timber yards in the Port, fitted with a pier, cranes and railway sidings. Here there is ample storage accommodation for several cargoes of timber, while large bonded warehouses provide space for many thousand tons of general cargo, including perishable goods. As forwarding agents for some of the largest importing houses of the Transvaal, the company handles a considerable proportion of the transit traffic of the port of Lourenço Marques, and its bunkering activities ensure a regular supply of bunker coal from the best collieries of the Witbank district of the Transvaal for the immediate use of steamers. In addition, it conducts a varied range of general agency work.

**Agencies.** Among the shipping companies whose agencies are undertaken by The Delagoa Bay Agency Co are The British India Steam Navigation Co., Messrs. Bullard King & Co. (Natal Direct Line), Elder Dempster & Co., the Norwegian African Line and the East Asiatic Co. Ltd., while the firm acts as stevedores and landing agents for these companies and for the Union Castle Co. Ltd., among others. Additional corporations represented are the Bureau Veritas, the Board of Underwriters of New York, the North British & Mercantile Insurance Co., the Southern Life Association, etc. The Consulate of Denmark and that also of Sweden are domiciled at the company's offices.

**Offices.** - Occupying a large two storeyed building at the corner of the Rua Araujo and the Travessa Francisco Fener, the premises extend along the latter street up to the entrance of the Customs and Wharf Area.

**Address.** P.O. Box 796, Lourenço Marques. Cables - "Maputa," Lourenço Marques. Codes - Bentley's, Scott's, Watkins and A.B.C. 5th Edition.

**London Office.** 3, Lechurch Street, E.C.

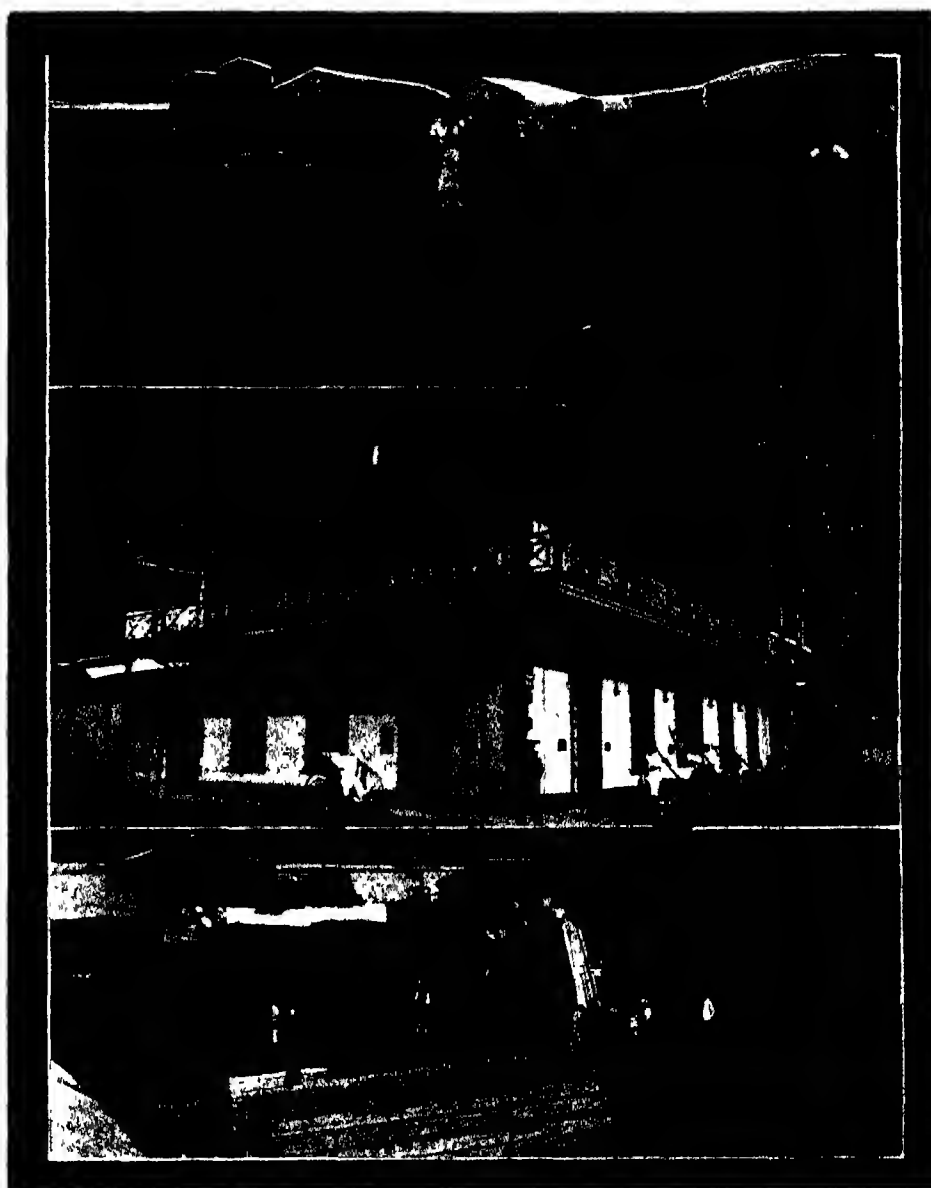
**DELAGOA PLANTATIONS LTD.** Estates on the Incomati River, the chief interest being citrus culture, approx. 31,500 trees on 350 acres. Irrigation scheme for 1,200 acres, surplus at present used for other crops mainly cotton.

**MOZAMBIQUE SOAP & OIL CO. LTD.** Lourenço Marques. A British company, formed in 1917 to take over soap works and oil works since destroyed but to be rebuilt. Production approx. 4,000 cases of soap per month. Head office - Johannesburg. Cables - "Sabao."

**NATIONAL BANK OF SOUTH AFRICA, LTD.** Rua Alexandre Herculano, Lourenço Marques. Branch est. 1890. In 1911 absorbed the Bank of Africa Ltd. in whose former buildings the Bank is now housed. Capital and reserves - £2,375,000. All banking business transacted. (See also "Finance" section, Union of South Africa.)

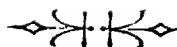
**SHARLAND, W. A.** P.O. Box 244, Lourenço Marques. Commission and insurance agencies. Bankers. Standard Bank of South Africa Ltd. and National Bank of South Africa Ltd., Lourenço Marques and London. Cables - "Sharland," Lourenço Marques.

**UNION-CASTLE MAIL STEAMSHIP CO. LTD.** - Lourenço Marques. Regular passenger and cargo service between East African ports and Europe (via Durban and Suez), and frequent sailings to Mauritius. Direct cargo service to and from U.S.A. and Europe.



THE DELAGOA BAY AGENCY CO. LTD., Lourenço Marques.

1. Stocks stored for Johannesburg Importers.
2. Offices, Rua Araujo.
3. Loading Trucks for Johannesburg.





PANORAMIC VIEW OF

## CITY AND

### CITY

**BEIRA**, the seat of Government of the Mozambique Company's Territory, is not only the capital of a large and important extent of country but also by virtue of its port facilities, the natural outlet for Northern and Southern Rhodesia, Nyassaland, and the Katanga Province of the Belgian Congo, or in all for an area of some 500,000 square miles, with a population of 3,500,000. The agricultural and mineral resources of these countries are enormous, and although the trade is already considerable there are possibilities of great expansion, the further growth of the port and town being assured.

**BUILDINGS.**—The principal public structure in Beira is the spacious block of Government buildings erected by the Mozambique Company in the centre of the town, in which are the offices of the Governor, the Director of Agriculture, and other departments; adjoining is the handsome Palais de Justice. Beira has several good hotels, the Savoy being a particularly fine building, and the principal banks, the Standard and Banco da Beira, are handsomely housed. Other business firms have good premises, and all new buildings must fulfil the requirements of the Municipal Commission. There are two churches, Catholic and Anglican, and three schools.

**CLIMATE.**—Owing to the sea breezes the climate of Beira is superior to that further up the river, and may be considered fairly healthy. The best months are from May to October. The mean annual rainfall is about 37 inches.

**POPULATION.**—The population of Beira is between 4,000 and 5,000, of whom nearly 1,000 are whites.

**SPORT AND RECREATION.**—In the hinterland served by Beira every variety of large and small game indigenous to the East African littoral is to be found. Shooting parties can be equipped and transported to

the districts with a minimum of expense and a maximum of speed and comfort. Near the town is a fine 18 hole golf course, which attracts many visitors to the port. There is also a very good cricket and football ground, likewise a tennis club under the direction of the Beira Amateur Sports Club in the Vasco da Gama Park. On the ocean front, and in a large sea inlet, there is excellent and safe bathing and more conveniences for this purpose are being provided.

**STREETS, ETC.**—The Mozambique Company has done much to improve Beira as a town out of the revenue derived from the settlers and merchants, who in the early days proposed a schedule of licences and scheme of taxation which has been practically adhered to ever since. From the commencement of 1916 municipal affairs have been under the control of a Municipal Commission, some of whose members are nominated by the public associations of the town and others by the Government. To this Commission much of the improvement of the place is due. The original sand spit has been formed into a town with many fine avenues of trees bordering handsome straight roads and with several tastefully designed squares and gardens. The thoroughfares, the centres of which have been made by a top dressing of a firm and close setting gravel, are kept in good order, but most of the traffic is carried along Decauville tram lines laid through all the streets. The footpaths everywhere are of cement. The tram lines serve every purpose, admirably carrying the fast-travelling passenger car or the heavily loaded flat trolley to any point desired. The absence of any grade makes their propulsion easy to the boys employed in the service. The passenger cars, some 300 or 400, are privately owned, though several of the hotels keep many for hire to visitors.

**WATER SUPPLY.**—Hitherto Beira has been dependent upon wells and rain water tanks for its supply, but a scheme is in hand by the Municipal Commission for the construction of a piped water system.

### PORT

The port of Beira, situated at the centre of a great bight of the East African coast, is for that reason endowed with a larger natural hinterland than any other harbour of East Africa. At present this hinterland is immense, extending from the Limpopo-Zambesi watershed in the south to the upper Congo Valley in the west and Lake Nyassa in the north. Though the opening of direct routes from Katanga to the West Coast may divert a portion of the Congo traffic from Beira in the near future it seems certain that the deficiency will be more than made good by coal traffic from the Zambesi mines, by the enhanced development of Nyassaland and North-Eastern Rhodesia that will result from the bridging of the Zambesi, and by the northward extension of the Nyassaland railway system to the shores of Lake Nyassa. In brief, Beira is the natural sea outlet for an area of some 500,000 square miles, whose agricultural and mineral resources are enormous, and, though the trade of the port has increased already at a greater rate than has that of any harbour in the Union (86 per cent in four years, as compared with the 73 per cent of Durban), there are possibilities of immense expansion.

**ACCOMMODATION.** The minimum navigable depth on the bar is 11 to 12 ft. at low water, ordinary springs rise 18 to 20 ft., and ordinary neaps 5 to 7 ft. From the bar to the berthing accommodation the channel, some 16 miles long, has an average width of over half a mile and a depth varying from 18 to 36 ft. Large vessels do not berth, all cargoes being discharged into lighters. The wharfrage available is at present inadequate for the increasing trade of the port. Great extensions and improvements are, however, projected, and were expected to be commenced in 1926. The first instalment to be undertaken will be the construction of a general import and export wharf 1,200 ft long and a mineral wharf 600 ft long, the face line of which will be in deep water, so that only



THE PORT OF BEIRA.

## PORT OF BEIRA

a small amount of dredging will be necessary to obtain an ultimate depth alongside of 34 ft. at low water ordinary spring tides.

The wharves will be carried on screw steel piles, well braced together. On the deck between the face line of the wharf and the transit sheds, provision will be made for one portable crane track and three lines of 3 ft. 6 in. gauge railway. The cranes will be of the most modern type for the rapid handling of cargoes. There will also be two single-storey transit sheds, each 400 ft. long by 120 ft. wide, placed 50 ft. back from the face line of the general wharf.

The Mozambique Company's custom-house will be established at the site of the new wharves, and the transit sheds will themselves form the custom sheds, to the great advantage of consignees, whose goods can be passed through the customs and placed on wagons with the minimum of handling.

A wharf for the mineral trade will be built on the Pangue River above the general wharves. The first installation is to consist of one berth equipped for dealing with ore, but in the future, when the Tete coalfields have been opened up and are in operation, a large number of berths will be required and special arrangements are to be made for the shipment of coal for export and bunker purpose.

**ADMINISTRATION.**—At present there are three separate authorities concerned in the working of Beira Port—namely (1) the Mozambique Company, the proprietors of the port and which provide the port captain and port offices and control the port approaches and custom-house, (2) the Beira Boating Company, which owns and works the fleet of lighters and conducts the loading and discharging of vessels, and (3) the Beira and Mashonaland Railways Co., which controls the railway wharves and goods sheds. This multiplicity of control has not made for efficiency, and through the medium of the Port of Beira Development Company, Limited, which has been formed to carry out the necessary works of improvement and the future administration of the port, great

developments are being looked for. The new company is to have entire charge of the port administration in all its branches. Schedules of rates and charges and new port rules and regulations will be drawn up, but it is confidently anticipated that, so far from the new works and the necessity for financing them causing an increase in port charges, the reverse will take place, improved facilities and management bringing about a reduction in costs to importers and shippers.

**ANCHORAGE.** The anchorage at Beira is a sheltered river estuary protected by a sand spit. Commercial vessels must anchor within the following boundaries. North boundary the railway pier, south boundary the Intendente's flagstaff. Vessels with explosives or inflammable cargo must anchor between the highest gable of the Donna Amélia Hospital to the north and the old Point de Goa lighthouse to the south, leaving the island of Uíamhe bearing N 15 W. The anchorage for vessels in quarantine is to the north of the Mozambique Company's powder magazine.

**LIGHTERAGE.** The special task of carrying passengers and goods across the shallow waters which lie between the piers and the deeper channels of the harbour is at present conducted by local lighterage companies operated by the Beira Boating Company and the Deutsche Ost-Africa Linie.

Since the volume of import and export commerce at the port has greatly expanded in recent years, the Beira Boating Company has much increased its plant, on which it is known to have spent a very considerable sum during the last three years. The company owns a fleet of more than 62 lighters and pontoons and also eight tugs, together with sundry other craft, and is building more at the present time. In addition to its lighterage plant, the company also possesses a large and well-equipped engineering department, together with a small dry dock. It undertakes the erection of its own plant and effects its own repairs, and is doing a steadily expanding general engineering business.

The lighterage companies have for a long time past been pressing for systematic dredging alongside the wharves and in the harbour, and when this is undertaken they should be able to effect considerable improvements in the assistance now rendered to the shipping companies and the port in general.

**PILOTAGE.** Pilot service at Beira is good and free, the pilot boat being anchored one-third of a mile to the north of the anchorage buoy in the south-east channel. During strong southerly winds the pilot boat is stationed near Buoy No. 4. The taxes for pilotage for entry or departure are, for each foot immersed: Not over 14 ft. 2 esc. (gold), over 14 ft. and not exceeding 20 ft. 2\$50, over 20 ft. 3 esc. Vessels coasting obtain a discount of 25 per cent. Vessels re-entering port within 30 days a discount of 40 per cent. Vessels calling for bunkers only, a discount of 50 per cent. on entry and departure on pilotage fees.

**PORT CHARGES.** The principal port charges at Beira are as follow—

**BLA CON AGI AND BUOYAGE**—10 centavos (gold) per ton on all merchandise loaded or discharged.

**CUSTOMS DUTIES**—Vessels from foreign ports, 12,320 reis; from a Portuguese port, 8,720 reis.

**LANDING CARGO**—7s 6d per ton of 2,240 lb. or 40 cub. ft.

**LIGHTERAGE**—7s 6d per ton.

**SHIPBROKER**—Entrance and clearance, £10 10s. Commission on freight, 5 per cent.

**STEVEDORI**—Loading or discharging, 1s to 1s 3d per ton.

**TONNAGE DUES**—Vessels with cargo to or from Beira pay 7,500 reis on tonnage under 50 (minimum 7,500 reis) up to a minimum of 45,050 reis and a maximum of 75,000 reis on tonnage from 500 to 1,000, and 25 reis per ton for every ton over 1,000.

**TOWAGE**—£20 per service.



1. View looking towards the Residential Quarter from the centre of Beira.
2. Entrance to Railway Station and Goods Yard, with Harbour in the distance.
3. Beira Club.
4. Street Scene outside the Customs House.

**SHIPPING AND TRADE.** The number of vessels entered at the port of Beira during 1924 was 472 (of which 239 were British and 78 Portuguese), of an aggregate gross tonnage of 2,001,576, compared with 474 (1,872,318 tons) in 1923. Whereas in 1913 the tonnage of goods handled at Beira was only 279,039, the tonnage handled at the port ten years later, in 1923, had increased to 524,000 and in 1924 to 611,851 tons, the latter total having been reached in spite of an unusually bad maize harvest. This was a "record" for Beira in tonnage handled, being 105,000 more than in the previous best year. The trade movement in the port during 1924 amounted to a total value of £12,712,000, of which £9,196,000 represented import and export values of Rhodesia, the Belgian Congo, and Nyassaland.

The business of the port, as reflected by the railway figures for the financial year ended September 30, 1925, showed a notable advance over that for 1923-24. Altogether the railway wharf handled 499,849 tons, which added to the 76,180 tons landed at the customs wharf, gives a total cargo movement, exclusive of transshipments in the port, of 576,029 tons in the railway year 1924-25.

The total traffic handled in the railway yard and at the railway wharf during the twelve months—dumped, sorted, and carried to and from the railway wharf—was 1,221,581 tons, an increase of 159,305 tons over the 1923-24 figures.

### REPRESENTATIVE COMMERCIAL ENTERPRISES

#### MANN, GEORGE & CO. (BEIRA) LTD.

**Inception.** Having absorbed the Beira interests of Glenn & Co. and Mann George & Co. (Delagoa) Ltd., who in turn had absorbed the interests of Torre de Valle, this company was established in 1920.

**Activities.** The firm's main activities are forwarding and shipping, marine and fire insurance, steamship agencies and general commercial representation.

**Agencies.** Among the most prominent concerns represented are: Marine and fire insurance, Yorkshire Insurance Co. Ltd., Northern Assurance Co., The World Auxiliary Insurance Corporation Ltd. Steamship agencies: American South African Line, Nippon Yusen Kaisha, Italia Steamship Co. Ltd., P. & O. Steam Navigation Co. Commercial agencies: Cooper & Nephews, South African Breweries Ltd., Ransomes, Sims & Jeffries Ltd., Baldwins Ltd., Transvaal Coal Owners' Association Ltd., Atlantic Refining Co. of Africa Ltd., Duly & Co. Ltd. (Ford car agency).

**Branches.** The parent company has its head office in London, and other offices in Great Britain at Cardiff, Newport (Mon.), Swansea, Liverpool, Glasgow, Newcastle-on-Tyne, and Hull. In North America, branches under the name of Cory Mann George Corporation operate at New York, Philadelphia, Newport News (Norfolk), and Sewalls Point (Virginia), in South America, under the designation of Mann George Depots Ltd., at Montevideo, Buenos Aires, La Plata, and Rosario. Further details of the South African organisation, Mann, George & Co. (S.A.) Ltd., established at Durban, Capetown and Walvis Bay, and the Lourenço Marques office of Mann, George & Co. (Delagoa) Ltd., may be found on pp. 241 and 351 respectively.

**Warehouse.**—A large warehouse, the property of the company, is situated at One Mile Peg, on the main line to Rhodesia.



**Office.** Rua Conselheiro Fomes, Beira (P.O. Boxes 44 and 258) Codes: Scott's 10th Edition, A.B.C. 5th Edition and Bentley's

**Bankers.** Standard Bank of South Africa Ltd. and National Bank of South Africa Ltd.

**ALLEN, WACK & SHEPHERD LTD.**

**Activities.** One of the largest and most important firms operating within the Province of Mozambique this company occupies at Beira a very prominent position in the export and import trade of the port. Among its other activities, it flourishes as wholesale and retail general merchants, carrying extensive stocks of building material, hardware, furniture, tools, electrical supplies, agricultural implements and machinery, groceries and provisions.

**Exports.** The concern handles a very large proportion of the total tonnage shipped

**Imports.** - Of the general goods imported to Rhodesia, Belgian Congo and Nyassaland, a very large part passes through the hands of Messrs. Allen, Wack & Shepherd Ltd. Forwarding agents at Beira for all the largest mining companies and merchants in those territories they represent, to the complete satisfaction of principals, the respective Governments of Southern and Northern Rhodesia, The British South Africa Co., the Globe & Phoenix Gold Mining Co. Ltd., African Explosives & Industries Ltd., The P. & O. Banking Corporation, Ltd., and others.

**Handling Facilities.** The firm's facilities for handling goods are unsurpassed at the port. It possesses extensive bonded or free warehouses for storage of general merchandise: timber, oils, etc., a private railway siding with ample open space for the accommoda-

tion of every kind of machinery, and a travelling crane capable of handling lifts up to five tons.

**Agencies.** The following steamship, marine and fire insurance and mercantile agencies are also in the capable hands of Messrs. Allen, Wack & Shepherd Ltd. at Beira -

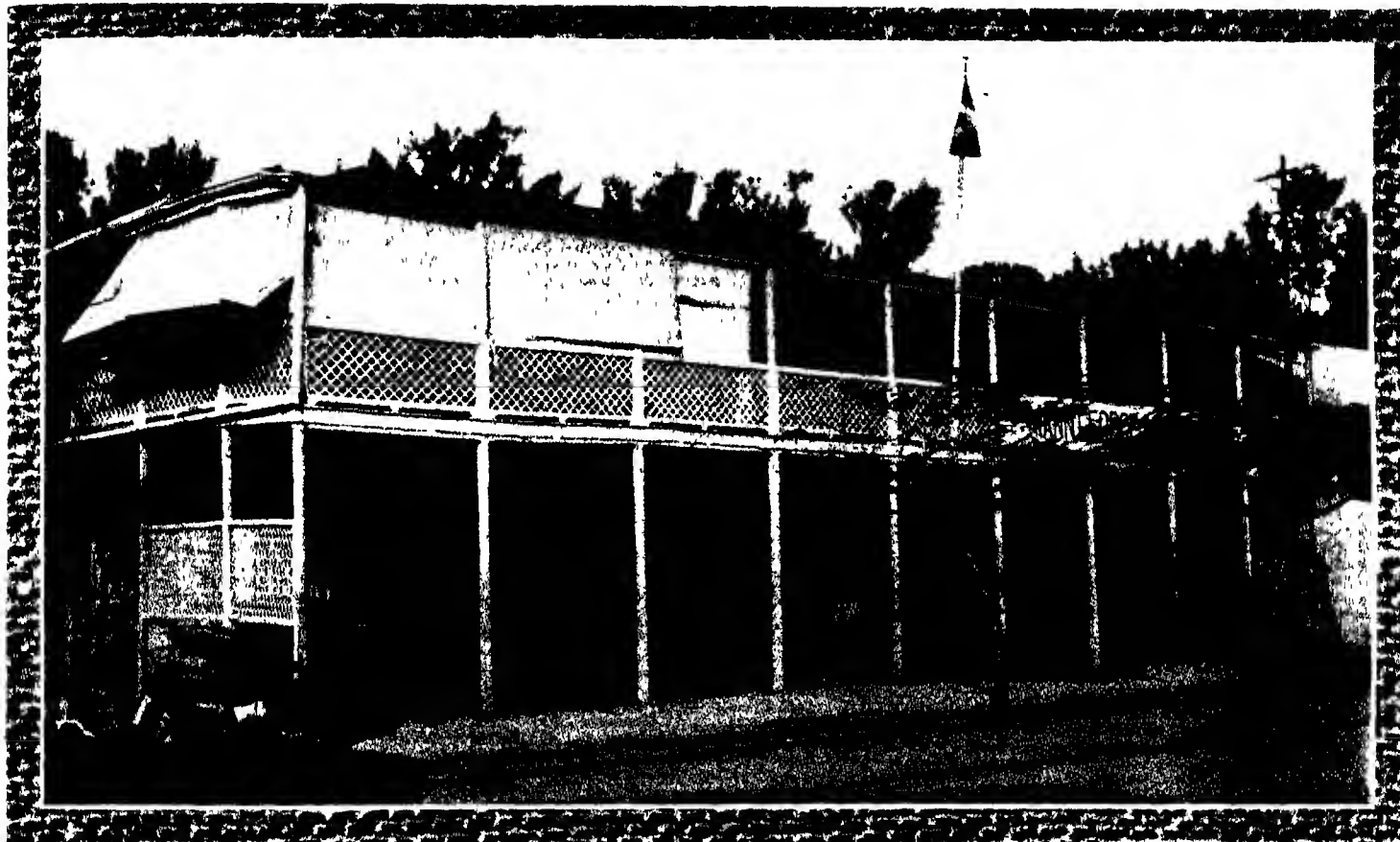
**STEAMSHIPS** - British India Steam Navigation Co. Ltd. (Bombay and Home Lines), Scandinavian Fast African Line.

**MARINE FIRE INSURANCE** - Liverpool & London & Globe Insurance Co., London & Lancashire Insurance Co. Ltd., South British Insurance Co. Ltd., Marine & General Mutual Life Assurance Society.

**MERCANTILE** - Vacuum Oil Co. of S.A. Ltd. ("Pegasus" petrol, "Laurel" and "Sunflower" paraffins, and "Gargoyle" mobiloids), John Lysaght Ltd. (galvanized, corrugated and flat iron, wire netting, etc.), Austin Motor Co. Ltd. (motor cars and farm tractors), Phosphor Bronze Co. Ltd. (manganese bronze, white anti-friction metals, etc.), British General Electric Co. Ltd. (electrical fittings, etc.), James Findlay & Co. Calcutta (twines, hessian, gunnies), Newton, Chambers & Co. Ltd. ("Izal" disinfectants), D. & J. McCullum ("Perfection" whisky), W. & A. Galbey (wines and spirits), Ross & Sons, Ltd. (Bellart mineral and tonic waters), Swallow & Ariel (biscuits, cakes, etc.), Lazenby, London (preserves and provisions), Libby, Chicago (jams, tinned meat, etc.), Heinz, Pittsburgh (tinned goods of all kinds).

**Head Office.** Johannesburg, Transvaal.

**Beira Office.** P.O. Box Nos. 270, 280, 290. Cables: "Ebanne," Beira. Codes: A.B.C.



MANN, GEORGE & CO. (BEIRA) LTD., Beira.  
The Company's Premises.

from the port of Beira principally comprising base minerals such as copper, chrome ore, lead, zinc, and asbestos from the Belgian Congo, Northern and Southern Rhodesia, and in addition considerable quantities of produce, tobacco, cotton, sisal, tea, etc., from Nyassaland and Rhodesia. The firm under notice represents at the port of Beira the following enterprises: Union Minière du Haut Katanga (copper producers, Belgian Congo), Rhodesia Chrome Mines Ltd., Rhodesian and General Asbestos Corporation Ltd., Rhodesian Broken Hill Development Co. Ltd. (lead and zinc mines, Rhodesia), Bwana M'Kubwa Copper Mining Co. Ltd. (Rhodesia), Falcon Mines, Ltd. (copper mines, Rhodesia), British Asbestos Chrome Co. Ltd. (asbestos and chrome mines, Rhodesia).

tion of every kind of machinery, and a travelling crane capable of handling lifts up to five tons.

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**MERCANTILE** - Vacuum Oil Co. of S.A. Ltd. ("Pegasus" petrol, "Laurel" and "Sunflower" paraffins, and "Gargoyle"

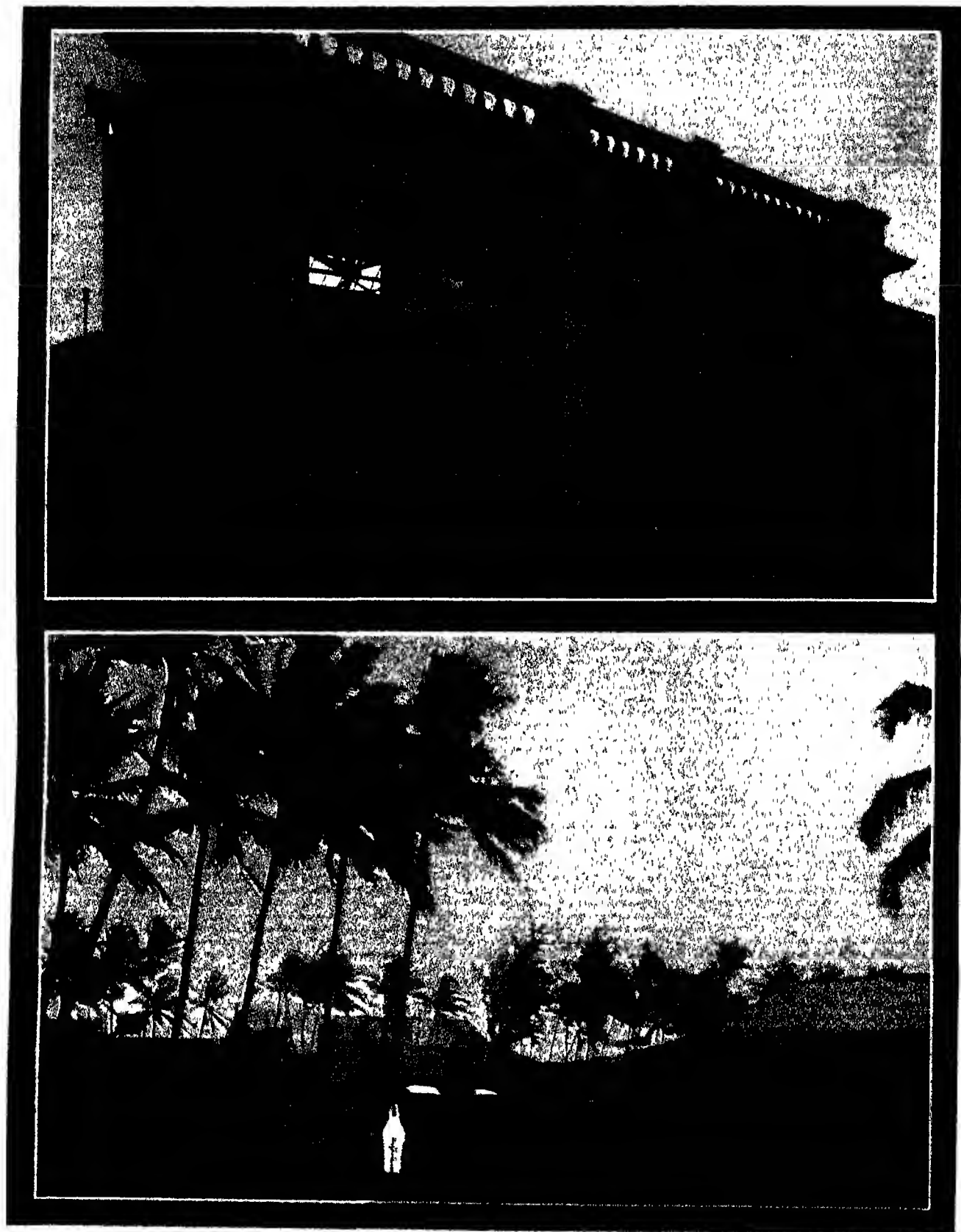
5th Edition, Scott's, Bentley's Complete Phrase, and Ribeiro.

**Branches and Agencies.** In addition to Beira, branches of the company are established at Bulawayo and Salisbury (Rhodesia), Lourenço Marques (Portuguese East Africa), and Ermelo (Transvaal), and agencies at Capetown, Port Elizabeth, Durban and Umtali.

(See illustration, page 360, also text, pages 252 and 353 Lourenço Marques.)

**ANGLO-AFRICAN TRADING CO. LTD.**

- Beira branch opened 1910. General merchants and agents. Head office: Salisbury, Rhodesia. Branches: Bulawayo, Gatooma, Hartley, Umtali and Vila Pery. London office: 9, Billiter Square, E.C. Cables: "Anglo," Beira.



ALLEN, WACK & SHEPHERD LTD., Beira.

1. Fine New Premises at Beira.
2. Portion of the Firm's Yard and Warehouses, showing Storage Facilities.

(See letterpress, page 339.)

**COMPANHIA DE MOCAMBIQUE.**

**Inception.**—Designed to administer the territory of Manica and Sofala in the Province of Mozambique, Portuguese East Africa, this company received in 1891 its Royal charter, available for 50 years and renewable.

**Capital.**—The capital of the concern is £1,500,000 in £1 ordinary shares fully issued.

**Territory.**—The territory governed has an area of about 60,000 square miles, and a population of roughly 300,000. It contains the richest soil in East Africa producing numerous varieties of tropical and sub-tropical crops, agriculture having become in recent years the main interest of its inhabitants. Virgin bush has been replaced by prosperous farms and homesteads, built under the company's concessions, which, totalling 294,888 hectares in 1915, by 1922 had risen to 891,481 hectares (approximately 2,228,000

acres). Beira. The two large companies producing sugar in the territory are the Sena Sugar Estates and the Companhia Colonial do Buzi, having respectively 15,600 and 11,000 acres under cane. In 1921 the total area of the territory under cotton was some 76 acres, and production about 22 tons of seed cotton; in 1924 the area had increased to about 10,000 acres, and production (independent of native-grown cotton on the Zambesi) to 1,500 tons of seed cotton. (Further details of the agricultural products of the area are furnished in the preceding article, "The Mozambique Company's Territory.")

**Administration.**—President of the company Dr Rui Ennes Ulrich, Managing Director, Dr Augusto Luis Vieira Soares, Governor of the territory, General Pedro Francisco Massano de Amorim, Secretary general, Colonel José Augusto Paure da Rosa.

produced 14,000 tons of sugar, and are gradually working up to the full capacity of 10,000 tons.

**Activities.**—The principal industry is the production of sugar from cane grown on 4,000 hectares (9,880 acres) on both sides of the Buzi River, a plantation that is being yearly increased. Besides the factories, there have been built up-to-date workshops, sawmills, distilleries and stores. For purposes of transport the company has an aerial ropeway across the river about 80 miles of private light railway with 6 engines and 400 trucks, a fleet of 6 big sailing ships and several motor and row boats for communication and transportation to Beira. The mail and passenger service between the estates and Beira runs three times a week by motor boat.

**Plant.** On the estates the company has a large quantity of agricultural machinery, comprising two Fowler steam engines, one



COMPANHIA DE MOCAMBIQUE, Beira  
Typical Sugar Estate in the Company's Territory.

acres). Beira, the headquarters of the administration, is the seaport not only for Manica and Sofala, but for Northern and Southern Rhodesia, Katanga and Nyassaland, and is necessarily the pivot for a heavy cargo movement. This in 1924 totalled 611,000 tons, an increase of 18½ per cent over the figure for 1923. The possibilities are incalculable, an immense augmentation of traffic being assured upon the completion of projected improvements.

**Products.**—The chief agricultural products of the territory are maize, sugar, cotton, sisal, coconuts, rubber, coffee, tobacco, rice, fruit, ground-nuts, mangrove bark and timber; among the minerals recovered are gold, copper and tin. In connection with the export of maize, the prime crop, the Companhia de Mocambique has an up-to-date cleaning and drying plant at

**Offices.**—Lisbon (head office), 10 Largo da Biblioteca Publica, London 3, Thames House, Queen Street Place, F.C.4, Paris 17, Boulevard Haussmann.

**COMPANHIA COLONIAL DO BUZI.**

**Inception.**—This prominent sugar-producing company was established in 1898 by Dr Guilherme d'Oliveira Arriaga, having its head office and directorate in Lisbon.

**Capital.** The capital of the company stands at £300,000.

**Development.**—At first only one factory (the Luzitania, standing on the left bank of the Buzi River) with a capacity of 4,000 tons was operated. In 1920 the firm bought out the Inhanguvo Sugar Estate, including a factory of 12,000 tons capacity situated almost opposite the Luzitania factory on the other side of the river. In 1924 these factories

aveling and Porter steam engine, three 10-ton Holt caterpillars, three Austin tractors and various ploughs, harrows, ditchers and ridgers. The land is irrigated by steam power, the various pumps pouring 40,000 gallons of water per minute through 50 miles of conductors.

**Other Property.** The company's other property includes several hundred head of cattle for work and for meat supplies, large areas of land covering tracts fit for any culture, and vast forests of timber. It owns also a coconut plantation, which is increased yearly, and grows enough maize to feed the 3,500 native employees.

**Offices.**—Lisbon (head office) Avenida da Liberdade, 7 R/C Lisbon, Beira P.O. Box No 68 Cables "Izuba," Beira (See illustration, page 362.)

**H. G. D'ALMEIDA LTD.** Founded in 1915 by Mr H. G. d'Almeida, this firm carries on business as general importers and exporters, commission agents, clearing, forwarding and shipping agents, and manufacturers' representatives. They are indentors in a large way for all classes of cotton goods, kaffir truck, hardware, glassware, wines, stationery, preserves, provisions, biscuits, beer and spirits, etc. Among the concerns for which H. G. d'Almeida Ltd. act as agents

Mozambique, and is open to accept a few reliable agencies. Correspondence is carried out in English, Portuguese, French, Spanish and Italian. At Beira, Messrs H. G. d'Almeida, Ltd. are owners of the premises which house their offices and showrooms, and which provide ample accommodation both for storage and display. The partners are Mr J. George d'Almeida, jun., and the heirs of Mr Joao George d'Almeida, while the manager is Mr Afonso Henriques

importers, wholesale and retail merchants, exporters, ice and mineral water manufacturers, cold storage warehousemen, chemists and druggists (wholesale and retail), and cattle ranchers and farmers. The export department is chiefly concerned with maize, groundnuts, cotton, mangrove bark and hardwood timber, while the principal imports handled are electrical goods, Portland cement, hardware, wines and spirits, all kinds of provisions, chemicals, crockery, cigars and piece goods. The company can store any perishable goods in its refrigerating rooms, which are open daily from 7 to 8 a.m. and 3 to 4 p.m., and specialises in crystallised ice manufactured from rain water which is automatically filtered. Two properties are owned by the company, producing both cotton and maize, one, "Inhaune" at Vila Pevy, of 1,200 hectares (approx. 3,000 acres) and the other, "Muda," covering 1,800 hectares (approx. 4,500 acres). On these farms cattle are also run, "Inhaune" stocking some 200 head and "Muda" about 125. A considerable quantity of maize is handled for local consumption, being ground at the company's own mill. Among the agencies held are Siemens (S.A.) Ltd., electrical engineers, Osram G.m.b.H. electric lamps, Siemens Bannion, concrete constructions, Protos automobile G.m.b.H., Ozongesellschaft, water sterilising plants, Lanum Bros Ltd., Portland cement, etc., Naaml Venn "Isola," boiler coating and insulating material, Hulstkamp & Zin & Molyn gin and hquments, Hickman & Bros., provisions, C. J. van Houten & Zin, cocoa and chocolates, Jute Industries Ltd., Dundee, etc. The directors are Dr Jose Arango de Lacerda, Sms Germanio da Costa Campos and Lcio Abudarrham. Cables, "Industrial," Beira. Codes A.B.C. 6th Edition and Ribeiro.

**QUEEN'S HOTEL.** The situation of an hotel is a question of prime importance to all travellers in tropical or sub-tropical countries, the principal essentials being coolness, comfort, accessibility and attractiveness of outlook. From all these points of view the Queen's Hotel at Beira is in an ideal position. It faces the sea and overlooks the Esplanade Gardens, while both the verandah and the balcony give an uninterrupted view of all shipping and movement in the harbour. Besides this, it has the advantage of being the nearest hotel to the landing jetty and to the railway station, while at the same time standing within easy reach of the shops and main business quarters of the town, so that the traveller will find it in every way convenient for all purposes. The accommodation is good in every particular, the service and attention to the wants of visitors expeditious and obliging, and the cuisine all that may be desired. There are the usual public rooms, a good billiard room and a comfortably furnished smoking room. The terms are moderate, ranging from 12s 6d to 15s a day, special charges being made by arrangement for weekly or monthly residents. Porters from the hotel meet all mail trains. The proprietor is Mr D. Philipatos.

**A. BROOK.** This firm of wholesale and retail general merchants was founded in the year 1908 by the present proprietor, whose name it bears. It is a direct importer of gold and silver ware, jewellery, watches, smokers' requisites, fancy goods and perfumes, photographic materials and cameras, and of ladies' and gentlemen's clothing. These articles are dealt with by the various departments into which the business of the firm is divided, the different sections corresponding in the main to the list of imported goods already detailed. Especial attention is paid to the requirements of tourists and travellers, who will find almost



**COMPANHIA COLONIAL DO BUZI, Beira**

1. Inhanguvo Factory.
2. Aerial Ropeway constructed to transport 50 tons of Sugar Cane per hour between the banks of the River.

(See letterpress, page 361)

are the following: Companhia da Zambesia, R. Companhia Vinicola do Norte de Portugal, Cordeiro, Santos & Ferreira Ltda., Prices (South Africa) Ltd., Bakers Ltd., Pearson's Hycol Ltd., Handelshuis "Insulinde," Rand Tobacco Co., Sociedade Colonial de Tabacos Ltda., African Guarantee & Indemnity Co. Ltd., The Italian Warehouse Co. Ltd., United Macaroni Factories Ltd., H. Jones & Co., Minimax (S.A.) Ltd., United South Africa Enamel Co. Ltd., The Nectar Tea & Coffee Co. Ltd., R. Wood Glass & Co. Ltd., R. B. Calder & Co., R. G. Dunn & Co., etc. The firm has branches in Lisbon, Lourenço Marques, Quelimane and

d'Almeida. The firm's bankers are the National Bank of South Africa Ltd., the Standard Bank of South Africa Ltd., and the Banco da Beira. Cables "d'Almeida," Beira. Codes A.B.C. 5th and 6th editions, and Bentley's.

#### **COMPANHIA INDUSTRIAL DA BEIRA.**

—The business carried on by this organisation, which is a Portuguese concern, was established in 1905 as Santos Silva, E. Fernandes & Graca, being taken over by the present company in 1920. The authorised capital is £75,000, composed of 37,500 shares of £2 each fully paid. The company acts as direct

anything they require from hand-dressing to a complete outfit. There is one department which contains an interesting collection of curios of the country, as well as a varied selection of postcards with views of Beira and of the territory of the Companhia de Mocim-bique. The premises owned by the firm are entirely self-contained, being a two-storeyed building, situated in the main business centre of the town close to all the banks and just opposite the Savoy Hotel. Address: P.O. Box 51, Beira. Cables: "Casabrook," Beira. Code: Bentley's.

**OLIVEIRA DA SILVA, LTD.** In addition to carrying on business as general merchants and commission agents, the firm under notice is co-partner in the Sindicato Agrícola do Tembe Ltda. and the Sindicato do Revue Ltda., landowners, farmers and ranchers. The side of the business devoted to general merchandise comprises the following sections: Drapery, jewellery, stationery, tailoring and outfitting. In all these departments a large stock of articles of good quality and the latest imported novelties is always carried. The farming and ranching concerns in which the firm is interested are of considerable importance. The Sindicato Agrícola do Tembe Ltda. is a property of 12,500 acres, yielding an average crop of 15,000 bags of maize a year, while cotton was tried for the first time in 1925 over an area of 500 acres. Cattle are also reared on this estate, the herds numbering about 1,000 head of the Indian (Zebu) type, crossbred with South Devon and Hereford. The farm and ranch rank among the best of their kind in the colony. The property owned in conjunction with the Sindicato do Revue Ltda. is larger, being 50,000 acres in extent and lying 4 to 18 miles from the Beira & Mashonaland Railway. This concession runs beside the Revue River, and, as well as being excellent land for maize, cotton, sisal, citrus and oil seeds, also extends over areas with mineral resources. The existence of gold and other minerals was proved by the exploration conducted by Mr. F. O. Thiele, M.Sc., F.G.S., and Mr. R. C. Wilson, B.Sc., F.G.S., in connection with the Imperial Institute. These lands are sold freehold in plots of about 2,000 acres, and the company invites correspondence from any persons interested. Address: P.O. Box 400, Beira. Cables: "Speshona," Beira. Code used: A.B.C. 6th Edition.

**BEIRA GENERAL AGENCY, LTD.** Lawyers, attorneys, legal, commercial commission and forwarding agents, manufacturers' representatives, imports, exports and insurance. Cables: "Agencia," Beira.

**EASTERN AND SOUTH AFRICAN TELEGRAPH CO. LTD.** Beira. Cable communication "Via Eastern," direct cables north to Quelimane and Mozambique, south to Durban and Lourenço Marques.

**GALLE, FOSSATI, LTDA.**—P.O. Box No. 254, Beira. Capital 78,500. Importers and exporters. Cables: "Fogal," Beira.

**MANICA TRADING CO. LTD.** Established in Beira 30 years. Import, export, commission, forwarding, insurance and shipping agents. Cables: "Marrojar," Beira.

**NATIONAL BANK OF SOUTH AFRICA, LTD.**—Established April 1891. Beira branch transacts banking business of every description. Head office: Pretoria, Transvaal. Cables: "Nation," Beira. (See also "Finance" Section, Union of South Africa.)

**STANDARD BANK OF SOUTH AFRICA, LTD.**—Beira branch established 30 years. Head office: London. Head office for S.A. Capetown. Cables: "Derby," Beira. (See also "Finance," Union of South Africa.)

## OTHER TOWNS AND PORTS

### CHINDE

Formerly the port of entry for Nyassaland and the eastern portion of Northern Rhodesia, Chinde is situated on one of the mouths of the Zambezi River, 62 miles from Quelimane, 141 from Beira, and 908 from Durban. Since the opening of the Beira-Chinde line in 1922 Chinde has lost much of its importance, and the river services to Nyassaland have been discontinued, but a considerable traffic in sugar and sisal from the estates on the river banks remains.

### INHAMBANE

This is a port of call for ocean-going steamers, a wireless station and the chief town of the district of Inhambane, which has an area of 33,000 square miles and a native population of 750,000. The harbor is spacious and safe, and the town, one of the oldest Portuguese settlements, picturesque and progressive. Cattle raising and agriculture are carried on in the district and groundnuts, rubber, mufum, maize, copra, and beeswax are exported.

### MOZAMBIQUE

Founded in 1508, the town of Mozambique, situated on a small coral island three miles from the mainland, was for many years the official headquarters of the Portuguese East African settlements. The harbor is well protected by the two smaller islands of St. George (Goa) and St. Jago, and is the centre

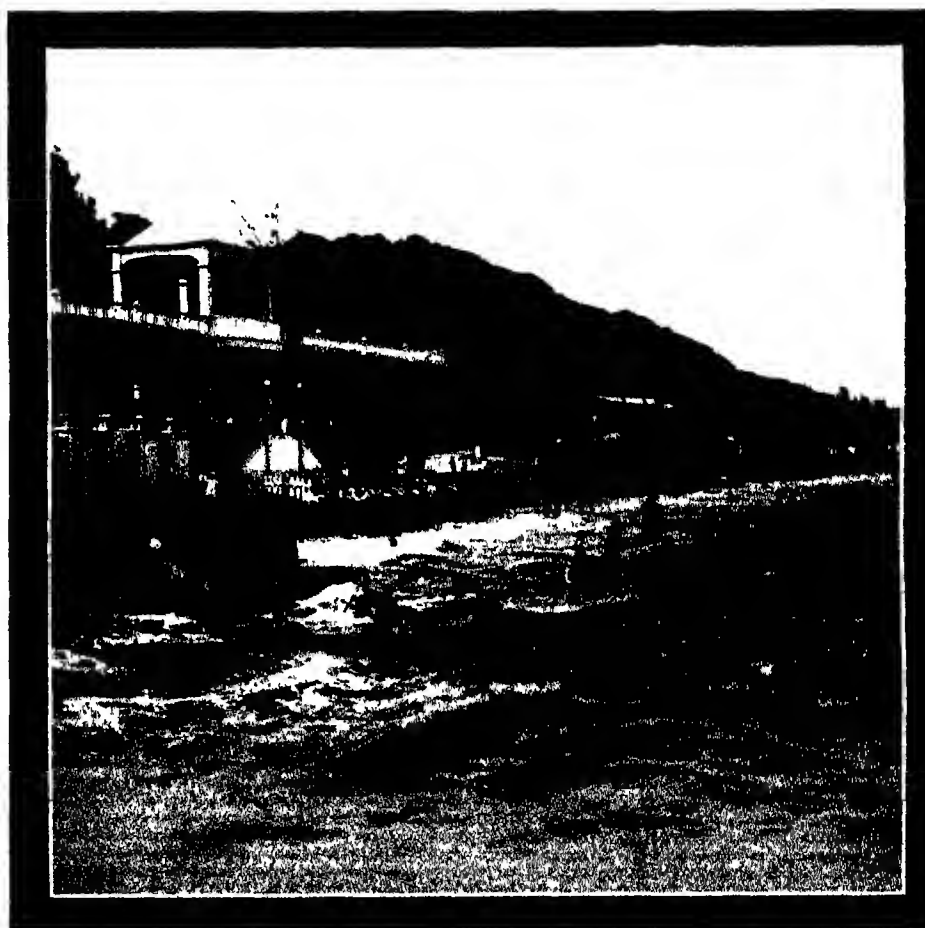
of a growing trade, a large part of the exports from the smaller harbours along the coast being assembled here. The town is substantially built, with an old Fort, Governor's Palace, three Churches, and a large modern hospital. The population numbers about 4,500. Mozambique is a cable station of the Eastern Telegraph Company and of the French Madagascar Cable Company, and possesses a wireless installation.

### QUELIMANE

A town and port of some 3,000 inhabitants, Quelimane is 12 miles from the mouth of the Rio de Boas Signaes, 300 miles south of Mozambique and 62 miles from Chinde. The harbor, available for ocean-going vessels and protected by the Qua-Qua bar, is situated near one of the mouths of the Zambezi River, which however, is not navigable as far as the main stream. Passengers are landed in motor launches. A wireless station has been erected. Quelimane is the centre of a very fertile agricultural district, with growing exports of sugar, copra, sisal, and rubber.

### TETE

Tete (native Nyimwe) where a Portuguese military station has been in existence for nearly 300 years, is a telegraphic centre and wireless station. The white population, including the military, is about 400. The position of Tete will become one of importance when the Zambezi has been bridged and railway connection made with the great coalfield on the northern bank.



POLANA BEACH, LOURENÇO MARQUES.



## AGRICULTURE AND OTHER INDUSTRIES

**E**XCEPT for a small number of European farmers, concentrated for the most part in the vicinity of Lourenço Marques, Vila Nova de Gaia, Inhambane, and along the Beira and Mashonaland Railway, agriculture in Portuguese East Africa is carried on mainly by large plantation companies or by native villagers on their own account.

**CROPS.** The most important crops are coconut, cotton, fruit, maize, sisal, hemp and sugar.

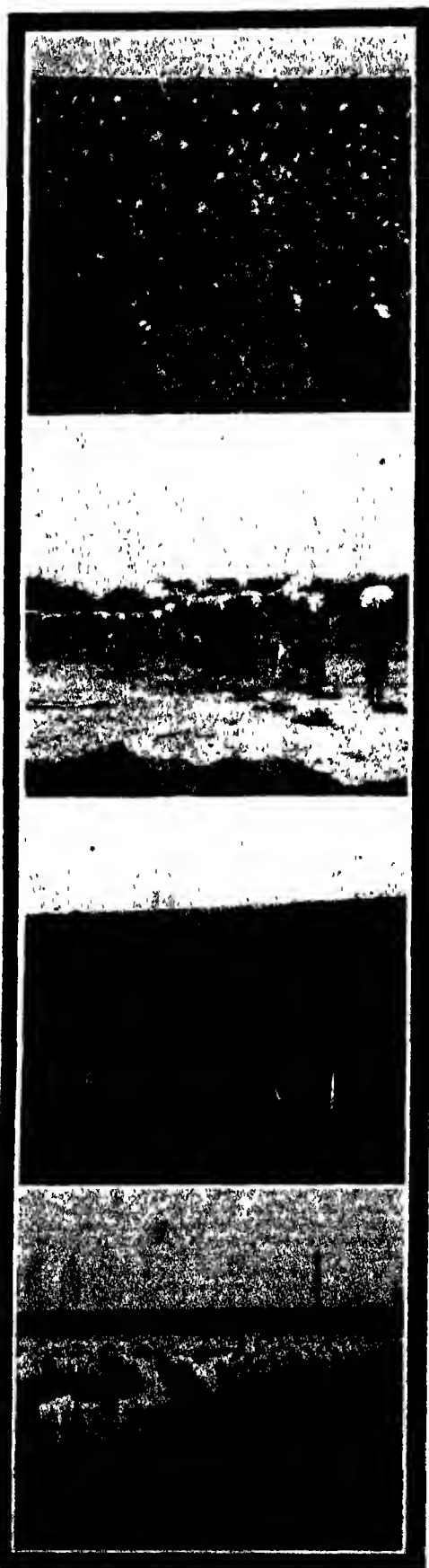
**COCONUTS.** After sugar, the cultivation of coconuts occupies second place among the plantation industries. In general, the coconut seems to grow best in the north of the Zambezi mouth, where it is extensively cultivated by the large *prazo* companies, such as the Zambesia, the Boror, which claims to possess more coconut trees than any single proprietor in the world (see text, page 349), the *Empreza Agricola do Lugella* and the *Madal* companies. Very large areas are planted with coconuts in the Quelimane district, and contain over 5,000 palms. There are also many coconut plantations along the coast of the Mozambique district and the Nvassa Company's territory. In 1924 the *Companhia Colonial do Buzi* collected over 308,000 nuts (see article, page 361) and the Inhambane district alone has about 2,000,000 palms.

**COTTON.** It is likely that a great development of the cotton industry will take place before very long in Mozambique, since during the last few years it has been the subject of great agricultural activity. As far, indeed, as natural advantages of soil and climate are concerned, Portuguese East Africa would appear to offer superior attractions for cotton growing to those of any other part of South Africa. During the season 1924-25 over 600 tons of lint of a quality which commands a premium of 2d per lb over middling American was ginned by the Mozambique Industrial and Commercial Company at Chemba, and probably even more than this amount was produced by the European farmers along the Beira and Mashonaland railway.

**FRUITS.** Fruit-growing - principally bananas, citrus fruits, and pineapples - offers possibilities of much promise to European farmers in Portuguese East Africa, though up to the present no large export trade has been developed. Many European fruits, such as strawberries, pears, figs, peaches, melons, and grapes, do well in the Alto Molecue circumscription of the Quelimane district, and there are other elevated regions, at present too remote from centres of population or from the nearest port, where the growth of temperate fruits will eventually be practicable. The vine grows well at Chinde and Quelimane, and in this region, amongst others, tropical fruits such as the pawpaw, custard apple, mango, guava, and banana, also flourish.

**MAIZE.** --- Maize growing on a large scale has been confined almost entirely to the Mozambique Company's territory, in which the annual production has averaged about 50,000 tons. The exports from the State-administered districts have hitherto been small, but only the provision of adequate transport facilities is needed to enable the production of this crop to be expanded.

**SISAL HEMP.** --- The cultivation of sisal hemp has been successfully established at various points in the Province, the annual output of fibre being about 6,000 tons. The chief centre is the Quelimane district, where



COMPANHIA DE MOCAMBIQUE.

1. Cotton Grounds at Morraca.
2. Cotton grown by the Natives being transported to the Gleanery at Chemba for sale.
3. Sisal Field at Chapungu.
4. Sisal Factory at Chapungu.

(See *Interpress*, page 361.)

large fibre factories are owned by the Zambesia, Boror and other companies. It is probable that much more land will be soon brought under this cultivation.

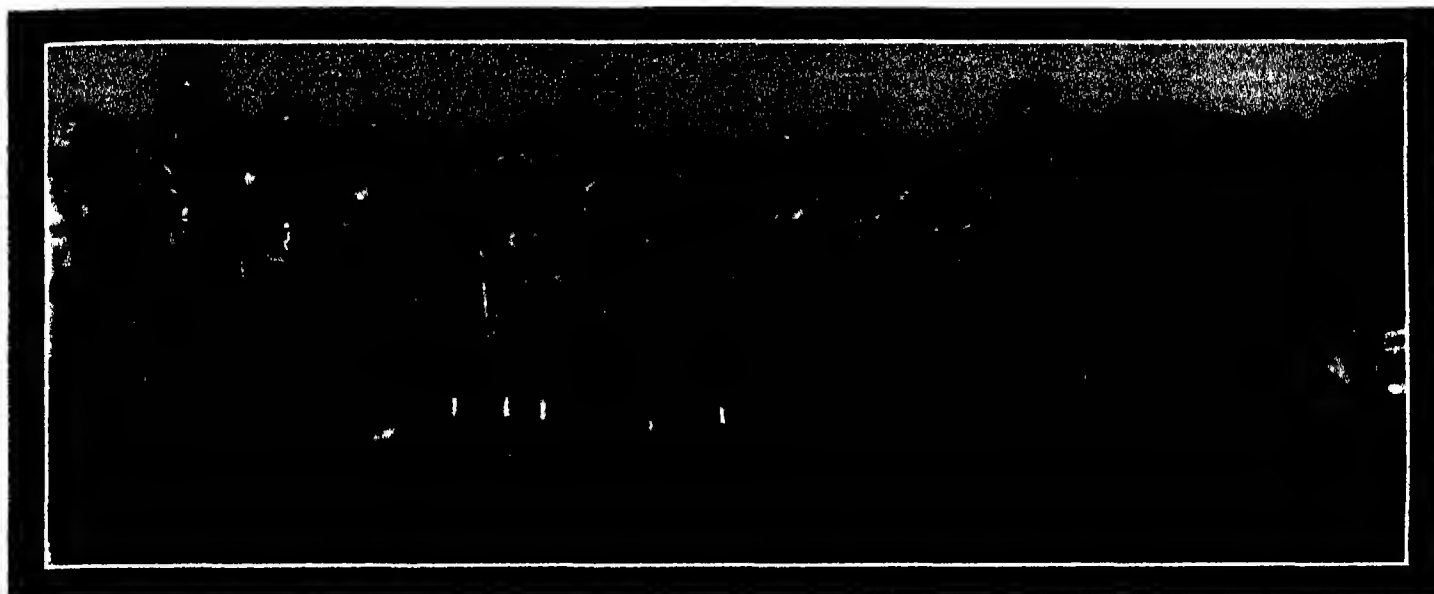
**SUGAR.** --- Pride of place among the plantation industries of the Province is enjoyed by sugar, of which culture the chief centre of cultivation is the Lower Zambezi Valley, where, in 1924, the four factories owned by the Sena Sugar Estates, Limited, produced just under 40,000 tons of sugar, the output for 1925 suffering a decline owing to the heavy floods of that year. The *Companhia Colonial do Buzi* owns a large acreage with two factories of an aggregate capacity of 16,000 tons of sugar per annum at Nova Luzitama on the Buzi River near Feira (see text, page 361). Sugar is also grown and produced extensively along the Namavane railway and near Inhambane. The further development of this important industry is only delayed by the uncertainty as to the trend of sugar prices, and when this is relieved many new enterprises will be initiated.

**VARIOUS PRODUCTS.** Other crops which are at present grown only on a small scale, but can be expanded indefinitely, are tobacco, kapok, coffee, and castor beans. The only existing tea plantations are in the interior of the Quelimane district, where the exceptional rainfall conditions required by this plant exist. Rubber plantations (mainly Ceara) are in the same district and elsewhere, but little has been done in the way of planting and tapping.

**LIVESTOCK.** Of recent years stock-raising has made rapid strides in the Province, especially in the districts of Lourenço Marques, Gaia and Iete. The last statistical returns taken in 1922 showed 271,302 head of cattle in the country. Good natural conditions for cattle-raising on a large scale prevail in the Lourenço Marques and Gaia districts, but in many places the tick offers tremendous difficulties to those engaging in the industry. Against this enemy, however, the Veterinary Department is employing its best efforts, and there are now 24 public and 40 private dipping tanks in the country. Stock-raising is meeting with every possible assistance at the hands of the Government.

**MANUFACTURING INDUSTRIES.** --- With the exception of factories connected with plantation industries, such as sugar, sisal and oil seed mills, the industrial undertakings of the Province are naturally concentrated at Lourenço Marques and Beira, the chief centres of population. At Motolla, near Lourenço Marques, are extensive cold storage works. Certain industrial undertakings such as cement-making, soap-making, leather-making, the manufacture of paper, parchment and pulp, and of ropes, coir matting, sacks, twine, and carpets, are reserved to certain companies which hold monopolies for a term of years. In the Mozambique Company's territory industrial development is largely associated with the *Companhia Colonial do Buzi* (see page 361).

**MINERAL PRODUCTION.** The only mining of any note carried on in Portuguese East Africa is in the territory of the *Companhia de Mocambique*, in Manicaland, which has regular monthly outputs of gold and copper. During the early days of Portuguese settlement it is estimated that the gold recovered amounted to at least £1,000,000 per annum. In the district of Lourenço Marques prospecting for minerals has been going on since 1920, though no definite results are as yet available. Tin and asbestos have been proved in the Chartered Companies' territories, and coal is known to exist in the Sabie region of Lourenço Marques.



A GROUP OF KIKUYU NATIVES, KENYA COLONY.

# KENYA COLONY

## PHYSICAL GEOGRAPHY



**K**ENYA Colony and Protectorate (formerly British East Africa) extending along the Indian Ocean from the Umba to the Juba River and inland as far as Uganda, include within their confines certain mainland territories of the Sultan of Zanzibar, which are held on lease by Great Britain. The whole occupies an area of 209,248 square miles (about equal to that of France) exclusive of the province of Jubaland, which was ceded to Italy by treaty in 1925.

**CLIMATE.**--The climate of Kenya affords a very wide range in temperature, from Lamu,

where the mean in the shade is 80° F. to Lamuru, where the average is recorded at 57.5° F. This diversity is principally due to the variance of altitudes obtaining in the colony, with a consequent decrease of heat at the higher stations. The coast belt, though hot and at times humid, is fairly healthy for the tropics. The hottest season at the coast extends from January to April, during which period the mean shade temperature averages 80.2° at Mombasa. The Highlands can, generally speaking, be regarded as healthy. At Nairobi, although at times hot at mid-day and early afternoon, the evenings and nights are almost invariably pleasantly cool or even sufficiently cold to warrant the lighting of fires and the need for extra blankets. The mean shade temperature at Nairobi is 65.5°. At higher altitudes it becomes correspondingly cooler,

and at some stations frost is by no means uncommon at certain times of the year, but fortunately is seldom attended by disastrous effects. The rainfall is good and generally well distributed.

**FAUNA AND FLORA.**--Both the fauna and flora of the Colony and Protectorate are exceedingly interesting, being rich and varied. While the gradual settlement of the country has necessarily denuded parts of the region of all game save the ubiquitous zebra and an occasional small buck, many districts can still show herds that would form a game reserve in less fortunate parts of Africa. Numbers of the wild and savage animals of Equatorial Africa are in abundance, the elephant is found in every district, rhinoceros are still common in some of the forest and much of the bush country, the hippopotamus is in most of the rivers and



1 &amp; 2. VIEWS OF MOUNT KENYA. KENYA COLONY ALSO HAS ITS ETERNAL SNOWS.

lakes, antelopes, gazelles and buffalo are numerous, as are giraffe, and the game birds of the continent are well represented.

**PHYSICAL FEATURES.** The surface of Kenya Colony consists broadly of (a) a low lying region, less than 3,000 ft. in height and comprising about three-fifths of the total area of the colony, which is poorly watered and mostly covered with thorn scrub, (b) a plateau raised by volcanic action to a height varying from 3,000 to 7,000 ft., and extending in a westerly direction. It continues in the south across the Tanganyika boundary, and in the north extends to about 70 miles beyond Mount Elgon. This plateau is characterised by extensive open plains, such as those of the Athi River and the Usim Gashu district, (c) the Great Rift Valley, formed by the subsidence of a portion of the elevated plateau. It contains Lake Rudolf and numerous smaller lakes, some of fresh water and others impregnated with soda, and many extinct volcanic craters. Extending in a generally northward direction, the eastern wall is formed by the Aberdare Range and the Lukipia escarpment. The western wall consists of the Mau escarpment which is known as the Elgeyo escarpment in the north. Mount Kenya (17,910 ft.) is the highest mountain in the colony, and the only one under perpetual snow and ice. Mount Elgon (11,140 ft.), which, like Mount Kenya is an extinct volcano, is slightly below the snow level. Mounts Settima and Kinangop are the highest peaks in the Aberdare Range.

**RIVER SYSTEM.** The most important river as regards length is the Jubu, whose head streams rise in Abyssinia, and whose total course may be some 1,000 miles in length. Only a small portion is suitable for navigation all the year round. The Tana flows from the slopes of Mount Kenya and the Kikuyu Highlands, and, with a total length of 500 miles, is navigable for about 300. Mount Kenya and the Aberdare Range also give rise to the Athi River, which drains the country to the south east. Its principal tributary is the Isavo, which rises in Mount Kilimanjaro. Below the junction with the Isavo the Athi is known as the Subaki, and enters the sea some eight miles north of the Malindi.

## HISTORY

**T**HE history of British East Africa from the white man's point of view, that is so far as written records extend, is very meagre prior to the celebrated journey of Joseph Thomson in 1882. As far back as the thirteenth and fourteenth centuries Arab enterprise had established important trading centres along the coast, but towards the end of the fifteenth century the Portuguese came on the scene, and rapidly reduced to submission all Arab cities and states along the East African seaboard, their largest and most important settlement being at Mombasa, where they built the great fort which stands to-day. Towards the end of the seventeenth century began a renaissance of Arab power on the east coast, with the result that, after being twice lost to Portugal and twice regained, Mombasa fell finally into the hands of the Arabs, and by 1730 there was not a vestige of Portuguese power left in equatorial East Africa. Henceforth the fate of the Mombasa coast line was much mixed up with that of Zanzibar, the princely family of the Mazini more or less ruling the Mombasa hinterland till 1896.

**1882-1914 : DISCOVERY OF MOUNTS KILIMANJARO AND KENYA. FOUNDATION OF BRITISH EAST AFRICA COMPANY.** As early as 1848 and 1849 two German missionaries, Reimann and Knapf, had discovered the great snow mountains Kenya and Kilimanjaro, while in 1871 Kilimanjaro had been ascended as far as its snow limit, about 14,000 feet, by a British missionary, the Rev. Charles New. To Joseph Thomson, however, who was sent out by the Royal Geographical Society in 1882, belongs the honour of locating the then almost mythical Mount Kenya and examining the north side of Kilimanjaro. As a consequence the British flag was hoisted over the region by Sir H. H. Johnston in 1884, and the Imperial British East Africa Company was formed to administer and develop the country north of Kilimanjaro (which remained in German hands) and south of the Sultanate of Zanzibar. The charter of the Company was recalled in 1895, and from that year the British Government directly administered its East

African territory, which by various arrangements was extended eastwards to the shores of the Victoria Nyanza and the slopes of Mount Elgon, and northward to Lake Rudolf and the Abyssinian and Italian Somaliland frontiers. Some fighting with the Arabs and native tribes took place, but with the construction of the Uganda Railway the initial object of which was to do away with the slave trade which flourished inland, the country became more open to settlement, and began to develop steadily, if slowly.

**1914-1925 . THE WORLD WAR. BRITISH EAST AFRICA BECOMES KENYA COLONY. STEADY DEVELOPMENT.** When the World War broke out in 1914 nearly all the military forces of the Protectorate—one battalion and two companies of the King's African Rifles—happened to be engaged on a punitive expedition on the Abyssinian frontier, the region most distant from the frontier of German East Africa. The majority of the male settlers, however, volunteered for active service, and two East African regiments were formed, which, with the forces from South Africa did great work throughout the campaign which lasted, so far as Kenya was concerned, until 1916, but until the Armistice itself in German East and Portuguese East Africa (see Union of South Africa History).

With the declaration of peace and the surrender of Germany's overseas colonies, the neighbouring territory of German East Africa became the Tanganyika Territory, and in 1920 in British East Africa itself the change from a Protectorate to Crown Colony status was effected, the name Kenya Colony and Protectorate being given to the region. At the same time an elective element for Europeans was introduced into the Legislative Council. The previous year had been notable for a currency crisis, which was eventually relieved by the abandonment of the rupee system and the substitution of an East African silver coinage. The inevitable slump in trade and financial stringency which followed the War were gradually weathered, and in 1924 the visit of T. R. H. the Duke and Duchess of York to the Empire's youngest colony proved, by the interest it aroused and the enthusiastic welcome which attended it,



**EAST AFRICAN GOVERNORS.**

A Group taken at a Meeting held at Nairobi in 1926.

Left to Right: Mr. A. C. Helms (Zanzibar), Sir William Gowers (Uganda), Sir Herbert Stanley (Northern Rhodesia), Sir Edward Grigg (Kenya), Sir Charles Bowring (Nyassaland), Sir Donald Cameron (Tanganyika), and Mr. C. F. Lyall (Civil Secretary, Sudan).

the progress that had been made in all directions since the establishment of British rule. In 1925, by a treaty with Italy, the right bank of the river Juba and the port of Kismayu were transferred to Italian Somaliland.

## PEOPLES

**T**HE population of Kenya Colony, which, at the census of 1921 was recorded as 2,803,721, is roughly divided into three classes, viz., (1) the Europeans, a small but virile group, numbering about 10,000, and consisting of farmers, commercial men, and Government officials, (2) the Indians, who are mainly artisans and traders and number about 23,000, and (3) the Arabs and Africans, totalling about 2,770,000.

**CENSUS (NON-NATIVE).** In 1926 a census of the non-native population of the colony was taken, the figures returned being Europeans, 12,505; Indians, 26,758; Arabs, 10,552; others, 3,821; total non-natives, 53,636. Compared with 1921, these figures show an increase in the European population of 28.54, and of the Indians of 3.936. The occupation group numbers 1,511 agriculturists on their own account.

**ETHNOLOGY.** The people of East Africa, unlike those of Central Africa, are very varied racially. Putting aside the Europeans who have settled on the uplands of Kenya and in administrative centres, the dominant types are those of Andorobo, Arab, Bantu, Ja-luo, Masai, and Somali descent. The bulk of the negro population is of Bantu descent (that is, so far as its linguistics are concerned), and can be sub-divided into an almost indefinite number of tribes and clans. The Somalis or Gahs are of a negroid rather than a negro type, and were at one time bitterly hostile to British rule. The Masai were formerly nomadic and predatory in their habits, but have submitted more easily than most to the white man's rule and influence. The Ja-luo, commonly called the Kavirondo, inhabit the western part of East Africa, and still go about naked and unshamed.

**LABOUR.** The immigration of Europeans into Kenya, which became considerable about the year 1904, started the industrial employment of East African natives on a large scale, and in 1906 the first Masters and Servants Ordinance became law, many amending ordinances having since been introduced. A system of inspection of labour camps and general labour conditions was instituted in 1919, mainly with a view to improving the conditions in the railway fuel camps between Nairobi and Mombasa. It has since been extended both to estates and industries where large numbers of long contract labourers are employed, and also to railways under construction. The objects of this system are beneficial to the native in effecting the recovery of wages from defaulting employers, compensating injured workmen, remitting wages of deceased labourers to their relatives, and supervising the general welfare of natives travelling in search of employment. The benefits derived by the employer are not less important. His easy access to the law is ensured in cases of native inefficiency, insubordination or desertion, or in any of the many cases in which the law may be broken by his employees.

Skilled labour in the colony is mainly supplied by Indian artisans, good native artisans at present being scarce. There are, however, plenty of natives capable of dressing



THE OLD FORT AT MOMBASA

stone, brick laying and rough carpentry. The native population also provide practically all the domestic servants, motor and cart drivers. The unskilled labour is supplied entirely by natives, chiefly of the Kavirondo and Kikuyu tribes. With the growth of the coffee industry and other crops the supply of native labour, besides being irregular, is often insufficient, and in 1926 it was decided to resort to a modified system of indentured workers, supplies to be drawn from Portuguese East Africa.

**WAGES.** The average rate of wages for unskilled labour in Kenya rose from about Sh 4 per month in 1905 to Sh 10 per month in the highlands and Sh 16 on the coast in 1925. Natives on 'long contracts' (e.g. over one month) receive usually a minimum wage of Sh 12 monthly. In addition a daily food ration of 2 lbs of mealie meal is generally given. Conditions as to food, blankets, etc., are mutually agreed upon and specified in the written contract, the Government having prescribed a minimum scale. Native artisans usually receive from Sh 1.50 to Sh 3 per day without food.

**PRESS.**—See under "Nairobi."

**SCHOOLS.**—Education in the East African Protectorate began in 1904 with the appointment of an official of the Indian Educational Department as headmaster of the Railway School, Nairobi. At that time there were few Europeans in the country, and education was required only for the children of European, Eurasian and Indian immigrants on the Uganda Railway. In 1908 the first Indian school was opened at Nairobi, and in 1910 a Board of Education was appointed by the then Governor, Sir Percy Grouard. The Board immediately proceeded to separate the provision for European, Indian, Arab and African education, and a European school was established in the former Police Barracks next to Government House. This school opened with 110 children, and gradually the

number was increased until a maximum of about 250 pupils was reached in 1918. The number of pupils at the combined Day and Boarding School, Nairobi is now 240. Both the Cambridge Junior Local and the London University Matriculation Examinations are taken by Nairobi pupils. European day and boarding schools are also established at Nakuru and Eldoret, the school at the latter town being used largely by the children of the British South African and Dutch residents of the Usam Gishu Plateau. These three schools are now full, and additional accommodation is required.

**ARAB EDUCATION.**—The education of the Arabs has always presented many difficulties, the chief of them being the former submission of the race to a mild system of slavery and their present condition of poverty and indolence. The Arab school at Mombasa provides an elementary curriculum in Kiswahili and in English, and boys on leaving seek employment in the Government or private offices in Mombasa. Proposals are now being entertained for considerably extending and raising the standard of Arab education.

**INDIAN EDUCATION.**—Considerable credit attaches to the Indian community of Kenya for the endeavour it has made to provide education in all centres, particular attention being given to the instruction of girls and raising of the standard of womanhood. With regard to boys' education, the Government school at Nairobi, where Indian languages are freely taught, now has over 400 pupils. Lads are trained here for the Cambridge Local Examinations. A large Indian school at Mombasa prepares its pupils for the Bombay University as well as for English examinations. Small Indian schools also exist at Naivasha, Kisumu, Fort Hall and Machakos, and the majority of private schools are in receipt of a grant-in-aid from the Government.

**NATIVE EDUCATION.** The education of Africans by the Government did not commence until 1911, when the system of grants-in-aid to the Mission Schools was instituted. At that time a grant of £2 per pupil was made for the purchase of tools and an annual grant of £5 for each pupil who passed an examination set by the Public Works, Medical or other Department. Since 1918 grants have been made dependent on an annual inspection, with one year's notice of withdrawal. In Kenya, as throughout East Africa, stress has been laid upon industrial education, which is carried on side by side with literary instruction, and industries have always formed an essential part of the curriculum. At the present time there are two large Government native schools, one at Machakos and one on the coast, which lay special stress upon industrial education, and all the seven Mission Schools which receive Government assistance have industrial departments.

**VILLAGE SCHOOLS.** Some 50,000 Africans throughout the colony attend the village schools founded by the Missionary Societies, and the demand for education increases every day. These schools, however, have hitherto received little assistance and no supervision from Government. They merely teach religion, together with the three "R's," but a great improvement will be effected through the "Education Ordinance, 1924," by which they will come under Government control and be required to introduce gardening, simple handicrafts, hygiene and drill into their curriculum.

**SPORT.**—See article following

## GAME HUNTING IN KENYA

**K**ENYA Colony is now generally accepted as being the premier big game country of the world. Other parts of Africa may boast a variety of animals nearly as great, but nowhere else can the joys of outdoor life and sport be indulged in under such favourable conditions in regard to health, climate, scenery, and general charm. The largest pair of elephant tusks on record came from Kenya, and a greater number of lions have been shot annually for the past 20 years in the colony than anywhere else, these animals being still as plentiful as ever in some of the outlying districts. They are larger and carry finer manes than in other parts of Africa, while the open nature of the country makes the finding of this wary beast almost a certainty. The record buffalo was also shot in Kenya, and large herds are so common that no less than ten bulls are allowed to be taken under Schedule 3 of the Game Laws.

**GAME.**—The list of animals which may be killed or captured under visitors' and residents' licences is a long one. It includes such notable varieties as elephant, hippo, lion, eland, oryx, wildebeeste, giraffe, buffalo, gazelle, bushbuck, zebra, blue duiker, reedbuck and stembuck, whilst leopard, hyena, wild dog and sundry jackals (all classed as vermin) are also common, and other strange creatures, such as antbear, ratel, aardwolf, giant hog, and numerous cats like cervel, lynx, etc., are likewise available to the collector and naturalist. There is an astonishing amount of bird life, about 20 different species of duck and geese being procurable on one lake alone. Snipe (6 kinds), guinea fowl (8 inds), francolin (20 kinds), including several kinds of partridge, sand grouse, pigeon,

greater and lesser bustard, and myriads of quail all provide unlimited sport for the gunner, and wild fowl shooting can be secured at very moderate cost.

**HUNTING GROUNDS.**—Good shooting is readily obtainable working from the Kenya and Uganda Railway, but the variety is naturally more limited than if one visits the regular shooting grounds. For short trips, with a first regard to economy, shooting from the line is quite sound. For the fully organised expedition, however, it is now advisable to journey at least ten days' march from rail-head, and allowance must be made for going to and returning from the outlying districts. Motor cars are frequently employed, but the expense of these is considerable. The best shooting grounds are mainly either north, in the direction of Abyssinia (e.g. lakes such as Baringo, Hannington and Rudolph), and rivers like the Northern Usio Nynio and Tana), or south towards Tanganyika Territory. Both north and south, the use of oxen is risky after about ten days' travel, owing to tsetse fly, which kills practically all domestic animals. This fly occurs in "belts," which are generally known by transport riders, who either avoid them or demand heavy extra hire to compensate for the grave danger to their cattle.

**LICENCES.**—Under the Game Regulations of the colony a visitor's licence, available for one year from the date of issue, costs £100, entitling the holder to shoot any of the animals (over 30 in number) detailed in the third schedule. A resident's licence for one year, conferring similar privileges, costs £10. Elephant, rhino, giraffe, and cock ostrich may only be killed under special licences, which, in turn, are alone issued to holders of either visitors' or residents' licences. These licences are: one elephant, £15, two ditto, £45, one rhino, £5, two ditto, £15, one bull giraffe, £15, one cock ostrich, £5.

**ON SAFARI.**—A "safari" is a hunting expedition, which may be undertaken alone or as a party, large or small. Its expense varies according to the extent of the outfit selected, the route shot over, whether mounted or afoot, whether motor cars are employed or not, whether a white hunter accompanies the party, the number of people in the expedition, and the extent to which the outfit is confined to bare necessities, or, per contra, includes unessential luxuries. In round figures, a properly equipped safari averages from £150 to £200 per month per gun whilst in the field. This does not include the white hunter's salary, cost of battery, licences, or use of motor cars for any great distance, neither are mounts included. But it is possible to reduce this estimate by travelling light, and selecting routes where transport is not difficult.

The experienced big game hunter generally prefers to hunt alone, but to those who can afford it a safari manager or white hunter is invaluable. He not only saves a great deal of trouble, but also, through knowing the favoured haunts of various species, can lead the party to the best shooting grounds without waste of time. European hunters cost from £50 to £150 per month and "all found." After the white hunter, the most important item in a safari is the selection of the natives—porters, gun-bearers, askaris or watchmen, skilled skimmers, tent boys and cook. A good headman is essential. According to the nature of the journey, a single traveller will usually require from 20 to 35 porters, each taking a load of from 54 to 60 lbs.

The usual practice is to provide each porter with 1½ lbs of food daily, one posho bag, one blanket, one water-bottle and a cooking

pot, with a tent to every six men. Skinners are provided with knives in addition and askaris with a Martini-Henry rifle and ten rounds of ammunition each. Wages vary according to supply and demand.

**OUTFIT.**—Nairobi has long been famous as a starting point of safaris, and is without question by far the most convenient place from which to outfit. Situated, broadly speaking, equi-distant between the coast and Lake Victoria, Tanganyika Territory and the Northern Frontier, it possesses, in addition to strategic advantages, several good hotels and extensive stores, among which that of Messrs Shaw and Hunter, the well-known suppliers of ammunition and all safari requisites, is prominent. All classes of outfit, clothing, provisions, wines and spirits, etc., are to be obtained, and the traveller can purchase any kind of firearm, from a heavy double cordite to a light magazine rifle, with ammunition to suit. (See also notice following.)

## SHAW AND HUNTER.

**Objects.**—This firm of gun and rifle specialists and "safari" outfitters was established to deal with the needs of the prospective hunter and traveller, to arrange expeditions, and to advise generally on all matters pertaining to big game shooting in East Africa.

**Service.**—The firm's service extends all over Kenya Colony and the adjacent territory of Tanganyika, in other words, from Zanzibar on the east coast to Lake Victoria Nyanza in the remote hinterland. Both scenically and from a hunting standpoint the country covered has few, if any, rivals, and the illimitable plains, swamps, deep gorges, tumbled rocky valleys and mighty rivers literally teem with game of all descriptions. Mr Shaw, the proprietor of the firm, was for many years with Westley Richards and Company, Limited, and has had over fourteen years' experience in fitting out big game and scientific expeditions. The firm's advice on all matters relative to going on "safari" may therefore be considered as thoroughly trustworthy.

**General.**—The firm carries large stocks of all the most reliable makes of guns and ammunition, camp outfits, provisions, wines, etc., it has at its disposal a number of efficient headmen, gun-bearers, porters and tent boys, and it can always arrange for the services of well-known big game hunters if desired. Those intending to shoot in Kenya or Tanganyika should only bring their personal kit with them, and this should be reduced to the necessary minimum.

**Trophies.**—The firm undertakes the preservation of all trophies entrusted to its care, these are treated with a special preparation to destroy all vermin, beetles, grubs, etc., after which they are labelled with the clients' names and stored until ready for shipment.

**Premises.**—These are situated in the very centre of Nairobi, in Sixth Avenue, and immediately adjoin the New Stanley Hotel. The postal address is P.O. Box No. 70.

**Agents.**—London: Messrs Richman Symes & Co., 39, Charterhouse Square, E.C.1, who will gladly give every assistance to the prospective traveller. New York: Messrs Griffin & Howe Inc., 234/236 East 39th Street.

**Cables.**—"Giraffe," Nairobi.



## ADMINISTRATION

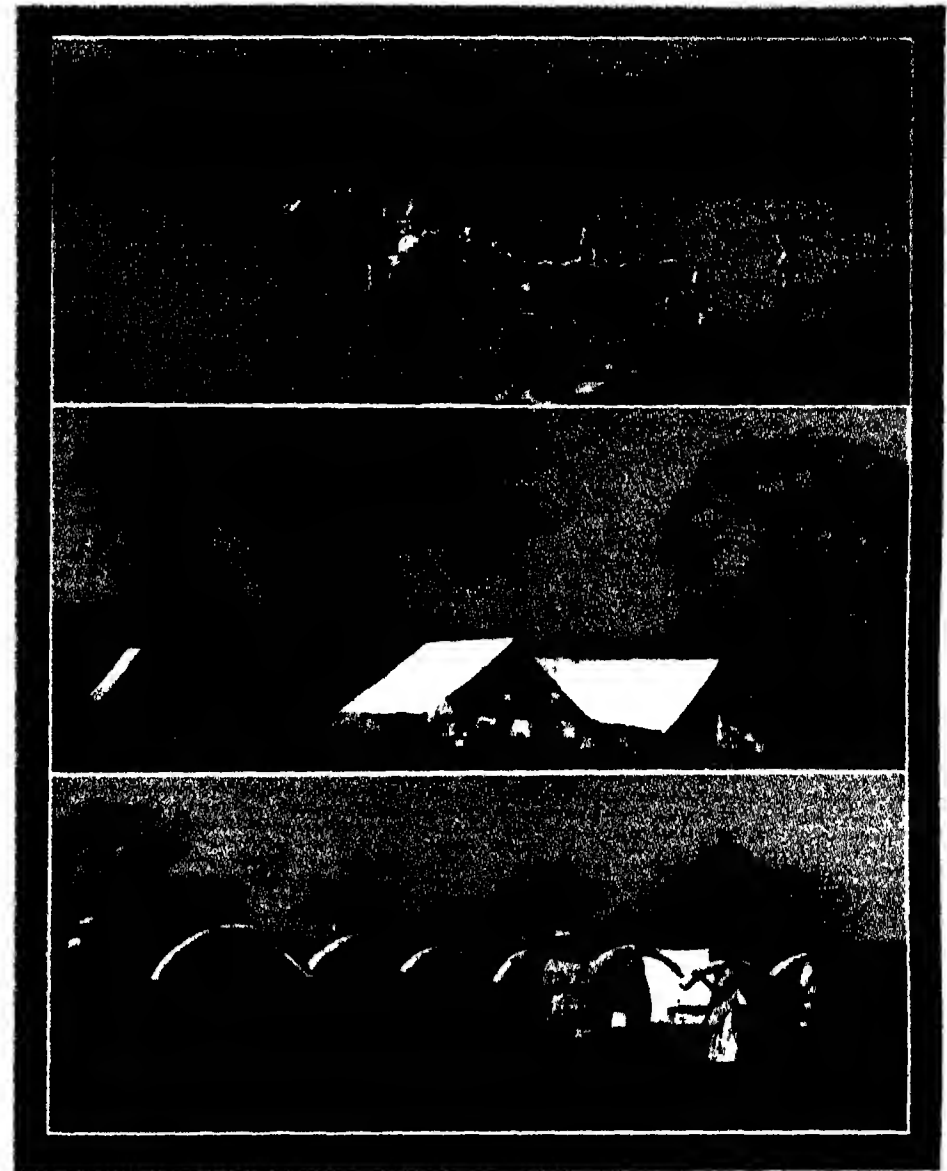
**S**INCE July 23, 1920, the territory formerly known as the East Africa Protectorate, excluding certain dominions of the Sultan of Zanzibar, has been a Crown Colony under the name of Kenya Colony. It is administered by a Governor and Commander-in-Chief, the present holder of the office being His Excellency Lieutenant-Colonel Sir Edward W. M. Gigg, K.C.V.O., C.M.G., D.S.O., M.C., who was appointed in 1925. There are Executive and Legislative Councils, the former consisting of four members in addition to the Governor, the latter of eleven elected representatives of the European community, three nominated members, two representing the Indian population, and one the Arabs, and a sufficient number of official members to give a majority in the Council. Legislation is by ordinances made by the Governor with the advice and consent of the Legislative Council.

The colony is divided into five Provinces, namely: Seyidie (capital Mombasa), Ukamba (capital Nairobi), Lanaland (capital Lamu), Kikuyu (capital Nyeri), and Nyanza Province (capital Kisumu). In addition, there are the Northern Frontier District (capital Moyale), the area known as Suk Kamasia (capital Eldama Ravine), and the Masai Reserve (capital Narok). For administrative purposes the colony is divided into white-settled areas under Resident Commissioners, and native reserves under District Commissioners.

**DEFENCE.** In time of peace the defence of the colony is entrusted to the 3rd and 5th battalions of the King's African Rifles, a force recruited from various parts of the colony, Somaliland and the Sudan. These are under an Officer Commanding Troops in Kenya Colony and Protectorate, who is also responsible for the organisation and administration of the European Defence Force of the colony created in 1921, and in which all European British residents between the ages of 16 and 60 are compulsorily enrolled. This force, in the event of war, is liable for service anywhere in East Africa. The two battalions of the King's African Rifles are officered by British Regular Army Officers, who are seconded from their British units for service under the Colonial Office. Both the battalions have to their credit extensive active service, either during or since the War.

**LAW AND JUSTICE.**—A British Court of Appeal and a High Court sit at Mombasa. Inside the territory still partially subject to the Sultan of Zanzibar, Mohammedans may be tried by their own courts. Matters are complicated, but, speaking broadly, the law consists of Indian Acts and Local Regulations, supplemented by English Law. Natives are governed according to the laws and procedure laid down in the Native Courts Regulations.

**POSTS AND TELEGRAPHS.**—The post and telegraph systems of Kenya and Uganda are combined, and the two countries are members of the Universal Postal Union. The Indian Post Office Act is in force, the administration being in the hands of a Postmaster-General. Rates of postage and other charges are fixed by the Governor-in-Council, subject to certain maximum limits imposed by the Post Office Ordinance. There are now departmental post offices established in all the settled European areas in both countries, the number of post offices and agencies in Kenya in 1924 being 95, with an average of 20,800 inhabitants to each post office. The bulk of the native population may, however, for all practical purposes be disregarded as users of post office services, the very scattered European population and



SHAW AND HUNTER, Nairobi.

1. A "Safari" Crossing a River
2. Typical Safari Camp equipped by the Firm.
3. "Safari" with some Ivory Trophies.

the Asiatic community (which lives mostly in the towns) being almost entirely responsible for the 5,000,000 letters, 100,000 parcels and 2,500,000 pieces of other matter which are now dealt with annually by the Department.

**CONVEYANCE OF MAILS.**—When postal services to places off the railway were first established, mails to and from them were conveyed almost exclusively, owing to the absence of other suitable means of transport, by native mail runners, and it has to be placed to the credit of the African that he performed this service in a remarkably loyal, regular and courageous manner; in fact, he is still doing so in the more outlying districts. In the case of long distances, relays of runners travelling night and day are employed, and where there has been failure or delay, this has invariably been found to be due to causes beyond the runner's control. More than one runner has lost his life in attempting to ford flooded rivers or from lion attacks, while there are two instances on record of runners having been waylaid and murdered and the mail looted. With increasing road and rail

facilities, however, the mail runner and ox cart are gradually being displaced by mechanical transport, though there still remain in existence some 750 miles of mail runner routes.

**POSTAL RATES.**—Postal rates, inland and for British possessions, are: letters, 20 cents first oz., 15 cents per oz. over; post cards, 15 cents; book post, 10 cents per oz.; newspapers, 10 cents each. The universal foreign rates are: letters, 30 cents first oz., and 15 cents afterwards; cards and book post, as above. Parcel post rates to the United Kingdom are: 3 lbs., Sh 2 30; 7 lbs., Sh 4 00; 11 lbs., Sh 5 30. Inland rates are Sh 1 50, Sh 3 00, and Sh 4 50 respectively, and for delivery at Uganda offices, Sh 2 00, Sh 4 00, and Sh 6 00.

**TELEGRAPHS.**—The first telegraph line ever constructed in East Africa was laid between Mombasa and Lamu, a distance of 200 miles, by the British East Africa Company. With the construction of the Uganda Railway telegraphic communication was greatly extended. The whole system was linked up by an overland route with the South

African system in 1921, and as the local system extends to Nimule on the Sudan boundary, there is now only a gap of 100 miles between Nimule and Rejaf to be bridged in order to establish through land line communication between Alexandria and Capetown. A landline directly connecting the local system and that of the Belgian Congo was completed and brought into use in 1924.

**Cables** — The overseas cable service is maintained through an Eastern and South African Telegraph Company's branch cable which connects Mombasa with Zanzibar, one

the foregoing, press, Sh 2 00 the first 32 words, each additional 16 words, Sh 1 00, to the United Kingdom and Europe the rate is Sh 2 50 per word to India, Sh 2 50 per word, to the Union of South Africa, Sh 2 60 cable and Sh 1 40 overland, and to Southern Rhodesia, Sh 2 70 cable and Sh 1 40 overland.

**Wireless** — The wireless service is limited to the coast, and consists of stations at Mombasa, Kisumu and Lamu. The Mombasa station was completed in 1915, at a cost of £15,000. The approximate cost of the Kisumu station was £7,000. Radiotelegraphy in the colony is controlled by

general public in that year, during which 18 private subscribers were connected. The Mombasa exchange was also first started for official purposes only, and was situated in the Mombasa Railway Station. It was taken over by the Department in January 1906, and also made available for private subscribers in 1908.

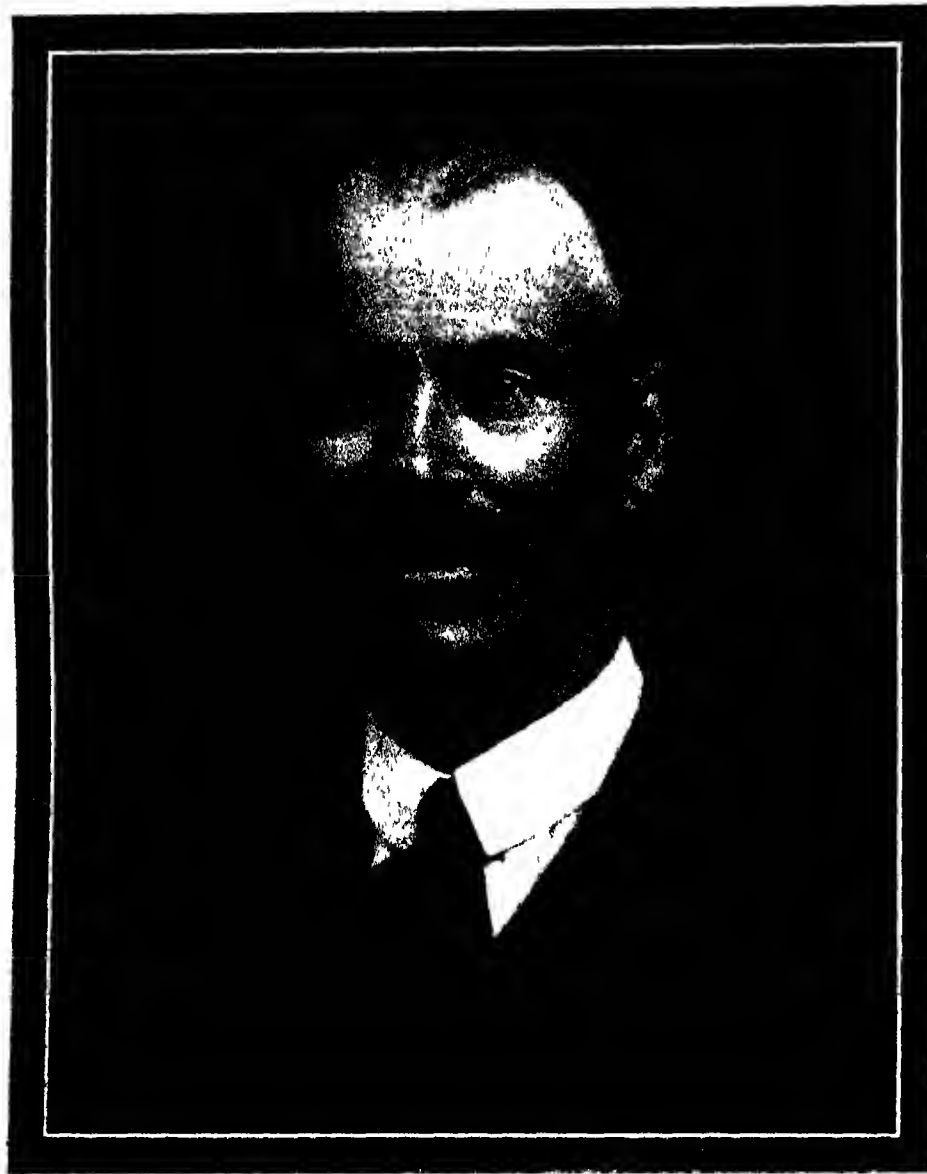
Small exchanges for official purposes, mainly are installed at Nakuru, Kisumu and Kiambu. There are two former party line systems in operation, one at Kori and the other at Kiambu. This latter is connected with the Nairobi exchange by a trunk line.

**PUBLIC HEALTH.** — There has been an efficient Public Health Administration in Kenya since the establishment of a Medical Department towards the close of the last century. Its work has often been cruelly hampered by a depleted staff and inadequate funds, but to-day it can be safely asserted that the general health of the colony compares very favourably with that of any other country situated in the same degree of latitude. Plague has always been a menace, possibly the greatest that the colony has experienced, and in one year (1920) in the North Kavirondo District alone the deaths from this cause were estimated at between 1,500 and 2,000. Small-pox, once a scourge, has, thanks to vaccination, been almost stamped out, sleeping sickness was once terribly epidemic, but has not recurred for a long time, malaria is common in the coast zone, but is as preventable in East Africa as elsewhere, and enteric fever is said to be widespread, though with the improvements in sanitation that are taking place it may before long be eliminated.

**HOSPITALS** — There are European hospitals at Mombasa, Nakuru, Kisumu and Nairobi. There are also native hospitals at Headquarter Stations in each Province, in addition to which there are civil dispensaries and native military hospitals at various points.

**PUBLIC WORKS.** The Public Works Department was inaugurated in 1896, but work was confined to Mombasa Island until 1901. In 1908 the Head Office of the Department was transferred to Nairobi. The branch office at Nairobi was opened in 1902, at Kisumu in 1903, at Naivasha and Nyeri in 1906, and at Eldoret in 1910. The chief duties of the Department are the construction and maintenance of engineering and building works on behalf of the Government, other than those in charge of the Kenya and Uganda Railway. The chief individual works of importance which have been executed by the Department are the following: (1) Administration Offices, Mombasa (£4,247), (2) Mombasa Water Works (£117,622), (3) Thika Railway (£61,796), (4) Nakuru Water Works (£8,607), (5) Nairobi Drainage System (£59,815), (6) Government House, Nairobi (£10,526), (7) European Hospital, Nairobi (£9,383), (8) Kabete Laboratory (£17,524), (9) Nairobi Gaol (£11,178), (10) Machakos Native Hospital (£7,004), (11) Kisumu Native Hospital (£7,050), (12) Treasury, Nairobi (£9,693).

The road system of the colony and protectorate, which now comprises some 4,000 miles of track available for traffic, has been constructed and maintained by the Department, either directly or through various agencies, at a cost of nearly three quarters of a million since the financial year 1905-6. The various Government buildings have been constructed and maintained at a total cost of nearly a million since the same year. In 1925 the Legislative Council adopted the report of a select committee intended to form the basis of a large programme of public



SIR EDWARD W. M. GRIGG, K.C.V.O., C.M.G., D.S.O., M.C., Governor and Commander-in-Chief of the Colony and Protectorate of Kenya

of the company's main stations on the East Coast cable route. This branch cable was laid about 1888 under a concession from the Sultan of Zanzibar, granting the Cable Company "the sole and exclusive right for a term of 50 years of landing ocean telegraph cables from foreign countries" to any point on the coast between Varsheik on the Somali coast and Jungi near Cape Delgado.

**Telegraph Rates** — Inland (Kenya and Uganda) Plain words, 10 cents per word; code, 15 cents per word, urgent, double

the Wireless Telegraphy Ordinance of 1913, which provides that private stations, whether commercial or experimental, can be established and worked only under licence from the Government.

**TELEPHONES** — Public telephone exchanges are established at Nairobi and Mombasa. The Nairobi exchange had its origin in a small switchboard installed in the Government Offices in 1906 for official use only. This was taken over by the Post Office in 1908, and was made available for the

works, involving a colonial loan of nearly £3,000,000. The major works contemplated include the building of schools, provision of water supplies, town planning, maize drying, and cold storage plant, houses for African and European officials, offices for the K. A. R. lines, hospitals, roads, bridges, a Supreme Court, and improvements at Government House. The works will be spread over several years.

### FINANCE AND BANKING

**T**HE finances of Kenya have undergone a very satisfactory change since, in 1923, expenditure exceeded revenue by £298,186, that excess being largely accounted for by the liquidation of war charges and some miscellaneous items. In 1924 revenue exceeded expenditure by £259,954, and at the end of that year the floating debt was converted at a surplus of £59,000. The year 1925 was expected to provide a further balance, increasing the surplus to some £104,000.

This ability of the colony to show such a balance is principally due to an increase in the Customs revenue, which amounted during the first six months of 1925 to £609,516, against an estimate of £500,000, and was £135,000 more than was collected from January to June 1924.

**BANKING FACILITIES.** The following banks have branches in the colony:

**NATIONAL BANK OF INDIA, LIMITED.** Registered in London under the Companies Act of 1862 on March 23 1866, paid up capital, £2,000,000. Head office,

London with branches in Kenya at Mombasa, Nairobi, Kisumu and Nakuru. Bankers to the Colonial Government.

**NATIONAL BANK OF SOUTH AFRICA, LIMITED.** Established 1862; paid up capital, £2,209,165. Head office, London, and branches in Kenya Colony at Eldoret, Kisumu, Mombasa, Nairobi and Nyeri. (See "Finance," Union of South Africa section.)

**STANDARD BANK OF SOUTH AFRICA, LIMITED.** Registered in the Transvaal, paid up capital £2,075,500. Head office, Pretoria, and branches in Kenya at Eldoret, Mombasa and Nairobi. (See "Finance," Union of South Africa section.)

**CURRENCY.** The currency of the East African Protectorate originally consisted of the British India and the late Imperial British East Africa Company rupee as unit, with subsidiary coins, while the pound sterling was also legal tender at the rate of Rs 15 to the pound. In 1907 a coinage was introduced consisting of the rupee divided into cents. Owing to the appreciation of the rupee in 1917, which by the early part of 1920 was quoted in India at 28.9d, it was decided to fix the exchange at 28 sterling per rupee. This order came into operation in July 1920, and a new currency was adopted with the florin (28) as unit divided as before into cents, and on June 22, 1921 the rupee and its subsidiary coins were demonetised. The new currency was however found to be unsatisfactory, and in 1922 in both Kenya and Uganda the shilling was substituted for the florin. The currency now in circulation consists of Silver coins one shilling (legal

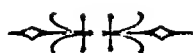
tender to any amount) and the 50 cent piece (legal tender up to Sh 20), bronze coins 10 cent, 5 cent, and one cent pieces (legal tender for amounts not exceeding one shilling). Notes to the value of 1,000, 200, 100, 20, 10 and 5 shillings are legal tender up to any amount. There are also still in circulation the East African rupee and florin currency, both in coin and notes, but these are being gradually withdrawn.

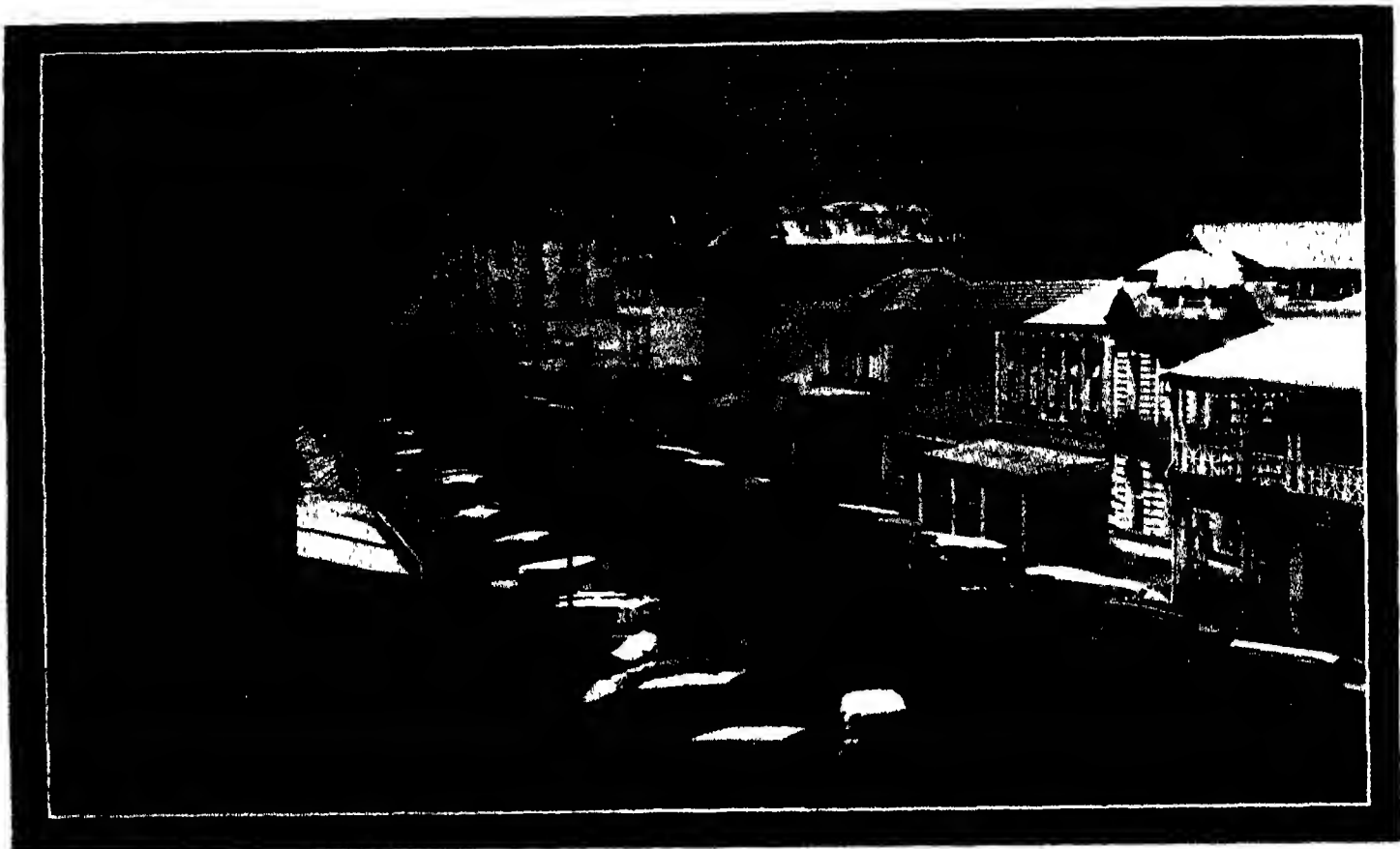
**EXCHANGE.** In order to maintain the rate of exchange between the United Kingdom and the colony at par, local coins or notes may be tendered at the Currency Offices in East Africa in exchange for mail or telegraphic transfers on London. The premium charged on such transfers is at present 1½ per cent on mail transfers and 1 per cent on cable transfers. For transfers on Nairobi a rate of ½ per cent is charged.

**LOAN ACCOUNTS.** In 1921 the colony floated a loan of £5,000,000 on the London market, the annual charges for sterling interest and sinking fund on which amount to approximately £365,000 of which £310,000 is for the Uganda Railway account and £55,000 for the Kenya Colony account. In addition, the Imperial Government in 1922 granted a further loan of £3,350,000 free of interest for five years, which, together with another loan of £3,000,000 to be floated at a later date, both secured on the revenues of Kenya and Uganda and the Uganda Railway, will provide funds for the completion of the harbour scheme at Kilindini, for the continuation of the Uasin-Gishu branch of the Uganda Railway to the Eastern Province of Uganda, and for certain other railway works.



THE INDIAN BAZAAR, NAIROBI





THE BUSINESS CENTRE, GOVERNMENT ROAD, NAIROBI.

## CITY OF NAIROBI

**N**AIROBI, the administrative centre and capital of Kenya Colony, dates as a town only from 1899, in which year it was founded during the building of the Uganda Railway, chiefly because of its position at the extremity of the grass-clad plains and the commencement of the ascent to the upper highlands. The situation of Nairobi is superb, for, though lying at the foot of the Kikuyu Hills, it has an elevation of 5,450 ft above sea-level, and a climate which, as a rule, is delightful, being neither hot nor cold, while rain usually falls each month.

**BUILDINGS.**—The main thoroughfare is Government Road, leading from near the Station almost to the suburb of Parklands. Along it most of the prominent offices and shops are situated. From near its centre Sixth Avenue branches off at right angles and leads across the railway line to the hill on which Government House, the Civil Hospital, and a number of fine residences have been built. On the summit of the hill is the Nairobi Club. Sixth Avenue itself contains some of the handsomest buildings in Nairobi, and many of the new Government Offices are being built here. The Post Office, the Treasury and the District Commissioner's Office are the most substantial buildings at present. There are Anglican, Roman Catholic and Presbyterian churches, a Mosque and a Synagogue, also two theatres and a market hall.

**CLUBS.**—Club life in Nairobi is not unlike club life in any part of the Empire. There

are no less than four European clubs in Kenya's capital catering for all classes of the male population. Of these, the Nairobi is the best known, and has a really luxurious club house. The European, Parklands, and City Clubs also offer the usual facilities for social intercourse and recreation to their members and to visitors. Both the Y M C A and Y W C A have local premises.

**FIRE BRIGADE.** Preventive measures in regard to fires were in the hands of the Police till 1921, though the few existing appliances were the property of the Municipality. In that year a native brigade was organised. As the result of several fires in 1921 and 1922 the brigade was put on a more efficient basis. The organisation now consists of a white firemaster and deputy and 12 native firemen, a fire station with firemaster's house and firemen's quarters attached, a motor van carrying two large 35-gallon extingisher tanks, hose, hose cart, escape, hand extingishers, etc. There are 52 hydrants serving the principal streets of the commercial area, but in the suburbs the distribution of water mains is not close enough to provide a sufficient service against fire, and the chemical extingishers are the only means of protection.

Several prominent buildings were destroyed in a disastrous fire which completely burnt out four blocks in Government Road on February 20, 1926, among these being the printing and publishing offices of the "Kenya Observer" and the "Farmer's Gazette." The damage was estimated at over £100,000.

**MUNICIPALITY.**—The present Municipality or Corporation of Nairobi received its charter in 1919, and consists of 16 members, who are nominated by the Governor after an informal election conducted by the Municipality. The Corporation controls and administers the roads, water supply, drainage, fire-brigade, public market, slaughter house, and street lighting (electrical). The municipal revenue is derived from profits on certain services rendered, licences of various kinds, and the rate on unimproved site values. Several services, such as refuse removal, street lighting, etc., are performed without a direct charge, and it may be roughly stated that the profits derived from services rendered produce an amount approximately equal to the revenue derived from the rate on unimproved site values. The balance sheet of the Corporation showed in 1925 assets in excess of liabilities of approximately £40,000. Municipal loans amount to £60,000, whereof £28,000 has been expended on the water supply, the development of native quarters, and the purchase of road plant, while the remainder is earmarked for water supply and sewerage. A water-borne sewerage system for the central area of the town is nearing completion.

**NEWSPAPERS.**—The English papers published in Nairobi are the "East African Standard," the "Kenya Observer," and the "Farmer's Gazette." The "East African Standard" publishes both daily and weekly editions. The "Democrat," an Indian newspaper, is published weekly, and the "Kenya

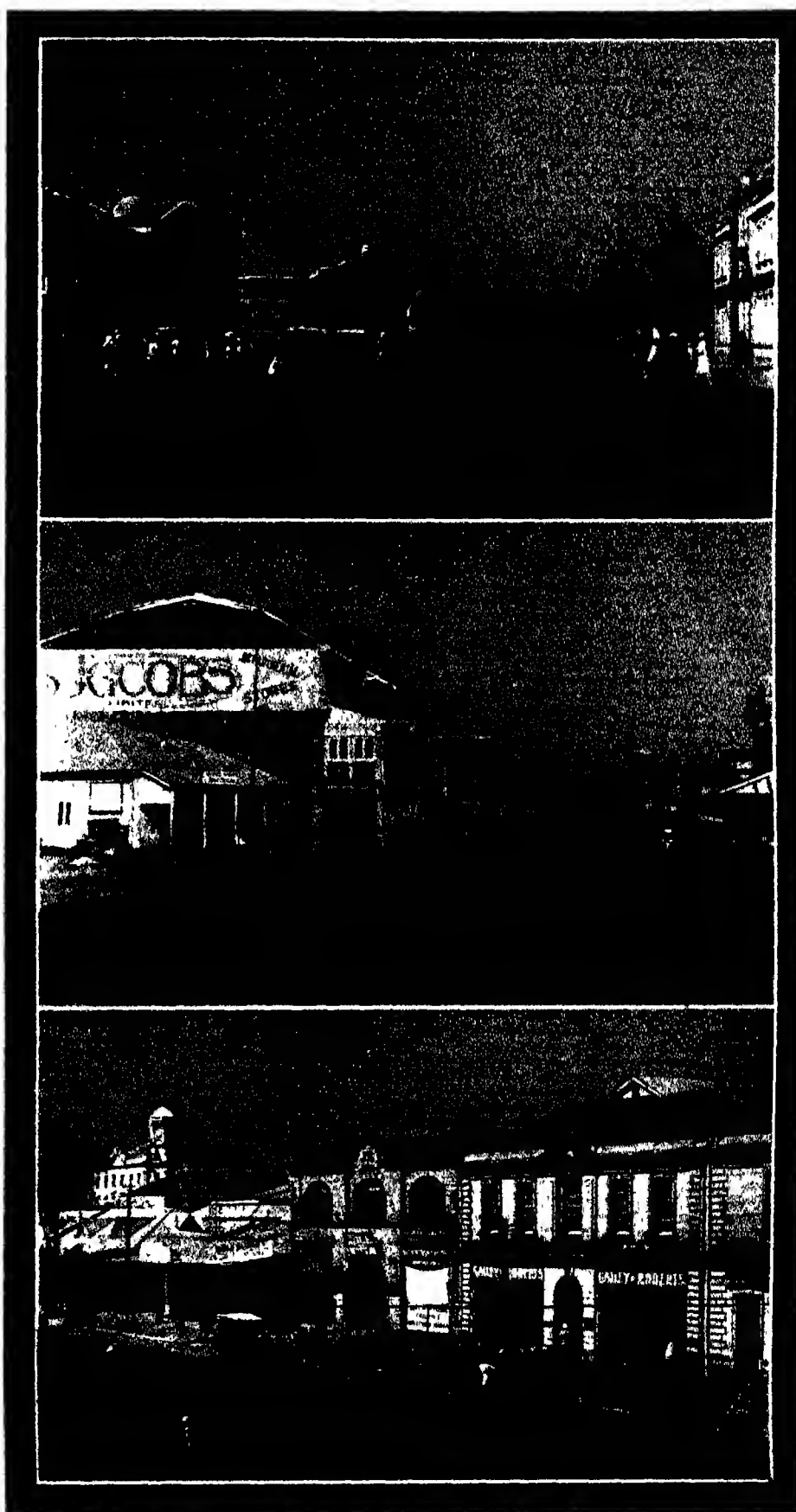
Medical Journal" monthly. The "Official Gazette" of the colony and protectorate is issued every Wednesday.

**PARK.**—The Corporation of Nairobi is fortunate in possessing a magnificent piece of virgin forest, 200 acres in extent, scarcely a mile distant from the centre of the town, which forms a public park of great natural beauty. In the heart of this forest a large clearing has been made, in which a rustic pavilion and dancing floor have recently been erected. A cross road has been driven through the forest to link up two of the main trunk highways leading out of the town—the Limuru and Kyamburi Roads. The undergrowth has been cleared and a number of woodland paths have been formed.

**POPULATION.**—The population of Nairobi is about 25,000, of which some 3,000 are Europeans and 10,000 Asiatics. Nairobi has always been one of the most cosmopolitan of towns, and the geographical distribution of its inhabitants calls for mention. The town in its earlier days consisted of Government Road, Market (now River) Road, Victoria Street, and the Bazaar, all lying on the plain to the south of the swamp through which Nairobi River runs. There were also the widely scattered European suburbs. The Indian population of from 3,500 to 5,000 was massed in the nine crowded acres of the Bazaar, and Government Road and Victoria Street were mixed European and Indian business centres. The Africans (excepting servants, who were scattered throughout all parts of the town) resided mainly in three large villages of grass huts on Crown land to the north of the river. In the 1910-14 period of development, River Road became a second Bazaar. Government Road became predominantly European, and Sixth Avenue and the new streets adjoining it (Hardinge Street, Eliot Street, Standard Street, and Sadler Street) also developed as European business thoroughfares. The Africans have since been isolated on a location of their own near the Police Training Depot.

**SPORT.** Nairobi is a great sporting centre, cricket, football, tennis and polo all having their grounds and votaries. Just outside the town is the racecourse, on which several two-day meetings provided by the Jockey Club take place every year. The Nairobi Golf Club, the oldest in East Africa, has its links on a plateau which overlooks the Athi Plains, and possesses a view which embraces two snow-clad mountains, namely Kenya, 120 miles to the north, and Kilimanjaro, 110 miles to the south. This is the only 18-hole course in East Africa, having a total length of 6,600 yards, a comfortable club house and a membership of over 400. Zebra, antelope and gazelle all use the links for grazing, and even lions and leopards are said to have been encountered and driven off with a mibick. The Royal East African Automobile Association has its headquarters at Nairobi, where information, maps, etc., can be obtained.

**WATER SUPPLY.**—One of the first acts of the Corporation after its formation was to improve the water supply of the town. The reservoir belonging to the Uganda Railway and situated 14 miles up country was bought at a cost of £20,000, payable in yearly instalments, while two new springs yielding about 600,000 gallons and 175,000 gallons respectively per diem were opened up and connected with the town's supply at a cost of £2,300. The separate water supply of the outlying suburb of Muthaiga was purchased for £6,500. Investigations directed towards the purification of the main supply, which was found to be impure at its source, and to the increasing of the storage have since been taken in hand with satisfactory results.



1. LOOKING UP SIXTH AVENUE, NAIROBI, FROM THE CENTRE OF THE TOWN.
2. GOVERNMENT ROAD, THE MAIN THOROUGHFARE.
3. HARDINGE STREET, SHOWING MESSRS. GAILEY AND ROBERTS' PREMISES IN RIGHT FOREGROUND.



## VISITORS' GUIDE

**BANKS.**—National Bank of India—Government Road (telephone 6), National Bank of South Africa—Corner House (telephone 351), Standard Bank of South Africa—Sixth Avenue (telephone 111).

**CLUBS.**—Nairobi Club—Ngong Road, The Hill (telephone 35), Muthaiga Country Club—Muthaiga (telephone 88), Parklands Sports Club—Kikuyu Road, Parklands (telephone 135).

**CONSULATES.**—Denmark—Whiteaway, Laidlaw & Co's Buildings, Sixth Avenue, Italy—Kikuyu Road, Parklands, Portugal—Government Road, Sweden—J. O. G. North & Son Ltd, United States—Bulus House, Government Road.

**HOTELS.**—Kenya House—Kikuyu Road, Parklands, Homestead—Parklands, New Stanley—Sixth Avenue (tel. address "Snuggest," telephone 235), Norfolk—Government Road (tel. address "Norfolk," telephone 240), Oakleigh (private)—Ngara Road, Parklands.

**THEATRES.**—Lyric Hall—Hardinge Street, Theatre Royal—Sixth Avenue.

## BUSINESS ENTERPRISES

**HOWSE AND McGEORGE, LIMITED.**

**Inception.** This firm of chemists and druggists was established at Nairobi in 1912 by the present partners Messrs L. A. Howse and R. McGeorge.

**Development.** The company started operations in a small way, but these have grown to such an extent that it now owns a large central store, with branches in all the principal centres of the country, and further expansion of business is assumed in order to keep pace with the ever increasing needs of so rapidly developing a country as East Africa.

**Activities.** Apart from the company's main activities as chemists and druggists it conducts a large business in toilet veterinary and agricultural sundries and also carries a representative stock of photographic appliances. The products of most of the leading British houses manufacturing the above lines are always obtainable at the company's headquarters and branches.

**Branches.** These were opened by the firm at Kampala (Uganda) in 1913, at Eldoret in 1919 and Nakuru in 1920 (both in Kenya), Jinja (in Uganda) and Kitale (in Kenya) in 1925 and Dar-es-Salaam (Tanganyika) in 1926.

**Address.** Zebra House, Government Road, Nairobi P.O. Box 28.

**London Agents.** Messrs. Tozer, Kemsley and Millbourn, Ltd., 84, Fenchurch Street, E.C. 3.

**Cables.** "Zebra" Nairobi.

**Bankers.** The Standard Bank of South Africa, Ltd.

**S. JACOBS LTD.**

**Foundation.** The business of this firm was founded in the year 1910 in a small wood and iron building in Government Road, Nairobi.

**Development.** At that time the company specialised in hardware and household goods, but with the growth of the colony and consequent increase in the needs of the public other departments were added. To day the firm's large building occupies one of the most important sites in the town and functions as a complete departmental store.

**Departments.** These include outfitting, dressmaking, men's, women's and children's clothing, hardware, glassware, provisions, wines and spirits, butchery, tobaccos and sports accessories. The company has also erected an up-to-date factory equipped with modern machinery, where native woods are manufactured into furniture of all kinds.

**Mail Order.** From time to time catalogues are issued and sent all over the country, thus serving a public who have no opportunities of visiting the company's showrooms. In this manner goods from the firm reach the outposts of Uganda and the Congo, Tanganyika, Zanzibar and other distant territories.

**Agencies.** The company holds agencies for Crawford's whisky and Hennessy's brandy, and it is the sole distributor for Fendler's wines and "His Master's Voice" gramophones.

**London Representatives.** Messrs. Carters, 6, Princes Street, E.C.

**Premises.** Government Road, Nairobi P.O. Box No. 255. Branches have been established at Nakuru and Eldoret.

**Bankers.** The National Bank of India, Ltd.

**Cables.** "Advalorem," Nairobi.

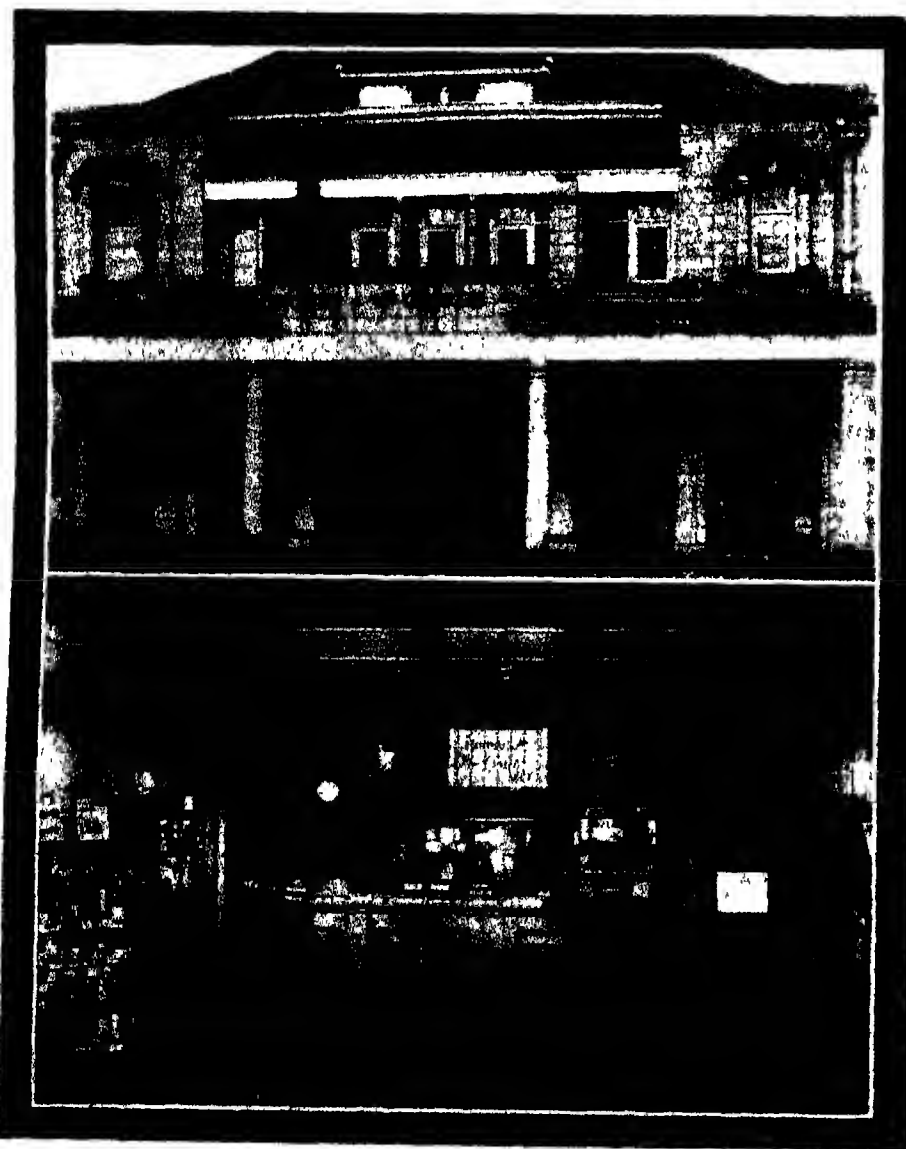
**THE MOTOR MART AND EXCHANGE LTD.**

**Inception.** This company, which is the oldest established motor enterprise in Nairobi commenced operations in 1917.

**Development.** The firm was one of the first to realise the suitability of the light car for the needs of the country, and was largely instrumental in introducing the one-ton truck for commercial use.

**Activities.** The company is a direct importer of motor cars and trucks, and represents well-known motor manufacturing firms. It carries large stocks of spare parts for all cars and trucks, and also accessories, tyres, benzine, oil, and other motorists' sundries. Its operations extend throughout Kenya, Uganda, Tanganyika and Zanzibar.

**Chevrolet Department.** This department is operated separately from the rest of the business, and a special staff is employed both for the sale and service of Chevrolet products. In the last three months of 1925 two hundred and fifty cars and trucks were delivered, and one hundred and twenty more were booked for delivery in January 1926.



HOWSE AND McGEORGE LTD., Nairobi.

1. Head Office.
2. Showroom.



**S. JACOBS LTD., Nairobi**  
Leading Departmental Store in the City.

**Hupmobile Department.** The company has held the agency for these cars ever since it commenced operations. The new eight cylinder model runs between Nairobi and Mongala, the Nile embarkation point for Cairo, and this model recently travelled from the northern frontier via Nairobi to the Nile.

**Service.** The company has its own modern machine shop and employs one of the biggest staffs of mechanics in the country. It does its own assembly work and has a battery equipment, also a special service department. The "Safari" body, peculiar to and in practically universal use throughout the colony, is constructed at the works to clients' own specifications.

**Premises.** The new premises now under construction, covering an area of 15,000 square feet, will, when complete, be thoroughly modern and up-to-date. They are situated in the centre of Sixth Avenue, the heart of the motor industry.

**Branch.** A branch is maintained at Nakuru, in the centre of the agricultural districts.

**Directorate.** Managing director, Major B. Pitt, secretary, Mr. K. Kerth.

**Cables.** "Motomart," Nairobi, codes A B C 5th Edition and Bentley's.

**Bankers.** The National Bank of South Africa, Ltd.

**HAMILTON, R. O., LTD.** Government Road, Nairobi. Manufacturers' representatives, insurance agents and produce brokers. Bankers: The National Bank of India, London and Nairobi. Cables: "Glaswegian," Nairobi.

**NEW STANLEY HOTEL.** Nairobi. Accommodation: 70 bedrooms, hot and cold baths, spacious lounges, and excellent dining room. Cables: "Snuggest," Nairobi.

**NORFOLK HOTEL.** - Nairobi. Standing in three acres of ground. Private suites and

bungalows obtained by arrangement, and proprietor arranges short "safaris" on the hotel farms for big game hunters. Cables: "Norfolk," Nairobi.

**SAFARILAND LTD.** Sadler Street, Nairobi. Outfitters of safari and scientific expeditions, financial, insurance and general agents. Cables: "Travellers," Nairobi.

**TODD, J. H. S., & CO.** Hea Buildings, Government Road, Nairobi. General importers and exporters, buyers and shippers. Agencies: U.S.A., India, Australia, Ceylon, China, Japan, etc. London office: 29/35, City Road, E.C.4. Cables: "Agenticus," Nairobi.

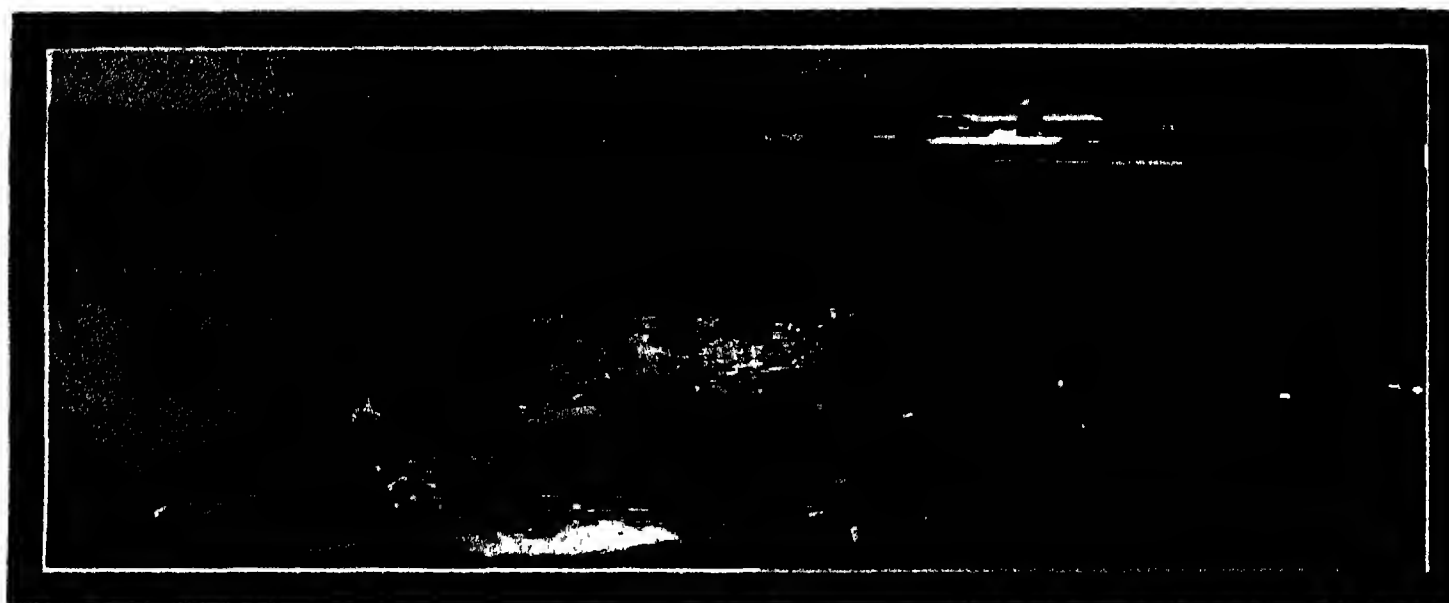
**WHITEAWAY, LAIDLAW & CO. LTD.** Nairobi. Incorporated in England. Drapers, outfitters, glass and china merchants, importers of boots and shoes, etc. Branches at Kampala, Mombasa, Eldoret, and Nakuru. Cables: "Warfield," Nairobi.



**THE MOTOR MART AND EXCHANGE LTD., Nairobi.**

1. Present Premises. The oldest Motor Garage in the City.

2. Proposed New Premises for the Firm.



KILINDINI HARBOUR, MOMBASA, WITH LANDING WHARF IN BACKGROUND

## CITY AND PORT OF MOMBASA

### CITY

**A**LTHOUGH Mombasa is an important port of entry and the meeting place of many races, neither the old native town nor its modern surroundings is of striking interest. Formerly the capital of British East Africa, it contains some good public buildings, and many of the old houses have handsome carved doorways. There are several stores of merit, a few of them being European, but mostly they are kept by Goanese.

**BUILDINGS.**—Apart from the Fort, which is described subsequently, there are the Government Offices, several banks and other substantial structures. Government House stands on the Bluff facing the entrance to Mombasa Harbour, a little beyond the Railway Station and the Civil Hospital. Just above the Fort is H.M. High Court of East Africa, opened in 1902. Not far from the Metropole Hotel is a Hostel of the Pères du Saint Esprit, and the Seaman's Institute at Kilindini, opened in 1922, contains a Main Hall erected by his widow in memory of Captain Barry, R.N., who fell in the East African campaign.

**CHURCHES.**—The Anglican Cathedral, a stone building of a somewhat heavy Oriental type, was erected in 1903-05 to the memory of Bishops Hannington and Parker and the Rev. H. Wright. There is a Roman Catholic Church attached to the mission of the Pères du Saint Esprit which possesses beautiful interior decorations, also some small Mohammedan mosques and a Hindu temple.

**CLIMATE.**—Though the heat at Mombasa is very trying, especially during the summer, the climate is not unhealthy, and, in spite of a water supply which is capable of improvement, enteric is not common. Over a period of 33 years the average annual rainfall was 47.05 inches.

**GARDENS.**—In the Public Gardens, which have been carefully laid out and provide a pleasant oasis in what is perforce a somewhat arid setting, there is a statue of Sir

William MacKinnon, Bart., who founded the Imperial British East Africa Company in 1887. These gardens and those of some of the British residents' villas in Mombasa are very pretty; crotons especially grow well in the island, but the vegetation is generally less luxuriant than is the case at Zanzibar. The quaintly-shaped baobab trees are a prominent feature of the landscape.

**FORT.** The most prominent building in Mombasa is the great red Fort of Jesus, which is of quadrangular form and was erected by the Portuguese in 1503-05, at the time when Mombasa was constituted the capital of their East African possessions. An inscription recording this event is to be seen inside the porch. On August 16, 1631, all the Portuguese in Mombasa, numbering over one hundred, were murdered by the then reigning Sultan Yusuf, otherwise known as Dom Jeronymo Chingouha, after which he took up his residence in the Fort. A fleet was sent from Goa to punish the rebel, who, however, succeeded in capturing two of the vessels, he then dismantled the Fort, destroyed the town, and escaped to Arabia. Four years later the Portuguese were again in possession, and the Fort was re-built.

The great siege by the Arabs commenced in March 1696, and continued for 33 months, the entire population of the island, consisting of 50 Europeans and some 2,500 natives, taking refuge in and round Fort Jesus. Towards the end of 1697 reinforcements arrived and the siege was prolonged until December 1698, when the Arabs stormed the walls and massacred the survivors—eleven men and two women only. Two days later the relief fleet from Goa appeared before the town, but left on ascertaining the fall of the Fort, and not until 1727 did the Portuguese flag once more fly from the citadel. In 1729, however, the people of Mombasa invited the Arabs to return, with the result that the Portuguese were once more driven from the town. Forty years later they made a last unsuccessful attempt to regain their lost supremacy.

The Fort, over which the red flag of the Sultan of Zanzibar is flown, is now used as a prison. Opposite the Fort is a memorial to Colonel Wavell, who raised the Arab Rifles for service in the war against Germany, and was then killed near Gazi.

**POPULATION.** The population of Mombasa Island is approximately 45,000, made up as follows: Europeans, 650; Asiatics, 7,575; Goans, 724; Arabs, 5,461; Anglo-Indians, Seychellois, etc., 174; Natives, approximately, 30,000.

**SCHOOLS AND COLLEGES.**—In connection with the Memorial Cathedral is the Buxton High School for Boys, and near by is a Convent School for Girls. Technical and other education is also given to native boys by the Pères du Saint Esprit.

**SPORT AND RECREATION.**—The climate of Mombasa is against the more strenuous forms of athletic exercise. Cricket is regularly played by the British residents and visitors, and the Mombasa Golf Club, with an excellent 9-hole course, has a membership of over 200. The Mombasa Sports Club concerns itself almost entirely with cricket and lawn tennis. The Yacht Club has been in existence since 1910, and has a fleet of nine boats. The sea fishing off Mombasa is said to be excellent.

**SUBURBS.**—Mombasa has, properly speaking, no suburbs, but on the mainland are Freretown, the principal C.M.S. Station, and Kisauni, a native village of some importance.

### VISITORS' GUIDE

**CHURCHES.**—Memorial Cathedral—Macdonald Terrace; Roman Catholic—Kilindini Road.

**CLUBS.**—Caledonian Society, Mombasa Golf Club, Mombasa Yacht Club, Sports Club.

**CONSULATES.**—Belgium—Station Road; France—Station Road; Italy—Macdonald Terrace; Portugal—Vasco da Gama Street.

**HOTELS.**—Kenya—Kilindini, Metropole; Palace.

## PORT

Mombasa, with its two harbours, is the principal port of Kenya Colony and Protectorate. It is situated on an island three miles long by two wide, the principal harbour, Kilindini, "the deep place," being on the west side of the island. From Mombasa the Uganda Railway connects with Nairobi, the capital, and Kisumu, the Lake Victoria terminus, 587 miles away.

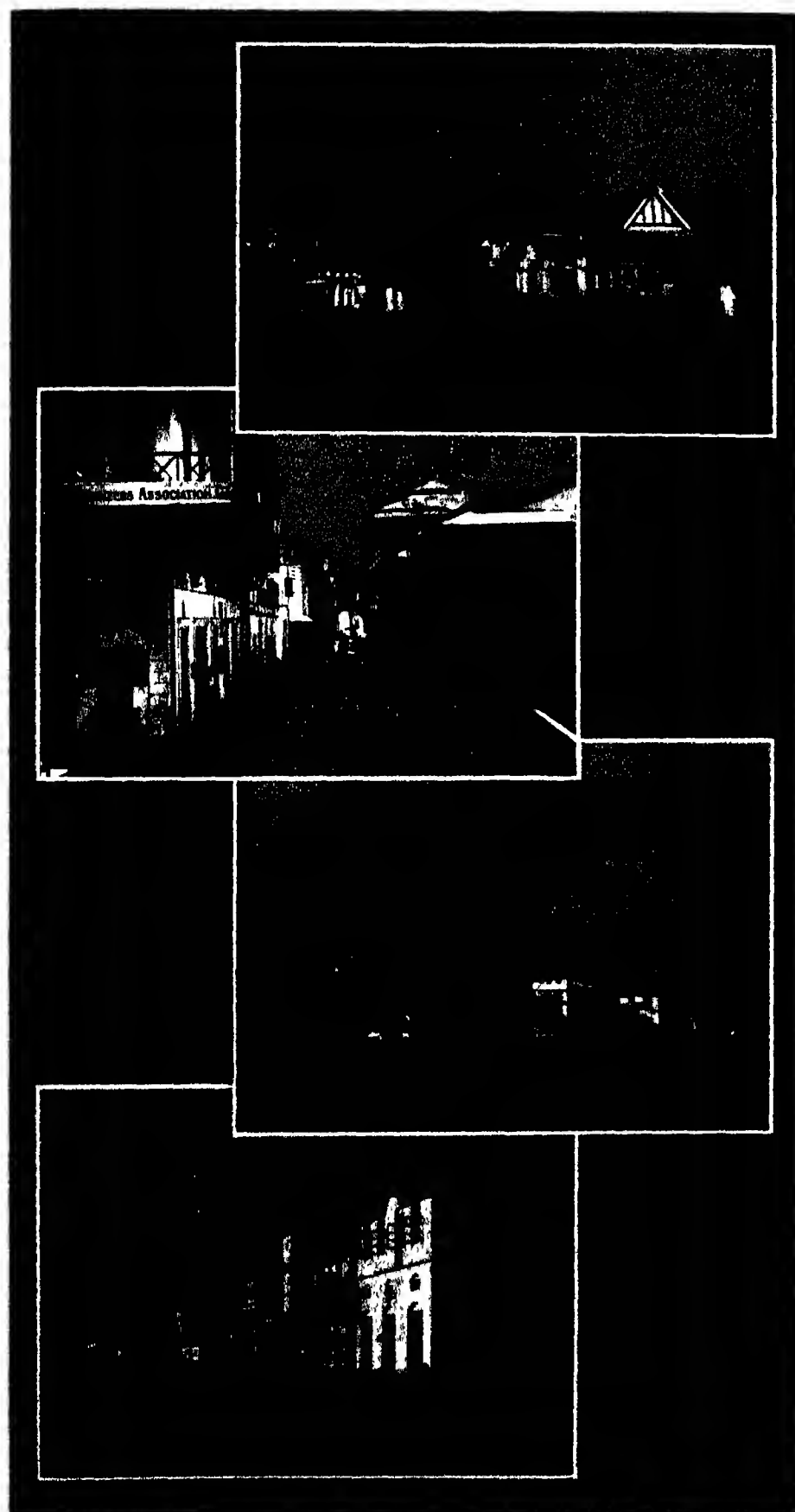
**ACCOMMODATION.**—Both the Mombasa and the Kilindini harbours are well sheltered by the natural formation of the coast-line and outlying reefs, and are fairly easy of access, with good leading marks in both harbours. The depth of water in the channels of the harbours ranges from  $5\frac{1}{2}$  to 18 fathoms, low water springs. Mombasa harbour is mainly used by small steamers and native craft (dhows) trading between the African ports, Persia, India and Madagascar. Wharves have been constructed at M'Baraki Creek by a private company. Near these a motor ferry gives access to the road running south by Gazi, and eventually to Fanga, Korogwe, Kilosa, Munga, and Tukuvi to Mwaya on Lake Nyassa. A stretch of water adjoining Mombasa harbour, but further inland, is known as Port Tudor. This is divided from Kilindini harbour by the railway bridge.

At Kilindini, the channel into which is 600 ft wide and a mile long, the wharf, 550 ft long, with a projecting pier 100 ft in length, is being extended at a cost of over a million sterling to cope with the increasing traffic. The new works which were completed in 1925 have added 1,210 ft of wharfage, and there is now deep sea berthing alongside the quays. The Magadi Soda Company has its own pier and landing place. Good fresh water and provisions are obtainable at the port, and competent stevedoring and lighterage companies are available. Oil fuel is also available.

**ADMINISTRATION.**—The question of the control of Kilindini port has produced an acute controversy, the rival claims of an exclusive State control and of a Harbour Board administration having been hotly contested. In 1926 the report of a Commission recommended that the harbour be placed under the control of the manager of the railways, that a Harbour Advisory Board be constituted to advise the general manager, that the harbour and all the land connected therewith remain the property of the Kenya Government and outside the jurisdiction of the Inter-Colonial Railway Council, and that the general manager of the railways be responsible to the Governor of Kenya.

The Advisory Board was to consist of representatives of the Kenya and Uganda Governments and of shipping and commerce. Further recommendations were to the effect that cargo-handling be done by private contractors on the basis of tenders, that the Government negotiate for the termination of the present lease of Mbaraki Pier by the African Wharfage Company, and that the construction of two additional deep-water berths at Kilindini be undertaken.

**COMMUNICATIONS.**—The following regular steamship services are maintained: monthly service to and from London by the Union Castle Mail Steamship Co. and the British India Steam Navigation Co. Fort-nightly service to and from Marseilles by the Messageries Maritimes. Monthly service by the Italiana Navigation Co. Three-weekly



1. Centre of Mombasa, with the Standard Bank's and the African Mercantile Co.'s Premises on the left and the Treasury in the centre.
2. Street leading to Customs House through part of the Old Town.
3. Mombasa end of the Kilindini Road.
4. Redgers Road, showing the four Buildings comprising the Premises of the Old East African Trading Company's Head Office in right foreground.

service to and from Liverpool to Beira by the Clan Elberton-Harrison Line. Fortnightly service by the Holland East Africa Line. Monthly service by the Deutsche Ost Africa Line. Fortnightly mail service to Bombay and Durban by the British India Steam Navigation Co. Coasting services by the British India S.N. Co. and Messrs. Cowasjee Dinshaw.

**PILOTAGE.**—Optional, pilotage fees range from 80s. for vessels up to 500 tons to 170s. for over 1,500 tons.

**PORT REGULATIONS.**—(1) A black ball, hoisted at the south-west yardarm of the flagstaff at Ras Serani, signifies that a vessel is leaving Kilindini harbour. Vessels bound in shall not approach within half a mile of Ras Serani while the black ball remains hoisted. (2) A white ball hoisted on the

### BUSINESS ENTERPRISES

#### SMITH, MACKENZIE & COMPANY.

**Inception.** This firm was founded at Zanzibar in 1877, and extended its operations to Mombasa in 1890. It is the oldest established British house on the coast and originally had branches on the caravan route from Mombasa to Kampala in Uganda. On the advent of the Kenya and Uganda Railway these branches became unnecessary, and were closed down in 1898.

**Shipping Agencies.**—The firm is agent for the Peninsular and Oriental and British India Steam Navigation Companies and associated lines in connection with which it does one of the largest shipping businesses in East Africa. The principal routes along which they operate are those to England, Europe, India, and South Africa. The company is also agent

**General Merchandise.**—Messrs. Smith, Mackenzie and Co. export all primary products and import general merchandise; they also act as clearing and forwarding agents for both exports and imports.

**Representations.** Some of the principal firms represented by the company are Balfour Williamson & Co. of New York (grey sheeting), Vlissingen & Co. Rotterdam (printed cotton goods) and Ledward and Faylor, of Manchester (white shirting, etc.).

**Head Office.** Kilindini, Mombasa Island, P.O. Box 102, Mombasa.

**Branches.** These are maintained at Zanzibar, at Dar-es-Salaam, Tanga and Lindini Tanganyika Territory, at Nairobi and Lamu in Kenya, and at Kampala in Uganda.

**Bankers.** The National Bank of India, Limited.

**Cables.** "Mackenzies," Kilindini.



1. NDIA KUU, THE ENTRANCE TO THE BAZAAR, MOMBASA.

2. THE OLD HARBOUR OF MOMBASA.

flagstaff on the railway pier, Kilindini, signifies that a vessel is approaching the channel to Kilindini harbour. Vessels must not leave their moorings while the white ball remains hoisted.

**SHIPPING AND TRADE.**—During 1924 steamers numbering 302, of which 248 were British, entered the port. The shipping also included 1,205 sailing vessels, mostly Arab dhows.

In 1925 the remarkable total of 36,764 passengers passed through Mombasa, and 440 steamers entered and left the harbour, the total net registered tonnage of these vessels being 1,180,493. The total tonnage of imports landed in 1925 was 346,714, as against 220,333 tons in 1924, and of exports shipped, 293,326 tons, compared with 259,326 tons.

for the Union Castle Mail Steamship Company at Tanga, Dar-es-Salaam and Zanzibar.

**Insurance.** The firm is agent for Lloyd's and for the Marine and Atlas Assurance Companies and is in a position to accept practically all classes of risks.

**Oil.** Smith, Mackenzie & Co. act as distributing agents for the British Imperial Oil Company (S.A.) Ltd., which has its own main installation at Kilindini, where its products are stored in bulk and packed for distribution.

**Coal and Bunkering.**—The company is manager for the African Wharfage Company, Ltd., and as such is in a position to act as coal and bunkering agents, and stevedoring and lighterage contractors. The African Wharfage Company, Ltd., operates its own fleet of lighters and tugs at Kilindini, Dar-es-Salaam and Lindi.

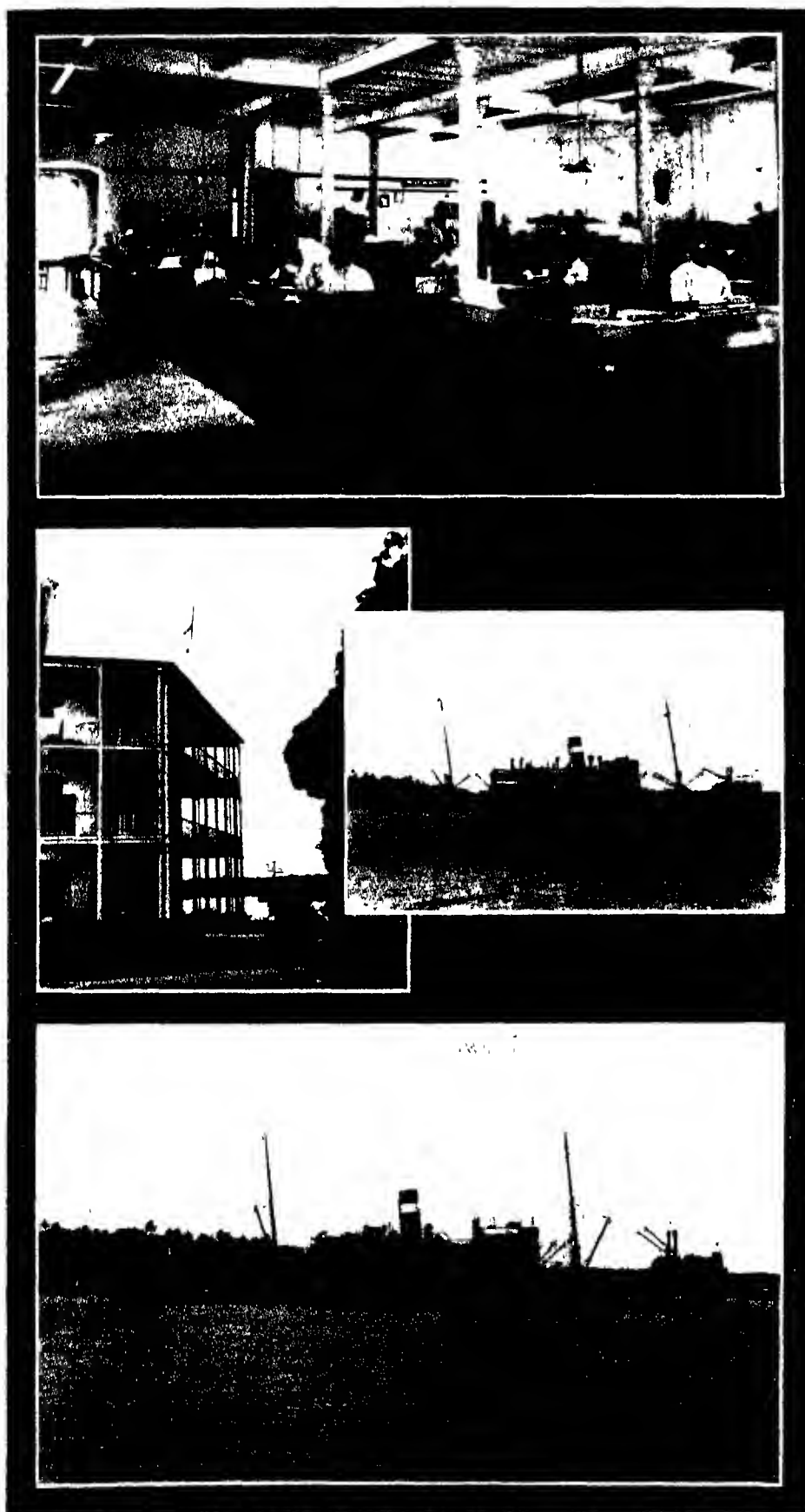
#### THE EAST AFRICAN LIGHTERAGE & STEVEDORING CO. LTD.

**Inception.** This company commenced business at Kilindini in the year 1911.

**Activities.**—For lighterage and stevedoring operations the firm at present owns a fleet of forty-six lighters, with a carrying capacity of 7,000 tons, these vessels being served by five tugs. Twelve more lighters, with a capacity of 200 tons each, have been ordered, and are now in course of construction.

**Contracts.**—The company is contractor to the following: The Clan Line, the Ellerman Line, the Harrison Line, the Ellerman Bucknall Line, the German East Africa Line, The Holland Africa Line, the Scandinavian East Africa Line, Osaka Shosen Kaisha Line, R. P. Houston & Co., the Kenya and Uganda Railway, the Vacuum Oil Co. Ltd., Messrs.





SMITH, MACKENZIE &amp; COMPANY, Mombasa.

1. General Office at Kilindini.
2. Front View of the Company's Head Office at Kilindini, showing a B.I. Steamer in Harbour.
3. S.S. "Karoo," one of "K" Class of Steamers belonging to the British India S.N. Co., running to India.
4. S.S. "Mulbera," one of "M" Class of Steamers belonging to the B.I. S.N. Co., running to Europe, for which Smith, Mackenzie & Co. are agents.

Mitchell Cotts & Co., the Kenya Farmers' Association, Ltd. and the Anglo-Persian Oil Co. Ltd.

**Directors.** - Messrs. T. B. P., F. T. G., and J. J. Davis.

**Associated Companies.** There are associated companies operating at Dar-es-Salaam and Tanga.

**Head Office.** 211, Point Road, Durban.

**Bankers.** The National Bank of South Africa Limited.

**Cables.** "Lightorage."

(See illustration, page 386.)

#### MOMBASA BONDED WAREHOUSE COMPANY LIMITED.

**Inception.** This company was formed in 1918 by various local firms to provide exporters with facilities for the storing of their produce and also with the object of opening Customs bonded warehouses in which importers' goods could be stored until required.

**Development.** Prior to the company's existence there were but few essentials for the storage of dutiable goods, and such Customs bonded warehouses as existed were small and inadequate for the volume of trade. The firm supplied these requirements, and also afforded long needed facilities to importers and exporters who required coast agents on whom they could rely. During the seven years of its existence the company has built up a large clearing, forwarding and export business and acts as agent at the port for many cotton ginneries, also for coffee sisal and rubber estates up-country.

**Objects.** The company specialises in import and export shipping but, not being a trading concern, importers can rely on receiving prompt and efficient service.

**Storage Accommodation.** There are 12 large stone godowns at Kilindini with a total capacity of 13,000 tons. Particular attention has been paid to ventilation, and all packages are stacked on sound cement floors. The warrants issued for all goods received into the warehouse are accepted as security for advances by the local banks.

**Transport Facilities.** - By arrangement with the Kenya and Uganda Railway, a siding has been constructed from Kilindini station to the godowns, and consignments from up-country are sent direct to the company's sidings. Trucks can also be loaded up from godowns, and the goods railed direct up-country.

**Warehouses.** These have been so built that it is possible to bring goods into them either by rail or by road. In addition the company has four more bonded warehouses close to Mombasa Customs and Mombasa Station for the convenience of merchants having goods lying in the harbour.

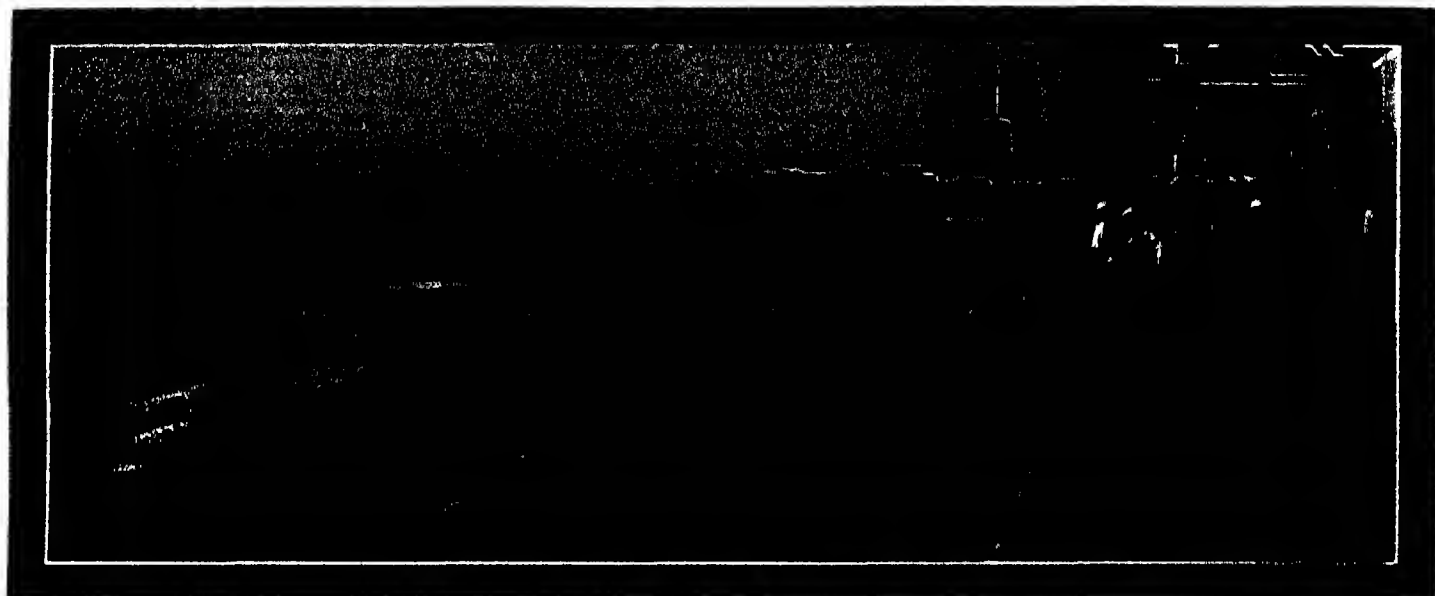
**Agencies.** - The firm is agent for a number of well-known European firms, and is also the East African agent for Messrs. Harolds Ltd., John Barker & Co., Fortnum & Mason, Wm. Whiteley and other large wholesale and retail London houses. Goods shipped by these firms are cleared and railed to the consignee by the company.

**Congo Trade.** The Mombasa Bonded Warehouse Coy. is agent for the Belgian Colonial Government, the Société des Mines d'Or Kilo-Moto, the Intertropical Comfina Société Anonyme, the Compagnie Minière des Grands Lacs Africains, and others. It is estimated that 95 per cent. of the imports for the Belgian Congo pass through the company's hands, and special arrangements have been made for the delivery of goods.

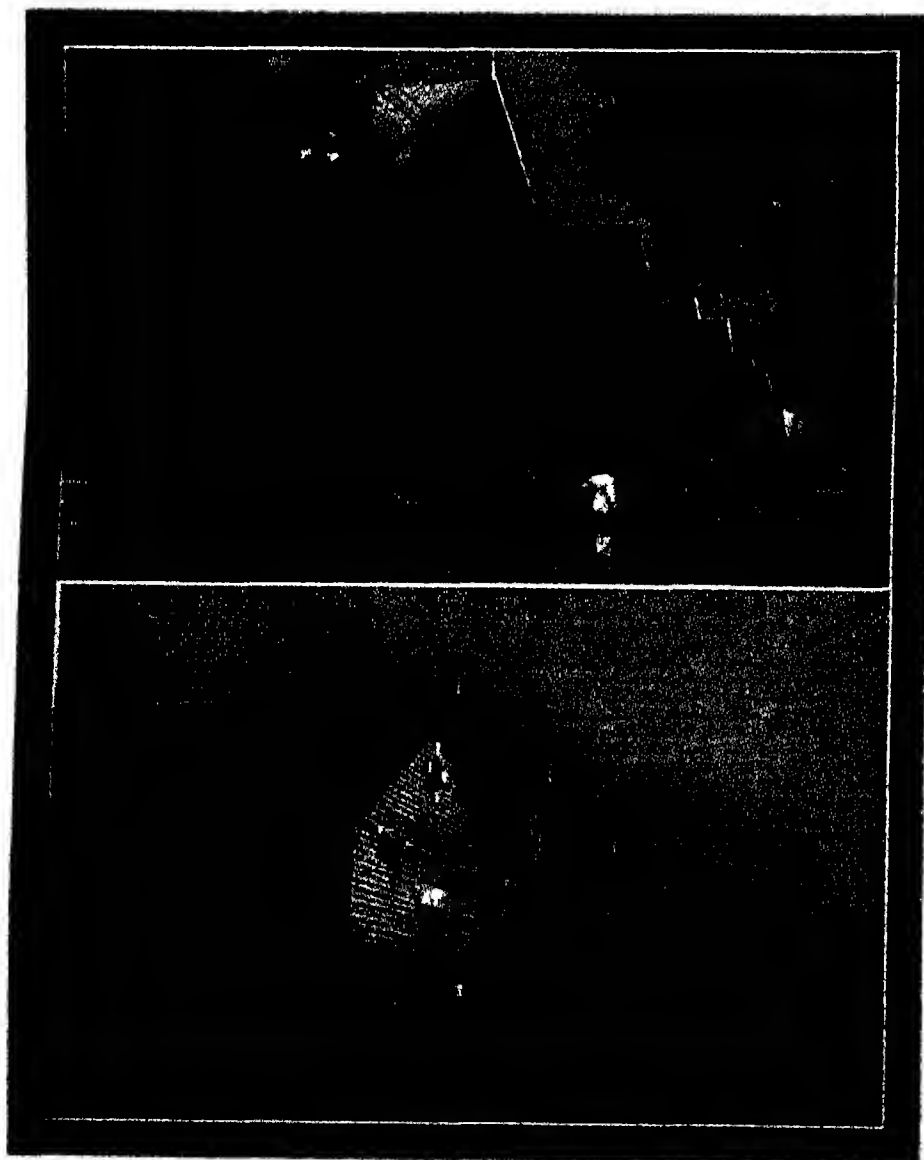
**Bankers.** - The Standard Bank of South Africa, Limited, Mombasa branch.

**Cables.** "Storage," Mombasa.

(See illustration, page 386.)



**THE EAST AFRICAN LIGHTERAGE & STEVEDORING CO LTD., Mombasa.**  
Loading Company's Lighters at Kilindini Wharf. (See letterpress, page 378.)



**MOMBASA BONDED WAREHOUSE COMPANY LTD., Mombasa.**  
1. Main Block of the Company's Warehouses, showing Road Facilities.  
2. Another view showing Company's Private Railway Siding.  
(See letterpress, page 379.)

**BOUSTEAD & CLARKE LTD.** Mombasa  
Established under style of Boustead & Ridley & Co in 1872 converted into present limited company in 1900. Main activities are centred in Manchester piece goods and general merchandise. Branches Nairobi, Kisumu, Kampala, Jinja, Dar-es-Salaam, and Zanzibar. London buying house 85, Gracechurch Street, E.C. 3. Cables "Progress," Mombasa.

**FRIGERIO, L., & CO. LTD.** P.O. Box No. 50, Mombasa. Specialises in export of hides and skins and all country produce, deals in insurance, and represents many leading firms in Europe and America. Bankers National Bank of India Ltd. Cables "Leghorn," Mombasa.

**JAPAN COTTON TRADING CO. LTD. (NIPPON MENKWA KABUSHIKI KAISHA).** Mombasa. Head offices 10 Nichome, Nakanoshima, Osaka, Japan, agency at Mombasa. Deals in cotton, cotton yarn, piece goods, raw silk, wool, jute, rice, and acts as general commission merchants. Cables "Mankwa," Mombasa.

**MANOR HOTEL.** P.O. Box 51, Mombasa. Established 1913. Accommodation 50 rooms, all fitted with modern sanitary arrangements. Telegrams "Manorial," Mombasa.

**MESSAGERIES MARITIMES.** Mombasa. Head office 8, Rue Vignon, Paris, agency at Mombasa. Steamers run between France and India and Indo-China, and other Eastern countries, Australia, Egypt, Syria and Africa. London offices 72/75, Fenchurch Street, E.C. 3 and 62, Pall Mall, S.W. 1.

**OGDENS & MADELEYS LTD.**—Mombasa. Also Manchester, London, Zanzibar and Kampala. Established 1840. Textile manufacturers and general importers. Transact a large business in native trade goods. Bankers National Bank of India Ltd. Cables "Coronation," Mombasa.

**PALACE HOTEL.** P.O. Box 317, Mombasa. Situated on main Kilindini Road. Present accommodation 21 rooms, but expansion is contemplated in near future. Proprietor C. Schwentafsky. Tariff 15s. per day. Cables "Palace," Mombasa.

# COMMERCE

**T**HERE being no Customs barrier between the neighbouring territories of Kenya and Uganda, their import and export statistics are combined, separate figures for Kenya not being available. As showing the great development in the trade of the two countries, it may be stated that in 1896, the first year of the protectorate, the total value of the merchandise imported amounted to only £250,007. In 1925 the value of all Kenya and Uganda imports and exports was £16,783,202, which is not only a proof of the progress made, but also a demonstration of the capabilities of the two territories. Much of this economic development of the countries has undoubtedly been due to the Uganda Railway which tapping as it does the important productive areas of Uganda and the contiguous portions of Tanganyika Territory and the Belgian Congo, has opened up vast tracts of country with immense potentialities between Mombasa and Kisumu.

A healthy export trade has been built up in agricultural products of European and Native growth also in such manufactured and semi-manufactured commodities as are naturally associated with the by-products of an agricultural and stock-raising community, together with a complementary import trade in articles of necessity and luxury for European, Asiatic and Native consumption and use, viz., agricultural and industrial machinery and implements, commercial vehicles for transport purposes, vehicles for ordinary passenger use, materials for road and railway construction and maintenance, and manufactured goods of all kinds necessary for the development of territories which are denied the usual industries dependent on the possession of mineral wealth.

**CUSTOMS.**—Kenya has a Customs Tariff identical with those of Uganda and Tanganyika Territory, and no amendment of the tariff now in force can take place except by the agreement of the three Governments concerned. The imposts are on an ad valorem basis, the general rate prior to 1922 having been one of 10 per cent. In order to raise revenue during the trying period of 1921-23, duties were increased in a number of cases in 1922, but it should be noted that an effort has been made, as the result of the deliberations of a Customs Conference on East African Tariffs, to differentiate between the rates imposed upon necessities and luxuries. Protective duties have been introduced to assist in the establishment of local industries for the supplying of sugar, flour, timber and dairy products. Specific rates of duty have been imposed on such commodities as lend themselves to that basis of assessment, while the free list has been amplified to include articles necessary for the agricultural, industrial and educational development of the country. Export duties have been abandoned by reason of the fact that the amount of revenue did not compensate for the disturbance caused to the export trade by the incidence of imposition and collection.

The headquarters of the Customs Department is at Mombasa, and there are customs houses and preventive stations at various coastal sub-ports, lake ports, and frontier posts. The Uganda Railway Administration exercises supervision over the dhow traffic of Lake Victoria Nyanza, while in outlying frontier districts customs' work is performed by Administrative Officers in the absence of Customs Stations proper.

**IMPOSTS.**—While the general ad valorem duty on imported goods is one of 10 per cent,

the following important increases have been made since 1922. Spirits (50 per cent) of proof, 60 per gallon, wine 60 per cent, tobacco, 90 per cent, pianos, silk and others, 30 per cent, rice 25 per cent, wheat, wheat-flour and meal 30 per cent, sugar, 15 per cent, provisions, motor-cars and cycles, 30 per cent, timber, 50 per cent, ghee, butter and cheese, 15 per lb., cement, chemicals, iron sheets, petroleum, petrol pump, soap, and others 10 per cent, all not otherwise classified 20 per cent. The free list includes passengers' luggage (covering bicycles, cameras, used sewing machines, binoculars), agricultural and stock-raising implements, industrial machinery and commercial motor vehicles.

**EXPORTS.** Exports from Kenya and Uganda, which for the year 1911-12 had a value of only £710,744 increased from £3,996,432 in 1923 to £13,770,000 in 1924, and to £7,821,844 in 1925. In the last named year Uganda raw cotton accounted for over 60 per cent of the total exports of the two countries, and it is the most rapidly developing as well as the most valuable of East African products. The other principal exports of Kenya and Uganda in order of importance are maize, sisal, coffee, skins, and carbonate of soda. It is impossible to tabulate the destinations of these exports, as cotton exported to India (almost the whole of the crop) is really destined for Japan, while sisal purchased to ship to London is often diverted to New York or Antwerp. Exports of coffee are shipped principally to Great Britain, as are also wool, ivory and flax. The United States buys the total production of goatskins, together with sisal and capsicum.

**IMPORTS.** Imports into Kenya Colony and the Uganda Protectorate increased from £4,257,843 in 1923 to £6,277,007 in 1924, and to £8,901,448 in 1925. The United Kingdom's share of imports declined from 39.53 per cent in 1924 to 38.00 per cent in 1925, India's from 12 to 11 per cent, Japan's from 6 to 4 per cent, and Germany's from 6 to 5 per cent, while Holland's share remained stationary at 5 per cent. Imports from the United States, principally automobiles, accessories, trucks, tractors, tyres, gasoline, kerosene, lubricating oils, agricultural machinery and sewing machines—increased from 5 to 9 per cent. For the first six months of 1925 the figures of value of the chief imports were: Cotton yarns and piece goods, £1,124,317, textile manufactures and wearing apparel, £262,389, motor cars, £234,678, cycles, £233,128, coffee, £232,328, machinery and tools, £224,416.

**MOTORS.** Imports of motor cars were valued at £26,000 in 1922, at £47,000 in 1923, and at £158,000 in 1924, Great Britain's share being £4,500, £7,300, and £28,000 respectively. In the trade in motor lorries and tractors the Mother Country's position is more encouraging. Of commercial vehicles which were imported into Kenya and Uganda to the total value of £64,000 in 1924, only £18,000 represented the share of the United States, against £20,000 British and £23,000 Canadian. Britain furnished motor cycles to the value of £40,000 out of a total of £44,000.

**RE-EXPORT AND TRANSIT TRADE.**—By reason of its geographical position, Kilindini handles a large portion of the import and export trade of the upper part of Tanganyika Territory and the Belgian Congo. In addition, the entrepôt trade of the ports of Mombasa and Kilindini is of considerable importance. Stocks of bonded or duty-paid goods are held for sale in the markets of

Zanzibar, Tanganyika Territory, Italian Somaliland and the Belgian Congo. In the case of duty-paid goods, subsequently re-exported, full drawback is allowed under certain conditions. The re-export trade of the colony rose from £1,583,113 in 1921 to £1,754,309 in 1925.

**TRADE BY COUNTRIES.** The following table shows the shares of the principal countries trading with Kenya and Uganda during the first six months of 1925.

COUNTRY.	IMPORTS.	EXPORTS.
United Kingdom	£3,911,880	£2,537,123
India and Burma	445,571	835,954
Tanganyika Territory	408,887	16,210
Germany	251,361	142,971
The Netherlands	337,361	67,758
Japan	148,855	67,437
Other British Possessions	64,982	7,597
Belgium	52,781	118,565
Union of South Africa	75,162	30,570
France	43,051	61,207
Sweden	22,562	64
Italy	10,767	60,505
China	16,174	-
Zanzibar	8,245	32,302

**TRADING ASSOCIATIONS.** The leading commercial association of Kenya is the Association of East African Chambers of Commerce, which was formed with the object of establishing a responsible and representative body to hold a watching brief in the commercial interests of Kenya, Uganda, Nyassaland and Tanganyika Territory. This is done either by way of advice or assistance to the Governments, or through the Association of Chambers of Commerce and the East African Section of the London Chamber of Commerce. The sessions of the Association are held half-yearly in December and July. The Nairobi, Mombasa, Eldoret and Kisumu Chambers of Commerce, and all constituent chambers of the Association are represented on its executive.

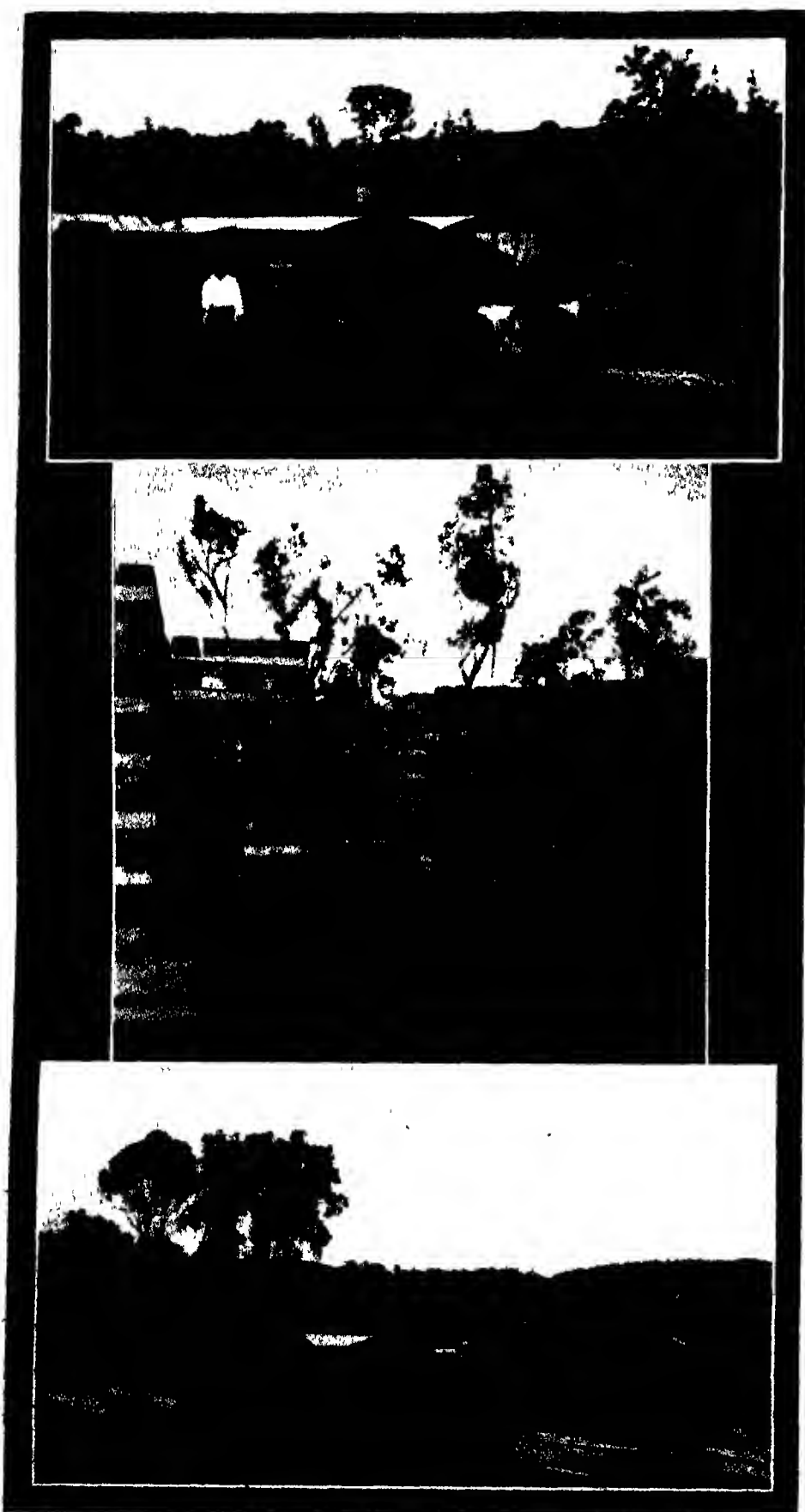
**TRADING LICENCES.** Every person trading in the colony (with certain exceptions) must pay an annual fee according to the licence taken out. The fees are as follow:

(1) For each store the value of whose stock exceeds Shs 3,000, Shs 300 p.a. (2) For each store the value of whose stock does not exceed Shs 3,000 (a) In townships and trading centres, Shs 30 p.a. (b) Elsewhere, Shs 10 p.a. (If it is considered that the charging of the fee for any licence taken out under (a) or (b) will prove a serious check to desirable trade, the whole or part of such fee may be remitted by the licensing officer in any case. Such cases, however, have to be reported to the Governor or any officer he may appoint.) (3) For a commercial traveller's licence, Shs 300 p.a. (4) For a hawkers' licence, Shs 10 p.a. (5) For transfer of a trading licence, Shs 10 p.a. (6) For a duplicate licence, Shs 10 p.a.

Trading licences are required to be taken out on the first day of January in each year, and are due to expire on the last day of December following. A licensing officer may issue a licence on or after July 1 in any year at half the specified fee.

Persons engaged in the following occupations need no licence in respect of them: Planters, farmers, market gardeners or dairy-men disposing of the produce of their own estates, auctioneers, brokers, money-changers, silversmiths, or persons licensed to sell liquor.

**TRADING SYSTEM.**—Large export houses are established on the coast, with branches in



EQUATOR SAW MILLS, Nairobi.

1. Log Yard and Breakdown Mill at Maji Mzuri.
2. Sleeper Dump - Stocks for Seasoning, Kenya Creosoting Works at Maji Mzuri.
3. Pressure Creosoting Plant, Maji Mzuri.

the interior, and these concerns are the primary importers and the ultimate exporters. Staple lines of manufactured goods, cotton-piece goods, foodstuffs, implements, etc., are held in fairly large stocks by those firms, and are distributed to the local retailer. For the European trade there are large departmental stores established in the important towns, selling practically every line known to a similar concern in Europe. For the native trade, the Indian is at present the distributor, with his "duka" or agent, in the native reserves. The crops of the European planters generally pass through one hand before export, that of the merchant-shipper with his connections in the principal overseas produce markets, while those of the native come in small parcels to the "duka," are collected, and may then pass through the hands of two or more parties before ultimate exportation. The merchant-shipper interest is, therefore, likely to be increasingly represented in Kenya. His presence and the facilities he offers mean that the planter can sell his crops outright locally, get his money at once and turn again immediately to further production, without the delay in disposing of his produce himself to the overseas market.

**CREDIT IN EAST AFRICA**—In a recent report issued by the British Trade Commissioner for East Africa, emphasis was laid on the fact that too much business was being done on consignment terms. It was pointed out that a new factor had been introduced by the adoption by foreign firms of the system of making cash advances to the small trader against a lien on his prospective exports, and binding him to place all his indents with the firm that gives him this accommodation. While such liberal accommodation may help to maintain the increased business consequent on present and future developments in crops, it may, on the other hand, encourage over-trading. Although in many lines too generous credit has admittedly been harmful, between the British manufacturer of heavy machinery and the local dealer long credit is, however, necessary and generally justifiable. If it is not granted there is little hope of keeping out the foreign supplier. The demand for expensive goods of this class is not yet sufficiently widespread to warrant the importer in locking up much of his exiguous capital in stocks.

**WEIGHTS AND MEASURES.**—The earliest legislation regarding weights and measures was introduced in 1899, when certain native standards of weight were authorised, properly stamped sets of these measures were obtainable from Government offices. The paraffin tin at a very early date became a popular, though unauthorised, measure amongst the Native population and still remains so.

With the increase of the European population the necessity arose for the legalisation of Imperial standards, and in 1912 an ordinance was passed to this effect; under this the only legal weights and measures became those in general use throughout the Empire. The ordinance was applied at first to Nairobi in 1921, an inspection and verification being made of all the weights and measures used in the town. It is hoped to apply this ordinance gradually to the whole colony as opportunity offers. The protectorate standards are stored at the Treasury, and special precautions taken to safeguard them, these are sent once in ten years for verification to the Standards Department of the Board of Trade in London.

## REPRESENTATIVE COMMERCIAL ENTERPRISES

### EQUATOR SAW MILLS.

**Inception.** This enterprise, the oldest and largest lumber and timber concern in Kenya Colony, was founded in 1904 by the present sole proprietor, Major E. S. Grogan, D.S.O.

**Properties.** Apart from several thousands of acres of forest owned by Major Grogan in the vicinity of Furi, on the Uganda Railway main line, the Equator Saw Mills possess a forest concession from the Crown of over 200,000 acres on Eldama Ravine. The Uasin Gishu Railway runs through this concession.

**Timber.** These forests contain a wide variety of timbers. The most valuable commercially is the *Podocarpus gracilior*, a straight grained, odourless, strong, light, soft-wood with a cream satiny surface. The panels made of this wood exhibited at the Kenya pavilion during the late Wembley Exhibition were greatly admired. This *Podocarpus* is the mainstay of the building trade in Kenya, being used for bridge timbers, joists, rafters, flooring, butter boxes, railway sleepers, fruit crates and many other purposes. *Mushatagi (Olea hochstetteri)* is a very strong olive hardwood, with a grain that outrivals the best walnut. Its toughness is remarkable, and, apart from its value for cabinet work, it lends itself readily to hard wear, enabling it to be used for flax scutching blades, pick handles, and aeroplane propeller blades. Cedar is prevalent throughout the forests. It is insect-proof, and is used largely in the building trade, but has yet to come into its own in the pencil trade. The Equator Saw Mills were the pioneers of the cedar pencil and slat industry of the colony.

**Allied Concerns.** The allied concerns of the Equator Saw Mills are —

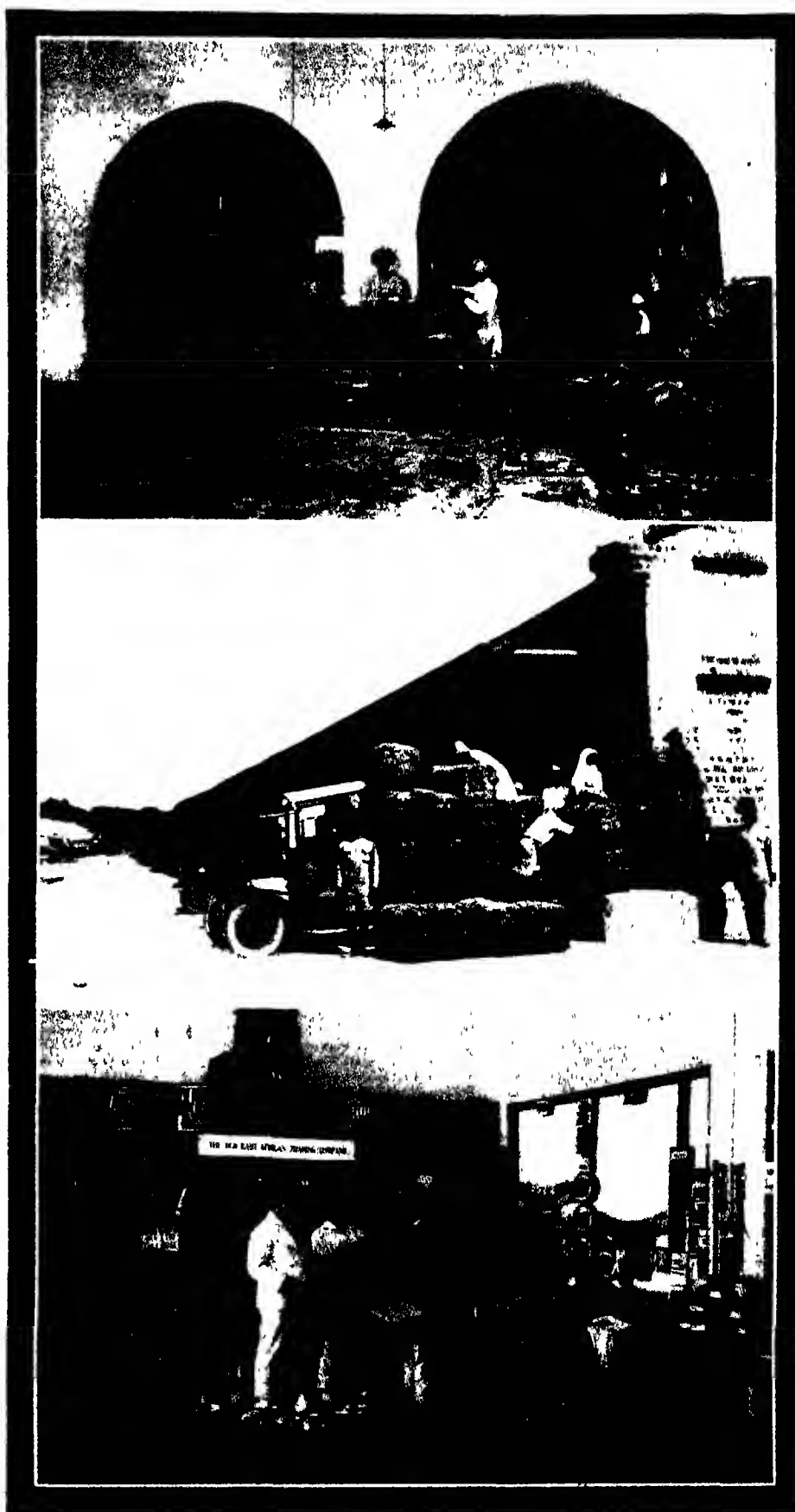
**THE KENYA CLOSING COMPANY, LIMITED.** This company is run in conjunction with Messrs. Burt Boulton and Haywood, Ltd., timber merchants and tar distillers, as half-shareholders. The plant which is situated at Maji Muri, was erected in 1922, and is capable of dealing with about ten tons at a charge. It is one of the most up-to-date factories of its kind in the world. The company executes large Government contracts, embracing sleepers, bridge timbers, telegraph poles and telegraph arms.

**THE EQUATOR BRICK AND TILE WORKS.** These are situated in Nairobi, and manufacture bricks both solid and hollow, also a very high-class Brosley pattern roofing tile. The local demand for its products is far in excess of the works capacity, although the output increases annually.

**Address.** The head office of the Equator Saw Mills and the company offices controlling the allied concerns, all under the direction of Major Grogan's personal representative, Mr. A. C. Tannahill, are housed in one block of buildings in Sadler Street, Nairobi. This block has its own railway siding attached to it.

**Cables.** — "Capcat," Nairobi: code, Bentley's.

**Bankers.** The National Bank of South Africa, Limited.

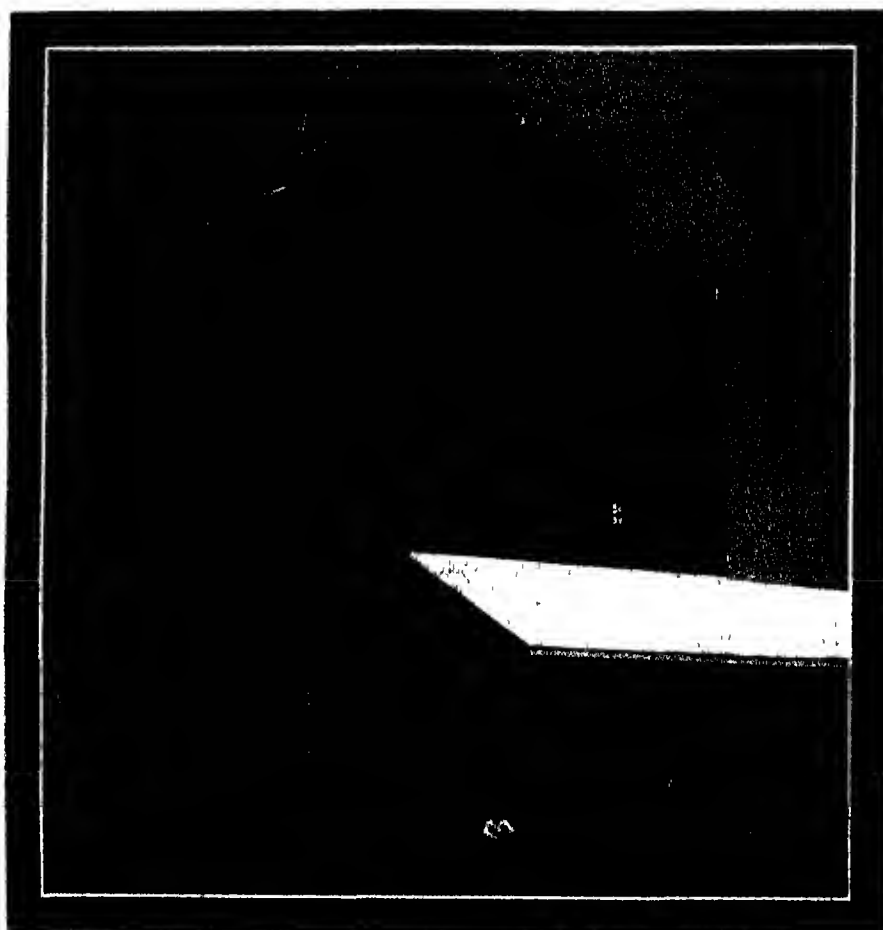


THE OLD EAST AFRICAN TRADING COMPANY, Mombasa.

1. Packing Hides and Skins for Export at one of the Company's Hide and Skin Godowns.
2. Loading General Merchandise imported for up-country Branches.
3. The Sample Room, Dar-es-Salaam.

(See letterpress page 384.)





KENYA GRAIN MILLS LTD., Nairobi.  
The Mill

#### THE OLD EAST AFRICAN TRADING COMPANY.

**Inception.** This company was established at Mombasa in 1903.

**Activities.** - The business of the enterprise is mainly that of import and export merchants. The chief import lines in which the company

specialises are textiles (in particular blankets), khaki drills, varied assortments of native loom cloths, building materials (corrugated iron and cement), hardware, enamelware and cutlery. Exports include Hides and skins (in which line the company has always taken a very active part), maize,

ground nuts, sesame seed, castor seed, cotton seed, beeswax and rubber, of each of which the company is a regular buyer. The Uganda branches of the firm are also engaged in the export of cotton.

**Branches.** The first branch office was opened at Entebbe which was then the headquarters of the Government and the trading centre in Uganda. In the course of years the organisation of the company was extended considerably, and branches were opened at Nairobi in Kenya Colony, Kampala and Jinja, in Uganda, and Mwanza, Dar es Salaam and Tabora in Tanganyika Territory. All these branches are under European management, and have in some of the localities their own organisation of sub-branches.

**Foreign Connections.** The firm has a very old-standing connection with many leading houses in the United Kingdom, as well as on the European Continent and in the United States of America.

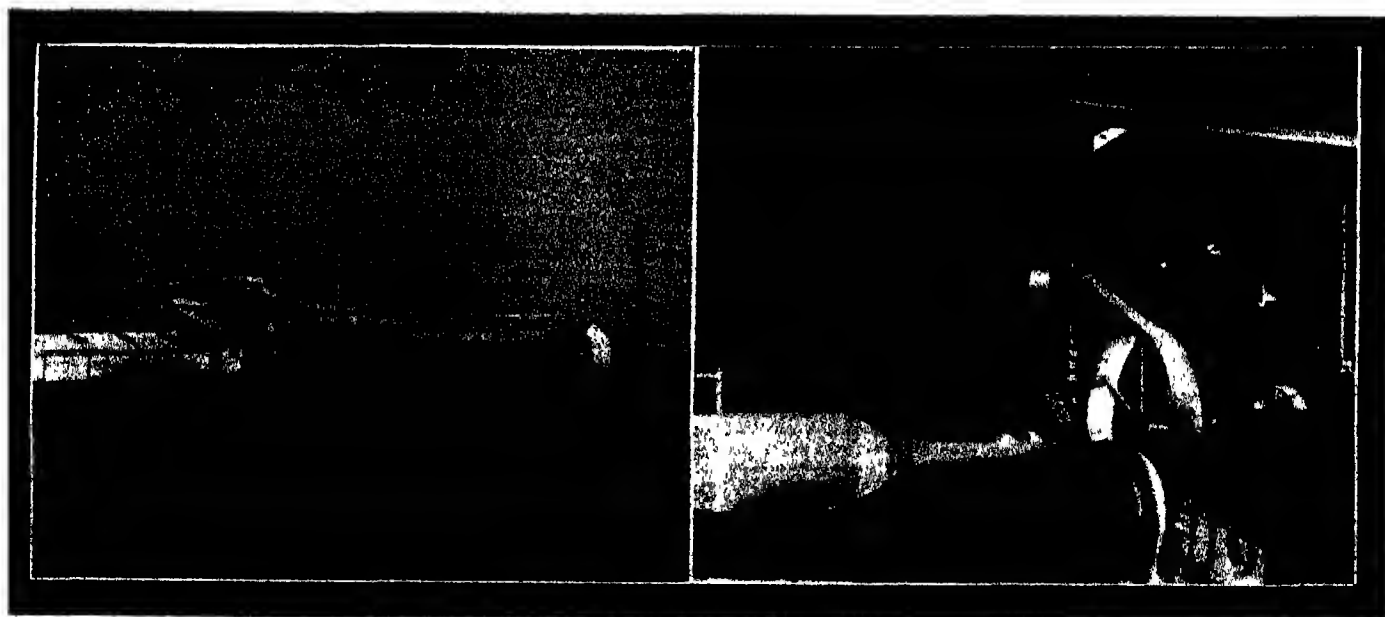
**Cables.** "Bruch," both for head office in Mombasa and for all branch offices. Codes: A B C, 5th and 6th Editions, Western Union 5 letter, Western Union Universal, Tanner's Universal Trade (Council Edition), Lacher's, Bentley's, Morse and private. (See illustration page 383.)

#### KENYA GRAIN MILLS, LIMITED.

**Inception.** This company was founded in 1921 by Mr. R. O. Hamilton, the present managing director, who had had many years' experience in Great Britain, both in milling and on various corn exchanges.

**Object.** The main object prompting the formation of the concern was the milling of locally grown wheat. The production of this cereal is increasing annually, and in the very near future it will be a large item in the primary products of the colony.

**Plant.** The mill commenced operations in June, 1925, and at present has a capacity of 37,000 bags a year. It is built on the Simon Long system, and has been so constructed that extensions can be made at any time without interrupting the milling processes in the existing building. Its capacity can be increased by three hundred per cent.



C. C. MONCKTON & CO., Nairobi.

1. Coffee Curing Works at Kahawa, the Largest in the Colony.

2. Portion of the Power Plant at the Works.

**Flour.**—The company manufactures all grades of flour, from Superfine to Atta. The leading brands are known as "Kenya's Pride" and "Good Company" both of which bear favourable comparison with any on the market.

**Wheat.**—At present the country produces insufficient wheat to cope with the local demand for flour, and consequently a certain amount of the product has to be imported. In 1925, 33,000 bags of flour were brought into the country.

**Possibilities.** There is no doubt that as the local production of wheat increases and meets the requirements of the country it will have to look for new markets for its flour, these, owing to the geographical position of the colony, are practically lying at its own door.

**Directorate.** Messrs T. A. Wood, O.B.E., C.M.G. (chairman), Peter Whitclaw, George Blowers and R. O. Hamilton (managing director).

**Head Office.** Cearn's Chambers, P.O. Box 396, Nairobi.

**Cables.** "Cerea," Nairobi.

**Bankers.**—The Standard Bank of South Africa, Ltd.

### C. C. MONCKTON AND CO.

**Inception.**—This firm came into existence in 1918. The sole proprietor Mr C. C. Monckton, has been connected with coffee since 1914, when he joined the firm of Messrs Macdonald and Jameson of Nairobi as a partner. On the death of Mr Macdonald and the retirement of Mr Jameson, Mr Monckton carried on the business under the present style.

**Activities.**—Besides marketing coffee in all parts of the world, the firm also acts as estate agents, managing agents of estates, and secretaries of companies, in addition to importing and exporting goods of all descriptions. Coffee planters' requirements are particularly catered for.

**Overseas Business.**—A large overseas business is done in coffee and other produce. The marketing of coffee in Australia is conducted through the medium of Messrs Gollin and Company Proprietary Limited, while in South Africa the firm acts as coffee buying agents for Messrs Glenon and Mitchell of Johannesburg and Durban.

**Warehouse and Works.** Messrs C. C. Monckton and Co. are lessees of the largest coffee curing works in the colony. These works, which are at Kahawa, 13 miles from Nairobi, are capable of dealing with nearly 30 tons of parchment coffee per day. The warehouse accommodation consists of spacious godowns at these works, and also in Nairobi.

**Branches.**—Branches are maintained at Moshi and Arusha, both in Tanganyika Territory.

**Representations.** The firm represents The Beaver Company, Limited (Beaver Board), of Thorold, Ontario, Canada; The New York Lubricating Oil Company, Limited (oils and greases), of 116, Broad Street, New York, and Messrs J. Gordon and Company (coffee machinery), of 69, Old Broad Street, London, E.C.2.

**London Agents.**—For coffee: Messrs I. H. Allan and Company, 17, Gracechurch Street, E.C.; for fibres: Messrs Hindley and Company, London House, 35, Crutched Friars, E.C.; for buying: Messrs Wm. Menzies and Company, 165, Fenchurch Street, E.C.3.

**Bankers.**—The National Bank of India, Limited.

**Cables.**—"Monckton," Nairobi.

**J. GRAHAM DAWSON.** Nairobi, Kenya Colony. P.O. Box 216. Partners: Mr J. Graham Dawson and Mr A. F. J. Gedy. Manufacturers' representatives. Established in 1912. Field of operations extends throughout Kenya, Uganda, Tanganyika, and Zanzibar, which territories are systematically and regularly worked by the partners and a competent staff. The firm holds no stocks, but confines its activities to procuring indents for the manufacturers it represents. A branch office and showroom are maintained in Mombasa. Among the well-known firms it represents are: Huntley & Palmer Ltd., Crosbie & Blackwell (Mfg. Co.) Ltd., Thomas Townend & Co., J. & N. Phillips & Co. Ltd. of Manchester, The Phoenix Hosiery Co. of Milwaukee, Bartrum Harvey & Co., J. H. Downing & Co. Ltd. of Leicester, Joseph Rodgers & Sons Ltd. and Spear & Jackson Ltd. Correspondence is desired from important manufacturers who are not already represented, and who would not conflict with representations already held. The staff is being augmented, making it the second largest organization of its kind in East Africa. Cables: "Celerty," Nairobi and Mombasa. Bankers: The Standard Bank of South Africa, Ltd., Nairobi and London.

**W. C. HUNTER & CO.** Sixth Avenue, Nairobi. P.O. Box 96. Established 1906 as secretaries, accountants and managing agents. Activities include the supervision of the financial administration of producing estates and the employment of visiting agents to look after all practical managerial matters. The firm is sole agent for Dalgety & Co. in London and as such, is directly interested in the development of the colony. In this connection it advances to primary producers against crops, and erects godown storage facilities at up-country stations, where produce is received for export and local consumption. The firm distributes imported goods as well, and it also holds agencies for the London Assurance Co. and the International Harvester Co. Imports all classes of goods, including agricultural machinery and implements, also live stock from England, Australia and South Africa. Exports the primary products of the country, such as sisal (of which the firm handles 60 per cent. of the colony's production), maize, coffee, wool, flax, linseed, chillies, wattle bark, cotton seed, sunflower seed, ivory, casen, dairy produce, etc. Partners: Mr W. C. Hunter, A.C.I.S., and Mr R. Nicholson, D.S.O., M.C. Branches: Mombasa and Eldoret. Agents at Nakuru, Kisumu, and Kampala. London representatives: Dalgety & Co. Ltd. Cables: "Venator," Nairobi. Bankers: The National Bank of India, Ltd.

**BEALES AND SMITHSON.** Avenue House, Sixth Avenue, Nairobi (P.O. Box No. 320). This firm was established in 1920 for the purpose of carrying on business as company secretaries, accountants, and general agents, and in these capacities it has proved of service to farmers, planters, and others making use of its services. Messrs Beales & Smithson have been especially useful to those who, during temporary absence from the colony, have been able to leave in the firm's hands the management of their affairs. Among the various activities of the partners are the management and secretaryship of the Nairobi Brick, Tile and Pipe Works, Limited. This company's brickfield and works are situated on the outskirts of Nairobi, and produce bricks and tiles of high quality. Messrs Beales and Smithson are also the local representatives of several well-known British manufacturing firms, including The Mirreles Watson Co. Ltd., of Glasgow (manufacturers of sugar and oil machinery, pumps, etc.), The British Re-

inforced Concrete Engineering Co. Limited, of Manchester (makers of "B.R.C." reinforcements), The British Steel Piling Co. Ltd., of London (manufacturers of steel sheet piling, pile driving equipment, concrete mixers, etc.), and Messrs J. Blakeborough and Sons, Limited (valve makers, iron and brass founders). The firm undertakes fire insurance work, and it represents the well-known Fine Art and General Insurance Company, Limited. It is the hon. correspondent of the Federation of British Industries, and supplies British manufacturers with trade reports. It also answers enquiries through the F.B.I. Messrs Beale & Smithson are able to supply valuable information and reports to intending settlers regarding town properties and country estates for sale in Kenya and the adjacent territories. Partners: Messrs C. K. D. Beales and A. L. Smithson. Bankers: The National Bank of South Africa, Ltd., Nairobi. Cable Address: "Adaptable," Nairobi. Codes: Broomhall's Imp. Combn., A.B.C. 5th Edition and Bentley's.

**J. W. MILLIGAN & COMPANY.** Madatally Building, Government Road, Nairobi. P.O. Box No. 148. This firm was started in 1912 by the senior partner, Mr J. W. Milligan, and has developed into one of the principal export and import merchants, land estate and managing agents in Nairobi. It specialises in the handling of coffee, maize, and all kinds of produce for export, and imports all sorts of machinery and farm implements, being agents for Petters Limited and Vickers-Petters Limited (crude oil engines), the International Harvester Company, P & O line of implements, Barton's disintegrators, etc. The land department has on its register a very large selection of farms in all the districts of the colony, and from its long experience is able to place before prospective purchasers farms and estates suitable for the amount of capital it is desired to invest. The partners in the firm are: Messrs J. W. Milligan, F. D. Moore and A. G. Nourse. London agents: Messrs John K. Gilhat & Co. Ltd., 7, Crosby Square, E.C.3. Bankers: The Standard Bank of South Africa, Limited. Telegrams and cables: "Milligan," Nairobi.

**ENRICO N. STEIN, INC.** This company is a branch of the well-known firm of hide and skin merchants Abe Stein & Co. Inc., of 100, Gold Street, New York, which was founded some 50 years ago. Messrs Enrico N. Stein, apart from East Africa, have branches in Aden, Berberah, Bulhar, Zanzibar, Jibouti, and throughout India also. The company opened a branch at Mombasa in 1923, and now has sub-branches and agents in Nairobi, Kisumu, M'hele, Kampala, Bukoba, Muanza, Tabora, Kigoma, Uvua, Usambara, Dodoma, Dar-es-Salaam, Tanga, and Moshi. The China and Java Export Company, a subsidiary concern, has branches in Hamburg and in the main skin and hide centres of China. The firm confines itself to the export and distribution of hides and skins of all marketable kinds, and is a regular exporter of raw hides and skins to the principal markets of the world. The company has its own godowns throughout the country, and the selection, packing and shipping of all hides and skins are done under direct and experienced European supervision. The partners of the firm and of the subsidiary companies are Messrs Enrico N. Stein (president), Charles Bruschhoff (vice-president), and Eugene Newman (treasurer). The head office is at Leather Building, 100, Gold Street, New York, the London office at 19, Tyer's Gateway, Bermondsey, and the Hamburg office at Jungfernstieg, 3. Bankers: The National Bank of India, Ltd. Cables: "Steinico," Mombasa.

**GIBSON AND COMPANY LIMITED.**—P.O. Box 222, Mombasa. This firm was established on January 1, 1920, and was converted into a limited company on August 1, 1923. It acts as general import and export merchants, clearing, forwarding, and shipping agents, insurance and steamers' agents, estate managers, and companies' secretaries. The imports include crude and refined oils, "B.P." motor spirit, lubricating oils and greases, gunnies, timber, fertilisers, etc., and the exports are maize, barley, ground-nuts, coffee, cotton, cotton seeds, copra and other East African produce. It represents the Anglo-Persian Oil Co. Ltd., the British Tanker Co. Ltd., Candles Ltd., Prices Patent Candle Co. Ltd. (London), R. G. Shaw & Co. (Winchester House, Old Broad Street, London, E.C.), Shaw Wallace & Co. (Cal-

cutta), Queensland Insurance Company, Ltd. (Sydney, Australia), Plateau Maize Growers Limited (Eldoret, Kenya), the British Sulphate of Ammonia Federation Limited, and many others. Branches have been established at Nairobi, Kenya Colony, Dar-es-Salaam, Tanganyika Territory, London correspondents R. G. Shaw & Co., Winchester House, Old Broad Street, E.C. The directors are Messrs L. M. Gibson, H. J. Sheldon and William Allan. Bankers: The Standard Bank of South Africa, Limited. Cables: "Factotum," Mombasa.

**VAN NELLE'S OVERSEA TRADING COMPANY.**—P.O. Box No. 301, Mombasa. This is a subsidiary company to De Eeven de Wed. J. Van NELLE, of Rotterdam, Holland, the largest coffee, tobacco, and tea dealers in Holland, and was established in 1921

primarily for the distribution and sale of Van NELLE's "Rising Hope" tobacco, and for the purchase of coffee for the parent company. The firm carries stocks and has agents at Zanzibar, Tanga, Dar-es-Salaam, Lindi, Tabora, Muanza, Bukoba, Nairobi, Eldoret, Kisumu, Mbale, Jinja, Kampala, and Goa. It also acts as agent for several European manufacturing houses, and does a general import and export business. Its premises and stores at Mombasa are situated behind Vasco Da Gama Street, towards Mombasa Harbour entrance. The East African Manager Mr A. L. M. Winkelman, is Netherlands Consul for British East Africa. Head office Rotterdam, Holland. Bankers: The Standard Bank of South Africa, Ltd. Cables: "Winkelman" Mombasa. Codes: A B C 5th and 6th Editions.



KENYA AND UGANDA RAILWAY.  
Nairobi Station and a Portion of the Railway Yards.  
(See letterpress, page 388.)

## TRANSPORT

### RAILWAYS

**T**HE Kenya and Uganda Railway, which was commenced in 1895 and completed in 1903, links the sea-coast with the healthy uplands of Kenya Colony, with the steamer transport on Lake Victoria, and, consequently, via the Busoga Railway and Lake Kioga, with the Upper Nile. Constructed originally as a non-commercial undertaking, the capital expended has since become remunerative, both directly and indirectly, as the prosperity of the colony and the Uganda Protectorate has been built up.

The Kenya and Uganda Railway stands as an example of splendid engineering carried out in the face of great natural difficulties. Starting from Mombasa, the line rises gradually for over 100 miles through tropical forests, only broken occasionally by spaces where native cultivation is carried on. From Makur the country opens out, and on the Athi plateau the railway crosses many miles of grassy plain, over which wanders big game of every description in herds of thousands. It then passes through Nairobi, the capital,

and drops a couple of thousand feet over the edge of the Kikuyu escarpment into the Rift Valley, next skirting Lakes Naivasha and Nakuru, it climbs the Mau escarpment, and from 8,200 feet descends rapidly to Kisumu (Port Florence), its terminus on Lake Victoria. The gradient, however, never exceeds 3 per cent, and below Nairobi is kept down to 1½ per cent or less.

**ADMINISTRATION.**—In 1905 an Order in Council was gazetted creating the office of High Commissioner of Transport for Kenya and Uganda. The High Commissioner (who is the officer administering the Government of Kenya) has control of the working and management of such railways, ports, harbours, wharves, and steamship services as are now or may be hereafter owned by the Governments of Kenya and Uganda, and are declared by the Secretary of State to be included in such services. At the head of the Railway Council, which is advisory to the Government, is the General Manager, who is assisted by an official and non-official member from Kenya and Uganda appointed by the Governor of those territories.

Some of the more important provisions of the new Order-in-Council are: (1)—Complete separation between the revenue and expenditure of the Governments and the revenue and expenditure of the railway, port and lake services; (2) the establishment of separate railway and harbour funds; (3) the working of the railway, port and other services with due regard to agricultural and industrial development in Kenya and Uganda by means of cheap transport; (4) profits remaining after provision for renewals, betterment, interest and sinking fund charges, etc., to be used in reduction of railway rates, instead of being diverted for other Government purposes; and (5) Governments requiring the provision of non-paying facilities to make good the loss in working which may result therefrom.

**CAPITAL COST.**—The capital expenditure on the Kenya and Uganda Railway to Dec. 31, 1924, amounted to £9,986,934, as against £8,290,413 to December 31, 1923, an increase of £1,696,521 for the preceding twelve months. Of this last amount, £216,537 was expended on new lines and £301,895 on rolling stock.



KENYA AND UGANDA RAILWAY.  
New Deep Water Wharves at Kilindini, Mombasa, almost completed  
(See *letterpress*, page 388)

**FINANCIAL POSITION.** The Railway Budget for 1926 estimated revenue at £2,000,000 and expenditure at £1,177,000 (See also article following)

**LOAN.**—In 1924 the Imperial Government sanctioned a loan from the Imperial Treasury to the Government of Kenya for railway, port and lake development in Kenya and Uganda, amounting to £3,500,000. This loan will be free of interest for a period of five years, after which it will carry interest at the rate of 5 per cent and redemption at the rate of one per cent. The object of the loan is to assist in development, and a provisional allocation of expenditure against the loan was made as follows:

- |   |            |
|---|------------|
| (1) Extension of the Uganda Railway into Uganda, and the construction of branches in Kavirondo and Uganda | £2,200,000 |
|---|------------|

- |  |          |
|--|----------|
| (2) Additional rolling stock   | £400,000 |
| (3) Capital improvements to existing lines and lake services and the provision of additional equipment | 500,000  |
| (4) Additional port development and equipment  | 400,000  |

**MILEAGE.**—See article following

**ROLLING STOCK.**—The shops of the Kenya and Uganda Railway, located at Nairobi, are equipped to make necessary repairs to the rolling stock of the line. New steel freight cars, passenger cars, and oil and wood burning locomotives are constructed in England and imported into East Africa, but all parts and accessories are imported for assembly and repairs at Nairobi. The railway is a metre-gauge line, and the rolling stock is correspondingly light. Locomotives weigh up to 50 tons, and steel freight cars are built

to carry maximum loads of 25 tons (See also article following)

**SERVICES.** Trains leave Mombasa four times a week for Nairobi and thrice weekly for Kisumu. The time taken by mail trains on the through journey, not including stoppages, is 38 hours, to Nairobi, 20 hours. The return journey from Kisumu to Mombasa occupies 35 hours. The trip to Nairobi and back covers 62 hours, allowing for 24 hours in the capital. Trains, both up and down, pass the game reserves during daylight. There are refreshment rooms at various stations along the line, and all arrangements are made to suit the convenience of passengers.

**FARES.**—Fares are as follow, per mile, according to distance: first class, 23.40 to 27 cents; second class, 18 cents; third class, from 4 to 6 cents. At certain seasons, and when 30 passengers or more from a ship

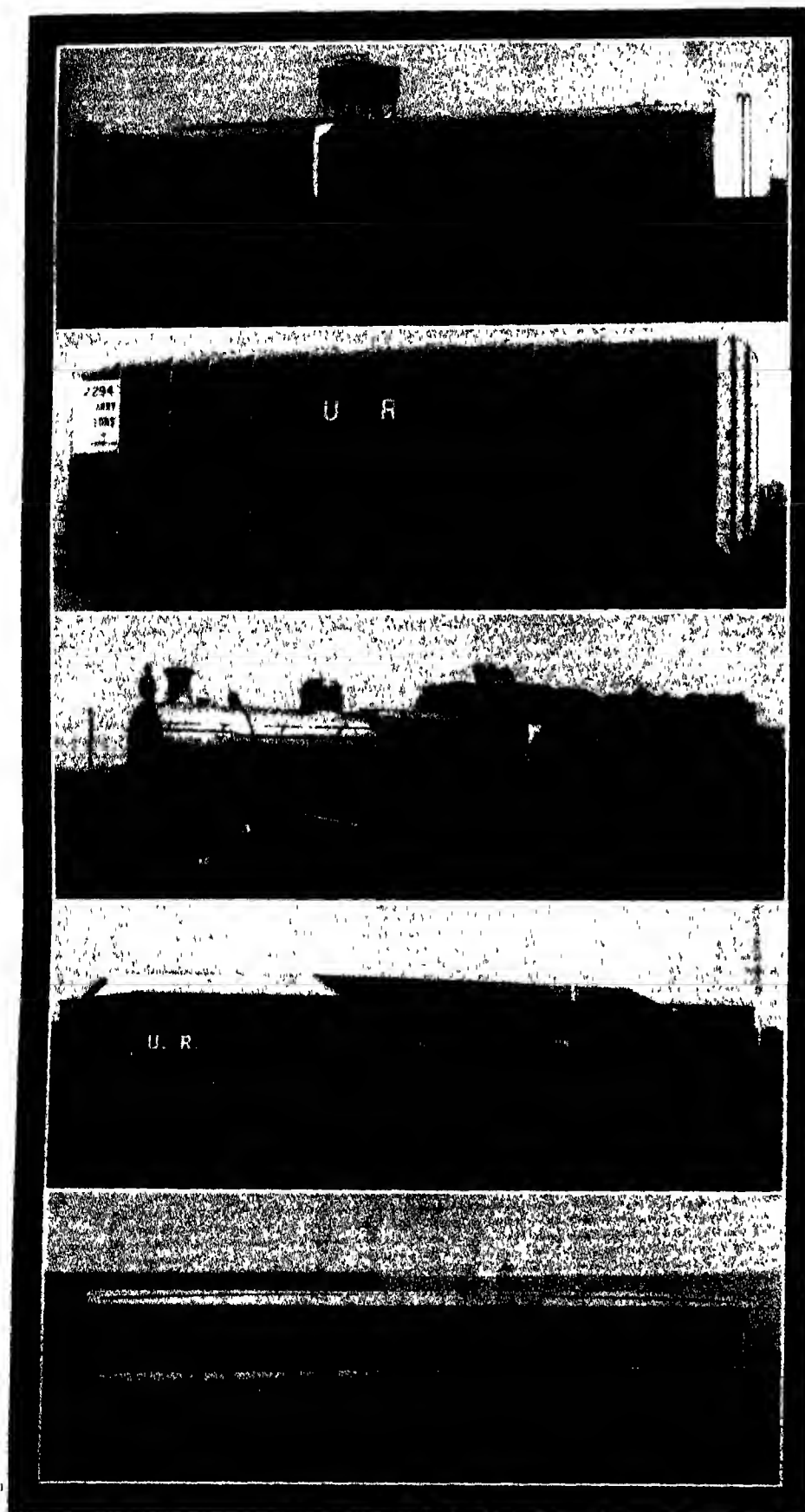


1. Typical Mail Train.

KENYA AND UGANDA RAILWAY.

(See *letterpress*, page 388)

2. Dining Car.



#### KENYA AND UGANDA RAILWAY.

1. Coaches for the use of the Governor and Royal Visitors.
2. 25-ton closed Goods Waggon.
3. Latest Type of Engine.
4. 27-ton Open Truck.
5. 1st. Class Day and Sleeping Coach.

wish to travel, excursion trains are run. At all times passengers in steamers lying off Kilindini can obtain return tickets at single fares to Nairobi. Through passengers can also travel between Kilindini and Tanga, via Voi, at reduced fares in either direction.

**REST HOUSES** - These are provided by the railway at certain points. Passengers have free use of same for 24 hours, the subsequent charge being Sh 4 for each 24 hours or fraction thereof. Passengers must share a room with strangers if necessary. Furniture, bedstead, bath, toilet set, lamp, etc., are provided, but no mattress, blankets, sheets or towels.

#### KENYA AND UGANDA RAILWAY.

**Inception.** This railway had its origin in Article (1) of the General Act of the Brussels Conference of July 2, 1890 (constituted a Slave Trade Treaty by Order-in-Council of May 9, 1892), to which Great Britain and other Powers were parties. These Powers declared that the most effective means for counteracting the slave trade in the interior of Africa were the progressive organisation of the administrative, judicial, religious and military services in the African territories placed under the sovereignty or protectorate of civilised nations, the gradual establishment in the interior of strongly occupied stations to make them protective or repressive action effectively felt in the territories devastated by slave hunting, the construction of roads and railways connecting the advanced stations with the coast and permitting easy access to the inland waters, with a view to substituting economical and rapid means of transport for the then means of carriage by men, the establishment of steamboats on the inland navigable waters and on the lakes supported by fortified posts, the establishment of telegraph lines to provide communications, the organisation of expeditions and flying columns to keep up communication between the coast and the interior, to support repressive action and to ensure the security of high roads, and finally the restriction of the importation of firearms and ammunition throughout the territories infected by the slave trade. Great Britain, having placed Uganda and British Africa within her sphere of exclusive influence, felt bound to give effect to the above provisions of the Brussels Act, with the result that railway and telegraph construction was entered upon.

**Development and Construction.** In accordance with this policy, the Imperial Parliament passed a vote of £20,000 as a grant-in-aid of the preliminary survey costs, and reconnaissance surveys were carried out between November 1891 and October 1892. A report wholly favourable to immediate construction was submitted by the surveyors, but, owing to changes of Government in England, it lay dormant until 1895, when Lord Salisbury's Government decided to proceed with the building of the railway immediately. The Chief Engineer, Sir (then Mr) George Whitehouse, and his staff arrived at Mombasa in December of the year just mentioned. Between this time and the arrival of the first material in June 1896 many preliminary operations were undertaken, such as the construction of earthworks for the rail lines leading from the harbour to the Macupa Strait (separating Mombasa from the mainland), a distance of about a mile and a half; the building of shelters for the staff and workpeople; and the construction of temporary offices and sheds. Platelaying was started on the mainland in August 1896, and by the end of the year twenty-two miles of line had been laid. In



1899 Nairobi (326 miles) was reached, and by September of the same year work had been carried up to the 363rd mile. At this period the headquarters of the railway were transferred from Mombasa to Nairobi, and the line to this town was opened for public use in August 1899. By the end of the year the 476th mile had been reached. Owing to various causes, chief amongst which was considerable delay in stores transport, the permanent way was not completed until March 1903, although a locomotive had been run through for the first time to the shore of Lake Victoria Nyanza on December 2, 1901. Practically all the viaducts were then temporary structures, but by March 1903 they had been replaced by permanent ones.

**Open Lines.** The mileage of open lines at December 31, 1925 was: Uganda Railway main line 580 miles, Linka Branch 57 miles, Busoga Railway, 61 miles, Kampala Railway 6 miles, Usim Gashu Branch 142 miles, Voi Kabo Branch 92 miles, and the Magadi Soda Company's Branch 91 miles, making a total of 1,038 miles. The total track mileage, including loops and industrial private sidings, was approximately 1,125 miles.

**New Construction.** The following extensions are in progress: Usim Gashu Railway from Turbo to Mbulamuti, 184 miles, Pindaniha to Nyeri, 47 miles, Solai

Branch, 30 miles, Kitale Branch, 41 miles, the total under construction being 302 miles.

**Lines Surveyed.**—The following branch lines have been surveyed: Tororo to Mbale, 48 miles, N Kavirondo, 45 miles, Eldoret-Sergot, 20 miles, Kericho-Sotik, 70 miles, Donvo Sabuk, 15 miles, Nyeri-Nanyuki 30 miles, Gilgil-Thompson's Falls, 50 miles.

**Passenger Traffic.** During the year 1925 the number of passengers carried was 913,640, an increase of 83,431 over the previous year. The receipts from this source were £227,272, as against £199,500 for 1924, an increase of 13.92 per cent.

**Goods Traffic.** The receipts from public goods and the tonnage conveyed were as follows: Revenue for 1925, £1,580,642, tonnage carried, 534,474. These figures showed an increase of £283,406 on the revenue, and a tonnage increase of 51,631 over the year 1924.

**Motor Service.** The Kenya and Uganda Railway Administration runs a motor service between Masindi Port and Butiaba, a distance of 75 miles. This was taken over from the Uganda Government at the beginning of 1924.

**Steamer Service.** Communications on Lakes Victoria, Kioga, Kwana and Albert and on the River Nile as far as Nimule are maintained by marine services. The first

passenger steamer was launched in 1903. The various fleets now consist of nine large steamers, six tugs, and forty six lighters. One steamer maintains a regular weekly service between Kisumu and Uganda, while two others conduct a service round the lake. Kisumu is the headquarters of the steamer service on Lake Victoria which earned £272,467 in 1925, as against £238,642 in the previous year.

**Earnings and Expenditure.** The steady improvement of the railway services is reflected in the following figures: Earnings for 1925, £1,993,500, working expenditure, £1,090,071, excess of receipts over expenditure, £903,428. For 1924 these amounts were £1,635,180, £878,407 and £756,722 respectively.

**Staff.** At the end of 1925 the staff numbered 20,622, made up as follows: Europeans, 494, Asiatics, 2,455, Native labourers, 15,449, Natives (other than labourers) 2,224.

**Rolling Stock.** This comprises 172 locomotives, 58 of which are of the G.D. super-heater type. Coaching vehicles number 306 and goods stock 2,447. The railway is of the metre (3.28 ft.) gauge.

**General Manager.**—Mr C. L. N. Felling, C.M.G.

(See also illustrations, pages 386, 387-9.)



A COCONUT AVENUE, KENYA COLONY

## AGRICULTURE

### GENERAL DATA

THE future of Kenya promises to be bound up in the main with agricultural development. There are few countries, indeed, where conditions so favourable for the production of economic crops occur as in this East African Colony. Cultivation embraces a great range, from the vegetation of tropical and sub-tropical to that of temperate zones, maize and wheat and maize and flax being frequently grown side by side. Stock of all kinds thrive on the natural herbage, and herds under good management have increased rapidly.

An area of some 7,750,000 acres, mostly in the highlands (that is, in the country lying from 5,000 to 9,000 feet above sea-level), has

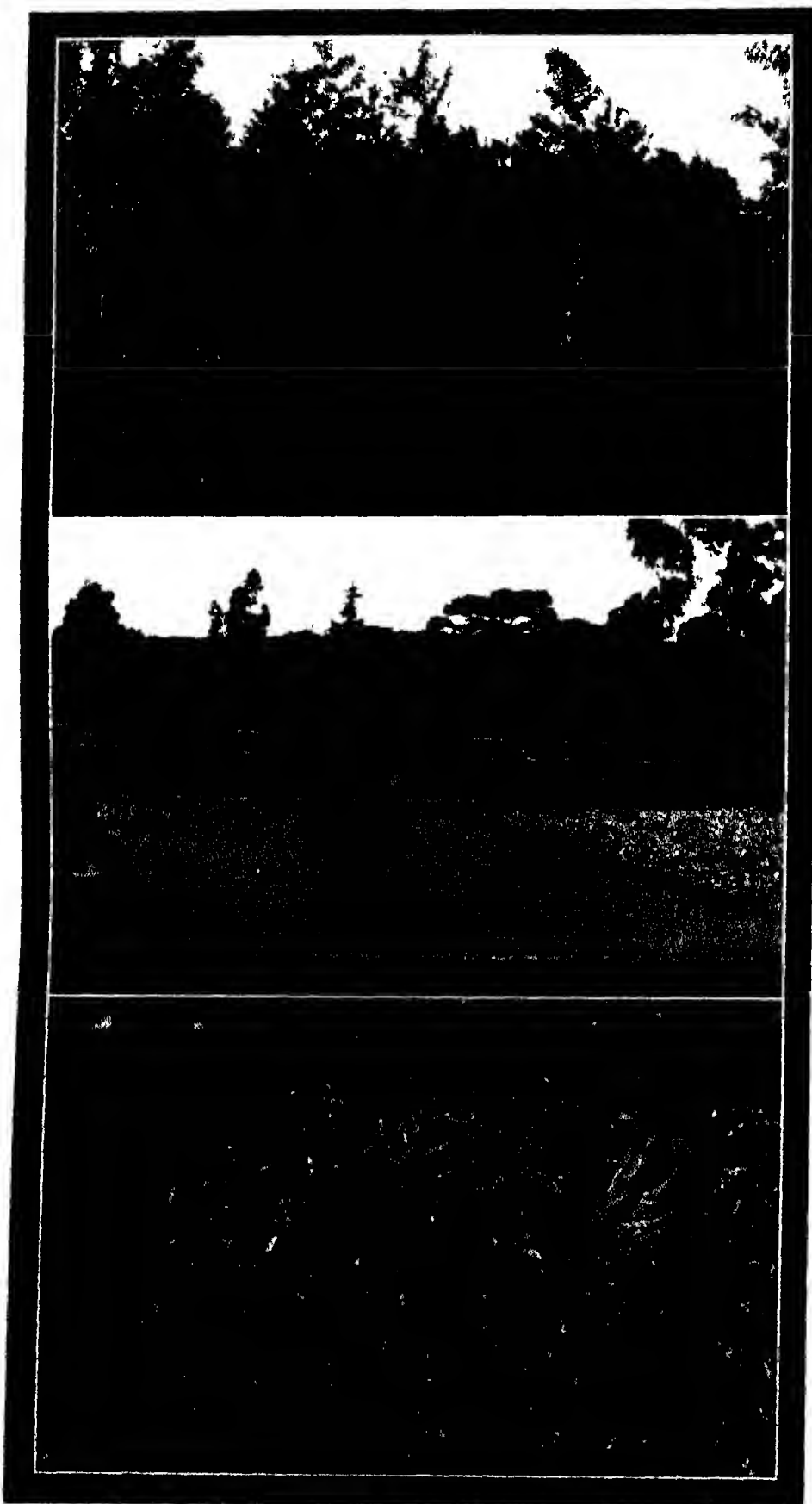
been set aside for European occupation, of which a total of 4,420,573 acres was under such occupation on June 30, 1925. Within this zone are to be found extensive areas of great fertility, and moreover, on account of its physical condition, land which is readily and inexpensively cultivated and made productive. A drought attended with serious consequences is rarely experienced, and the sufficient rainfall, coupled with abundance of sunshine for plant growth and crop harvesting, creates a feeling of security in agricultural pursuits.

In the highlands the standard crops are cereals, flax, and pulse, but between the heights and the sea-coast, or along the shores of Lake Victoria, cultivation ranges from the

coco-palm and the pineapple to all kinds of European products, and includes coffee, cotton, maize, sisal hemp, and rubber. A proof of the steady growth of Kenya's agricultural industry is to be found in the recent formation of three new organisations, a Sisal Growers' Association to co-ordinate the industry, a Wheat Growers' Association, and a Hide and Skin Trade Association.

**AGRICULTURAL CONDITIONS.**—Areas alienated for European occupation fall generally into three classes in respect of agricultural pursuits, viz: Agricultural, Mixed and Pastoral, but these are not sharply defined, and they merge into one another. The chief agricultural districts are: Kyambu (coffee and sugar cane), Ruuru (coffee and

### PRODUCTS



COFFEE INDUSTRY, Kenya Colony.

1. Shaded Coffee Plants.
2. Drying Coffee.
3. Pruning Trees.

sisal), Thika (sisal, coffee and maize), Njoro (flax, maize and wheat), Eldama Ravine (maize and coffee), Trans-Nzoi (maize, wheat and coffee), Kericho-Sotik (flax, coffee and tea) and Muhoroni (maize, coffee, sugar cane and sisal). Mixed farming is carried on principally in the Nairobi, Machakos-Ulu, Kiu-Sultan-Hamud, Lamuru, Kijabe, Gilgil, Nakuru, Solai, Moro, Lumbwa and Nyeri districts, also on the Uasin Gishu Plateau. The Rift Valley, West Kenya and the Laikipia District are entirely given over to pastoral farming.

**INSECT AND OTHER PESTS.**—Practically all the insects which are responsible for damage to crops in Kenya are indigenous. The two pests known to have been introduced are the Australian bug and the red scale. These, in all probability, were brought in on citrus fruits from Australia. Generally speaking, and in comparison with other parts of the world, Kenya has not in the past suffered greatly from insect pests, invasions of locusts or serious ravages by the cotton boll weevil or the coffee berry beetle being rare. The mealy bug (*Pseudococcus citri*) is sometimes a menace to coffee, while wheat growing has occasionally been hindered by the prevalence of red rust. Leaf blight and cob rot often attack maize, and the tobacco grown sometimes suffers from leaf spot. The most serious stock diseases are rinderpest, pleuro-pneumonia and East Coast fever. Most of the fly infected areas of the colony and protectorate have been more or less accurately mapped.

**LAND SETTLEMENT.**—Except for a few freehold grants, land in Kenya Colony is held on leasehold from the Government either under the Lands Ordinance of 1902 for a term of 99 years, or for 999 years under the 1915 Ordinance. Conversion of the 99 to 999 year leases is allowed by permission of the Governor. Under the 1902 Ordinance annual rents range from six cents of a shilling to 24 cents of a shilling per acre, whilst under the 1915 Ordinance rents are fixed at 20 cents of a shilling per acre. The rent payable is revised every thirty years, and certain development conditions must be complied with at the commencement of the lease.

From time to time such Government land as is available is sold by public auction, but at present the best opportunity which exists for securing a selected holding is by acquiring it from original allottees of freehold or leasehold land by private treaty. Many of these landholders are disposed to sell a portion of their holdings, and, with the exercise of care in selection, land suitable for the purpose which the prospective settler has in view can be obtained at a reasonable price, having regard to its fertility and productive capacity. That varies greatly—very good land suitable for growing a variety of crops, including some for coffee, can be acquired at 30s to 60s per acre, in recognised areas where maize production is already highly successful, 60s to 100s per acre is the present price, while that portion suitable for coffee in a recognised coffee-growing area may be valued at £10 to £20 per acre. In pastoral areas values may vary from a few shillings to 20s per acre, according to the carrying capacity and other factors. In all these cases, however, much will depend upon the water supply, rail and road communications, soil, fertility, etc.

Farming conditions in Kenya are not suitable for the man with small capital, dependent largely upon his own effort and that of his family to secure a livelihood. On the other hand, the colony does offer most attractive propositions to the man with a fair amount of capital, or to a group of shareholders provided with money sufficient for the development of an estate of considerable dimensions.

## PRODUCTS

**COCONUTS.**—Coconut culture is an important industry on the coast lands, a large area of that zone being well adapted to this branch of agriculture. Formerly the industry was mainly in the hands of natives, but a large number of plantations have lately been established by Europeans. From half a million to three-quarters of a million nuts are produced annually by the European plantations.

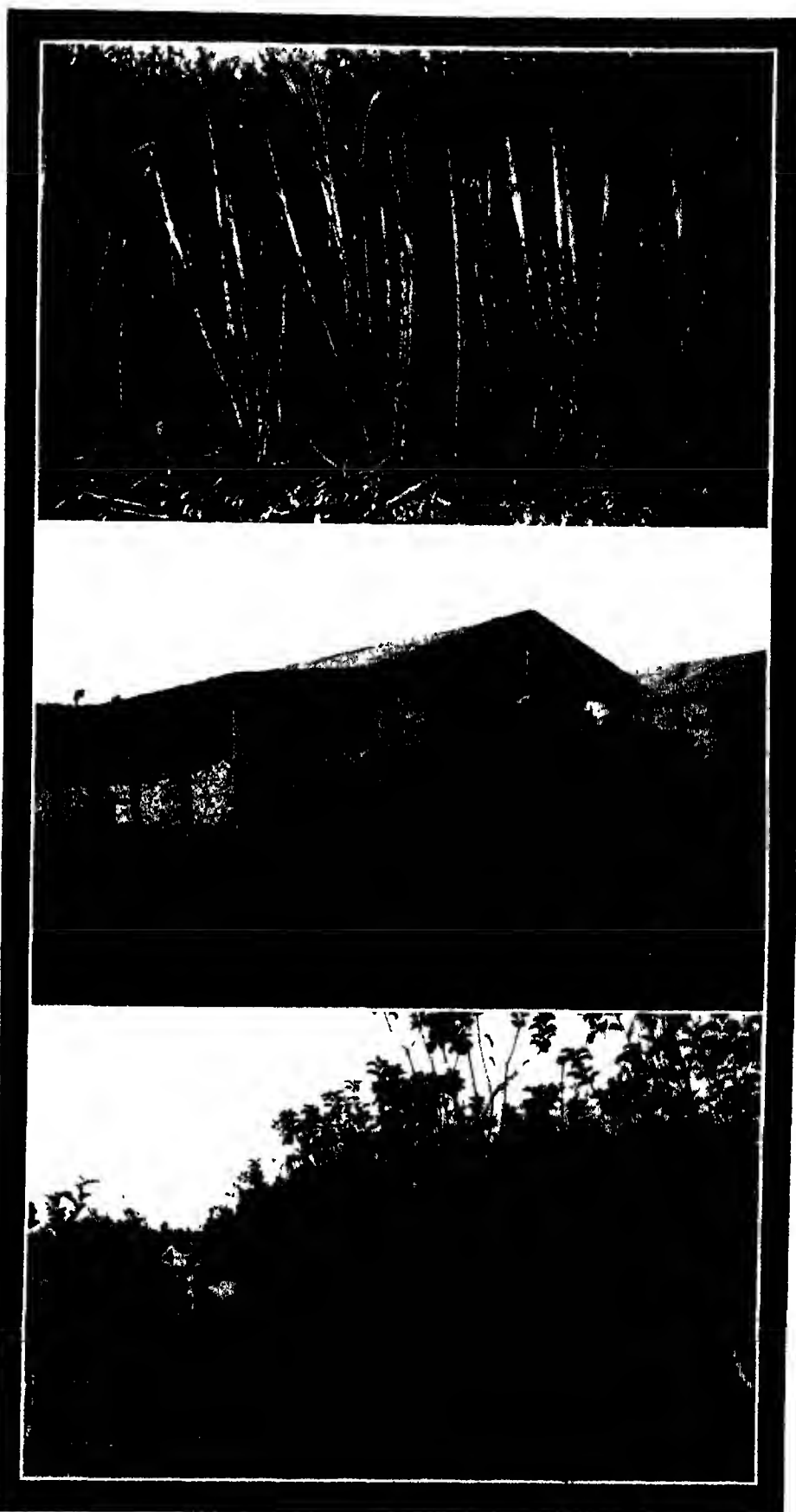
**COFFEE.**—It is perhaps not generally known that Tropical Africa shares with Central and South America the honour of being the chief home of coffee. Several varieties of wild coffee in Africa have been classified and named, and may be seen in Kenya to-day growing in their natural habitat under the great virgin forest trees. Of the many crops of which the East African planter has a choice, coffee has been by far the steadiest during the years of weak and uncertain markets which have been experienced since the War.

**DISTRIBUTION.**—Coffee in Kenya is grown almost exclusively in the highlands, the best results being obtained between altitudes of roughly 5,000 to 6,000 feet. New districts, however, are constantly being tried, and it is by no means improbable that the best coffee district of the future may not yet have reached the producing stage. The areas under coffee have been steadily increasing, as the following figures show: 1920, 27,813 acres; 1921, 33,813 acres; 1922, 43,350 acres; 1923, 52,249 acres; 1924, 60,054 acres; 1925, 65,140 acres.

The principal coffee-growing districts in order of importance are: Kikuyu, Fort Hall, Lumbwa and Kisumu, Trans Nzoia, Uasin Gishu, Sotik, Nyeri, Nandi and Kavirondo North, Nakuru, Machakos, and Voi (Euta Hills). Kikuyu District, possessing over 25,000 acres, includes the two large coffee areas of Kyambu and Ruiri, besides several smaller areas. This is also the nearest district to Nairobi. Land, therefore, in the neighbourhood commands a higher price than elsewhere, as the areas are "proved" for coffee, and there is also the advantage of being near the railway, with a shorter journey to the coast. The more distant districts of Nyeri and Trans Nzoia and the Uasin Gishu possess good land suitable for coffee, whilst the railway now being laid to the former and already tapping the latter districts will bring them more into touch with other parts of the country and greatly facilitate their transport.

**PRODUCTION.**—In 1913 only 5,000 acres were under cultivation, this area being increased to 65,140 acres in 1925, of which 21,000 acres were fully bearing, 18,000 acres over three and under six years, and 26,000 under three years. In 1925 returns of coffee plantations were made by 696 planters, indicating that 41 per cent of the total number of European occupiers in the colony are coffee growers. The production of clean coffee for the period 1924-25 was estimated at 104,419 cwt., and of "Buni," 11,111 cwt., or a total of 115,530 cwt of coffee. The 1925-26 crop was estimated (given good weather) at 153,536 cwt. Exports decreased from 136,081 cwt. in 1923-24, valued at £636,744, to 117,594 cwt., valued at £606,338, in 1924-25.

**COTTON.**—Cotton was first grown in the colony in 1904, when a cotton expert from Egypt was appointed to conduct experiments in various parts of the coastal zone in order to ascertain which were the most suitable varieties to raise, and further to encourage the natives to take up the industry. For many years cotton growing remained a purely native industry, being assisted by Government subsidies and by the Empire Cotton



1. KAMPALA OR RIBBON SUGAR CANE, KENYA COLONY.
2. MAIZE CRIBS, CAPACITY 10,000 BAGS.
3. IN AN APPLE ORCHARD

Growing Association, which erected the first ginnery at Malindi. Since the War increased attention has been paid to cotton culture both by the natives and by the European planters, the latter having planted several tons of Uganda seed, Upland type, in various parts of the highlands. In 1924 the cotton crop of the colony increased by no less than 262 per cent. over that of 1923, and aggregated some 2,000 bales. There are at present six ginneries working, and two more are projected. It is too early to state the limit which cotton production may reach in Kenya, but where labour is plentiful cotton will probably be found to be very remunerative.

economy of the country. They are situated in the heaviest rainfall areas, they protect the hillsides from the erosion to which the deep laterite soil is very liable, and they conserve and maintain the flow of water in the streams on which the whole agricultural prosperity of the colony is dependent. Also they provide the only sources of power, e.g., wood-tuel and water, coal and oil not yet having been discovered. The most important timber trees of the colony are the *Albizia cuanensis* (mbemba kofi), which produces a wood much in demand by the Indians and Arabs on the coast and in Zanzibar for construction works, doors, furniture, etc.,

inside decorative work. Cedar exports are the most valuable, and were valued at £22,272 in 1924. There are indications that the cultivation of casahuate bark may become a valuable native industry.

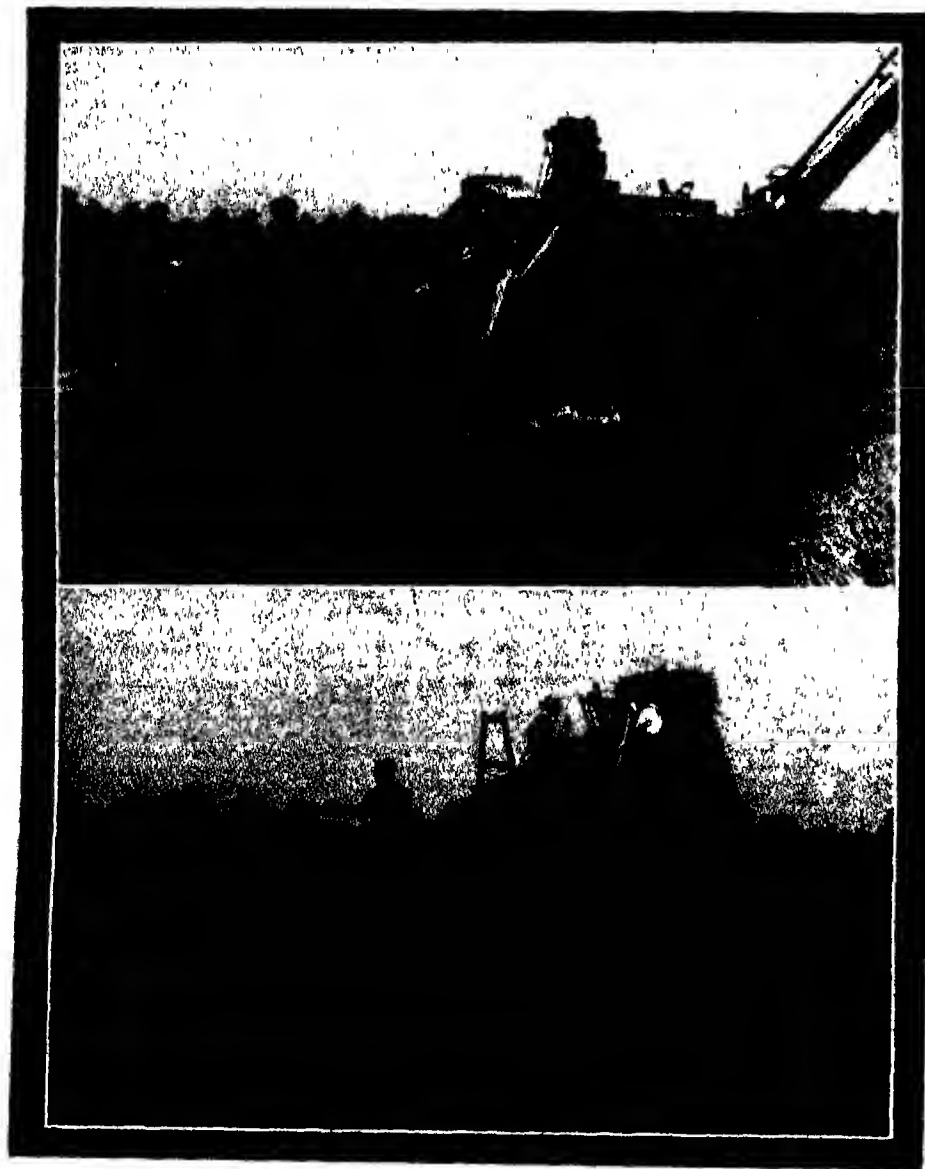
**LIVESTOCK.**—British East Africa in general, and Kenya Colony in particular, possesses most of the essentials to render it an ideal stock raising country, indeed cattle-breeding may be termed the oldest industry of the region. The climate of the highlands is so equable that the housing of the stock is quite unnecessary at any time of the year, although during the rains cows kept for milk production thrive and yield better results when given some protection at night. The wealth of the natural pasture throughout the uplands can scarcely be surpassed by any country in the world. Even during the dry seasons cattle thrive and keep fat upon the natural grasses without the aid of any artificial feeding. Both pink and white clover are indigenous plants, and in many districts grow thickly, whilst a wild samson is met with on Athi Plains and elsewhere.

The native cattle are abundant and of an excellent type. From the coast up to Victoria Nyanza are to be found vast herds of animals, suitable for grading, in possession of the natives, and although their price is steadily increasing, good cows may still be bought at figures well within their value. The native cow belongs to the Zebu tribe but has been much improved by the infusion of European stock and careful grading up, chiefly by the use of Shorthorn, Ayrshire and Friesian bulls. A large number of oxen are used for draught purposes, and the value of that cheap transport service to the colony is great. The local market for "beef" cattle is strictly limited, and there does not seem to be any immediate prospect of the establishment of an export trade in beef, but dairying is making steady progress.

In the drier parts of the colony there are large areas suitable for sheep farming on an extensive scale. Grade merinos have been bred up from the native ewe, and already their wool is fetching high prices on the London market. Pigs thrive remarkably well under the equable climatic conditions, and, at the extremely low prices at which foods such as maize, pollard, bran lucerne, etc., can be procured for pig-rearing and fattening, it is considered that favourable conditions exist for the establishment of an export trade in bacon and hams. Already a good type of pig, chiefly bred from the Berkshire and large Black breeds, is in the hands of Europeans. Horses are successfully bred and maintained in some districts, chiefly for racing, polo, and as hacks, but neither horses nor mules are much used for transport purposes. Poultry of all kinds thrive well on the farms.

The figures of live stock owned by Europeans on June 30, 1925, were as follow: Cattle, 216,589; sheep, 178,796; pigs, 8,564; goats, 5,372; horses, 1,846; mules, 922; donkeys, 1,336; poultry, 31,159.

**MAIZE.**—Maize has been grown for many years in the colony, but at the time when the first serious European settlement took place the crops raised were poor on account of the weak, attenuated nature of the local seed. By the introduction of such varieties as Cusco, Hickory King, Horsetooth, Ladysmith White, Old Cabin Home and other white maizes great improvement was shown in yields. In 1907 quantities of American varieties were imported by the Agricultural Department, and from these, but mainly from the seed known as Hickory King, a hybrid type now styled Kenya White has evolved. This is the type which is grown on over 90 per cent. of the acreage devoted to maize in

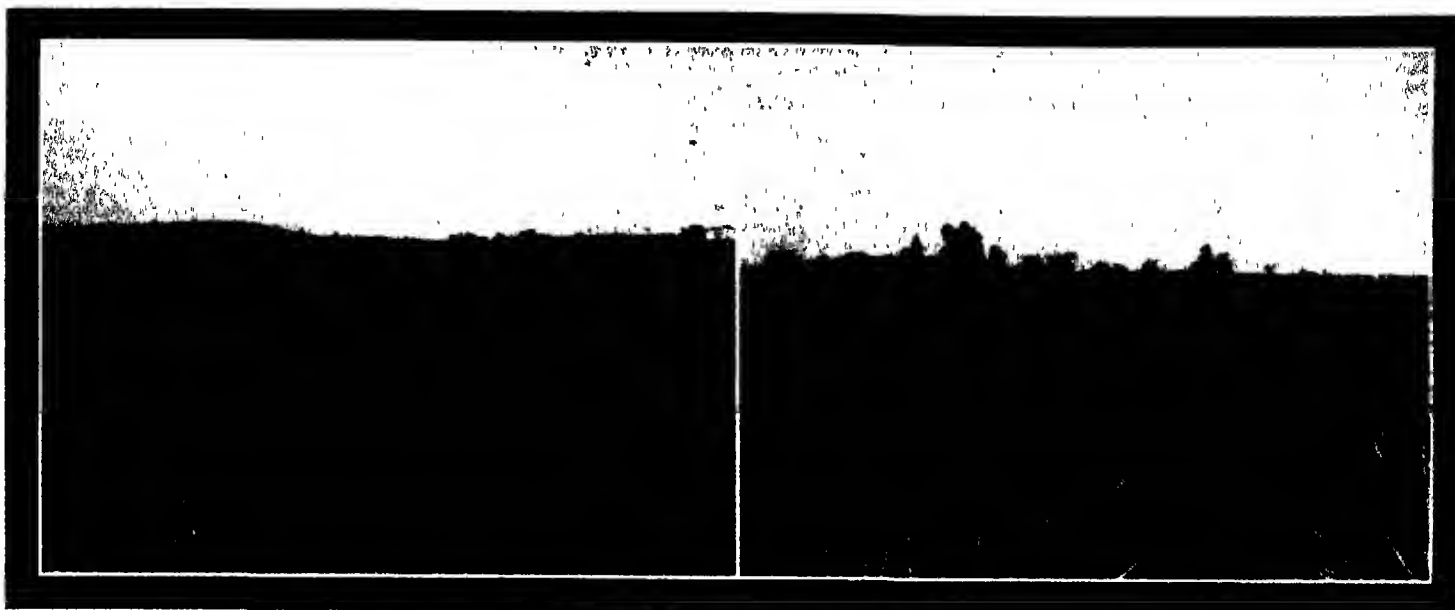


1 & 2. THE USE OF THE FORDSON TRACTOR FOR MANY SERVICES INDICATES THE APPRECIATION IN KENYA COLONY OF UP-TO-DATE METHODS.

**FLAX.**—The growing of flax in Kenya was commenced on a commercial scale in a period of "boom" prices, and when costs of production were abnormally high. It was planted in regions unsuited to the crop, and disappointments were experienced. The area sown consequently dropped from about 25,000 acres to 5,500 acres in 1924, but has since increased, and prospects, with the steadier and better market prices now prevailing, are considered good.

**FOREST PRODUCTS.**—The mountain forests play a most important part in the

Allophyllus abyssinicus (mushami), used for lining railway carriages and for furniture and panelling; Brachylaena hutchinsii (muhugu), a very durable timber in great demand for fence posts, piles, flooring boards and construction work; Dalbergia melanoxylon (ebony), a dense hard blackwood which takes a high polish; Juniperus procera (pencil cedar); Pygeum africanum, identical with the red stinkwood of South Africa; two varieties of Podocarpus much used locally; and Warburgia ugandensis (muthiga), a large cedar easily worked, very suitable for furniture and



SISAL FIELDS, KENYA COLONY.

the colony. It was early recognised that big yields of maize could be secured comparing more than favourably with yields in any other part of Africa.

In 1910 small consignments were sent to England, and a trade sprang up with near by markets. Railway rates were considerably reduced and some 20,000 bags were sold in Europe. The 1912-14 exports amounted to 115,000 bags, and ten years later (1923) 500,000 bags found their way to the London market. The area under crop on European holdings now exceeds 150,000 acres, and the average yield per acre is 7.68 bags. Native areas are also contributing large surpluses of maize for local consumption and for export, the quality showing a decided improvement. For the year ended June 30, 1925, the crop provided an exportable surplus of 800,000 bags and shipments represented a value of over £400,000.

**MINOR CROPS.**—Barley of a quality suitable for malting is raised in some districts of the colony. Fruit-growing is pursued on a scale sufficient for local needs, most of the tropical and sub-tropical fruits being cultivated. The black wattle flourishes, some bark is being exported, and a factory has been established for the preparation and export of tannin extract. Buckwheat does well, as do sunflowers, and much interest has lately been taken in the growing of castor seed, the plant of which thrives luxuriantly.

**PULSE CROPS.**—Peas and beans are produced in small quantities both by Europeans and natives. Samples of high quality are grown, and the output is favoured for seed purposes in other countries, notably France.

**SISAL.**—This valuable fibre occupies an area of nearly 50,000 acres, and there is a steady expansion. Exports of sisal-fibre now stand second in the colony's list, figures for 1924-25 showing a total of 23,772 cwt, with a value of £473,747, an increase of 27,899 cwt upon the exports of 1923-24. It has been proved that vast areas in different parts of the colony are suited to the production of sisal fibre of a high quality, and that, under good management, large profits may be made. With a view to assisting producers in removing difficulties and correcting deficiencies in grading, etc., it has been suggested that standard grades for East Africa should be set up by the London Hemp Association, and

that samples should be furnished to each producer for guidance. In 1925 a Sisal Growers' Association was formed, and is expected to do much to consolidate and develop the industry.

**SUGAR.** Sugar cane planting is still in its infancy, but sufficient has been done to prove the suitability of several areas of the colony for this crop. High yields of cane are obtained under natural conditions of rainfall and soil fertility. One large sugar-mill has been established, and smaller ones are being installed. The industry is protected by a high Customs duty, and production has now reached the local demand. It is hoped soon to establish an export trade.

**TEA.** Developments are taking place for the production of tea in Kenya on a commercial scale. Lamoru and Kericho are the two areas most closely interested, and it is estimated that by the end of 1926 there will be over 1,000 acres under tea, of which 540 acres were planted in 1925. Conditions as regards rainfall and soil are in many respects similar to those obtaining in the tea districts of Ceylon. The great difficulty, however, will be to maintain a supply of trained and fairly intelligent labour, as the East Coast natives are not altogether suitable.

**WHEAT.** With the aid of a heavy protective duty on imported wheat and flour, the production of home-grown wheat has been steadily encouraged, the area sown having increased from 13,696 acres in 1922 to nearly 25,000 acres in 1925, and the actual production from 35,793 bags to some 62,000 bags during the same period. The yield per acre also shows an upward movement, due to a better knowledge of the more suitable wheat-growing districts and soils, and to the use of seeds possessing greater rust resistance. A Plant Breeder was appointed in 1910, and a number of successful hybrids have become popular in the colony. Much of the wheat breeding has been done on Lord Delamere's farm at Njoro, the owner having taken a keen practical interest in the experiments, at the same time introducing hundreds of varieties for trial. Owing chiefly to difficulties not unconnected with yield and the incidence of rust, wheat-growing in Kenya has not yet attained large dimensions, but the crop gives distinct promise of becoming one of the staple products of the country, the importance of the colony producing its own flour requirements being widely recognised.

## COMMERCIAL ENTERPRISES

### G. NORTH & SON LTD.

**Inception.** This firm was established in 1869 to supply agricultural implements and machinery, with headquarters just outside Durban, the Nairobi branch being opened in 1910 some nine months after the Armistice.

**Development.** Shortly after the opening of this branch the great trade slump occurred, in which East Africa like other parts of the world suffered heavily. As a result, many houses gave up business, but Messrs. North & Son Ltd. with 50 years' experience and substantial capital behind them, were able to stand firm. Starting with a staff of one, they are to-day effecting one of the largest turnovers in East Africa in their class of business, the employees now totalling over 20 Europeans and very many Africans. They have also established branches at Eldoret and Nakuru.

**Activities.** In addition to representing a number of implement and machinery houses, Messrs. G. North & Son Ltd. carry a very wide range of tools, paint and general hardware. Over 50,000 spare parts for agricultural machinery are kept in stock, which is an indication of the importance the firm attaches to efficient service. This is still further augmented by a travelling staff equipped for carrying out repairs and adjustments on farms.

**Representations.** Messrs. G. North & Son Ltd. are agents for the following firms: the Cockshutt Plow Company of Canada, the International Harvester Co. of Chicago, the Martin Cultivator Co. of Stamford, England, the Alfa-Laval Separator Co. of Stockholm, R. Hunt & Co. of Earlscotne, and numerous other implement and machinery concerns.

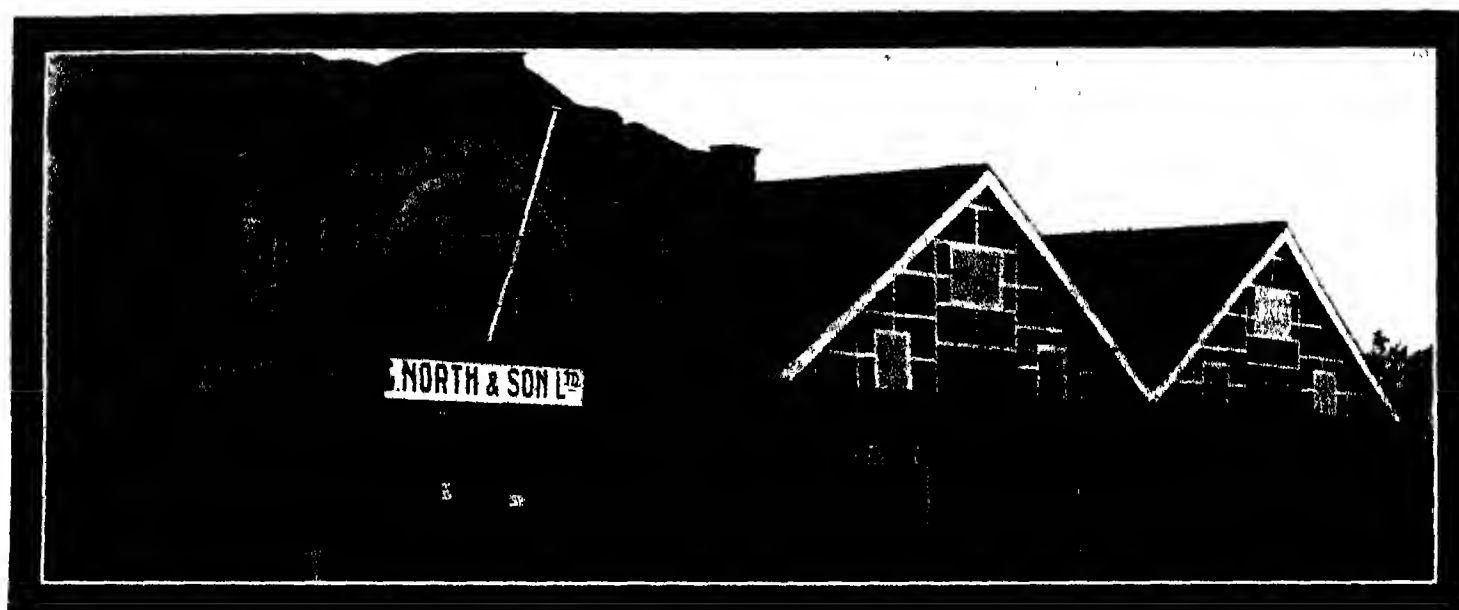
**Address.** P.O. Box No. 485, Nairobi.

**Cables.**—"Hercules," Nairobi. Code Bentley's.

**Bankers.**—The Standard Bank of South Africa, Ltd.

(See also "Agriculture" Section, Union of South Africa, and illustration, page 394.)





G. NORTH AND SON LTD., Nairobi.  
Administrative Offices and One of the Firm's Stores  
(See letterpress, page 393)

#### GAILEY AND ROBERTS LTD.

**Inception.**—This important and well-equipped enterprise has been established in Kenya for over twenty years.

**Activities.**—The firm's scope of operations includes Kenya, Uganda, Tanganyika and Zanzibar, and it carries large and complete stocks of machinery and engineering requirements. Specialties of the house are agricultural implements, power transmission appliances, building material, electrical machinery, hydraulic machinery, hardware, oils, paints, tubes, fittings, commercial vehicles, pumps, sanitary goods, sugar crushing and refining plants, cotton ginneries, and all classes of wire goods. The company has obtained a large number of important Government contracts.

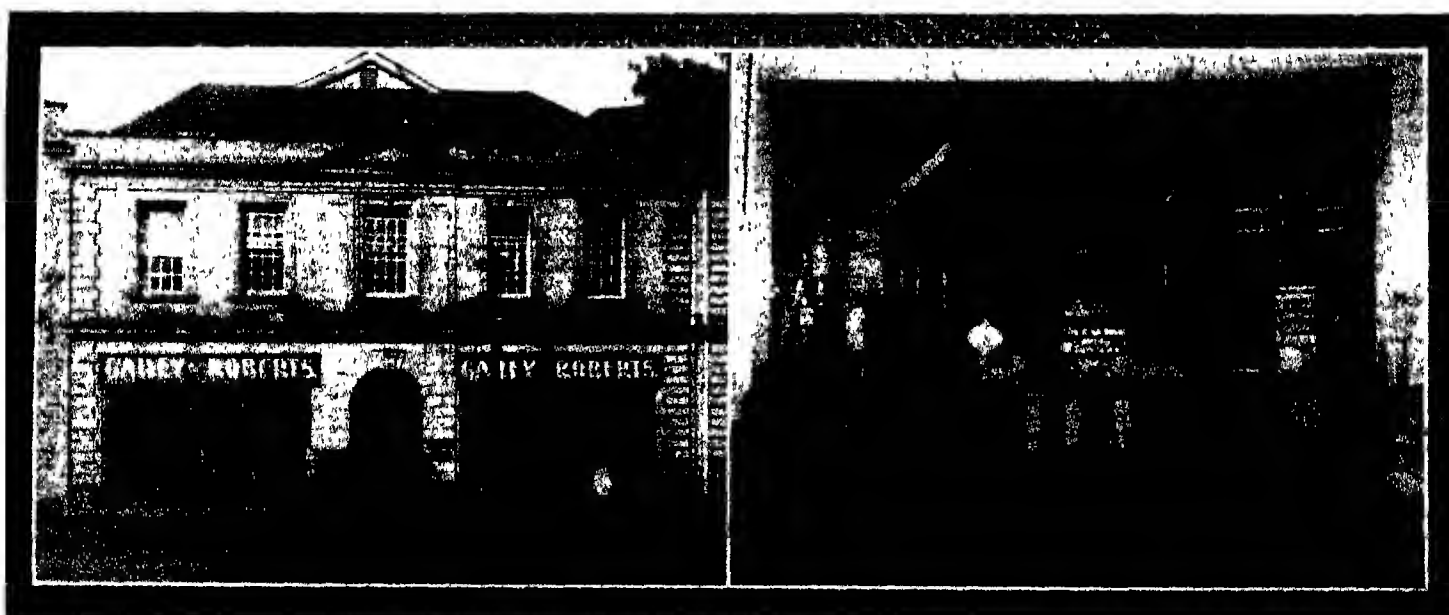
**Organisation.** The administration is conducted from the head office in the centre of the capital, Nairobi, and there are branches in the principal producing areas, at Nakuru, Eldoret,

Jimba (Uganda), and Dar-es-Salaam (Tanganyika). At these branches large stocks are held.

**Premises.** The main building consists of a double-storeyed stone structure, occupying a floor space of just over 10,000 square feet. More commodious and up-to-date premises are now in course of erection, and when completed will give a total floor area of over 55,000 square feet. The front portion of this building will consist of a three storey reinforced steel and concrete structure, and the rear portion of commodious warehouses, equipped with up-to-date overhead electric travelling cranes. It will be served by its own railway siding.

**Representations.** The company is representative in the colony for the following houses: Ransomes Sims and Jeffries Ltd (agricultural implements and machinery), Ruston and Hornsby Ltd (suction, gas, crude and refined oil engines, excavators, etc.), Harrison, McGregor & Co Ltd

(harvesting machinery), Caterpillar Tractor Co (Holt caterpillar tractors), Platt Bros & Co Ltd (cotton ginning machinery), Samuel Osborn & Co Ltd (steel and steel tools of every description), Douglas Lawson & Co Ltd (wrought iron pulleys), Lewis & Taylor Ltd (machine beltings), Standard Oil Co of New York (lubricating oils and greases), Electric Wheel Co (farm wagons, etc.), S. L. Allen & Co (Planet Junior cultivators), Albion Motor Car Co Ltd (commercial vehicles), Stewarts & Lloyds Ltd (tubes and fittings of all descriptions), G. Fletcher & Co Ltd (sugar refining machinery), California Corrugated Culvert Co (culverts, etc.), A. Ransome & Co (saw milling machinery), Chubb & Sons Ltd (safes and strong rooms, etc.), Gilbert Gilkes & Co Ltd (turbines, Pelton wheels, pumps, etc.), John Blakes, Ltd (hydraulic rams), Boulton & Paul Ltd (steel buildings, water elevators, etc.), Sisson Bros & Co Ltd (Hall's



1. Head Office.

GAILEY AND ROBERTS LTD., Nairobi.

2. Section of the Showroom.

distemper, paints, colours, etc.), and the Greenfield Tap and Die Corporation (engineers' small tools).

**Insurance.**—The firm is general agent for Messrs Matthews Wrightson and Company, underwriters to Lloyd's, and it effects all classes of insurance in the colony.

**Technical Department.** The company employs a staff of trained engineers, capable of dealing with all classes of engineering work undertaken.

**Directors.** Major J. H. Gailey, D.S.O. (chairman), and Mr. G. E. Ramsay (managing director).

**London Office.** The London office of the company is at 4, Chapel Street, Whitecross Street, E.C. 2.

**Bankers.** The National Bank of India, Limited.

**Cables.** "Gailey," Nairobi.  
(See also illustration, page 396.)

#### TYSON BROTHERS, LIMITED.

**Inception.** This company was established in 1921 with a nominal capital of £25,000 to take over the business of Messrs Tyson Brothers.

**Insurance.**—All classes of insurance are effected, agencies being held for the following companies: Motor Union Insurance Co. Ltd., Union Insurance Society of Canton, Ltd., Central Assurance Corporation Ltd., Ocean Accident and Guarantee Corporation, Ltd. and the South African Mutual Life Assurance Society.

**Imports and Exports.** As managing agents for Messrs Newtons, Ltd., Tyson Brothers, Ltd., import and hold agencies for the following: B.S.A. Cycles, Ltd.; Douglas Motors, Ltd.; C.C. Wakefield & Co. Ltd.; Champion Spark Plug Co. and Parsons Chimney Co. Ltd. The company exports all kinds of produce, specialising in coffee and sisal.

**Managers and Secretaries.**—The company is managing agent for the Spring Valley Coffee Estate, Kathum Coffee Estate, East African Properties, Limited, Bahati Estates, Ltd., and for Sir H. J. Delves Broughton, Bart. Reports and valuations are also made on all classes of properties.

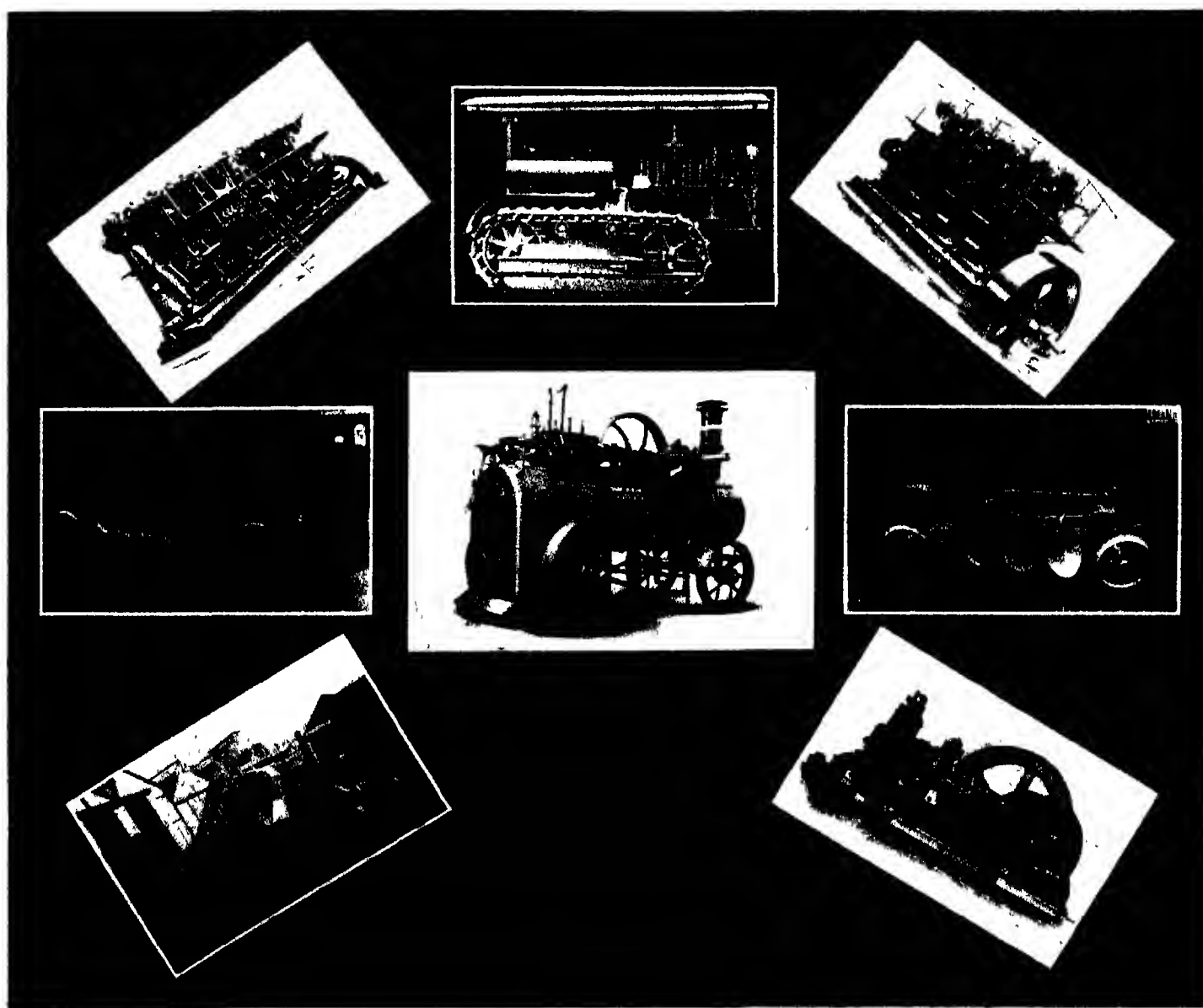
**Directors.** Sir H. J. Delves Broughton, Bart., and Mr. W. Tyson.

**London Agents.** Messrs. Arbutnot Latham & Co., 33 Great St. Helens, E.C. 4.

**Address.** Whiteaway's Buildings, Box 120, Nairobi.

**Cables.** "Managing," Nairobi. Codes: A.B.C. 5th Edition, Bentley's and private.

**Bankers.** The National Bank of South Africa, Limited, Nairobi and The Standard Bank of South Africa, Ltd., Nairobi.  
(See illustration, page 396.)



1. Ruston 6VK Vertical Cold Starting Oil Engine, 600 B.H.P.
4. Ransomes, Sims & Jefferies Ltd. 6-furrow "President" self-lift Tractor Disc Plough.
7. Ransomes, Sims & Jefferies Ltd., "Home-stead" Mole Sheller.

#### GAILEY AND ROBERTS LTD., Nairobi.

2. The "Caterpillar" Sixty Tractor.
5. Ransomes, Sims & Jefferies Ltd. double cylinder Portable Steam Engine.

3. Ruston 4VK Vertical Oil Engine, 400 B.H.P.

6. Ransomes, Sims & Jefferies Ltd. 3-furrow "All-Conqueror" Disc Plough.

8. Ruston Horizontal Cold Starting Oil Engine, single cylinder, 84, 100, 130 and 170 B.H.P.



**GAILLY AND ROBERTS LTD., Nairobi**  
A Train Load of Machinery despatched to up-country Settlers.

(See Interpress, page 391)

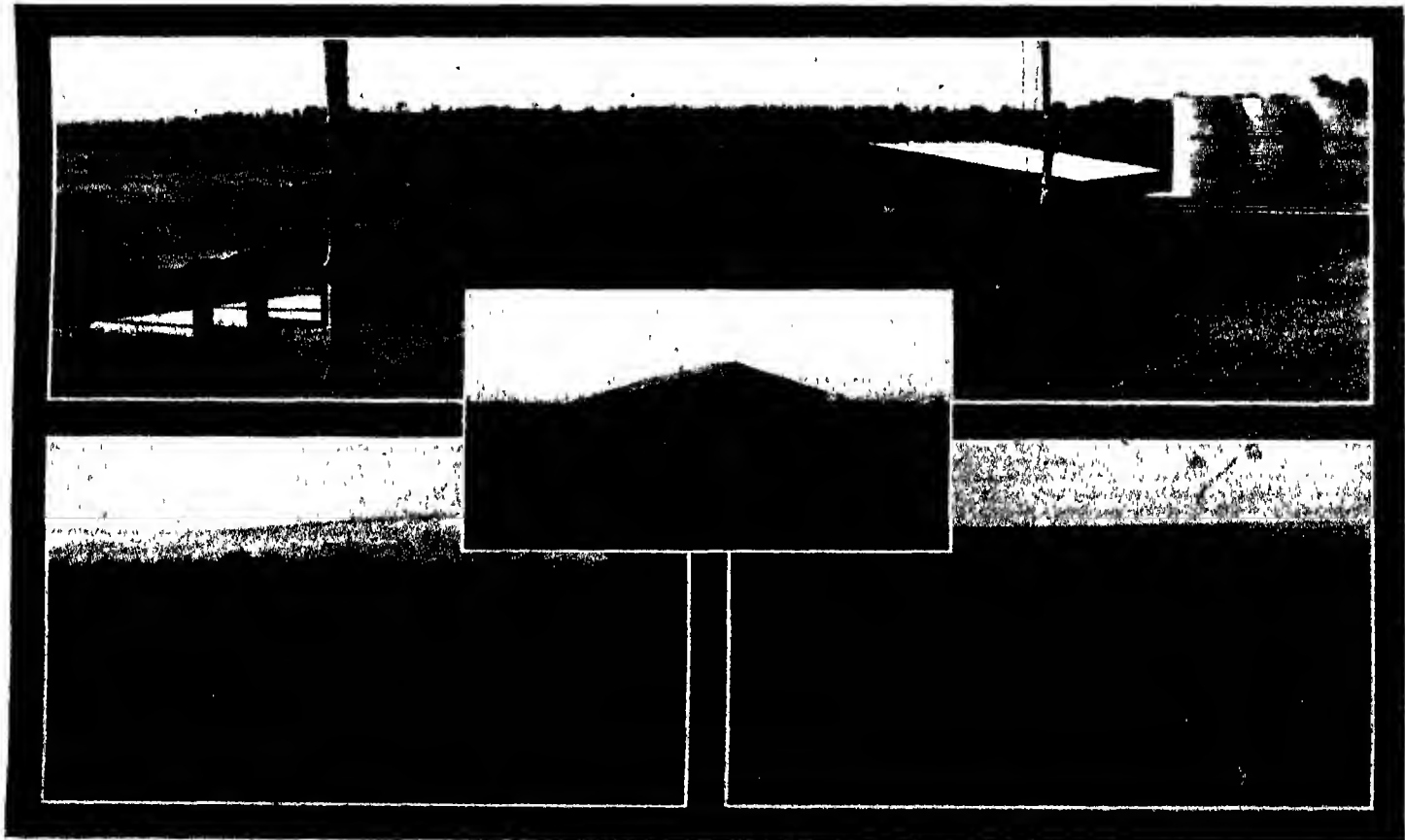
**THE SERVICE COMPANY, LIMITED.**

**Inception.** This company, which had operated for a number of years as the Service Motor Company, became a proprietary concern in 1922.

**Activities.** Connected with motor cars and trucks during the War, the company

has also been actively associated with them since that period. The experience thus acquired has considerably assisted the general development of motor transportation in the country. The Service Company is chiefly interested in Ford products, the pioneer motor vehicles in Kenya Colony and these

vehicles, with the exception of the Uganda Railway, have contributed more than any other influence towards the development of the territory. During the great War they were of material assistance in the success of the East African campaign.



**TYSON BROS. LTD., Nairobi.**  
1. Panoramic View of a Coffee Factory.  
Centre. Exterior of a Sisal Factory.

3. Portion of a Coffee Estate in the Ruiru district, managed by the Company.

4. Portion of a Sisal Estate for which the Company are Visiting Agents.

(See Interpress, page 395)

**Fordson Tractor.**—This has been an important factor in the progress of mechanical farming, and has relieved the labour situation to a great extent. It has also met the difficulty resulting from the loss of animal life in the tsetse fly area, where, before the advent of mechanical appliances for farming, agricultural development had been much retarded.

**Allied Company.** Messrs. Thos. J. O'Shea & Co. Ltd. are agents for Ford products in the Uasin Gishu and Trans Nzoia districts. Their head office is at Eldoret, with a branch at Kitale, and they form an integral part of the great Ford organisation which stretches throughout the length and breadth of British East Africa. The Thos. J. O'Shea Company co-operates in every way with the Service Company, Ltd., its branches and agents, and stocks all Ford products. It also trades as merchants, land, commission, and insurance agents, land valuers, Government mail contractors and produce brokers.

**Organisation.** The Service Company's head office is in Nairobi, with branches and

subsidiary companies operating in Mombasa, Nakuru, Tanga, Moshu, Arusha and Dar-es-Salaam. Sub-dealers are located at Zanzibar, Mtwara, Nyeri, Nanyuki, Kisumu, Mwanza, Bukoba, Tabora, Dodoma and Tanga. Authorised Ford spare part dealers and repairment depots are established at practically every centre throughout the country.

**Agencies.** The company represents everything connected with the Ford car and Fordson tractor, including the Oliver Chilled Fordson tractor plough, the Electric Wheel Company's Fordson tractor trailers, Robert Hudson's rail locomotive attachment for Fordsons, and Exide batteries.

**London Representatives.** Messrs. Arbuthnot Latham & Co. Ltd., 33 Great St. Helens, E.C. 2.

**Cables.** "Motoring," for head office and all branches.

**Bankers.** The Standard Bank of South Africa Limited.

## MINES & MINERALS

**GEOLOGICALLY**, more than half of the exposed surface of Kenya is composed of the oldest rocks known in the world, namely, gneiss and crystalline schists. These are the rocks in which most of the gold and diamonds are found in other parts of Africa, and there is good reason to think that a systematic search in the unprospected parts of the colony may lead to mineral discoveries of great value. Up to the present the most important minerals found in Kenya are gold, silver, lead, mica, graphite, and soda.

**GOLD.**—The occurrence of gold has been reported from various parts of the country at different times, but until the recent discovery of the gold belt in the Southern Masai reserve its existence in payable quantities had never been proved. The reefs found in this belt vary in width from a few inches up to eight or nine feet, and some



THE SERVICE COMPANY LIMITED, Nairobi.

1. Fordson Tractor for Driving Purposes.
3. Fordson used for General Farm Haulage Work.

2. Tractor pulling a Binder.
4. Fordson at work on a Sisal Estate.

astonishingly high values have been recorded. The gold is said to be exceptionally free, and no difficulty whatever is expected in its extraction.

**GRAPHITE.**—There are large deposits of graphite in Kenya, especially in the Tata Mountains and in the Ulu Mountains, and a good deal of work has been done on a mine near Machakos. This mineral, however, requires to be worked on a large scale to compete with the other graphite mines in the world, and is unlikely to be a commercial success in Kenya at present.

**LEAD.** Galena is found in considerable quantities in the Lolgorien area, and could undoubtedly be worked for the extraction of lead if the price of the mineral rose sufficiently, as the specimens which come from there show that the percentage of the mineral present is very high.

**MICA.** In several parts of the colony mica has been found in sufficiently large crystals to have a commercial value. It has been worked in two places, the more important

of which is at Kenzi, near Sultan Hamud station. The other mine where it has been worked is near Chuka, on the east side of Mount Kenya.

**SILVER.**—From time to time discoveries of silver have been reported from different parts of the colony, and a certain amount of work has been done on a galena-silver proposition about 20 miles inland from Kilifi, in the coast area. Silver is also found associated with gold and galena in the Lolgorien area, but not yet in sufficient quantity anywhere to pay for working by itself.

**SODA.**—The largest deposit of trona (i.e., Sesquicarbonate of soda) in the world occurs in Kenya at Lake Magadi, near the Tanganyika border. This lake, which is about 12 miles long by 3 miles wide, is filled entirely with soda, and is one of the sights of the world. It looks like a frozen lake, and it changes its colour in the most wonderful way from grey to white, and white to pink, according to the amount of moisture on its surface and the brightness of the sunlight.

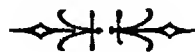
It has been mined on a fairly large scale by a company with a big capital, but in spite of the purity of the deposit and the extraordinary fact that nature replaces it almost as quickly as it is mined, the venture has not been an unqualified success, owing, chiefly, to the tremendous difficulties of transport which the situation of the deposit imposes.

The lake is 377 miles from the coast, and the soda has to be hauled by the railway to a height of over 4,500 ft. above the lake level before it can be run down to Kilindini. Everything possible has been done to assist development by the granting of exceptionally cheap rates on the railway, but the cost of transport is still very high in comparison with the market value of the product.

**VARIOUS.**—So far, no payable coal has been found in Kenya, though there are carboniferous rocks near the coast. Good quality iron ore exists in the Sama hills, there are several limestone deposits, and from the diatomite found in the Rift valley and other parts of the country excellent roofing tiles are being manufactured near Nairobi.



VIEW OF PORT REITZ AND PORT TUDOR, KENYA COLONY.





## OTHER COUNTRIES



THE vast Continent of Africa comprises no less than 30 distinct countries, excluding the great inland desert of the Sahara. During the 18th and 19th centuries the "scramble for Africa" by the European Powers was such that, in turn Portugal, Great Britain, France, Germany, Spain, Belgium and Italy obtained possession of large and valuable colonies from Cape Mogador to the Cape of Good Hope and from Cape Guardafui to the Gulf of Guinea. A glance at the map of South Africa shows the large extent and the wide distribution of these European colonies, Germany alone of the Great Powers being now unrepresented. The leading physical features and most important facts relating to the Government, peoples and trade of these countries are briefly described in the following pages, the Kingdom of Egypt only being omitted in order that it may be fully dealt with in the immediately succeeding volume of this series.

### ABYSSINIA

Abyssinia, the modern representative of ancient Ethiopia, has the distinction of being the only wholly independent native state in Africa. It occupies a very mountainous part of the Upper Valley of the Nile, to the south-west of the lower end of the Red Sea, extending over the watershed between the Egyptian Sudan and the coast strips of Eritrea and French and Italian Somaliland. The total area (including Abyssinian Somaliland) is about 350,000 square miles.

Abyssinia consists of a huge tableland with a mean elevation of 7,000 ft. The Simen Mountains have summits rising to 15,000 ft. The Abai, an upper branch of the Blue Nile, the Narab, and the Hawash are the principal rivers. Lake Tzana, or Derubca, is 60 miles long. The climate is pleasant owing to the great elevation, but the country is subject to an excessive rainfall.

**ADMINISTRATION.** The government is a feudal despotism, the rulers claiming descent from Menelik, the son of Solomon by the Queen of Ethiopia. After the overthrow of Theodore, King of Amhara, by the British in 1868, the principal event in the country's history was a long war with Italy, ending in the complete rout of the Italian forces at Adowa in 1889. In 1906 Great Britain, France and Italy undertook to preserve the integrity of Abyssinia. The present ruler is the Empress Walzeru Zauditu (daughter of the late Emperor Menelik), whose heir, H. H. Ras Tafari Makonnen, G. C. M. G., G. C. B., practically exercises supreme power, cabinet government, once tried, having fallen into disuse. The Abyssinian army is 300,000 strong and is well equipped. The capital and seat of government since 1894 is Addis-Ababa, in the south of Shoa, on the southern slopes of the Entoto Range. It is little more than a number of villages surrounding the Royal Palace, with a population of 50,000.

**COMMERCE.**—The total trade of Abyssinia is valued at about £2,000,000, but it has suffered for some years from continued depression. That with Great Britain in 1924 was £11,600, exports, £28,000. The principal artery of trade is the French-Ethiopian railway, but caravans also do considerable business in the interior. Exports consist mainly of hides and skins, coffee, wax, ivory, civet, and native butter.

**FINANCE.**—No organised system of finance exists in Abyssinia, bars of salt and cartridges being still used as media of exchange in many parts. The Bank of Abyssinia, with an authorised capital of £500,000 and paid up capital of £125,000, has its head office at Addis-Ababa, with agencies at Harar, Dire Dawa, Gore, Gambela, and Dessie. By its constitution the Governor of the National Bank of Egypt is its President, and the governing body sits at Cairo.

**POPULATION.** The population between ten and eleven millions consists of various elements, but the nucleus is formed of the Abyssinians proper, a brown, well-formed people belonging to the Semitic stock and believed to be the descendants of immigrants from Arabia. The basis of the language is the ancient Ethiopic, or Grez, a Semitic tongue, which is now the sacred language, understood only by the priests. The Amhara is the prevalent language. There is a large Galla population also many negro tribes. The Abyssinians practise a debased form of Christianity, being members of the Alexandrian or Coptic Church. The negro tribes in the border districts are either Pagans or Mohammedans.

**PRODUCTION.** Abyssinia is exceedingly fruitful, and its productions vary from the pines, heaths and lichens of Northern Europe to the choicest tropical plants. Two and in some places three crops can be raised yearly. The banana-tree, date palm, sugar cane, vine, orange, lemon, cotton, coffee, and wild indigo flourish. The higher plateaux furnish rich pastures of European grasses, also oats and barley. The chief industries are the rearing of cattle and the cultivation of grain, agricultural and pastoral pursuits occupying the bulk of the population, but there is also a certain number employed in the preparation of leather and the working of copper and iron. The forests abound in valuable trees and rubber.

**TRANSPORT.** The only railway in Abyssinia is that built under French auspices and known as the Franco-Ethiopian Railway. It runs for 495 miles from Djibouti in French Somaliland to Addis-Ababa, the capital, via Dire Dawa. The posts and telegraphs are also under French management. Roads, excepting a few in the vicinity of the capital, are mere tracks, and transport is generally effected by means of mules, pack-horses, donkeys and camels.

### ALGERIA

Algeria, situated between Morocco on the west and Tunis on the east, has been gradually occupied by the French since 1830, and now forms an integral part of France. It has an area of about 343,500 square miles, with a coast line 545 miles long. The most fertile and populated part is that known as the Tell, which is mountainous and well-watered. The central part of the country—a region of plateaux—is largely used for cattle-rearing. The south limit of this tableland is formed by the chain of mountains constituting the north boundary of the Sahara, culminating in Sheliah (7,585 ft.), the highest point of Algeria. The climate is divided into three seasons—winter, spring, and summer, winter being the rainy season. Except near the coast, it is nearly tropical, and oppressive to Europeans.

**ADMINISTRATION.** Algeria is divided into three civil departments—Algiers, Oran, and Constantine (to each of which is attached a military division) and the Southern Territories, consisting of the districts of Am Sefia, Ghardaia, Tougourt, and the Sahara Oases. A civil Governor is in residence at Algiers, and is assisted by a consultative council. Each department sends two deputies and one senator to the French Chambers, which alone have legislative powers over Algeria. The budget is submitted to a Superior Council and to the Financial Delegations, representing French colonists, urban taxpayers and Moslem natives. The French troops in the country consist of one corps d'armée, and the native troops are the *Fenailleurs Algériens* and *Spahis*.

**CITIES AND PORTS.** The capital of Algeria is Algiers, which dates from 935 A.D. The town rises from the sea shore up a precipitous hill. It is divided into two parts—the old or high town inhabited by the Arabs, and the new or low town the glory of which is the magnificent Boulevard de la République with its fine terrace, built in 1860-66 at a cost of eight million francs. The French have at great expense improved the port, which is safe and spacious and has a lighthouse. Algiers is now in the front rank of Mediterranean bunkering stations. It is strongly fortified and can accommodate 40 warships and 300 trading vessels. Of the 206,595 inhabitants at the last census the majority were French including naturalised Jews.

Constantine a picturesque town of over 78,000 inhabitants, is the capital of the easternmost department of Algeria and is connected by rail with its port Philippeville (40 miles N. E.), also with Algiers and Tunis. It is a great trade centre, being the chief grain market of Algeria, and also exports oil and wool.

Oran, the second seaport of Algeria and also a naval base, has a population of 141,000, of which 124,000 are Europeans.

**COMMERCE.** The chief exports are wine, corn, olive oil, esparto grass, phosphate and zinc, the total value of exports in 1924 being Frs 1,000,304,000. Imports, six-sevenths of which come from France, consist mainly of textiles, clothing, sugar, coffee, coal, automobiles, and building materials. In 1924 they totalled Frs 2,793,744,000. Goods passing direct between Algerian and French ports must be carried in French bottoms (*monopole du pavillon*). About half the ships entered and cleared are French, British ships easily ranking second. Trade with Tunis, Morocco and the Saharan oases has developed greatly in recent years.

**FINANCE.**—The revenue in 1925 was estimated at Frs 519,800,824, and the expenditure at Frs 519,788,955. The finances are on a sound footing, and, were the Algerian franc independent of the French franc, would support a stable currency. As it is, the Algerian exchange rates follow those of France.

**POPULATION.**—The population of Algiers at the census of 1921 was 5,802,464, comprising nearly 8,000 Europeans, of whom 6,000 were French. The native population is divided between Arabs and Berbers.

**PRODUCTS.**—Despite the ravages of phylloxera, Algeria has developed into a great wine-producing land, the total area under cultivation in 1924 being 7,357,000 acres, and the production over a million metric tons.

Wheat, barley and oats are also largely produced, and millions of gallons of olive oil are shipped to France. Pastoral industries are expanding, and the tablelands yield in exhaustible supplies of esparto grass (alfa). The principal minerals are phosphate and zinc.

**TRANSPORT.** In 1923 there were 2,480 miles of railways open for traffic, and in 1924 the number of ships engaged in foreign trade entering Algerian ports was 3,848, of a net tonnage of 3,851,698.

## ANGOLA

Angola, or Portuguese West Africa, stretches from the Congo River to South-West Africa, and is bounded on the east by the Belgian Congo and Rhodesia. The total area is 484,800 square miles. The long coast strip is level, barren, extremely hot, and very unhealthy. Beyond is hill country, reaching to a height of 3,000 feet, and it promises to become an important source of maize, wheat and beef. The main rivers are the Kwango running north to the Congo, and the Coanza and Cunene, which discharge into the Atlantic.

**ADMINISTRATION.** The colony has belonged to the Portuguese since 1575, with the exception of the years 1641-48, when it was held by the Dutch. The present boundaries have been fixed by agreements with France, Belgium and Great Britain. The colony is governed by a High Commissioner, who resides at Loanda, and is vested with large powers. It is divided into eleven administrative districts. The capital is St. Paul de Loanda, which is also the chief port.

**COMMERCE.** Trade is almost entirely with Portugal. There is some export of wax, buffalo hides, ivory, coffee, copal gum, rubber and palm oil. Exports as yet do not balance imports, the yearly figures averaging 24,000,000 escudos and 40,000,000 escudos respectively.

**FINANCE.** The finances, in spite of very heavy taxation, are unsatisfactory. In 1925 revenue amounted to 108,020,000 escudos and expenditure to 158,000,000 escudos. In 1925 the Bank of Angola was obliged to suspend operations.

**POPULATION.** This is returned at about 5,000,000. The aborigines are Congo negroes, and belong to Bantu stock.

**PRODUCTS.** The chief products are coffee, rubber, wax, sugar (for the rum distilleries), vegetable oils, coconuts, ivory, oxen and fish. Rubber supplies are becoming exhausted. In the coast belt, cotton has been cultivated for centuries by the natives, and grows well at an altitude of from 2,000 to 3,000 feet. Tobacco is raised and manufactured for local consumption. Sugar is grown on a large scale at Catumbella, eight miles from Lobito, where some 2,000 acres have been reclaimed and machinery erected capable of treating 250 tons of cane per month. The table land is admirably suited for cattle ranching purposes. The province also contains large quantities of malachite and copper, iron, petroleum and salt. Gold has been found, and in the Lunda district alone (in 1924) 118,011 carats weight of diamonds were recovered.

**TRANSPORT.** The Portuguese National Navigation Company does most of the carrying trade to and from Europe, but the steamers of three British lines and one German line visit Loanda and other ports. Railways run inland from Lobito Bay and Benguela, and from St. Paul de Loanda, the total length of line being about 820 miles. It is hoped before long to link up the Loanda-Lucalla line with the Central African Railway.

## CAMEROONS

The former German colony of Kamerun, on the West Coast of Africa, lies between British Nigeria and French Equatorial Africa, extending from the coast north-eastwards to the southern shore of Lake Chad. The whole colony was captured from the Germans by French and British troops in February 1916, and is now divided between Britain and France. The French administer by far the larger portion (roughly 166,000 square miles), their seat of government being at Yaoundé. The British portion is a narrow strip (about 31,000 square miles), stretching from the sea along the Nigerian frontier to Lake Chad, and is attached to Nigeria. The seat of government is at Buea. The total population is 2,500,000, Bantu negroes inhabiting the coast districts and Sudan negroes the inland portion.

**LEADING FEATURES.** The surface of the Cameroons generally consists of series of plateaux in the interior and of a low-lying coastal strip. The Cameroon Mountains are in the north, near the coast, and they culminate in Mongo-ma-Lobo (13,000 ft.). The principal rivers are the Sanaga, Munga and Wuri, navigable only by steamers for short distances. In the interior litter-transport is employed, and as the distance from Douala, the principal port to the Central Cameroons, is a 30 days' journey, and to Lake Chad 20 days, few products, except ivory and rubber, can bear this expensive means of transit. There are some 400 miles of railway, and good roads in the settled parts.

**PRODUCTION.** The soil throughout the coast region is fertile, and numerous valuable African vegetable productions grow in profusion. Experiments in the cultivation of cloves, vanilla, pepper and other products have been successfully developed. There is an active trade in ivory and palm oil; the colony is rich in hardwood, and ebony is abundant. Salt is found in several districts, and iron is smelted by the natives. Tobacco has been exported.

## CONGO (BELGIAN)

The colony of Belgian Congo, formerly known as the Congo Free State, has an area estimated at 900,654 square miles. With a coast line only 25 miles long, it stretches inland as far as Angola in West Africa, and is also bounded by the Anglo-Egyptian Sudan, the Uganda Protectorate, Tanganyika and Northern Rhodesia. The greater part lies within the geographical basin of the Congo, being drained by that river and its many tributaries. On the whole, the country is not mountainous, but forms a depressed and inclined plateau, rising round its rim to heights of about 6,000 ft., and on the eastern border touching much higher elevations on the flanks of the Ruwenzori and Mfumbiro ranges. Much of its surface is composed of savannas and arable lands, but more is under dense and dark forest, in which rubber trees are abundant and strange forms of animal life are found. The climate is tropical, and the greater part of the country is unsuited to European colonisation.

**ADMINISTRATION.** The Congo Free State was founded in 1885 by Leopold II, King of the Belgians, and was placed under his sovereignty. Annexation to Belgium took place in 1908, and since then the colony has been known by the name of Belgian Congo. Government is centred in Brussels, and a Governor-General administers the territories, which are divided into 21 administrative districts, these being combined to form four provinces—Katanga, with its capital at Elizabethville, Congo-Kasai, with Léopoldville as its capital; the Equator, capital

Coquilhatville, and the Eastern Province, capital Stanleyville. Léopoldville (population 18,100), formerly Kinshassa, is the capital of the whole colony.

**COMMERCE.** The principal exports are palm nuts, copal, rubber, ivory, copper (ore and crude), gold and diamonds. These go chiefly to Belgium, Great Britain ranking next. Imports come mostly from Belgium, Britain, Rhodesia, and the Union of South Africa. In 1924 imports into the Congo from Britain were valued at 47,203,013 francs and exports to Britain at 30,527,221 francs. The chief commercial centres are Boma, Bamana, Léopoldville, Elizabethville and Stanleyville.

**FINANCE.** The public debt in 1924 stood at 543,410,235 francs. The ordinary yearly revenue approximates to 250,000,000 francs, and expenditure to 275,000,000 francs, in addition to which extraordinary expenditure often exceeds 100,000,000 francs. Seven banks are in existence, of which the most important are the Banque du Congo Belge and the Banque Commerciale du Congo. Gold and silver money of Belgium is also current in the Congo, and the Banque du Congo is authorised to issue notes.

**POPULATION.** The population is estimated at from ten to fifteen millions, the last census recording the inhabitants of Bantu origin only at 8,500,000. The white population numbers over 10,000, more than half being Belgians. The native peoples are varied in race, but (except in the north-east) are generally Bantu in speech. In several regions pigmy tribes inhabit the forests, and many of the remoter tribes are cannibals.

**PRODUCTION.** The natural wealth of this enormous territory, which is almost unmeasurable, has so far only been tapped. The chief agricultural products in order of importance are palm nuts and palm oil, rubber, white copal and cocoa. Ivory is also abundant. Coffee grows freely, and the cultivation of cocoa has been successfully developed. Rice, cotton and tobacco are grown in many native villages. Cattle thrive satisfactorily in all districts where there is no tsetse fly, notably in the highlands of Katanga, Ituri and Kivu. Mining flourishes, the chief minerals being gold, diamonds, copper and tin, and coal, iron and cobalt are also known to exist. The most important mines are the famous copper mines of the Union Minière near Kambove (Katanga), whose output in 1925 amounted to 89,583 tons.

**TRANSPORT.** The Congo is navigable for 95 miles from its mouth to Matadi and on this section a fleet of State-owned steamers operates. Above this for 250 miles are numerous rapids, which render the river unnavigable as far as Stanley Pool (Léopoldville). Above the Pool there are about 1,068 miles of navigable water as far as Stanley Falls, while several of the larger tributaries are negotiable over a considerable extent of their courses. Above Stanley Falls the Congo is called Lualaba, and is navigable for 585 miles, from Ponthierville to Kindu and from Pongolo to Bukama.

There are over 7,200 miles of road, 2,000 being suitable for motors. They are principally in the north-eastern district, connecting with the Sudan frontier and the Upper White Nile. The total length of railways is over 1,300 miles, and as several lines have been built where the navigation of the Congo is impeded by rapids, it is now possible to cross the continent by rail and steamer. The Cape to Cairo railway enters Katanga province from the south and reaches the Congo at Bukama, its extension northward and the construction of a branch line to Lobito Bay on the West Coast are only a matter of time.

## CONGO (FRENCH)

This has been known as French Equatorial Africa since 1908. It embraces the former colonies of Gabon and the Middle Congo, and has a total area of 980,000 square miles, including the Cameroons territory which France acquired during the European War. A large part of the coast region consists of primeval forest, with trees rising to 150 and 200 feet, but there are open lagoons, mangrove swamps, park-like reaches and prairies of tall grass with patches of cultivation. Behind the coast region is a ridge which rises from 3,000 to 4,000 feet called the Crystal Mountains, then an extensive plateau some 2,000 feet in height. The rivers which fall into the Atlantic are mostly unnavigable, and the largest part of the country is drained by the Congo.

**ADMINISTRATION.** Each of the colonies of Gabon, Middle Congo, Ubangi-Shari and Chad has its own Lieutenant Governor, financial and administrative autonomy, and an administrative council. The Lieutenant Governors are under the control of the Governor-General of French Equatorial Africa, whose headquarters are at Brazzaville, and who is assisted by a Secretary General and a Council of Government. Brazzaville, on the Congo opposite Léopoldville, the Belgian capital, is the administrative capital, Libreville, or Gabon, the capital of the Gabon colony, with 4,000 inhabitants being the largest town. Bangui, on the Ubangi River, is the capital of the Ubangi-Shari-Chad colony.

**COMMERCE.**—The almost insuperable difficulties of transport in the interior have hitherto hindered commercial development. The principal exports are rubber, palm-oil, ivory, ebony and mahogany, coffee, cocoa and copal, and there is an increasing trade in piassava. The bulk of the export trade is with Britain. The imports, which largely exceed exports in value, are mainly cotton and metal goods, foodstuffs and spirits.

**PEOPLES.**—The country is peopled by diverse negro races, and in the regions bordering Lake Chad and in Wadai by Fulani, Hausa, Arab and semi Arab tribes. Several of these are cannibals, and amongst many of them the fetish worship of the West African negroes prevails. In the northern regions the majority of the inhabitants are Mohammedans, and it is only in those districts that organised and powerful states exist.

**PRODUCTS.**—The resources of the country are largely undeveloped. The tropical forest, which extends for some 30,000 square miles, contains many timbers of industrial value. Wild caoutchouc is the most important. Palm oil is being produced in large quantities, a French company operating a big mill at Gabon. Coffee is also cultivated. In the Chad colony numbers of cattle, sheep, asses, camels, horses and ostriches are raised, but with few facilities for export. Copper, lead and zinc are the minerals found.

**TRANSPORT.**—The question of railway communication with the Atlantic and with the surrounding countries is one of vast importance to the economic future of this colony. At present the main route into French Equatorial Africa is by the Belgian railway from Matadi, on the Congo, to Kinshassa and Léopoldville, and thence across the Stanley Pool to Brazzaville. From that point boats are run on the Congo and Ubangi as far as Zinga during low water, and up to Bangui in the rainy season, the latter journey taking 12 days. To reach Lake Chad via Bangui occupies 71 days. A line from Brazzaville to Pointe Noire,

a deep-water harbour south of Loango is under construction, and will prove a valuable outlet for traffic. Other railways to connect with Lake Chad and the Cameroons are projected.

## DAHOMEY

Dahomey is bounded on the south by the Gulf of Guinea, east by Nigeria, north and north-west by the French possessions on the middle Niger, and west by the Gold Coast Colony. The French colony extends far north of the negro kingdom to the Niger River at a spot a little above Illo. Exclusive of the portion of Togoland administered by the French under mandate, the area of the colony is about 40,000 square miles. The country is mainly flat, with large baricade tracks inland interspersed with forest regions. The most important river is the Weme (300 miles long) which drains the colony from the Bariba country to the Porto Novo lagoon.

**ADMINISTRATION.**—Dahomey, formerly part of an extensive negro kingdom notorious for its slave traffic and human sacrifices, was annexed by France in 1894. The colony is administered by a Lieutenant Governor, assisted by a Council composed of official and unofficial members. It is divided into territories annexed, territories protected, and "territories of political action," but for administrative purposes the division is into "circles" or provinces. Except in the annexed territories, the native states are under French supervision, and native laws and customs, as far as possible, are retained. Natives, however, may place themselves under the jurisdiction of the French law, those doing so being known as "assimilés." The chief source of revenue (about 12,000,000 francs) is the customs, while the capitation tax contributes most to the local budget. The chief port and seat of Government is Kotonou, laid out by Europeans on a definite plan, and with a climate more healthy than that of most coast towns.

**COMMERCE.**—Trade and commerce are chiefly concerned with Dahomey proper and the coast. The prosperity of the country mainly depends on the export of palm-oil and palm kernels. Copra, kola nuts, rubber and dried fish are also exported, the fish going to Lagos. A large proportion of all cargo destined for Dahomey passes through the British port of Lagos. The volume of trade, which increases annually, is about 6,000,000 francs, imports slightly exceeding exports.

**POPULATION.**—The population is approximately 900,000, entirely native except for a few hundred French officials and traders. The inhabitants of the coast region are of pure negro stock. The Dahomeyans of the interior are a tall and well-formed people reserved in demeanour, polite with strangers, warlike and keen traders. Many Hausas and Fulani are found. There are converts to Islamism in the northern districts, but the Mahi and Dahomeyans proper are nearly all fetish worshippers.

**PRODUCTS.** The soil being naturally fertile, can be highly cultivated. The chief product is palm oil, made in large quantities. Next to palm-oil, the principal vegetable products are maize, guinea-corn, cassava, yams, sweet potatoes, plantains, coconuts, oranges, limes, and the African apple, which grows wild. The country also produces ground-nuts, kola-nuts, pineapples, guavas, spices, ginger, okras (hibiscus), sugar-cane, onions, tomatoes and papaws. Cattle, sheep, goats and fowls are scarce. Some cotton of fairly good quality is grown by the interior inhabitants for their own use.

**TRANSPORT.** The few roads in the colony have been greatly improved in recent years. A new metalled highway 310 miles in length for motor traffic extends from Savé to the Niger. From Kotonou the Dahomey railway of metre gauge, runs into the interior to Savé (150 miles), with a branch line to Whydah and Segbourné on Lake Abémé (20 miles). A metre gauge railway has also been constructed from Porto Novo to Pobré (50 miles) along the Lagos frontier. Kotonou is a port of call for steamers from Europe to the West Coast and there is also regular steamship communication along the lagoons between Porto Novo and Lagos.

## ERITREA

The Italian colony of Eritrea, on the African coast of the Red Sea, extends for about 650 miles from Ras Kasar to Ras Demora. It is bounded inland by the Anglo-Egyptian Sudan, Abyssinia and French Somaliland, and has an area of about 45,800 square miles. The northern portion is part of the East African rift-valley, and the latter is diversified by ranges of hills, principally volcanic, and by lakes. The chief rivers of the plains, of which the Hawash and the Ragnah are the largest, enter and are lost in one or other of two salt plains or basins, Asah in the north and Aussa in the south, which in parts are 200 ft. below sea level. There are no navigable rivers. The climate is excessively hot on the coast, but more temperate in the middle zone and on the high plateau.

**ADMINISTRATION.** Since 1890 all the Italian possessions on the Red Sea have been united under the name of the Colony of Eritrea, which is administered by a civil Governor responsible to the Ministry of Foreign Affairs at Rome. The six provinces are each governed by a regional commissioner. Civil justice for natives is administered in the first instance by headmen of villages, provinces and tribes, or by councils of notables, on appeal by the Residents and regional tribunals, and in the last instance by the Colonial Court of Appeal. Europeans are entirely under Italian jurisdiction. Penal justice is administered by Italian judges only.

The capital and seat of Government is Asmara (population, 15,000, including 2,000 Europeans), which has been rebuilt since the Italian occupation and possesses several fine buildings. Massawa is the chief port.

**COMMERCE.**—Hides are the principal export, being valued at about £50,000 a year. Wax, gum, coffee and ivory are also exported. Pearl fishing is carried on at Massawa and the Dahlak Islands, and the annual value of the fisheries is over £40,000. Salt, obtained from the salt lakes, is a valuable article of commerce. Cotton goods are the chief import. There is some trade with Northern Abyssinia, but it is undeveloped.

**FINANCE.** The revenue is derived from customs duties, direct taxation, and tribute paid by the nomad tribes. The local revenue, which amounts to about 12,000,000 lire annually, is supplemented by grants from the Italian Treasury. Nearly half the expenditure is on the large military force maintained.

**PEOPLES.**—The total population is estimated at 380,000. The inhabitants of the plains and foothills are for the most part nomad shepherds. In the north the people are largely of Arab or Hamitic stock, such as the Beni-Amer, but include various negro tribes. Afar and Somali form the population of the southern regions. The inhabitants of the plateau are Abyssinians.

**PRODUCTION.**—Large herds of cattle and camels are owned by the nomad tribes of the plains, the low country being almost entirely pastoral and unsuited to the cultivation of crops. In the intermediate zone and on the high plateau almost all European cereals flourish, the Abyssinian is a good agriculturist and understands irrigation. Numbers of immigrants from Italy possess farms in the highlands and cultivate coffee, cotton and tobacco.

**TRANSPORT.** The one railway in the colony, which is State-owned, runs from Massawa to Asmara, the capital (a distance of 75 miles), and thence to Cheren, a further 65 miles. The line has been extended to Agordat, on the main caravan route to Kassala. The whole territory is crossed by camel and mule paths between the sea and the high plateau, and between the various centres of population. There is regular steamship communication with Italy, and Massawa has cable connection with Perim, via Assab.

## GAMBIA

The Gambia Colony and Protectorate consist of a narrow strip of territory on each side of the lower reach of the Gambia River, together with several small islands in the river. The size of the colony proper is 60 square miles, that of the protectorate being over 4,000 square miles. The island of St. Mary, at the mouth of the river, is the principal district, the protectorate stretching to about 250 miles up stream. The climate is unhealthy during the rainy season, but in the dry season is better than that of most West African countries lying near the equator.

**ADMINISTRATION.**—The country, under British rule, is divided into the colony and the protectorate, the whole excepting only St. Mary's Island, being for practical purposes treated as a protectorate. The colony is governed by a Governor, with an executive and legislative council, the protectorate being ruled by commissioners (directly responsible to the Governor) through the native chiefs. The capital is Bathurst (population, 9,227), on the island of St. Mary, founded in 1816, and one of the cleanest towns in West Africa.

**COMMERCE.**—Imports and exports during 1925 amounted to £615,927 and £722,021, of which amounts £267,172 came from and £419,084 went to the United Kingdom. Ground-nuts are the principal export.

**FINANCE.**—The public revenue declined from £229,688 in 1923 to £208,613 in 1924, the expenditure also falling from £221,317 to £203,653. There is no public debt. There is a Government Savings Bank in Bathurst, also branches of the Bank of British West Africa and the Colonial Bank. The West African silver currency has been in circulation since 1913.

**PEOPLES.** The population of St. Mary at the census of 1921 was 9,227, and that of the protectorate 201,303. The European population is confined to a few hundred officials and traders. The chief peoples forming the native population are Joloffs (or Woloffs), Mandingos, Serers, and Jolas, the first-named being the superior race and constituting the bulk of the non-Christian population in Bathurst. They are noted for their powers of conversation and for their extremely black colour. Being good traders, their language is widely spread through Senegal and Guinea. They are a handsome, fine-hearted people, and have embraced Islam.

**PRODUCTS.**—The great majority of the native male population is engaged for about eight months of the year in the cultivation of the ground-nut, valuable commercially for its oil. Apart from this, the agricultural crops grown include wheat, barley, oats, maize, potatoes, coffee, cocoa, cassava, sugar, tobacco, indigo, and plantation rubber, while the animal products are merino wool, butter, cheese, meat, and hides. Gambia is rich in iron ore, ochres, and china clay, but these are not worked commercially. There are practically no manufactures, with the exception of the weaving of native-grown cotton into pagns ("country-cloths"), the preparation of vegetable oils, boat-building, and the making of bags, sandals, etc., from locally tanned leather and dyed grass.

**TRANSPORT.** In 1924 the tonnage of vessels entered and cleared at Bathurst was 1,100,729. Between Liverpool and Bathurst there is a fortnightly mail service, and the colony is also connected with St. Vincent (Cape de Verde) and Sierra Leone by cable. There are no railways. Overland travelling is accomplished by Europeans on horseback or in hammocks, but there are no metalled roads.

## GOLD COAST COLONY

The Gold Coast Colony, Ashanti, and the Northern Territories are three adjacent strips of territory, the boundaries of which are practically parallel to the coast-line of the Gulf of Guinea—so called either from *Ghana*, "black," or (more probably) from *Jenne*, the once great city in the interior. The colony proper extends along the coast for nearly 270 miles, being bounded on the north—at an average distance of 130 miles from the coast—by Ashanti, above which, again, come the Northern Territories. The area of the whole is about 80,000 square miles. The physical features are mainly those of a low-lying, surf-beaten coast line, with ranges of hills up to 2,000 feet in the interior. Three quarters of the Gold Coast is still primeval forests, with splendid open park-like country in the north-eastern portion. The climate is hot, moist and generally unhealthy.

**ADMINISTRATION.**—The colony is administered by a Governor with an executive and a legislative council, both nominated, with nine unofficial members in the latter. Ashanti, first placed under British protection in 1896, was definitely annexed in 1901, the Governor of the Gold Coast being appointed Governor of the country, though the laws and ordinances of the Gold Coast do not apply to the annexed territory. The Northern Territories are administered, under the Governor, by a chief commissioner, with headquarters at Tamale.

The present Governor and Commander-in-Chief of the Gold Coast is His Excellency Brigadier-General Sir Frederick Gordon Guggisberg, K.C.M.G., D.S.O., R.E.

**CAPITAL.**—The seat of government is at Accra, which has a population of 38,000. Accra is the port of entry for the colony and the hinterland, and the harbour has lately been extended and developed. Landwag is by means of surf boats. The capital of Ashanti is Kumasi, a historic town with a grim story of native sacrifices and warfare with the British.

**COMMERCE.**—The general trade of the colony during 1924 and 1925 was better both in tonnage and value than at any previous time. In 1913 the tonnage of maritime imports and exports was 405,000. The tonnage landed and loaded in 1924 was 755,653, or 118,000 tons more than the colony's previous record of 637,000 tons in 1923.

Imports in 1925 increased by £1,467,385 and exports by £975,286 their values being respectively £9,782,619 and £10,890,223, the latter figure being a record. Record shipments of cocoa, kola, and manganese were made.

In 1925 exports of cocoa were more than 50 per cent of the world's consumption, and good progress was also made in the establishment of the sisal, copra, fruit, and limejuice industries, and in the revival of the palm oil trade.

**CUSTOMS.**—In view of the sound financial position of the colony at the end of 1925, the ad valorem duties on imports were reduced from 20 to 10 per cent, and the duties on provisions from 12½ to 10 per cent. In 1924 the export duty on cocoa was lowered from £2 6s 8d to £1 3s 4d per ton.

**FINANCE.** The Gold Coast, Ashanti and the Northern Territories are administered financially as a single unit. In 1925 the income was nearly 2½ times as great as the average revenue for any five years in succession previous to 1919, while the excess of assets over liabilities was nearly four times as large as the aggregate surplus in 1918. Although recurrent expenditure has also risen since 1918, it has never exceeded revenue, and only on one occasion has the combined recurrent and extraordinary expenditure exceeded the revenue. The excess of assets over liabilities on April 1, 1925, was estimated at £2,405,605.

**PEOPLES.** The last census was taken in 1923, the population returns being: Gold Coast Colony, 1,171,013; Ashanti, 406,193; Northern Territories, 530,535; total, 2,108,401, excluding 2,033 Europeans. The inhabitants are all of the negro race, the most important tribe being the Fanti. The Akim, who occupy the north-eastern portion of the colony, have engaged in gold digging from time immemorial. The Akwapim, southern neighbours of the Akim, are extensively engaged in agriculture and trade. The Accra, a clever race, are in all the towns of the West African coast as artisans and sailors. Fetishism is the prevailing religion.

**PRODUCTS.** The Gold Coast is probably the richest area known in proportion to its size, very large amounts of gold and gold dust having been won from pre-historic times, in addition to which the vegetable resources are almost inestimable. Gold is found all over the colony, the very fine mine at Obnasi owned by the Ashanti Goldfields Corporation being the most important in West Africa. To the end of 1924 it had produced 1,740,000 oz. valued at over £7,500,000, and had paid nearly £2,250,000 in dividends. Manganese ore was first mined in 1916, and is produced at the rate of about 32,000 tons annually, production in 1925 being valued at £564,370. Diamonds are mined in the Birrim Valley, and were valued at £69,054 in 1925.

The greatest wealth, however, lies in the cocoa palm, the colony exporting some 198,000 tons of cocoa in 1924. The production of palm oil has declined, but that of kola nuts has increased. Palm kernels, copra, peppers, ground nuts, and cotton are other valuable products. There is a considerable fishing industry, and the native artificers in gold and other metals have a well deserved fame.

**TRANSPORT.**—A railway (3 ft 6 in. gauge) runs from Sekondi to Kumasi via Tarkwa (whence a branch line goes to Prestea), and is 168 miles in length. It was finished in 1902, the total cost being nearly £2,000,000. Another line to Kumasi starts from Accra, passing through Mangoase. A Caillet's mono-rail runs round the rapids at Krachi.

Horse drawn vehicles are in use in certain parts, and motors have been tried, but away from the railway line head portage is the rule. Europeans travel on horseback in the Northern Territories, in some parts of Ashanti, and near Accra (i.e. in the districts comparatively free of the tsetse-fly), but elsewhere they are carried in hammocks.

## GUINEA (FRENCH)

This colony, on the west coast of Africa, formerly known as *Rivieres de Sud*, is bounded on the North by Portuguese Guinea and Senegal, on the south by Liberia and Sierra Leone, on the east by the Ivory Coast and French Sudan, and on the west by the Atlantic. With an area of 100,000 square miles it has a population of about 2,000,000. The coast lands contain dense forests, where huge chimpanzees are to be found, but the Futa Jallon tableland is covered only by short herbage. Its largest rivers, exclusive of the Senegal, Niger and Gambia, are the Cogon, Kankur, and Fuballa, smaller ones being the Rio Nunez, Little Scauries, and Rio Grande.

**ADMINISTRATION.** The colony has a Lieutenant-Governor, assisted by a nominated Council. Revenue is raised from Customs and a capitation tax, the local budget balancing at about £300,000. Native princes retain their sovereignty over a large part of the country under the superintendence of French officials. The capital and only seaport is Konakry. Built on the island of Fumbo it is joined to the mainland by an iron bridge and has a jetty nearly 2,000 ft long. The population numbers nearly 30,000. Besides an ample supply of good water, there are spacious docks, wharves, and public gardens. Konakry, where there is a wireless station, is visited regularly by steamers of one English and two French companies. Other important towns are Bissandugu, a military station east of the Niger, Koumassa, the centre of three great native races, the Susus, Malinkes, and Fulanis, and famous for its great baobab tree, under which the celebrated chief Samory used to try his prisoners, Kankan, the present terminus of the railway, with 12,000 inhabitants, and a centre of the rubber trade, and Filinge, one of the largest of the bush towns and a centre of the millet-growing industry.

**COMMERCE.**—The chief products are rubber, palm oil and palm kernels, gum copal, ground-nuts and sesame. Coffee, wax, and ivory are among the minor products. Sheep and cattle are reared in the Futa Jallon district, and the trade in hides is considerable. Millet is the staple food. The principal imports are cotton goods, of which over 80 per cent come from Britain, kola from Sierra Leone and Liberia, rice from the East, and spirits, tobacco, arms, ammunition, and building material from various European countries. The average annual value of the colony's trade is about £2,000,000 sterling.

**COMMUNICATIONS.**—The French Guinea railway which runs from Konakry to the Niger at Kourassa was opened in January, 1911, and was later continued to Kankan, a distance of 412 miles. From Kourassa there is railway communication with St Louis and Timbuctu. The roads in the colony are good and connect the railway system, by their means a deal of trade had been diverted from Sierra Leone. There are over 2,200 miles of telegraph and 250 miles of telephone line, which connect French Guinea with Senegal. Cable communication is with France and Pernambuco, also with Free-town, Monrovia and Grand Bassam.

## GUINEA (PORTUGUESE)

Portuguese Guinea extends along the coast of West Africa from Cape Roxo to the Coton estuary. Inland it adjoins the territories of Senegal and French Sudan. The colony, over which Portugal has exercised jurisdiction since the fifteenth century, comprises with the adjacent Bissagos islands an area of about 14,000 square miles. The archipelago of small islands was at one time part of the mainland, the rivers of which—the Geba, Mancoia, Rio Grande, Carcheo and Cassini—are connected by a network of lagoons. The climate is generally unhealthy for Europeans, the rainfall being very heavy.

**ADMINISTRATION.** Portuguese sovereignty, which is administered by a Governor, is still little more than nominal over the greater part of the colony, settlement being practically confined to a limited area.

**COMMERCE.**—Trade has expanded during recent years thanks largely to the increased export of ground-nuts, but imports still greatly outbalance exports. In addition to ground-nuts, rubber, wax, palm kernels and ivory are exported. The great obstacle to improved trade is the lack of roads and transport facilities in the interior.

**POPULATION.** The population of Portuguese Guinea and the Bissagos Islands is less than a million. The natives inland are mostly of Mandingo and Fulani stock, practising ancestor worship and unrepentant of either Christianity or Mohammedanism. The people of the islands and round the lagoons are good seamen, artisans and agriculturists, but among them number are many warlike and piratical tribes.

**PRODUCTS.** The country produces palm-oil, ground-nuts, kola, peppers, and various fruits in abundance. Indeed, thousands of pounds worth of valuable produce is lost because it cannot be gathered and transported. The forests contain valuable timber, and mahogany (khaya) is known to exist. Other woods such as ebony, African teak, and the hard durable camwood are also found. The hinterland is a great rice-producing country, but this industry has never been properly developed.

**TRANSPORT.** Navigation on the coasts and rivers is extremely difficult, owing to strong currents and dangerous rocks. The principal port is Bissau. The greatest need of the colony is railways or at least the opening up of the interior by proper roads.

## GUINEA (SPANISH)

The Spanish Protectorate, known sometimes as the Muni River Settlement, lies on the Guinea Coast of West Africa between the Cameroons and French Equatorial Africa. The small islands of Corisco, Elchey Grande, Elchey Chico and Bana, in Corisco Bay, also belong to Spain, and the administration of the whole is under the superintendence of the Governor of Fernando Po. The colony, which, including the islands, has a total area of some 9,800 square miles and an estimated population of about 150,000, consists of a narrow coastal plain and foothills rising to the Crystal Mountains, which traverse it in a north to south direction, the mountainous region extending beyond the Spanish frontier. A large part of the country is covered with dense forest, the excessive growth being due to the fertility of the soil and the great rainfall. The inhabitants are Bantu-Negroes, immigrants from the Congo basin, cultivators of yams, bananas and manioc, and expert fishers and

hunters. The European settlements are confined to the coast. There are trading stations at the mouths of the Campo Benito and Muni rivers, at Bata, midway between the Campo and Benito, and on Elchey Chico. Cocoa, coffee and other plantations exist, but the chief trade is in natural products—rubber, palm-oil and kernels, and timber.

**FERNANDO PO.** The singularly beautiful island of Fernando Po is of volcanic origin, 44 miles long and 20 broad, with an area of 780 square miles. The population numbers 14,000. The island is very mountainous, with several magnificent peaks, and is clothed with dense forests. The natives are a primitive folk—sportsmen and fishermen rather than agriculturists. Sheep, goats and fowls abound, and cocoa, coffee, vanilla, tobacco, kola nuts and other tropical plants are cultivated. Fernando Po was for some time occupied by the British, and English became, and still remains the common language of the coast people.

## IVORY COAST

The Ivory Coast is a French West African colony lying between Liberia and the Gold Coast and bounded inland by the French Sudan. It has an area of approximately 120,000 square miles. The coastal region, very hot and unhealthy, is notable for the three large lagoons—Grand Lahou, Grand Bassam (Lebrice) and Assini. In the north-east and north-west are mountains rising from 4,000 to 6,000 feet. The chief rivers are the Cavalla (Kavalli), San Pedro, Sassandra (240 m), Bandama, Komoe (360 m), and Bia. They are navigable only near their mouths.

**ADMINISTRATION.** The Lieutenant-Governor is assisted by a Council, which includes nominated unofficial members. Native forms of government are maintained in most parts, the colony being divided into "circles" for local government. The Ivory Coast has a separate budget and is self-supporting, revenue being obtained from customs and from a capitation tax on all persons over ten years of age. The capital and seat of government is Bingerville, named after Captain Binger, the French explorer. Grand Bassam, with a population of 6,000, is the largest town and port. Petit Bassam or Port Bouet, the former capital, is an important port.

**COMMERCE.**—The principal exports are rubber, cocoa, kernels, kola nuts, gum and timber, valued at about 50,000,000 francs annually. Imports, largely from France, consist of cotton goods, tobacco, wines, metal work and machinery.

**POPULATION.**—The population hardly exceeds 2,000,000, of whom some 600 are Europeans. The coastal districts are inhabited by negro tribes allied on the one hand to the Krumen and on the other to the people of Ashanti. Further inland the "Jack-Jacks," (Avikomo) and Kwa-Kwa (Aradian) are met with, and the Jamans, Wongaras, and Mandingos are also represented. Some of these are savage and warlike, but the coast tribes are generally peaceful.

**PRODUCTS.**—The most valuable product to-day is cocoa, chiefly cultivated in the region of Bas Cavally, in the district of Bandama from Tiassale to Lahou, and in the vicinity of Aboisso. At one time the Administration had difficulty in persuading the natives to take up its cultivation, and freely distributed a million and a half of seeds. It is now the custom of the inhabitants to plant cocoa trees, and the movement has already attained remarkable results. Cotton is being



increasingly grown, and many native varieties exist. Manioc and yams grow in abundance, and the forest timbers are commercially valuable.

**TRANSPORT.**—The only railway, running from Abidjan to Buaké (197 miles), is of metric gauge, like other railways in French West Africa. It is being extended to the north, to the Niger and Upper Volta. The lagoons, which form excellent means of communication along the coast, are joined by means of canals. The ports are visited by liners of several French, British and Belgian companies.

## LIBERIA

This Republic is on the Pepper (Guinea) Coast of West Africa, extending north and west of Cape Palmas. It has an area of about 43,000 square miles, the coast line measuring 340 miles. The boundaries in the interior were determined by arrangement with France and Great Britain in 1905.

The coastal region of Liberia consists of mangrove swamps lying behind a belt of sand dunes, is traversed by numerous rivers, and is interrupted by projecting headlands of rock. About 20 miles inland the surface rises into undulating uplands. The climate and vegetation are tropical; the temperature varying only between 75 and 85 degrees.

**ADMINISTRATION.** Liberia owes its origin to the American Colonising Society, which in 1821 bought coastal land and settled thereon a small body of freed African slaves. Since 1847 the State has been a free and independent Republic, the constitution being modelled on that of the United States, with a President, Senate, and House of Representatives. No white man can acquire citizen's rights or hold property. The official language is English. Monrovia, the capital, has an estimated population of 6,000. It is one of the fifteen ports of entry along the coast, Robertsport and Sinoe being the most important of the others. The President is the Hon. C. D. B. King, who is serving his second term of office.

**COMMERCE.** The trade of Liberia is in a few raw products, rubber, palm-oil, cocoa, coffee, ivory, ginger, and camwood being the chief. It is mainly with Britain, the United States, Holland and Spain. Imports average \$1,300,000 and exports \$1,170,000 per annum.

**FINANCE.** Liberia is very undeveloped and the revenue is small. For the financial year 1923-24 it amounted to \$380,078 and expenditure to \$371,652. The finances are under the control of a Financial Adviser lent by the United States Government.

**POPULATION.** The population is estimated at 1,500,000 to 2,000,000, including about 100,000 Americo-Liberians. All are of the African race. The indigenous natives belong to the main to six principal stocks: the Mandingos, the Gassis, the Gola, the Kpweis, the Kru negroes and their allies, and the Greboes. The Kru tribes are pagan, but the Americo-Liberians are Protestant Christians. About 50,000 of the coast negroes are civilised, and among these a progressive system of education has worked good results.

**PRODUCTS.**—The soil is well adapted for coffee, the principal crop grown after the food plants rice and manioc. Other products are sugar, palm oil and kernels, cocoa, arrow-root, piassava fibre, spices, coconuts, rubber, kola nuts, and calabar beans. The grant of a million acres of land to an American (Mr. Harvey Firestone) in 1925, though it has been adversely criticised by a section of Liberian public opinion, will, by the introduction of rubber planting on a large scale, do much

towards the proper development of the country.

**TRANSPORT.** There are no railways, and only about 50 miles of motor-road, transport being entirely by ox-cart. The river St. Paul is navigable for 25 miles from the sea northwards, and various Liberians maintain steam launches thereon. There is direct cable communication with Europe and New York, and Monrovia is a port of call for some 200 steamers annually.

## MADAGASCAR

Madagascar, the third largest island in the world, is situated to the south-east of the African Continent, and is about four times as large as England and Wales, having a total area of 228,000 square miles. The country consists of an elevated interior region, from 3,000 to 5,000 ft. above sea level, and a comparatively level area surrounding the high land, not much exceeding 600 ft. in altitude, although there are lofty mountains extending to the south-eastern extremity of the island. The interior highland comprises nearly half the total area of the island, the highest point being Ankaratua (9,000 ft.), probably an extinct volcano. The chief rivers flow west and north-west, and there are many fine bays and harbours on the north-west coast.

**ADMINISTRATION.** Madagascar has been a French colony since 1896, and is administered by a Governor-General, assisted by a nominated Council which includes unofficial members. The colony is not represented in the French Parliament. Each province (there are 24) has its native Governor and minor officials. The capital and seat of Government is Tananarivo, of some 75,000 inhabitants, and possessing several handsome public buildings.

**COMMERCE.**—The principal exports are cattle, hides, wax, india rubber, rattan, bast, fibre hats and graphite, also ebony and other valuable woods. Imports are mainly cotton goods, metal work, crockery, coal and rum. The chief trade is from the eastern ports to Mauritius and Réunion, and there is now also an increasing trade with South Africa. Imports largely outbalance exports, the value of which is about £5,000,000 annually.

**COMMUNICATIONS.** Tananarivo, the principal seaport, is visited by the steamers of two French shipping companies, and the principal ports are connected with each other by coasting steamers. Tananarivo is joined to Tananarivo, the capital, by a railway 230 miles long, and another line, 100 miles long, runs from Tananarivo to Antisarabe, a watering place. There are regular motor-car services on the main roads.

**PEOPLES.** The total population is 3,504,000, including 17,000 Europeans, of whom nine-tenths are French. The Malagasy races or tribes are very numerous, the Hova being the most important. They are of Malayo-Polynesian origin. The slave-trade, formerly prevalent, was abolished in 1896.

**PRODUCTION.**—Agriculture is the chief employment, rice being the principal product. The manioc-root is also largely consumed, and immense herds of fine hump-backed cattle are found in the island. Coffee, sugar and vanilla are cultivated by Europeans, and ostrich farming is also carried on. Iron is abundant, and the European War brought about a great exploitation of graphite, which occurs in a stretch of country 750 miles in length. Up to 30,000 tons have been produced in a single year.

## MOROCCO

Morocco, known to the natives as Maghreb-el Aksha, the "farthest west," is an empire of sultanate confined to that part of north-west Africa bounded on the east by the Wad Gir, which separates it from Algeria, and on the south by Cape Nun and the Wad Draa, which separate it from Rio de Oro and French Sahara. Very little of the country has been surveyed, but it comprises probably about 230,000 square miles, of which the "Tell," or fertile region west of the Atlas mountains, contains 78,000, the steppes or flat upland pastures 27,000, and the Sahara the remainder. Morocco is as a whole mountainous, the Atlas range traversing it in several chains from south-west to north-east, and by various spurs both to the coast country and to the desert. Many of the plains are rich and fertile. In no instance is a river navigable for any distance from its mouth. The climate varies, that of the western slope, due to the sea-breezes, being temperate, the interior valleys are very hot. In winter, snow often falls in Fez and Mequinez, where ice an inch thick is not uncommon.

**ADMINISTRATION.** Politically, Morocco comprises the old Kingdoms of Fez and Morocco and the Territories of Taflet and Sus. Since 1912 it has been divided into three zones: Tangier in the north, which is neutral, a small Spanish protectorate along the Mediterranean coast, and a large French protectorate. Spain also holds a number of settlements on the north coast. Formerly the Sultan was absolute head of State and Church. Since 1912, however, he and his Grand Vizier have been under the control, in the French zone, of a French Resident General and French Ministers, while in the Spanish zone a High Commissioner nominally controls the Khafia. Neither of the two protecting Powers was able to establish its sway without prolonged and severe fighting, and more than once since 1921 the Ruis under the Sultan Abd-el-Krim, had driven the Spaniards to the coast and had turned upon the French. After prolonged and heavy fighting throughout 1924 and 1925, war was terminated in May, 1926, by the surrender of Abd-el-Krim, who was deported. Morocco has four Capitals or Imperial Residences, at which the Sultan resides at uncertain intervals and for indefinite periods. These are Fez, Mequinez, Marrakesh (better known as the City of Morocco), and Rabat. The most important towns commercially are Tangier and Casablanca, which have good harbours.

**COMMERCE.**—Owing to the disturbed state of the country the trade of Morocco has suffered severely during recent years, though the value of the total trade of French Morocco has increased from rather less than 200,000,000 francs in 1912 to about 1,100,000,000 francs. Trade with the United Kingdom is valued at some £3,000,000 annually. The chief exports are eggs, goatskins, wool, sheepskins, hides and wax.

**FINANCE.**—The finances of the French zone are upon a satisfactory basis, though the public debt, consisting entirely of French loans, amounts to over 700,000 francs. Revenue and expenditure each approximate to 300,000,000 francs yearly. The revenue is mainly derived from direct and indirect taxes and monopolies.

**POPULATION.**—This is estimated at about 6,000,000, of whom 5,400,000 may be taken as the native population of the French zone, the European population of all Morocco numbering about 100,000. The native population is composed of Berbers, or Kabyles (the aborigines of the country), Arabs, Moors and Negroes, the latter having

originally been brought from the Sudan as slaves. The "Moors," a term vaguely applied to all the Mohammedan inhabitants, are really Berbers, with a large admixture of Arab, Spanish and other European blood. The Jewish population, which came largely from Spain, have suffered much persecution but now have the larger part of the trade of the country in their hands.

**PRODUCTS.** Agriculture is the principal resource of Morocco, and forms the basis of the economic future of the country. The chief crops are barley, wheat, maize and millet, representing some 88 per cent. of the total cultivated area. Under proper conditions, Morocco may become one of the richest of cereal-producing countries. Other crops are vegetables, flax, hemp and henna, while there is a considerable acreage under orchards. Stock-breeding is also an important industry, sheep and goats predominating. Rich mineral deposits of copper, lead, iron, antimony, silver, gold, phosphates and petroleum are known to exist in the country.

**TRANSPORT.** There is a railway from Fida on the Algerian border to Fez, Mequinez, Rabat, Casablanca and Marrakesh, with which Tangier is to be connected. Another line runs from Tetuan to Ceuta. Much road-making has been done by the French and it is now possible to go to Fez or Marrakesh by motor-car. In the Spanish zone the lack of roads and the insecurity resulting from anarchy and brigandage have greatly retarded development. There are regular steamship services from Europe to the Morocco ports run by French, British, Spanish and Italian lines. Wireless stations have been established at Tangier, Rabat, and Casablanca.

## NIGERIA

Formerly known as Southern and Northern Nigeria, the British possessions in the neighbourhood of the River Niger were in 1912 grouped together under the single title of Nigeria. The united colony is wholly within the Tropics, and, with the exception of the Niger delta and the coastal plain, lies entirely upon the continental plateau, with an average elevation of 1,000 feet. It possesses an area of 335,600 square miles, that part known as the Protectorate (with headquarters at Lagos) being divided into the Northern and Southern Provinces. The most striking physical feature is the river system of the Lower Niger and the Benue, with the extensive delta projecting into the Gulf of Guinea between the Bights of Benin and Biafra. The southern creeks and forests give place northward to open park-like plains, mountains and plateaux rise within the colony to heights of over 4,000 ft. above sea level, while in the extreme north-east the British possessions extend inward to the margin of the northern desert and to the swampy shores of Lake Chad, in the central Sudan.

**ADMINISTRATION.**—Nigeria is administered by a Governor appointed by the Crown, who is assisted by an Executive Council. Since 1922 there has been a Legislative Council for the colony and the Southern Provinces of the Protectorate, in which is a proportion of elected Africans. The Governor legislates for the Northern Provinces and also administers (under mandate) the former German territory of British Cameroons. Each Province is under a Lieutenant-Governor. In many parts much of the work of administration is left in the hands of native chiefs. The present Governor is Sir Graeme Thomson, K.C.B., appointed in 1925.

**CAPITAL.** Lagos, the capital since 1914, stands on the island of that name only a foot or two above sea-level. The inhabitants number about 500 Europeans and 50,000 Africans. The town, with many handsome buildings of stone and brick, is lighted by electricity and has a supply of pure water. The port has increased in importance, large improvements having been carried out during the last 10 years, and ocean-going vessels can now pass into the harbour at high tides, thus saving transhipment. Kaduna, in the Northern Province, has been the seat of the administration of the United Protectorate since 1916. Port Harcourt, the newest port of West Africa, stands as a remarkable example of European enterprise, and has a population of some 7,000.

**COMMERCE.**—Nigeria is one of the richest tropical dependencies of the British Empire, and commercially the most advanced of all West African colonies. From earliest times the Hausas were the recognised traders of Nigeria and the Central Sudan and well-defined trade routes were established from their northern cities into the countries of the neighbouring tribes, the desire for salt stimulating their nomadic and trading instincts. The establishment of British rule throughout the land was accompanied by a marked increase in internal trade, and where transport by steamer or rail has been provided the Hausa merchant has not been slow to avail himself of modern methods.

In 1924 the total value of the trade (including specie) was £27,640,740, of which £12,635,866 represented imports and £15,004,874 exports, an increase of over £1,000,000 on the figures for 1923, and £13,000,000 more than in 1913. The bulk of trade is with the United Kingdom, which in 1924 supplied 71 per cent. of the imports and took 60 per cent. of the exports. Palm-oil, palm kernels, cocoa, and ground-nuts are the principal exports.

**FINANCE.** Both 1923 and 1924 marked a definite recovery in the financial position of the colony from the years of economic depression which succeeded the War. In 1923-24 revenue (£10,260,501) exceeded expenditure (£5,501,242) by £4,759,259, and in 1924-25 by £1,175,505, the figures being £6,944,220 and £5,768,715 respectively. The surplus assets at the end of March 1925 were £571,000, and at the end of July £4,230,000. The railway results for the financial year 1924-25 reflected the general return to prosperity. The gross receipts for 1923-24 were £1,053,115, which increased to £2,070,591 in 1924-25, and were expected to show a greater increase for the year ended March 31, 1926. Whereas the year 1923-24 showed a net loss on railway working of £12,952, the year 1924-25 gave a net profit of £324,311.

In 1923 a special silver coinage for West Africa was introduced, the denominations being 2s, 1s, 6d and 3d, of the same size, weight and fineness as corresponding coins of the United Kingdom. This currency, with adequate reserves in London, based on gold and securities, is under the control of the West African Currency Board. A nickel coinage (penny and one tenth of a penny) is also in use, and local currency notes from 1/- to £5. The Bank of British West Africa and the Colonial Bank have branches in Nigeria.

**PEOPLES.**—The population at the last census was 18,305,634, including about 2,800 Europeans. The native population embraces a vast number of races and tribes, speaking different languages and dialects, and varying greatly in degree of civilisation. The fundamental type is that of the Negro, which is found in its present form in the Niger delta

and the southern forests. Of the many negro races, the Hausas are the most important, and have from immemorial times been known as the traders of the Central Sudan. The Fulas or Fulani are of a superior type, and were originally pastoralists, but afterwards degenerated into slave dealers and extortioners. Slavery in any form was abolished in 1917 though a certain amount of slave trading still goes on among the tribes east of the Niger.

**PRODUCTS.** The chief native agricultural crops of Nigeria are yams, maize, cassava, and ground-nuts, with smaller quantities of potatoes and Guinea corn. Cotton has been cultivated from earliest times, and in the past cotton cloth formed one of the principal exports from Kano and Zaria to northern Africa by caravan. The 1924 yield of 92,780 lb. of cotton lint has only once been exceeded. Tobacco is cultivated near Ibadan in Southern Nigeria and almost everywhere in the Northern Province. Palm oil is an important forest product, and many varieties of rubber are obtained by the natives from the latices of various trees and vines indigenous to the country. There is a considerable inland trade in kola-nuts, and copra is exported.

**MINERALS.** Small quantities of gold, silver, copper, zinc and lead are found in places, but nowhere in sufficient quantity to repay European exploration. There are large tin-bearing areas, and a colliery has been opened by the Government at Enugu, in the Southern Province, which is connected by rail with Port Harcourt.

**TRANSPORT.** Nigeria is fortunate in possessing a large number of ports, of which the principal are Lagos, Sapele, Warri, Forcados, Akassa, Brass, Bonny, Opobo, and Calabar. A regular weekly steamer service is maintained between Liverpool and Forcados, Lagos, Calabar, and the other ports being served by smaller branch steamers from Forcados able to navigate the creeks and bars. Other steamers ply between the major ports and London and Hamburg. In the past the rivers have been the main arteries of communication, but in consequence of the great fall in the water level between October and May, navigation is then only possible for shallow-draught stern-wheel steamers, launches, barges and canoes. In the delta region every place of importance is easily reached by river steamers, and there is a regular service between Forcados and Lagos by lagoon.

**RAILWAYS.**—The railways are based on two separate ports—the Western line on Lagos, with a length of 968 miles to Kano, and the Eastern on Port Harcourt, with a route mileage of 158 as far as Mukuru. The latter line is being extended to join the Western at Kaduna. A light railway runs east from Zaria to the Bauchi tin-fields. Wide roads, permanently cleared, connect all the large towns and government stations. Motor transport has reached a remarkable stage of development in Southern Nigeria.

## NYASSALAND

The Nyassaland Protectorate (until 1907 the British Central Africa Protectorate) lies along the southern and western shores of Lake Nyassa, extending nearly to the banks of the Zambesi, and includes the Shire Highlands, the greater part of the Shire basin and Lake Shirwa. The larger portion of the country, which has a total area of 48,243 square miles, consists of elevations ranging from 2,500 ft. to 4,000 ft. and the climate is for the most part agreeable.

**ADMINISTRATION.** Nyassaland is administered, under the Colonial Office, by a Governor, assisted by Executive and Legislative Councils. The protectorate is divided into 20 districts, each administered by a Resident and his assistants. The laws consist of local ordinances, with such British Acts as are of general application. Education is entirely in the hands of the various missionary societies. The present Governor is His Excellency Sir Charles Bowring, KCMG, KBE. The seat of government is at Zomba, but Blantyre, a town of 7,300 inhabitants, is the largest settlement. Fort Johnston is the chief port of Lake Nyassa.

**COMMERCE.** The general trade of the protectorate has shown an upward tendency during the last three years, and in 1924-25 the balance was in favour of exports (£583,555, as against imports £548,150) for the first time since 1920. The United Kingdom supplied 57.7 per cent of the imports, consisting largely of cotton goods. The principal exports, 98.5 per cent of which went to the United Kingdom, were tobacco, cotton, fibre, tea, rubber, coffee, capsicum and chillies.

**FINANCE.** The revenue increased from £281,043 in 1923-24 to £293,050 in 1924-25, expenditure also rising from £282,800 to £295,481. The country suffered from acute financial depression during 1922 and 1923, but has since, owing to the improved cotton and tobacco crops, made a substantial recovery.

**PEOPLES.**—The inhabitants are for the most part pure negroes, there being here no trace as in other parts of Africa of an Hamitic intermixture. The term "negro" may be taken to include the Bantu, Hottentot, Bushman and Congo pigmy types, but ethnologically and linguistically the natives belong to the Bantu stock, and are in most respects identical with the peoples of Uganda.

**PRODUCTS.** Cotton, tobacco and tea cultivation have been rapidly developed during the last few years, and these are all now grown for export. Records for both tobacco and tea were established in 1924. Coffee, maize and sugar are also grown; rice is largely cultivated, and oats and barley thrive in the uplands. As regards European and native livestock, horned cattle numbered (1924) 121,875, goats 108,392, sheep 87,546, pigs 36,922, asses 343, and mules 13.

**TRANSPORT.**—Nyassaland has communication with the coast at Chinde by river steamers, but the Zambesi and the Shire having both deteriorated as waterways, communication with the outer world is more and more made by the railway which runs from Blantyre to Chinde and from Murraca to Beira. With the bridging of the Zambesi at Murraca there will be uninterrupted communication with the port of Beira. Railway extension northward to Lake Nyassa is contemplated. Main roads and "carrier" roads are open all over the protectorate, the total mileage being 3,500.

## RHODESIA (NORTHERN)

Northern Rhodesia, comprising a total area of some 297,000 square miles, lies to the north of the Zambesi River, and is bounded by Southern Rhodesia, South West Africa, Portuguese West Africa (Angola), Belgian Congo, Tanganyika Territory, Nyassaland, and Portuguese East Africa. It consists in the main of a high plateau, part of the great South African plateau which extends to beyond the region of the Great Lakes. Owing to its altitude (exceeding 4,000 ft.,

except in the Zambesi, Luangwa and Kafue Valleys), much of the country is suitable for European settlement and farming. The territory is well watered by the Zambesi and its tributaries, the Chambesi and the Luapula.

**ADMINISTRATION.**—In 1911 the two provinces formerly known as North-Eastern and North-Western Rhodesia were amalgamated under the title of Northern Rhodesia, and have since been administered by a Governor appointed by the Crown, assisted by an Executive Council of five official members. There is a Legislative Council of 13 members, with a majority of official members. The seat of Government is at Livingstone, on the Zambesi, and also on the main line of the Rhodesian Railway. Livingstone is connected by a telegraph line with both South Africa and the Congo. The present Governor is His Excellency Sir Herbert J. Stanley, KCMG.

**COMMERCE.** Northern Rhodesia's trade figures for the years named were as follow:

	1923	1924
Imports	£528,068	£684,183
Exports	£472,497	£455,917
Totals	1,000,565	1,140,100

For the first seven months of 1925 imports were valued at £777,516, and exports at £233,355. Exports consist mainly of live animals, pig and ingot lead, maize, and tobacco.

**FINANCE.**—The total revenue of the colony for the financial year 1924-25 amounted to £203,495, compared with £237,443 in 1923-24, and expenditure to £364,233, compared with £344,937.

**POPULATION.**—The permanent European population in 1925 was 4,424, the native population was estimated at 1,106,534. The Barotse, who are the predominant tribe in the region of the Upper Zambesi basin, are the superior, intellectually as well as physically, of the vast majority of the negro races of Africa.

**PRODUCTION.** The chief agricultural products are maize, cotton, tobacco, wheat, and European fruits. Rubber is also produced, and there is plenty of timber of various kinds. Stock raising is successfully carried on, much of the land being excellent for grazing. The native-owned cattle are estimated at 350,153 and European-owned at 85,348. Extensive mineral deposits have been discovered, lead and copper predominating. Gold, zinc, vanadium and coal are also present. The total annual mineral production is valued at over £3,325,000.

**TRANSPORT.**—Northern Rhodesia, being an inland country, depends solely on the main line of the Rhodesian Railway, which traverses the region from south to north as far as, and beyond, the Congo border. The Zambesi, Kafue, and Chambesi rivers are only navigable over a portion of their extent, and a great deal of transport work is still done by "ox-trek."

## RIO DE ORO

Rio de Oro is the only Spanish possession on the north-west coast of Africa. It is bounded on the east and south by the Sahara territory under French protection, and on the north by the undefined limit of Morocco, Cape Mogador being the most northerly point claimed by Spain. The country is really a part of the Sahara, and is practically waterless. Oases are few, and the scattered population consists almost entirely of nomad Arabs and Berbers, who are Mohammedans.

The colony, with its protectorate and occupied territory, which in all has an area of about 110,000 square miles, is under the governorship of the Canary Islands, with a Sub-Governor resident at Cisneros, the capital of the colony. Cisneros is the headquarters of a fishing industry of some extent, the trade in fish with the Canary Islands and Southern Nigeria having grown in value to nearly £100,000.

## SENEGAL

The French Colony of Senegal lies to the north of Portuguese and French Guinea, on the extreme west coast of Africa, having with its protectorate over certain native states a total area of over 74,000 square miles. The country behind the seaboard of Senegal proper is a slightly elevated, and for the most part barren, plain. Further east is a mountainous and fertile region, with altitudes of over 4,000 feet. The mountains sink abruptly towards the Niger valley, while southwards they join the Futa Jallon highlands. The Senegal, its tributary the Falemé, and the upper course of the Gambia are the chief rivers which drain the country. The upper Senegal and Niger country consists of a great plateau rarely more than 1,600 feet high, and in large part barren desert. On the borders of the Sahara, north of the Niger, is a good deal of fertile land.

**ADMINISTRATION.** The government of Senegal is modelled on that of a French department, and it returns a member to the Chamber of Deputies. It is administered by a Lieutenant-Governor, assisted by a Colonial Council of 40 members, 20 selected by French citizens, and 20 by representatives of native chiefs of cantons and provinces. The judicial system applied to Europeans resembles that of France, and the judicature is independent of the executive. Native laws and customs not repugnant to justice are respected. The capital is St. Louis, founded in 1626 and the oldest French settlement on the coast. The town is picturesquely situated but unhealthy, and the port is not used by European steamers, which discharge at Dakar, where there are three large commercial docks, besides a naval dock and arsenal.

**COMMERCE.**—The last figures available of the trade of Senegal are for 1924, in which year the total was valued at 863,969,450 francs, as against 603,829,453 francs in 1923, imports aggregating 477,871,418 francs and exports 386,098,032 francs. The chief imports included Textiles, 167,876,402 francs, rice, 33,925,523 francs, coal, 31,913,763 francs, sugar, 25,977,211 francs; wines, 14,527,356 francs, leaf tobacco, 11,972,083 francs, wheat flour, 9,851,669 francs, biscuits, 8,621,229 francs, building materials, 7,624,895 francs, cotton thread, 6,963,159 francs, timber, 6,327,687 francs, and kola nuts, 6,216,276 francs, while the principal exports comprised ground nuts in husks, 312,854,546 francs, gum, 11,874,803 francs, ground nuts (decorticated), 6,701,051 francs, raw cotton, 6,060,914 francs, palm kernels, 2,950,767 francs, ox hides, 2,003,939 francs, and wool, 1,851,138 francs.

**POPULATION.**—The total population of Senegal (including the protectorate) is 2,250,000, about 5,000 of whom are Europeans. The natives of the four towns of St. Louis, Dakar, Rufisque, and Goree and their descendants are French citizens, all other natives being French subjects. The native population consists largely of the Fulani, Mandingo, and Woloff tribes, the latter being considered one of the finest handsomest and blackest of West African

ances. They are nominally Mohammedans, and, in common with the Mandingoes have an elaborate caste system.

**PRODUCTS.**—Millet and ground nuts constitute the principal, if not the sole wealth of the colony. Maize, rice, castor-beans, gum, and rubber are also cultivated. There are large herds of cattle, also flocks of sheep and goats, besides numerous camels, asses and horses. Gold, iron, quicksilver and copper are found, and a salt industry is being developed. Native industries comprise weaving, pottery, brick-making and jewellery.

**TRANSPORT.** There is regular communication by rail and river between Dakar and Timbuctu the journey occupying ten days. A railway linking the Senegal and Niger rivers starts at Kayes on the Senegal, passes south-east through Bafoulabe and Kita, whence it goes east to Bamako on the Niger, and follows the left bank of that river to Kulikoro, the terminus, from which point the Niger is navigable down stream for 900 miles. The Senegal-Niger railway is 347 miles long and occupied 24 years in construction. Telegraph lines connect the colony with all other parts of French West Africa.

## SIERRA LEONE

Sierra Leone (Lion Mountain) lies on the west coast of Africa between the French possession Guinée Française on the north and north-east and the Republic of Liberia on the south-east and occupies an area of 25,000 square miles. The country is mountainous and exceptionally well watered, the principal rivers being the Rokel and the Boom Kittam, which eventually merges into the Kase Lake. The climate is tropical and not generally healthy for Europeans. Vegetation is profuse, and Sierra Leone is the home of the oil-palm, the chief source of the colony's wealth.

**ADMINISTRATION.** Sierra Leone is a Crown Colony the Governor being aided by an Executive Council composed of the General Officer Commanding the Troops, the Colonial Secretary, the Attorney-General, the Colonial Treasurer, and the Collector of Customs. The Legislative Council contains a proportion of elected African members. The Imperial military forces are represented by a battalion of the West India Regiment, British artillery and engineers, and a battalion of the West African Regiment, a native corps. There is also a native force, under British officers, for interior duties. The present Governor is Sir A. R. Slater, KCMG, CBE.

**CAPITAL.** The capital is Freetown, an important place of some 35,000 inhabitants, which possesses the finest natural harbour in West Africa. Freetown, besides being a garrison town, is also a naval station.

**COMMERCE.** The central fact of Sierra Leone's trade is the oil-palm, since in many of the greatest European industries vegetable fats are more and more required. In the scientific treatment of this immense indigenous wealth lies in the near future the economic development of Sierra Leone and its protectorate. There is a large local trade in kola-nuts. Imports exceeded exports in both 1923 and 1924, the respective totals being—1923 Imports, £1,949,981, exports, £1,607,225, and 1924, imports, £1,730,643, exports, £1,711,438. During the first seven months of 1925 imports (exclusive of specie) reached a value of £1,202,790, as against £934,067 for the corresponding period of 1924, and exports a value of £1,056,281, as against £916,125.

**FINANCE.** The public revenue totalled £868,319 in 1924, compared with £845,320 in the preceding year, while expenditure amounted to £777,790, as against £727,661. The West African silver currency (2s., 1s., 6d. and 3d.) is in circulation, but British coins are still largely used. Currency notes of the United Kingdom and Nigeria are in operation. The Bank of British West Africa and the Colonial Bank have their headquarters at Freetown.

**PEOPLES.** At the census of 1921 the total population of the colony was 85,163, of whom 1,161 were resident Europeans. The population of the protectorate was estimated at about 1,150,000. The natives of the interior are comprised in about 15 different tribes, offering striking differences in physique, languages, and general characteristics. The Sierra Leoneans (often called Creoles) who are found mostly in Freetown and the Peninsula are the descendants of the original settlers and liberated slaves.

**PRODUCTION.** The soil of Sierra Leone is extremely fertile and is easily worked. All agriculture is termed "farming" by the country natives who use the most primitive methods. The principal articles of food are rice and cassava which are grown all over the country. In the forests the oil-palm grows untended, and supplies the natives with the simple necessities of life, as well as furnishing a large export trade. The kola nut is used by natives extensively, and other promising crops are maize, cuscus, and bean seed. Coconut palms are to be found everywhere near the seaboard, and yield prolific crops.

No mining is carried on at present, but ironstone is found everywhere and is smelted by the natives who extract a splendid iron from which swords, spears, knives, hoes and other implements are made.

**TRANSPORT.** The main line of railway which runs inland for 227 miles from Freetown to Pendembu (with the branch line from Boia to Kamabai) has proved of immense value to the country. This was the first railway constructed in West Africa, and was commenced in 1896. It penetrates the heart of prolific oil-palm areas and some very fertile agricultural land. In connection with the railway are numerous government roads to facilitate the overland transport to the sections, and many of these now carry motor traffic.

## SOMALILAND (BRITISH)

The British Somaliland Protectorate includes all the parts of the northern coast of the so-called "Horn of Africa," and is a section about 68,000 square miles in extent, of the great triangular Somali Peninsula, which in many respects forms a continuation of Arabia. The country is dry, without permanent rivers, and almost universally hot but, except during particular seasons in the coastal lowland, the climate is not unhealthy.

**ADMINISTRATION.** The administration of the Protectorate was formerly undertaken by the Government of India, but was taken over by the Foreign Office in 1898, and transferred to the Colonial Office in 1905. The present Governor and Commander-in-Chief is Mr. Harold Baxter Kitchener, C.M.G., formerly Secretary to the Administration, who was appointed in 1926. The capital is Berbera, which possesses the only sheltered harbour on the coast, and has a population of about 30,000 in the trading season. Zeyla and Bulhar are trading centres of some 7,000 population each.

**COMMERCE.** Imports in 1924 were valued at £340,563, as against £328,045 in 1923, exports at £233,145, as against £228,640. The usual imports are mainly of grain (rice and pown) and a little tea from India, cotton piece goods from India, Europe and North America, and dates from Basra. The chief items of export trade are sheep, goats, some cattle and ponies, and hides, ostrich feathers, *ghu* (clarified butter), civet, myrrh, frankincense, gums, and mother-of-pearl may also be mentioned. Almost all goes to Aden, either for consumption or for transshipment to London and elsewhere.

**PEOPLES.** The population, mainly consisting of Somalis, a Mohammedan people, has for many years remained stationary at about 350,000. The Somalis are pastoralists, and tend to live in small vagrant communities, each known as a *tribe*, or *kama*, which rarely stays at one place more than a few days together, moving repeatedly to wherever it can find new grazing.

**PRODUCTS.** Stock-raising, upon very primitive methods, is the main business of the Somali who invests all his gains however earned, in either camels or sheep. It has been estimated that there are between two and three million camels in British Somaliland and perhaps 4,000,000 sheep; the latter carry little wool and are usually white, with black heads and necks and as a rule hornless. Round the towns there is a little scattered agriculture, mainly of millet; of mining or manufacturing activities there are none.

**TRANSPORT.** Methods of transport in Somaliland are primitive, for not only is there no railway, but there are not even roads in the proper sense, the nearest approach to one being the rough track, in parts lit for wheeled traffic, constructed for military operations some twenty years ago. Transport therefore is mainly by pack animals, mostly camels. There is constant communication with Aden, across the Gulf, by sailing boats called *buggalows*, belonging to the natives, and in dhows of between 50 and 300 tons from Basra and Red Sea ports but this traffic is partially suspended during the south-west monsoon, and a great deal of the Aden, together with the rest of the foreign, trade is carried by steamers, mostly British.

## SOMALILAND (FRENCH)

The colony of French Somaliland (Côte française de Somalis) is situated at the entrance to the Red Sea and north of British Somaliland. It covers an area of about 5,700 square miles, and has a population of 200,000, mostly Danakils (Afar) and Somalis, with a number of Arabs, Abyssinians and Indians, and about 2,000 Europeans and Levantines. The country has been progressively occupied by France since 1884, its importance to the mother country consisting principally in its strategic position as regards the Suez Canal and the use made of Djibouti as a coaling station. Djibouti is the capital, with a population of about 9,000. The country has little or no agriculture, and the chief industries are those of salt (procured from the lake deposits) and fishing. Some coffee is grown, and ivory and skins and hides are exported. The railway which runs from Djibouti to Addis-Ababa, the capital of Abyssinia, has aided commerce with that country, and some trade is also carried on with Aden and the Persian Gulf.



## SOMALILAND (ITALIAN)

Italian Somaliland, consisting of a colony and protectorate 154,000 square miles in area, extends on the East African coast from Bangar Ziyada, a point on the Gulf of Aden, eastward to Cape Gardafui, and thence southward to the mouth of the River Juba. Westward it is bounded by Abyssinia and British Somaliland. With a coast line of no less than 1,200 miles, the country does not possess a single good harbour, though there are ports at Mukdishu, Brava, Marka, Warsheik and Yub. The capital is Mogadiscio (20,700 inhabitants), where the Italian Governor resides. The principal occupations of the people, who are largely Somali of Hamitic origin and a very warlike race, are cattle rearing and agriculture, but in Northern Somaliland, where agriculture is almost unknown, camels and sheep are grazed in large flocks. Exports are in value far below imports, consisting principally of ivory, cattle, butter, cotton, myrrh, gums and skins. Animal produce is exported to Italy, Aden and Zanzibar, whence it is shipped to Europe, America, or India. Rich crops of millet and other grains are grown in the fertile district of the Juba Valley.

The budget for 1924-25 provided for a revenue of 2,857,000 lire, plus a State contribution of 8,049,000 lire, and an extraordinary revenue of 12,500,000, total revenue, 24,306,000 lire, to balance an expenditure of the same amount. There are no railways in the colony, but some 1,500 miles of roads. On the Juba River there is a steamship service from Kismayu (ceded to Italy by Britain in 1925) to Bardera.

## SUDAN (FRENCH)

The colony of French Sudan, occupying with its dependent territory some 771,000 square miles, is that vast hinterland which lies at the back of Senegal, French Guinea and the Ivory Coast, thus forming a link which connects all the possessions of France in north, west, and central Africa. The greater part of the colony lies within the bend of the Niger, north of which river it includes the fertile borders of the Sahara. Northward of Timbuctu the desert stretches to the borders of Morocco and Algeria. On the south-west and south the country is somewhat mountainous.

**ADMINISTRATION.**—The colony was formed in 1904 from the territories of Senegambia and the Niger, less the Senegal Protectorate, which was restored to Senegal. Its old name of Upper Senegal-Niger was changed to French Sudan in 1920. The whole of the colony is under civil administration, with the same judicial and educational systems as the other colonies of French West Africa. The capital is Bamako (10,000), planned like a French provincial town, with wide boulevards and solid stone houses. There is an excellent water-supply and the streets are lighted by electricity. Timbuctu, the ancient capital of the Songhay empire and the centre of the caravan trade of the Sahara, lies in the midst of the desert, and is connected with the coast and with Paris by wireless.

**COMMERCE.**—The chief exports are gum (which comes largely from the northern districts), rubber, gold, kola nuts, cotton, leather and ostrich feathers. A good deal of trade is still done by caravans across the Sahara to Morocco and Algeria. Much of the export trade from the Middle Niger passes through the port of Konakry in French Guinea.

**POPULATION.**—The population of the French Sudan, including the Sahara and the territories of the Upper Volta and Mauretania, is approximately 7,000,000, of whom not more than 2,000 are Europeans. The Fulani have long been the dominant race of this part of West Africa, and at various times have overrun and conquered many of the native states. They are a nomadic and pastoral people with marked warlike tendencies, and are generally considered to be the most intelligent of all African tribes, and amongst the finest specimens of mankind found in West or Central Africa.

**PRODUCTS.**—The chief native products of French Sudan are maize, millet, rice, ground-nuts, cotton, sesame, melons, manioc, bananas, and other fruits. Pasturage is extensive and cattle are plentiful; there are several good breeds of horses, donkeys are numerous and largely used as transport animals, and wool-bearing sheep distinct from the smooth-haired sheep of the coast regions—are bred in many districts, the natives using the wool largely in the manufacture of blankets and rugs. Under the direction of French officials, cotton-growing on scientific methods has recently made great progress. Some gold is found in the basin of the Falcine and of the Tankisso.

**TRANSPORT.**—The only railway in the colony is that known as the Kayes Niger line, which runs from Ambidedi to Koulikoro, 389 miles. The latter town is the headquarters of the Niger Navigation Service, which is run by the Government and maintains regular steamer communication between Koulikoro, Bamako and Timbuctu.

## TANGANYIKA

The Tanganyika Territory is, roughly speaking, a block of central East Africa between the Great Lakes, having the eastern side washed by the Indian Ocean. It is the only country in the world whose boundary on two sides consists largely of fresh water coast. It comprises that portion of the former colony of German East Africa which, under the Treaty of Versailles, it was agreed should be administered under a mandate by His Britannic Majesty. The total area of Tanganyika is about 305,000 square miles, the climate is generally of the Indian or trade-wind type, though hotter conditions prevail in the extreme north-west and north-east, and the general aspect of the country is of the savannah or park land order, with large tropical rain forests on the mountain slopes. The peak of Kilimanjaro (19,700 ft.), the loftiest mountain of South Africa, is just within the territory.

**ADMINISTRATION.**—Under an Order in Council, dated July 22, 1920, Tanganyika is administered by a Governor, who is assisted by a nominated Executive Council and an elected Legislative Council. Native laws and customs are respected unless they are opposed to justice or morality. Legislation for the complete abolition of slavery was enacted in 1922. For purposes of administration the Territory is divided into 22 administrative districts, with 47 sub-districts. The present Governor is His Excellency Sir Donald Charles Cameron, K.B.E., C.M.G., who was appointed in 1924.

**CAPITAL.**—The capital of the territory is Dar-es-Salaam, which is also the principal seaport. There is a fine land-locked harbour, in which the largest vessels can find anchorage, as well as a small, but well-equipped, naval dockyard. The population of Dar-es-Salaam is about 24,000.

**COMMERCE.**—The import trade of Tanganyika during 1925 amounted approximately to £2,443,000, compared with £2,100,000 in 1924. Great Britain supplied 39 per cent, India 17 per cent, Germany 11 per cent, and Holland 9 per cent of the imports. Domestic exports were returned at a total value of £2,898,000 in 1925, as against £2,550,000 in the preceding year. Cotton and coffee exports increased 78 per cent and 14 per cent respectively in weight, the decreases in grain and ground nuts being 50 per cent and 52 per cent. Considering the prolonged drought from which Tanganyika suffered in 1925, the export figures showed remarkable progress.

**FINANCE.**—The finances of the territory attained a much more favourable position in 1924-25 than in the previous year. Revenue, amounting to £1,558,082, was considerably above estimates, and expenditure, totalling £1,747,578, was substantially below estimates. These figures compare favourably with those for 1924 of £1,315,188 for revenue and £1,901,158 for expenditure.

The more important revenue items comprised licences and taxes, £532,062, customs, £426,725, railways, £318,028, court fees, £87,070, revenue from Government property, £62,498, posts and telegraphs, £30,663, port and marine, £29,010, and land sales, £2,347. The largest expenditures were on railways, £493,071, public works, £319,021, district administration, £178,483, military, £124,400, police and prisons, £113,850, medical and sanitation, £106,127, posts and telegraphs, £63,450.

**POPULATION.**—The native population consists mostly of tribes of mixed Bantu race, and is estimated at about 5,000,000. The coloured population (mostly Indians) other than native being some 15,000. These figures are exclusive of the inhabitants of the thickly populated provinces of Ruanda and Urundi, which are under Belgian administration. The total white population is about 2,600.

**PRODUCTION.**—Agriculture, including cattle farming, is the principal wealth of the country, and far exceeds in importance any other industry, such as mining, although a strong development of the latter is anticipated. The chief crops distributed generally throughout the territory are different kinds of beans, maize, rice, millet, oil-seeds, root crops, yams, cassava, and potatoes. The cotton industry is being considerably extended, production in 1925 amounting to 8,287,000 lb., compared with 7,517,364 lb. in 1924. There has also been a recent development in the cultivation of tobacco and coffee. Large areas of Cereia rubber exist, and await development. The principal mineral wealth of Tanganyika lies in gold, mica and diamonds, the latter having been discovered in valuable quantities. Coal and copper have been located, and vast iron ore deposits are known to exist.

**TRANSPORT.**—There are three railway lines in the Territory: the Tanga railway from Tanga to Moshi (219 miles), the line from Dar-es-Salaam to Kigoma, and the Vuu-Kake railway from Moshi to Voi (92 miles) on the Uganda Railway. The East African Commission has recommended the construction of three more important trunk lines, one of which will connect the Central Railway with the north end of Lake Nyassa, while another will branch from Jagora to the southern end of Lake Victoria, the third linking the Central and Tanga Railways between Dodoma and Arusha. Motor transport is at present possible only on a few good roads, but new roads are to be constructed. There is good steamer transport on the three lakes of Victoria, Nyassa and Tanganyika.



## TOGOLAND

Togoland, the narrow strip of country with a coast line of 32 miles and a total area of some 34,000 square miles which lies between the Gold Coast Colony on the west and French Dahomey on the east, formerly belonged to Germany, but was surrendered unconditionally to British and French forces in August 1914. The greater part of the country belongs to the basin of the Volta, and lies west and north of the Agome chain of mountains, the highest elevations of which are Mount Dabo (3,133 ft) and Mount Atiknse (3,248 ft). The chief navigable river traversing Togoland is the Oti; the Haho is navigable at its mouth for light canoes. The climate is hot and humid, but with careful hygiene and sanitation is supportable for Europeans.

**ADMINISTRATION.** In 1920 the country was divided between France and Britain, the boundary between the two spheres extending from the north-west corner in a general direction south-east and south, terminating not far from the port of Lome, but so that no part of the British sphere reaches the coast. British Togoland is attached for administrative purposes to the adjacent provinces of the Gold Coast Colony, Ashanti and the Northern Territories. French Togoland is administered as an autonomous territory, the seat of government being at Lome, which has a port of modern construction capable of sheltering and unloading vessels of any size.

**COMMERCE.** Quite one-sixth of the total products of all Togoland is in palm kernels and palm-oil, which are bartered and exported in large quantities. Cocoa, kola nuts, raw cotton, rubber, indigo, ebony and other valuable woods are also exported. Imports are chiefly textiles, metals and hardware.

**POPULATION.** The total native population is about 1,600,000, and the European population (British and French) a few hundred. The southern half of the country is peopled by natives using no less than 30 different languages, of which the principal is Ewe; these may be regarded as an offshoot of the Bantu peoples. The northern half contains ethnologically a totally different population descended largely from Hamitic tribes and speaking in all 16 languages, of which Dagomba and Tuni are the most important. The majority of the natives are pagans, but many profess Mohammedanism.

**PRODUCTION.** Whatever may have been said of the pre-war German administration of the country, there can be no doubt as to the development of its natural resources. Forestry and planting received most careful attention, as did the raising of stock, the result being that Togoland was the first German colony to dispense (1903-04) with an imperial subsidy towards its upkeep. There are flourishing plantations in which coffee, cocoa, cotton, kola and other tropical products are cultivated. The oil-palm grows extensively everywhere, and maize, yams, bananas, tapioca and ginger are cultivated by the natives. In the interior cattle and sheep are plentiful, on the plateau horses and donkeys. There is no mining by the Europeans, but in some districts the natives smelt iron, in which the country is very rich.

**TRANSPORT.** There are excellent roads throughout the colony, and over 800 miles of highway suitable for motor-traffic have been laid out with well-appointed rest-houses under European control. There are three railways connecting Lome with Aneho (Little Popo), with Palime, and with Atakpama, the total mileage exceeding 200. These are all in French territory, and are to be linked up with the Dahomey railways

## TRIPOLITANIA AND CYRENAICA

Italian Libya lies along the north coast of Africa, between Tunisia on the east and Egypt on the west. Formerly known as Tripoli, a vilayet or regency of the Ottoman Empire, it passed under Italian rule as the result of the war of 1911-12 between Italy and Turkey. To Tripoli the Italians gave the name of Tripolitania, the district of Cyrenaica borders on the north-west of Egypt, and on the Egyptian frontier Italy has recently obtained from Great Britain the stretch of territory known as Jarabub. The total area comprised is some 410,000 square miles, consisting very largely of Saharan desert interspersed with several chains of oases. Part of Libya (the general name of the combined territories) within the coast zone is fertile and capable of great development. The climate is variable, cold nights often succeeding very hot days.

**ADMINISTRATION.** For administrative and military purposes the whole country is divided into two independent districts, Tripolitania and Cyrenaica with their respective capitals at Tripoli and Benghazi, both under the jurisdiction of the Italian Minister for the Colonies. In both provinces natives have equal rights with Italians, and in each there is a small local parliament elected by all citizens.

**COMMERCE.** Statistics showed a marked improvement in the trade of the colony in 1921 as compared with 1923. Imports and exports during 1924 amounting in value to 198,672,048 lire and 25,204,132 lire, compared with 142,107,306 lire and 22,126,584 lire respectively. The chief exports in 1924 were tunny fish (in oil), 7,227,750 lire; skins, 3,801,100 lire; esparto, 1,708,024 lire; sponges, 1,538,765 lire; and henna, 1,481,813 lire. Imports, the principal of which were flour, wheat, cotton and linen goods, and sugar, came from Italy, Argentina, the United Kingdom and Tunisia in the order named. Much of the trade of the country is by caravan, between Benghazi and Wadai and between Tripoli and Central Sudan when the routes are free from raiders.

**FINANCE.** In the financial year 1924-25 the revenue and expenditure were estimated at Colonial revenue, 146,841,000 lire; civil expenditure, 34,477,500 lire; military expenditure, 112,304,000 lire. The Banca d'Italia, the Banco di Sicilia, the Banco di Napoli, the Banco di Roma and other banks carry on financial operations.

**POPULATION.** The population of Tripolitania and Cyrenaica is estimated at less than two millions, of which about 30 per cent are Arabs, 40 per cent negroes, 23 per cent Jews, and about 7 per cent Europeans. The country, which is known to have been inhabited by primitive man and to have been the seat of a flourishing Neolithic culture, is now inhabited almost entirely by Arab nomads, who occupy the Jufra flats about the capital and are in almost exclusive possession of Cyrenaica, Marmarica and the Anjala oases. In Fezzan the Saharan Berbers are dominant, but are here largely intermingled with negro or negroid intruders from the Sudan. Jews are numerous in the larger towns, and there are large colonies of Turks, Maltese, Italians, Cretans, and other southern European traders and artisans.

**PRODUCTION.** Tripolitania has four distinct zones, the first of which, along the coast, is covered with palm, olive, lemon, and fruit trees. The second is highland

country, on which olives, palms, fig trees, barley and saffron are grown. The third zone consists principally of oases, and is rich in palms. The fourth zone is covered with palms, figs, vines and almonds. The people possess large numbers of cattle, sheep, goats and camels, and there are good possibilities of developing the country's natural resources. Salt is the only mineral exploited. The output of the valuable sponge fisheries is valued at 250,000 yearly.

**TRANSPORT.** The principal means of communication inland are the caravans which follow long-frequented routes. The total length of the railways is 140 miles; lines run from Tripoli to Zuara along the coast, from Tripoli to Taghura, and from Tripoli to Aziza. There are fortnightly steamship sailings from Tripoli to Naples and Syracuse, and along the coast.

## TUNISIA

The French protectorate of Tunisia occupies an area of about 50,000 square miles in north-west Africa, lying between Algeria and Tripolitania and extending south to the Sahara. On the coast are the two large gulfs of Hammamet and Gabes, and Cape Blanco is the most northerly point of the African continent. Tunisia consists of four well-defined regions, the Tell, or mountainous region, the Sahel, or eastern coast region, the Central Fableland, one of the great granaries of North Africa, and the Sahara, or desert region containing the famous dried up salt lakes. The surface is generally mountainous, and the only important perennial river is the Magerda. The climate is hot, but generally healthy.

**ADMINISTRATION.** The Sultan of Tunisia is descended from the famous Hussein ben Ali, commonly believed to have been a native of Crete, who made himself master of the country in 1705, acknowledging, however, the suzerainty of the Sultan of Turkey. Since 1881 the country has been a protectorate of France, the government being carried on under the direction of the French Foreign Office, which appoints a Resident General, who is also Minister of Foreign Affairs, and a ministry of eleven heads of departments, eight of whom are French and three Tunisians. French tribunals administer justice between subjects of European Powers and between them and natives, purely native matters going before native courts. The capital and chief port is Tunis, with a population of 172,000. The port is now directly accessible to ocean-going steamers.

**COMMERCE.** The general trade, which increases every year, amounts to about 1,500,000,000 francs annually, imports rather exceeding exports. Grain, wines, olives, fish, live animals, hides, ore, esparto grass, sponges, phosphates and fruits are the chief exports. The bulk of the trade is with France, Italy and Great Britain coming next.

**FINANCE.** Revenue and expenditure about balance, amounting each to some 300,000,000 francs yearly. The public debt stands at about 500,000,000 francs. The Banque d'Algerie issues Tunisian bank notes, the legal coinage being similar to that of France.

**POPULATION.** The total European population of Tunisia at the last census was 156,170, composed of 54,477 French, 84,819 Italians, 13,504 Maltese, 604 Spaniards, 920 Greeks, and 1,786 other foreigners. The total native population was 1,938,920, of whom 1,891,280 were Arabs and Bedouins.

and 47,640 Jews. The natives belong almost entirely to the Berber and Arab stocks, the Arabs of more or less unmixed descent being pure nomads. On the littoral the population is very mixed.

**PRODUCTION.**—Tunisia is essentially an agricultural country, and cereals are raised on a large scale. Some 1,700,000 acres are under wheat producing about 300,000 tons annually, and the production of barley and oats averages about 260,000 tons and 40,000 tons respectively each year. There are vast numbers of olive trees and a large annual output of oil. Date palms abound, and there are large acreages under cork and pine forest and under vineyards. Other products are almonds, oranges, lemons, shaddocks, pistachios, esparto grass, and henna. Horses, asses, mules, cattle, sheep, goats and camels are reared extensively. Lead ore, zinc ore, and iron are the minerals worked, and their output is steadily increasing. Phosphate of lime is also produced in large quantities. The fishing industry (sardines, anchovies and tunny) is important.

**TRANSPORT.** Good roads have been constructed by the French to a total length of over 3,000 miles. There are also 1,503 miles of railway, belonging now almost entirely to the French Bone-Guelma Company. Extensions are projected to reach the Tripoli frontier. In the south communication is maintained chiefly by camel caravans. About half the shipping trade is in the hands of the French.

## UGANDA

Uganda was the name applied to a great Central African empire by its discoverer, Captain John Hanning Speke. He derived the name from the version of the Swahili Arabs who were his guides on his two journeys of 1857-58 and 1859-62. Strictly speaking, the word, if it be given in its native form, should be "Buganda," and this is the term now reserved for the designation of the metropolitan province of the protectorate, the native kingdom of Buganda. The form Uganda, however, has been consecrated by long usage and is given to the Protectorate as a whole, which has an area of 110,300 square miles, including 10,169 square miles of water.

The Uganda Protectorate lies in equatorial East Africa, between the Victoria Nyanza, Tanganyika, and the Egyptian Sudan. It is, indeed, essentially bound up with the Nile system, its principal river being the Kagera, a southern affluent of the Nile and the main feeder of the great shallow lake, the Victoria Nyanza, the biggest of the fresh-water seas of Africa. About 140 miles to the west of the lake rises the remarkable mountain mass known as Ruwenzori, isolated almost by the smaller lakes of Albert and Edward Nyanza, the Semliki and Lake Dweru, and rising at its highest point to an altitude of 16,794 feet. Between Ruwenzori and the coast of the Victoria Nyanza the country is sometimes mountainous, and often densely forested. Excepting in the northern province, which is dry and bare, the protectorate has a good rainfall, an exuberant vegetation, and excellent pasturage for stock. In the northern province the climate is extremely hot, but within the kingdom of Buganda fairly agreeable all the year round, the average altitude above sea-level being at least 3,000 feet.

**ADMINISTRATION.**—A British Protectorate has been declared since 1894, and for administrative purposes is divided into five provinces, viz.,—Eastern, Rudolf, Northern, Western, and Kingdom of Buganda.

The latter includes sundry islands in Lake Victoria and the districts of Mengo, Masaka, Mubende, and Entebbe. With the exception of the Rudolf province, the whole Protectorate is now under direct administration, but the native kings or chiefs, whose rights are in some cases regulated by treaties, are encouraged to conduct the government of their own subjects. The province of Buganda is recognised as a native kingdom under a "Kabaka" with the title of His Highness, H. H. Daudi Chwa being the present ruler. He is assisted in the government by three native ministers and a Lukiko, or native assembly. For Europeans and non-natives justice is administered by His Majesty's courts. The Governor (His Excellency, Sir William Frederick Gowers, K.C.M.G.) administers the Protectorate by means of ordinances. An Appeal Court consists of the judges of the High Courts of Kenya, Uganda, Nyassaland and Zanzibar.

**CAPITAL.** The headquarters of the British administration is at Entebbe, a town and port on the western shore of Lake Victoria. The native capital of Buganda is at Mengo, Kampala.

**COMMERCE.**—See under "Kenya Colony."

**FINANCE.**—The finances of the Protectorate are in a thoroughly healthy state, the revenue for 1924 (£1,239,270) as against £999,750 in 1923) exceeding expenditure (£918,662, compared with £938,999) by £321,128. The revenue in 1924 was mainly derived from poll-tax (£400,000) and Customs (£427,000).

**PEOPLES.**—The total population of Uganda on December 31, 1924, is given as 3,145,449, composed as follows: Natives, 3,136,769; Asiatics, 7,229; Europeans, 1,451. Among the natives, approximately 640,000 belong to the intelligent civilised Buganda, a race converted to Christianity by British and French missionaries. The ethnology of the Uganda region is extraordinarily interesting, the races including the Congo pigmies, the forest negroes, and the Nilotic negroes.

**PRODUCTS.**—The main source of wealth in Uganda is cotton, which accounts for approximately seven eighths of the Protectorate's exports. In 1920 the cotton crop amounted to 40,000 bales, in 1924 over 128,000 bales (each of 400 lbs.) were exported and the 1925 crop was expected to reach 200,000 bales, easily the best on record. Coffee is the second principal crop, exports in 1924 being valued at £167,696. Increased attention is being paid to rubber cultivation. There are indications of gold in Bungoro, and perhaps in the northern province, abundant iron is also found in Bungoro, while in the central part of the Protectorate there is copper, but at present there is no mining industry, the exploitable wealth of the country being either vegetable or animal.

**TRANSPORT.**—The Uganda Railway (see under "Kenya Colony") does not enter the protectorate, but a regular steamer service on Lake Victoria is maintained by the Administration between Kisumu, the railway terminus, and Entebbe, Port Bell, and Jinja, the principal Uganda ports.

The Busoga Railway Marine, which, with the Busoga Railway, is controlled by the Uganda Railway, deals with the traffic on Lake Kioga, on which waterway there are two steamers and a large number of lighters. An additional steamer and subsidiary craft ply on Lake Albert and the Nile between Butiaba, Nimule, and the Belgian Port of Kasenye at the south of Lake Albert. The Busoga Railway, of the same gauge as the

Uganda Railway, 62 miles in length, runs from Jinja, on Lake Victoria, to Namasagah, a point on the Nile below the rapids, and deals with the cotton output in the regions round Lake Kioga, connecting that Lake with Lake Victoria. A railway is under construction from Mbulamuth (on the Jinja-Namasagah Railway) to join up with the Uganda Railway via Toror, Turbo, and Eldoret. There is a light railway from Port Bell to Kampala,  $7\frac{1}{2}$  miles in length. The Government runs a fleet of motor vans, and there are said to be over 800 motor cars in Kampala alone.

## ZANZIBAR

The Zanzibar Sultanate and Protectorate consist of two small islands, Pemba and Zanzibar, and an islet, Tumbatu, on the equatorial east coast of Africa, together with some smaller islets. The total area comprised is 1,020 square miles, Zanzibar itself being about 47 miles long and 20 miles in breadth, situated 20 miles from the mainland. The temperature of both islands is always very warm and somewhat trying to Europeans.

**ADMINISTRATION.** The dominions of the Sultan of Zanzibar formerly extended along the mainland as far as Tunghu Bay and north as far as Waisheikh, but since the cession of a large part of the coast line to Germany in 1890, and of the Benadir coast to Italy in 1904, they are now confined to Zanzibar, Pemba, and the adjoining islets, and to a ten mile strip of coast line on the mainland which latter is administered by His Majesty's Government through the Governor of Kenya Colony. Zanzibar has been a British Protectorate since 1890, the administration being transferred from the Foreign to the Colonial Office in 1913. The present Sultan of Zanzibar is His Highness Seyid Khalifa bin Harib, K.C.M.G., K.B.E., who succeeded to the sultanate in 1911. The British Resident at Zanzibar is Mr Alfred Claud Hollis, C.M.G., C.B.E.

**CAPITAL.**—Zanzibar, the capital of the Sultanate, dates from before the Christian era, and has long been the largest in East Africa. The city consists of a picturesque Arab quarter and a highly prosperous European quarter, on the outskirts of which are the rude negro dwellings. The harbour is a magnificent one, with anchorages for men-of-war and merchant vessels. The capital of Pemba is Chaki-Chaki, and there are several good harbours, e.g. Port Cockburn and Port George, on both islands.

**COMMERCE.** Cloves, dry coconut kernel (copra), chillies, vanilla, sesame oil-seeds, copal gum, tortoiseshell, ivory and india-rubber are the chief products and exports of Zanzibar and Pemba, though the ivory and copal gum are only in transit from the mainland. The principal exports from Pemba, besides some £400,000 worth of cloves and cattle, are hides and tortoise "nail," the product of a bivalve shell. Imports in 1924 were valued at £1,976,230, as against £1,943,000 in 1923, and exports at £2,031,770, as against £2,280,000. Trade is largely with India, and for a hundred years the population of Indian traders in Zanzibar has been steadily growing till it is now nearly 12,000.

**PEOPLES.**—At the last census the population of Zanzibar and Pemba was 216,790, about two thirds being of negro blood. There are over 10,000 Arabs, more or less free from negro intermixture; about 16,000 Indians, or types of Indian origin; and a few Malagasies from Madagascar; the remainder

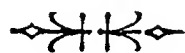
are minglings between all these ethnic types. The Swahili are sturdy and better looking than most negroes and make excellent seamen.

**PRODUCTS.**—The most important industry in the protectorate is that of the cultivation of cloves, the islands of Zanzibar and Pemba yielding the bulk of the world's supply. In both islands there are, it is estimated, about 50,000 acres under cloves and nearly 5,000,000 trees in bearing. The large plantations are

chiefly owned by Arabs, but many natives possess small holdings. Coconuts flourish everywhere and yield a rich harvest. Copra is also largely produced and exported. There is no mineral production, but the manufacture of pottery, coir fibre and rope, soap, oil, jewellery and mats is carried on.

**TRANSPORT.**—Transport facilities between the port of Zanzibar and England are maintained by regular sailings of the vessels of the British Steam Navigation

Company, the Union Castle Steamship Company, and the Clan-Ellerman-Harrison Line, and by various continental lines to and from Europe. The tonnage of ocean-going steamships which entered the port of Zanzibar in 1924 was 930,628, dhows to the number of 5,042 (95,863 tons) also entered. One light railway runs for seven miles from Zanzibar to Bubwlu, and over 75 miles of roads in the island of Zanzibar are suitable for motor transport.





# ADDENDA

## UNION OF SOUTH AFRICA

### POLITICAL

An outstanding event of the year 1926 was the passing of the Colours Bill on May 15 by 83 votes to 67. A Bill providing for the dissolution of the Senate or Upper House whenever the House of Assembly dissolves, including the nomination of Senators, was introduced, but was not proceeded with. In the same session of Parliament the introduction of the Flag Bill aroused keen and even bitter controversy. It was proposed to create a South African flag composed of a red vertical strip next the staff and horizontal strips of green, yellow, and blue, excluding the Union Jack, which was to be flown only on occasions symbolising the British connexion, and then in conjunction with the South African flag. Being strongly opposed by the English-speaking population in Natal and Cape Province, General Smuts, in leading the opposition to the proposed measure, urged its postponement on the ground that the exclusion of the Union Jack would raise far-reaching national issues, going much beyond the politics of the day. If the Government pressed the Bill through, the result would be "a flag which will not be honoured and gladly accepted by South Africa as a whole, but will only divide the people." The Labour Party advocated the postponement of the Bill, and eventually it was withdrawn pending re-introduction in 1927.

### PEOPLES

Unaudited census figures showed that the Union's total white population at the beginning of 1926 was 1,672,106, an increase of 10,007 on the census of 1921. Males numbered 854,157. The provincial figures were

Cape Province	704,898
Natal	158,254
Transvaal	606,763
Orange Free State	202,191

The population of Cape Province increased by 8 per cent, of Natal by 15 per cent, of the Transvaal by 11 per cent, and of the Orange Free State by 7 per cent.

The white population of Capetown rose from 55,000 in 1921 to 60,000 in 1926, and that of Johannesburg from 151,830 to 172,740. The population of Durban increased by 9,898, and of Pretoria and district by 12,000.

### FINANCE AND BANKING

**BUDGET, 1927.**—The Budget for the Union was introduced by Mr. Havenga, Minister of Finance, on March 30, 1927. The surplus on the year to March 31 was estimated at about £1,250,000, Customs duties having exceeded the computed sum by £850,000. The surplus, it was stated, would be devoted to the reduction of debt. The Minister anticipated a surplus of £210,000 in the coming year, but intended to remit £90,000 of the tax on mutual insurance companies, to lower Customs duties on cotton goods, and to make

other remissions which would result in a deficit estimated at £125,000.

During the year just ended exports of farm produce declined by over £8,000,000, but this was counterbalanced by increased export of gold and diamonds, so that the total export decrease was only some £3,500,000.

The statement of revenue and expenditure for the first half of the fiscal year (which ended March 31, 1927) showed a generally satisfactory condition of Treasury finance. Returns from all sources, excluding the loan account, totalled £11,827,000, a gain of £787,000 when compared with the amount for the corresponding half of the preceding fiscal year. The complete year's estimates were computed at £26,814,000.

For the first eight months of the financial year 1926-27 Customs and excise duties yielded £8,000,000, a very satisfactory figure when compared with the estimate for the whole year of £9,500,000. It was anticipated in the light of returns for the eight months stated that not only would the deficit of £138,000 be wiped off, but there would be available a credit balance of some £700,000.

**PUBLIC DEBT.**—The Public Debt of South Africa stood in January, 1927, at £222,000,000, nearly double the figure recorded in 1910, and represented £132 per head of the white population, as compared with £93 at the date of Union.

**PROVINCIAL BUDGETS.**—The public revenue and expenditure of the four provinces of the Union for the financial year 1925-26 were as under—

	REVENUE	EXPENDITURE
Cape Province	1,448,636	3,784,761
Natal	192,366	1,080,239
Transvaal	1,961,278	*3,750,000
Orange Free State	410,425	1,142,824

\*Approximate figure

**BANKING.**—Basic changes in the banking organisation of the Union were scheduled to take place in the early part of 1927 when the accounts of the Government were to be transferred from the National Bank of South Africa (Barclays Bank, Ltd.) and the Standard Bank of South Africa, Ltd., to the South African Reserve Bank. The business affected by the transfer falls into the following categories: The Railway Account, formerly chiefly handled by the Standard Bank, the Revenue Account, including Income Tax, Poll Tax, Customs, etc., and the Land Department Account. The last two accounts were hitherto operated by the National Bank.

The network of branches established by the National and Standard Banks, which covers very comprehensively all Southern Africa, will still be at the service of the Reserve Bank for the transaction of Government business.

During 1926 South African Bank clearings aggregated £468,680,000, constituting a record volume and an increase of 7½ per cent over the total clearings for 1925.

**RESERVE BANK.**—After providing for income tax and other accruing liabilities, and writing off £15,000 and £10,000 for fixed property and furniture and fittings accounts respectively, the net profits of the South African Reserve Bank for 1925-26 amounted to £238,420. A dividend of 10 per cent.

was paid for the 12 months ended March 31, 1926, on which date holders of the capital stock of the bank numbered 1,103.

### COMMERCE

For the first nine months of 1926 the exports of the Union totalled £57,000,000. The decrease of £3,000,000 recorded by comparison with the corresponding period of 1925 was principally due to the reduction of the maize crop and the falling off in wool prices.

The value of South African imports for the first nine months of 1926 was £54,000,000, representing an increase of £4,750,000 over the return for the same portion of 1925. Some 65 per cent of the imports came from the United Kingdom and its Possessions.

**WOOL.**—Exports of wool during the 1925-26 season totalled 213,000,000 lb, representing an increase of 43,000,000 lb over the preceding year's figure, the exportable value, however, amounting to £13,000,000, showed a decrease of £2,000,000.

### CUSTOMS TARIFF

The most important changes in the Customs Tariff of the Union which were introduced by the Budget for 1926-27 and became immediately effective, are as follow—The duty on imported whisky, brandy, and gin is increased from 37s 6d to 45s per proof gallon, equivalent to 1s a bottle. On men's ready-made suits the duty is increased from 15 to 20 per cent ad valorem.

The duty on a complete motor-car is 20 per cent. Steam wagons have to pay an increase of 10 per cent, and steam wagon chassis, of which the bodies are to be built in the Union, an increase of 5 per cent, on steam wagon spares and accessories the increase is 20 per cent. In the former tariff these three items were admitted free.

An increase of 17 per cent, is provided for girders, non bridge work, culvert tops, and trolleys for railway and tramway construction and equipment.

There is a suspended duty of 10 per cent increase on earthenware and stoneware, and a similar increase on glassware, chinaware and porcelain ware. Pipes, piping, and tubes of earthenware for drainage, irrigation, sewerage, and water supply or water pumping will have to pay an increase of 20 per cent, and tiles an extra 5 per cent. Sodium carbonate, including soda crystals (washing soda), will pay an increase of 6d minimum and 1s 6d maximum per 100 lb.

Other articles on which increased duties (the increases are given in brackets) are proposed, subject to rebates and concessions not yet published, are: Macaroni, spaghetti and vermicelli (10 per cent ad valorem on the maximum rate), perfumed spirits (11s an imperial gallon), liquid toilet preparations containing over 3 per cent of proof spirits per imperial gallon (15 per cent where duty is levied on an ad valorem basis), ladies' trimmed hats, linings, bands and borders not constituting trimmings (15 per cent minimum and 10 per cent maximum), cotton piece goods, the f.o.b. price of which exceeds 1s 3d. per yard (¼ per cent ad valorem), buckets, skips, trucks, and tubs,



wheeled or otherwise, for haulage or propulsion except by locomotives on rails or wires, and metal shaft sets (ad valorem suspended duty of 15 per cent), metal smoke stacks (ad valorem 17 per cent maximum and 20 per cent minimum), enamel lampshades and reflectors (suspended duty of 20 per cent), enamelware, i.e. (suspended duty 10 per cent), spare parts of engines and motors for fishing and whaling boats and mercantile marine purposes, and of trawl and whaling winches (20 per cent), barrels for miniature rifles and for single barrel shot-guns of a calibre not exceeding .420 (the difference between 20 per cent ad valorem and 15s each), miners' acetylene hand and bucket lamps (5 per cent of the difference between 15 6d each and 20 per cent ad valorem), electric lampshades, not enamel (20 per cent minimum and 15 per cent maximum).

Further notable increases are Structural steel work for the staging and platforms of industrial machinery (20 per cent minimum 17 per cent maximum), rock drill spurs and metal liners for tube mills (17 per cent), plates and frames for sugar filter presses (17 per cent), machinery for the conversion and transformation of electric power (2 per cent); electrical batteries, wet or dry, primary or secondary, including accumulators (12 per cent for wireless and 10 per cent for other purposes, except for motor-vehicles, and the suspended duty of 15 per cent ad valorem), metal sheets, metal badges, metal name or number plates, and similar articles enamelled (10 per cent ad valorem).

Tooth powders, etc., will have an extra suspended duty of 15 per cent. There is an additional duty of a farthing per lb. on bags and paper not printed and of 15 per cent, or the difference between 25 per cent ad valorem and a rated duty of a minimum of 30 and a maximum of 40 per cent, or, per lb., of 4d minimum and 6d maximum on pocket books.

In introducing the Budget which gave rise to these far-reaching changes, the Minister of Finance claimed that the increased duties would be offset by rebates of duties on materials for industrial purposes and by a reduction of the duty on cheap cotton piece-goods, which is now 7½ per cent minimum and 12½ per cent maximum.

The Union Post Office Department announced in October 1926 that the importation into the Union by letter post of all articles subject to Customs duty would be prohibited on and after January 1, 1927. Letters found to contain such articles will be liable to confiscation. The importation of dutiable goods will be permissible in parcels bearing the usual Customs declaration.

## TRANSPORT

**AIR.**—It was announced in 1926 that the negotiations in regard to the Junkers' scheme for the establishment of a South African civil air service had broken down, owing to the failure of the promoters to comply with the stipulations made by the Government. The Union Government on April 14, 1926, repeated its offer to grant a subsidy not exceeding £8,000 to any company making satisfactory proposals. Later information was to the effect that negotiations had been reopened between the Union Air Board and the Junkers' Aeroplane Company.

**RAILWAYS.**—The South African Railway Budget, presented on March 31, 1927, by Mr. C. W. Malan, showed a deficit of £146,000, or a net deficit (after deducting last year's surplus of £22,000) of £124,000. The Minister budgeted for a surplus of £40,000 during the ensuing year. He claimed that the working

costs of the Union's system were the lowest in the world, and announced that 400 miles of new line would be opened in 1927-28.

For the year ended March 31, 1926 the total railway earnings were £24,160,234, or £1,001,784 over the estimate.

**ROADS.**—The Government Roads and Bridges Committee recommended in 1926 a broad national policy of road construction and maintenance, and said that the Union Government must share in the burden of road building. The only solution lies in the development, at the instance of the Union Government, of a system of national main highways on a plan drafted without regard for provincial boundaries. The Committee recommended the establishment of a permanent National Roads Board and the classification of National main roads, provincial main roads and provincial branch roads, the first class to be maintained by the Government, and the second and third classes to receive Government subsidies.

On October 15, 1926, the South African Good Roads League was organised in Bloemfontein as a national association. This new development is the outgrowth of the work of the Transvaal Roads League, which has carried on an active propaganda during the last two or three years. At the inaugural meeting it was stated that there are 67,000 miles of public highways in the Union of South Africa. Considerable stress was laid on the advisability of adopting the petrol system of inspection and maintenance. According to one authority this would necessitate the appointment of at least 5,000 petrolmen and the purchase of 5,000 light graders or scrapers as part of them.

## AGRICULTURE

**COTTON.**—The total cotton production of the Union of South Africa for the year 1924-25 was 15,110 bales of lint, compared with 7,302 bales in 1923-24, and 21,078,362 lb. of seed cotton, the production of seed cotton by areas being as follows: Natal and Zululand, 8,278,681 lb., Rustenburgh Area, 2,489,842 lb., Northern Transvaal, 5,709,607 lb., Eastern Transvaal, 4,142,090 lb., Southern Transvaal, 123,619 lb., Swaziland, 641,608 lb., Cape Province, 237,600 lb., other, 58,315 lb.

**SUGAR BEET.**—The establishment of a sugar beet industry in South Africa partly as a means of providing work for rural unemployed, is being considered by the Union Government. The reports of the Agricultural Department's experts are promising, and suggest that South Africa contains much land eminently suitable for the production of beet sugar.

In South Africa the sugar content of the crop works out at between 18 and 20 per cent, which is higher than the average English figure. Moreover, experiments have shown that on the high veld at least the crop can be left in the ground in the winter for a long period without damaging its roots. This means a longer milling season, which is an important consideration in dealing with a crop the factory treatment of which demands an extensive plant.

Though sugar beet calls for a fair amount of labour, it is declared that it could be grown in South Africa by family labour, with perhaps a little cheap supplementary assistance at the busiest period. This would allow of production at a lower rate than is generally obtainable in England, where the cost of farm labour is high. The crop is held to be specially suitable for a district closely settled with whites or for small holdings where co-operative transport to the factory could be arranged.

**WINE.**—The South African wine vintage in 1925 was considerably higher than in 1924, totalling 136,030 leaguers, against 115,558.

## MINES AND MINERALS

**GRASFONTEIN "RUSH."**—The new diamond field in South Africa was on March 4, 1927, the scene of a great scramble for alluvial diamond claims, situated on a farm of over 6,000 acres in the Lichtenburg district, Western Transvaal. A few inches below the surface there is, it is stated, a layer of gravel containing hundreds of thousands—possibly millions—of pounds worth of diamonds. So rich is the field claimed to be that the owners of the farm had at time of writing received over £200,000 for only parts of the property. No less than 27,000 men, boys, and even girls took part in the race to peg out claims. Including sightseers, who came from all parts of the Transvaal, over 50,000 people were present before the proclamation was read preparatory to the rush.

**PRODUCTION.**—The production of South African gold valued at £40,800,000 in 1925, has continued to increase. The output figure for 1926 was £42,300,000, which formed a record in volume in the history of gold-mining in South Africa. On the East Rand the development of certain territory has opened up a new gold-field.

The production of diamonds, particularly of the alluvial variety shows constant augmentation, and is now valued at £500,000 per month. Discoveries in the Lichtenburg district of the Transvaal have largely contributed towards this increase.

**WITWATERSRAND GOLD PROFITS.**—During 1926 the 33 mines comprising the six principal groups of the Witwatersrand gold area made profits aggregating £14,985,250, an increase of nearly £600,000 compared with the 1925 figure. Following were the individual profits: Central Mining and Investment Company and Rand Mines Groups, £4,597,262; Barnato Group, £4,300,635; Anglo-American (Oppenheimer) Corporation, £1,777,666; Union Corporation, £1,367,477; New Consolidated Goldfields, £641,786; General Mining and Finance Corporation, £234,395.

The few mines not connected with the groups registered profits totalling £170,000, approximately, raising the year's Rand gold profits to some £13,155,250.

## OBITUARY

Mr Isaac Lewis, the South African millionaire and head of the famous firm of Lewis and Marks, died on March 28, 1927, at his residence, Leeuwenhof, Cape Town, at the age of 78. His name was a household word in South Africa in conjunction with that of his picturesque partner, the late Senator "Sammy" Marks. He was one of the fast-dwindling band of speculators and dealers who amassed wealth at the Kimberley diamond fields before the mines were amalgamated by Cecil Rhodes and became practically De Beers. He went on to make further wealth, especially in land and industrial enterprises. Born at Neustadt, Kovno, Russia, in 1849, he arrived in South Africa in 1870, two years after the "New Rush" which became Kimberley. Mr. Lewis took a great part in establishing a really beneficent enterprise—the great iron and steel works at Vereeniging, on the Vaal River. As a director of the Johannesburg Consolidated Investment Company, he kept in touch to the end with the Barnato interest. He was also a director of the Swaziland Corporation, the South African Breweries, Limited, and the Victoria Falls and Power Company.

## SOUTHERN RHODESIA

**AGRICULTURE.**—In 1924-25 the total area under all crops was 334,604 acres, representing an increase over the previous season of 47,767 acres. Cotton was responsible for an increase of 58,911 acres, maize 1,309 acres, tobacco 438 acres, potatoes 221 acres, while decreases were recorded in the acreage planted with such crops as maize silage, sunflowers, beans and ground nuts. Maize represented 60.6 per cent of the total acreage, as compared with 80.0 per cent in 1923-24.

The maize crop of 1924-25 totalled 1,041,904 bags, the average yield per acre being 4.47 bags. There were 62,858 acres planted with cotton, and the yield was 5,888,462 lb of seed cotton, or 93 lb per acre. The total output of the ginneries was approximately 4,100 bales of 500 lb each. Tobacco was planted on 8,441 acres, the Virginian crop aggregating 1,987,382 lb and the Turkish crop 418,522 lb, or a total of 2,405,904 lb.

Cattle raisers experienced an excellent year, and exports were probably in excess of 50,000 head. A feature of this trade during 1925 was the successful experiment of shipping cattle to Italy and England. In addition Rhodesia exported some 2,000 head of pedigree stock to the Belgian Congo. Dairy farming was also good during the year, as pasturage was plentiful throughout the dry season.

Favourable reports of production in Southern Rhodesia were forthcoming for 1926. Satisfactory tobacco and maize crops had been harvested, and a flourishing export trade established in these commodities, as in beef, through the Union ports.

**MINING.**—The value of the total mineral output of Southern Rhodesia fell to £4,134,260 in 1925, as against £4,478,499 in 1924. The gold section of the industry was principally responsible for this decrease, the output being 581,505 fine oz., valued at £2,539,542, compared with 627,720 oz., valued at £2,930,362. This drop of £409,020 may to some extent be explained by the closing of the Falcon Mine in 1925, for in 1924 this mine alone produced £124,317 worth of gold, as well as £160,816 of copper.

At the end of 1925 there were 41,968 gold claims current.

On the "base-metal" side of the industry (excepting copper, of which the Falcon was practically the only producer) the position and prospects in 1925 were brighter. Asbestos, with a declared value of £766,381, showed an increase of £162,958 over the previous year. Coal, at £324,511, was up £58,519 on 1924. Chrome ore at £337,317 showed a falling off in value of £95,156 when compared with the record year, 1924. The production and exportation of tin increased satisfactorily. With the closing of the Falcon Mine, the production and export of copper have practically ceased. Active development work is in progress in the copper belt in the south-western portion of the Lomagundi district, and there is a reasonable prospect that copper may again be produced in large quantities.

**RAILWAYS.**—In September, 1926, the British South Africa Company announced the heads of the agreement which, after much discussion, was arrived at in regard to the future working of the Rhodesian railway system. The object of the proposals is to secure that the lines serving Northern Rhodesia, Southern Rhodesia, the Bechuanaland Protectorate, the Mozambique Territory, and

112 miles of railway in the Union of South Africa shall continue to be administered as a single transport system. The British South Africa Company's representatives undertook to use their best endeavours to continue the existing arrangements or to make any new arrangement with the Beira Railway Company and the Beira Junction Railway Company as would facilitate such unified administration. An authority, to be called the Railway Commission, was to be set up, composed of three members, one appointed by the Government of Northern Rhodesia, one by the Government of Southern Rhodesia, and one by the Government of the Bechuanaland Protectorate, with a chairman, who was to have practical experience of railways, appointed by the Governments conjointly after consultation with the Railway Company.

## PORTUGUESE EAST AFRICA

**FINANCE.**—The revenue of the Province in 1924-25 was £2,372,985, and the Government had been successful in meeting all its obligations. During the two years 1923-25 no less than £348,000 out of revenue were spent on general improvement works, besides £85,000 expended on power plant, telegraph extensions, wireless installations and other material supplied to the Province by the Home Government on the basis of £3,000,000 export credit obtained by Portugal in London in 1924.

**TRADE AND SHIPPING.**—Final figures relating to the cargo movement at the port of Beira for 1925 show that the total tonnage landed, loaded, and transhipped amounted to 646,000, an increase of 34,000 tons over the total for 1924, the best previous year. This substantial increase was achieved in the face of an interruption of the Beira Railway for 25 days owing to floods, and an export of maize and sugar which was much below normal.

**LOURENÇO MARQUES.**—The following were the shipping returns for the port of Lourenço Marques in 1925—

ARRIVALS	NO.	TONS LANDED	PASSENGERS LANDED
Portuguese	145	19,574	22,465
British	363	227,417	208,710
American	17	3,009	4,543
German	35	15,772	24,199
Dutch	39	24,480	35,916
Japanese	14	3,901	2,075

Danish, Finnish, French, Greek, Italian, Norwegian and Swedish vessels totalled among them 70 vessels, with 15 passengers.

The totals for 1925 were: Gross tonnage of 3,163,953, cargo of 340,213 tons, and 31,891 passengers for 658 vessels. The returns for 1924 were 644 vessels, 3,000,114 gross tonnage, cargo of 342,054 tons, and 25,276 passengers.

## KENYA

**AGRICULTURE.**—The Kenya agricultural census for 1926 testified to the well-maintained development of the colony. The number of landholders had been increased by 200 to 1,800. Out of a total of 4,500,000 acres alienated to Europeans, 460,000 were under cultivation, 41 per cent being allotted to maize, 14 per cent each to sisal and coffee, and 9 per cent to wheat. The exports of maize for the season ending in February, 1927, were expected to reach the record total of 20,000 tons.

**COMMERCE.**—According to the Kenya Blue Book for 1925, imports for home consumption into Kenya and Uganda during the year amounted in value to £8,061,448, while domestic exports totalled £7,821,448. The following tables show the values of the chief classes of imports and exports during 1925—

IMPORTS FOR HOME CONSUMPTION	
Food, drink and tobacco	£1,384,084
Raw materials and articles mainly unmanufactured	675,646
Articles wholly or mainly manufactured	5,420,199
Animals not for food	14,228
Parcel post	343,357
Billion specie	223,934

DOMESTIC EXPORTS	
Food, drink and tobacco	£1,480,156
Raw material and articles mainly unmanufactured	6,322,756
Articles wholly or mainly manufactured	14,488
Miscellaneous and unclassified	4,444

**DISTRIBUTION OF TRADE.**—The principal countries of origin of imports for home consumption were the United Kingdom, £3,008,192, Tanganyika Territory, £1,187,000, India and Burma, £878,745, the United States, £721,146, Holland, £437,749, Germany, £420,920, and Japan, £312,536. The chief recipients of domestic exports included the United Kingdom, £4,410,544, India and Burma, £1,925,559, Belgium, £275,113, Germany, £195,915, Japan, £107,893, Italy, £125,179, Holland, £122,851, the United States, £105,137, and France, £102,302.

Exports to the United Kingdom comprised cotton, £2,685,067, coffee, £817,058, sisal and tow, £264,800, maize, £168,561, hides, £136,314, and oil seeds and nuts, £124,967.

The principal imports from Great Britain were cotton piece goods, £461,195, agricultural, electrical and industrial and other machinery, £315,330, motor-cars, lorries, cycles, etc., £231,666, enamelled hollowware, sheets, nails, screws, rails, sleepers, pipes, fittings, etc., £281,403, bicycles, £170,348, and agricultural and artisans' tools and cutlery, £122,958.

**RAILWAYS.**—The Kenya and Uganda schemes for participation in the East African £10,000,000 loan were outlined to the Legislature of Kenya Colony in May, 1926.

The schemes are, in order of precedence, the improvement of Kilindini (Mombasa) port, including Mbaraki, general improvements in the main line (the Kenya and Uganda Railway) spread over eight or nine years, increased rolling stock and workshops for the existing line, an extension of the railway from Tororo to Jinja and Kampala, an extension via Soroti and Lira towards the Congo and the Sudan, and rolling stock and workshops for the two last-named extensions.

The total expenditure contemplated for these schemes, of which the new and most interesting features are the linking of Kampala with the main line and the projected Sudan extension, is estimated at £5,550,000.

## OTHER AFRICAN DIVISIONS

### ANGOLA

**RAILWAYS.**—Work is in vigorous progress on two railways in Angola—the Benguela Railway towards the Congo frontier and the extension of the track from Porto Amboim to the interior. At the end of 1926 80 kilometres of the latter line were in operation, while Gabela, 124 km. from the seaboard

terminus, was shortly to be reached. A further extension projected is to the rich Bailundo area, over 200 km. from Porto Amboim

### CONGO

**COMMUNICATIONS.**—The Congo aviation service has been extended from the former inland terminus at N'Gule to Elisabethville, in Katanga, affording communication between the Lower Congo and the centre of the mining area Leopoldville and Brazzaville (capital of the French Congo) have been connected by telephone, a cable being laid on the bed of Stanley Pool.

### GOLD COAST

**COCOA.**—For 1926 the export of cocoa from the Gold Coast reached the record figure of 231,000 tons. For the month of February, 1927, the export total of that commodity was 36,787 tons.

**ECONOMIC PROGRESS.**—At the opening of the Budget session of the Legislative Council (March 3, 1927) the Governor reviewed the progress of the colony during the seven years of his administration. In that period Takoradi Harbour had been built and 233 miles of railway, 3,388 miles of motor roads, 1,710 miles of telegraph lines, and 1,570 miles of trunk telephone lines had been constructed. The average annual value of trade and revenue in the last seven years had doubled any previous figures. There existed aggregate surplus balances of over £2,000,000, besides reserve funds of over £900,000. The Government had spent £12,500,000 on development since 1910, of which £7,000,000 had been allocated to railways and roads. That expenditure had been instrumental in increasing the revenue from £1,500,000 to £4,250,000.

### NIGERIA

**COMMERCE AND CUSTOMS.**—The total imports and exports of the colony in 1925 showed an increase of £5,000,000 (equivalent to 19 per cent) over the trade return for 1924. The aggregate of Customs duties collected was the highest on record.

**COMMUNICATIONS.**—A vigorous policy with regard to the development of communications is projected, designed to construct annually 400 miles of road and 150 miles of railway.

The northern section of the Eastern Railway of Nigeria was to have been opened for goods traffic on March 24 and for passengers on April 1, 1927.

**FINANCE.**—The estimated surplus assets of Nigeria at the close of March, 1927, were £5,900,000. The revenue for the succeeding financial year was placed at £5,795,000 and the estimated expenditure at £6,660,000.

Owing to heavy over-subscription, the list for the Nigerian Government's £4,250,000 five per cent loan in January 1927, was speedily closed.

### UGANDA

**COTTON.**—The production of cotton in Uganda, 5,000 bales in 1909, reached 196,000 bales in 1925, and increased export of this commodity is anticipated when the railway is connected with the cotton areas in the south-east.

## EGYPT

### PEOPLES

**CENSUS.**—The first approximate results (furnished in March, 1927) of the recent decennial census returned the provisional total of the population of Egypt as 14,168,756. This figure represents an increase of 11.1 per cent over the total of 12,750,918 returned in 1917, compared with the increase percentage of 12.3 recorded in 1907.

## ADMINISTRATION

**ABBAS HILMI PASHA.**—In July, 1925, Abbas Hilmi Pasha, the Khedive who was deposed by the British Government in 1914, filed a claim for £2,753,825 against the Government under certain clauses in the Treaty of Lausanne. After his deposition his properties and possessions in Egypt were sold to pay off his creditors, and he received £E 589,865 as a final payment of the balance remaining after the discharge of those liabilities. In support of the claim a memorial was lodged by his solicitors in May, 1926, in reply the British Government prepared a memorial, and in November Abbas Hilmi Pasha presented a counter-memorial. The case was expected to come before the Anglo-Turkish Mixed Arbitral Tribunal sitting at Constantinople, during 1927.

**GOVERNMENT.**—On April 18 the Egyptian Government resigned, and on April 25 a new one was formed as follows: Abdel Khalek Pasha Sarwat, Prime Minister and Minister of the Interior, Fatallah Pasha Barakat, Agriculture, Marcos Pasha Hanna, Foreign Affairs, Osman Pasha Moharram, Public Works, Negib Pasha Gharabiy, Wakfs, Ali Pasha Shamsy, Education, Zaki Pasha Abul Seud, Justice, Mohamed Pasha Mahmud, Finance, Ahmed Pasha Khashaba, Communications.

**HEAD WATERS OF THE NILE.**—In March, 1926, the Egyptian Government decided to send Dr H. E. Hurst, Director General of the Physical Department of the Ministry of Public Works, to the Great Lakes to conduct investigations with a view to the possible construction of storage works for the Nile waters. Accompanied by Capt. W. G. Goldsack, Dr Hurst gained valuable information regarding the Kagera system and the Nile head waters generally.

## FINANCE

**GOVERNMENT REVENUE.**—Final Egyptian accounts for 1925-26 showed a revenue of £E 39,580,000 and an expenditure of £E 34,200,000, yielding a surplus of £E 5,380,000. This was transferred to the reserve, which on March 31, 1926, stood at £E 31,000,000. Following were the chief items of revenue: Railways, £E 7,380,000, Customs, £E 6,000,000, tobacco duties, £E 6,200,000, Post Office, £E 780,000, telegraphs and telephones, £E 780,000. Departments yielding profits were: Railways, (£E 2,000,000), Post Office (£E 223,000), Telegraphs and Telephones (£E 80,000).

The State Budget for the financial year 1926-27 passed by Parliament showed expenditure of £E 39,360,000 and revenue of £E 37,873,000, provision being made to take the expected deficit from the reserve. Of this, £E 5,600,000 is invested in Egyptian securities and £E 5,700,000 in British bonds. The main increase in expenditure was £E 2,500,000 for irrigation works, including the Nag Hamadi and Gebel Auha dams.

**RESERVE FUND (BARCLAYS).**—The Reserve Fund of Barclays Bank (Dominion, Colonial and Overseas), which previously stood at £1,000,000, has been increased to £1,100,000.

## TRANSPORT

**AIR SERVICES.**—In December, 1926, the Egyptian Government notified Lord Lloyd of its concurrence with the opening of the Cairo Karachi air service, the permission being provisional and without prejudice to future legislation governing aerial transport in the country. There being no civil aerodrome at Cairo, the starting place, the service

decided to make use of the Military Aerodrome at Heliopolis.

On December 30 Captain Gladstone started from Heliopolis Aerodrome in an R.A.F. mail service aeroplane for Khartoum. On January 3, accompanied by Mr Boyle, he flew in a De Havilland 50 biplane from Khartoum to Kisumu, thus opening the mail and passenger air line between the two towns.

It was proposed that the experimental period should be one of six months. Financial support was forthcoming from the Uganda Government with a contribution of £2,500, the Kenya Colony Government (£2,500), the Sudan Government (£2,000), and the North Sea Aerial & Transport Company, a subsidiary of the Blackburn Aeroplane Co., (£4,000).

**NILE BRIDGE, NEW.**—On February 12, 1927, the Minister of Communications, Mohamed Pasha Mahmud, opened the new railway bridge at Desuq, over the Rosetta branch of the Nile. The Minister congratulated the British company executing the contract on its rapid completion of the bridge, which he said would entail a saving of at least £E 30,000 to the State Railways.

**RAILWAYS.**—The new standard gauge line replacing the old narrow gauge railway between Luxor and Assuan was opened on December 3, 1926, when two special trains carrying King Fuad's representative, the Prime Minister, members of the Cabinet and other distinguished personages were run direct from Cairo to Assuan. The new track obviates the former necessity of changing at Luxor, and reduces the Cairo Assuan journey by four hours, while it is hoped to effect a further reduction of two hours.

## AGRICULTURE

**COTTON.**—During the post-war years whenever cotton prices experienced serious depreciation the Egyptian Government, in deference to the popular demand, played the part of a purchaser on the local market. The great fall in cotton prices encountered in the 1926 season led the Government to propose to intervene, not by purchasing, but by assisting the grower by means of advances on favourable terms through the banks. The Government was prepared to lose substantially over the scheme, since if the market fell below the price fixed it would not, like the banks, call upon the owner to make good the difference. Ultimately, however, the Government's hands were forced by Parliament, which decided (December 15, 1926) that it should resume its former role of purchaser of cotton contracts, the procedure being relegated to a joint committee of the Government and both Houses.

On September 20, 1926, a new law came into effect which prohibits the mixing of different qualities of Egyptian cotton and cottonseed.

## COMMERCE

**FOREIGN TRADE (1926).**—Imports into and exports from Egypt during 1926 amounted in value to £E 52,400,059 and £E 41,759,391, as compared with £E 58,224,895 and £E 59,198,662 respectively in 1925. The favourable balance in 1925, amounting to £E 973,767, was thus converted in the ensuing year into an unfavourable one to the extent of £E 10,640,668. The diminution in imports was chiefly in connection with yarns and textiles, which decreased in value from £E 17,965,629 to £E 13,631,470, and cereals, flour and agricultural produce, which declined from £E 7,101,278 to £E 5,952,440, in 1925 and 1926 respectively. Yarns and textiles were also responsible

largely for the export decrease, falling from £E 52,024,761 in 1925 to £E 34,670,388 in 1926

### MINES AND MINERALS

**MINING.**—The Egyptian mining industry as a whole was active during 1926, and it can now be said that the worst effects of post-war depression have been overcome. More interest was shown in prospecting than for several years past, and this is expected to continue. There was reason to anticipate increases in the output of petroleum, manganese and phosphate for 1927.

### SUEZ CANAL

**CANAL BOARD.**—In October, 1926, on the nomination of the First Lord of the Treasury, the Rt Hon the Earl of Cromer, G.C.I.E. (V.O.), was elected to the Board of the Suez Canal to fill the vacancy left by the death of Mr H. T. Austruther.

**PORT FUAD.**—The ceremonial opening of Port Fuad the new town on the Suez Canal immediately opposite Port Said, took place on December 21, 1926. King Fuad landed at Port Said from his yacht "Mahrussa" and crossed to Port Fuad, where he was met by the Governor of the Canal Province, Aslan Bey Cattani, the Comte de Serionne and the Baron de Benoit, who constitute the Domain Communal organisation for the control of the town. Among those present for the formal handing over of the town to the Government and the laying of the Town Hall foundation stone by the King were the Royal Family, members of the Diplomatic Corps, the Prime Minister, Government officials and Lord Lloyd.

The Egyptian and Palestine Railways have for some time considered plans for making Port Fuad the railhead of the Palestine Railway instead of Kantara. The new port might eventually replace Jaffa as the chief exporting centre for Palestine. Though Jaffa individually would suffer, the general trade of the country, in particular the exportation of oranges, and its railway passenger and goods revenue would benefit considerably.

### SUDAN

**GORDON MEMORIAL COLLEGE, KHARTOUM.**—Presiding at the annual meeting of the trustees and executive committee of the Gordon Memorial College Fund in November, 1926, Sir Reginald Wingate welcomed the appointment of Sir John Maffey (succeeding Sir Geoffrey Archer) as *ex officio* president of the Gordon College at Khartoum. The College has now become virtually the nucleus of the educational system of the Sudan, and the research work carried out in its laboratories has proved extremely valuable, as, for instance, in the investigation of insect pests which attack cotton. A girls' training college recently opened at Omdurman is having great success.

**SUDAN CROP.**—The estimate of the cotton output in the Sudan for the season 1926-27, issued by the Department of Agriculture and Forests at Khartoum, showed a large computed decrease in the production of the northern provinces, Kassala, Blue Nile, Fung and White Nile, where the inadequate rains had turned native attention to food crops. For the southern provinces (Nuba Mountains, Mongalla, Bahr-el-Ghazal and Upper Nile) large cotton crop increases were forecasted.

Estimated crops of certain varieties of cotton for 1926-27 (figures for 1925-26 in parentheses) were: Sakellaridis, 484,238 cantars (424,974 cantars); irrigated American, 47,605 cantars (54,446 cantars); rain-grown American, 43,140 cantars (34,435 cantars).

### PALESTINE

**CLIMATE AND PRODUCTION.**—Reports from Southern Palestine early in 1927 announced a serious position following very unfavourable climatic conditions. In the Beersheba region the entire failure of the barley crop was feared, and in the same zone 30 to 40 per cent of the sheep and goats had perished for lack of pasturage. In Northern Palestine, however, satisfactory weather conditions had prevailed, though gales and sand storms had considerably damaged the fruit trees of Jaffa.

Under the auspices of the Palestine Department of Agriculture important experiments are being carried out in the introduction of ground nuts, flax, sunflowers and other staple crops, while fertilisation questions are receiving much attention.

### INDIA POLITICAL

**COUNCIL HOUSE, DELHI.**—The State opening of the new Council House at New Delhi took place with picturesque ceremonial on January 18, 1927. The Viceroy and Lady Irwin drove to the scene in a State procession, and were received by Sir Bhupendra Nath Mitra, Member of the Viceregal Council for the Department concerned with the building of New Delhi, who presented Sir Edwin Lutyens, the principal architect of the city, Sir Herbert Baker, architect of the Council House, Mr Rouse, chief engineer, and others. After reading a gracious message from the King-Emperor, Lord Irwin formally opened the building, in which a joint session of the Assembly and the Council of State was inaugurated on January 24. The Council House, of which the foundation stone was laid by H.R.H. the Duke of Connaught on February 12, 1921, is a huge circular structure encircled by a pillared verandah. The central building (the joint library for the House of Assembly, the Council of State and the Chamber of Princes) has the finest dome in India.

**INDIAN NATIONAL CONGRESS.**—The session of the Indian National Congress, held at Calcutta, closed on December 28, 1926, having passed by a huge majority a resolution restraining members of the Congress from accepting office until the "national demand" has been conceded. The pledge also required hostility towards Ministries composed of members of any other party.

**LEGISLATIVE ASSEMBLY ELECTIONS.**—In Session at New Delhi on January 20, 1927, the Assembly unanimously re-elected Mr V. J. Patel as President, his return to the Chair being followed by cordial speeches from all parties.

On January 31 the Assembly elected Maulvi Mahomed Yakub Deputy-President.

### ADMINISTRATION

**ARMY REDUCTION.**—In the course of the Budget debate on March 5, 1927, Sir Basil Blackett stated that since 1914 the following reductions had been made in the fighting forces in India: British, 76,000 to 58,000; Indian, 154,000 to 139,000.

**EDUCATION.**—An increase of 9,113 recognised institutions of learning and 482,060 students in the fiscal year 1924-25 over figures for the preceding 12 months' period was shown by the latest report of the Department of Education for India issued towards the end of 1926. The proportion of girls attending school in 1924-25 was only one-fifth that of boys—1.24 per cent. as against 6.05 per cent respectively, 15 per

cent of the total population of India being of school-going age. The Indian Government's expenditure on education in 1924-25, when school and college students totalled 9,797,344, amounted to roughly £6,500,000. It was estimated that 90 per cent of the population was still illiterate.

**GOVERNORSHIPS.**—Sir Charles Alexander Innes has been appointed Governor of Burma in succession to Sir Spencer Harcourt Butler, and Sir Alexander Phillips Muddiman, Governor of the United Provinces of Agra and Oudh in succession to Sir William Sinclair Martin.

### FINANCE

**BUDGET.**—Sir Basil Blackett, the Finance Member of the Legislative Assembly, presented the first Budget of Lord Irwin's Government on February 28, 1927. Dealing with the financial results of 1925-26, he stated that an improvement of over Rs 2,00,00,000 on the revised estimate had been shown. With regard to revised estimates for 1926-27, the Customs receipts were better by Rs 1,30,00,000, taxes on income had decreased by Rs 29,00,000, and the duty on salt by Rs 20,00,000, net receipts on opium contributed an increase of Rs 86,00,000, while the railway contribution was unchanged. On military expenditure there was an increase over estimate of Rs 67,00,000.

The total revenue was expected to be Rs 130,25,00,000 and the expenditure Rs 127,16,00,000, yielding a surplus of Rs 3,10,00,000, against Rs 5,00,000 in the Budget. The total remittance programme of the Government for the next year was £35,500,000 compared with £27,500,000 in the current twelve months.

**DEBT INDIAN.**—During 1926-27 the sterling debt had decreased by Rs 1,15,00,000, the productive debt had risen by Rs 35,85,00,000, and the unproductive debt had been reduced by Rs 29,35,00,000.

**ESTIMATES (1927-28).**—The total estimate of revenue for the coming year was Rs 128,96,00,000, and the expenditure Rs 125,26,00,000, providing a surplus of Rs 3,70,00,000 on the basis of existing taxation and a rupee ratio of eighteen pence.

**TAXATION PROPOSALS.**—The export duty on hides would be abolished, involving a loss of Rs 9,00,000, the export duty on tea would be abolished, involving a loss of Rs 50,00,000, but the basis of assessment on tea companies would be altered from 25 to 50 per cent of their profits, as the latter more nearly represented the non-agricultural position of their profits. This would give Rs 45,00,000 next year, rising to Rs 50,00,000 in 1928-29. The import duty on motor cars would be reduced from 30 to 20 per cent *ad valorem*, and on tyres from 30 to 15 per cent. The import duty of 15 per cent on rubber seeds and stumps would be removed. The stamp duty on cheques and on bills of exchange payable on demand would be abolished with effect as from July 1, 1927. The import duty on unmanufactured tobacco would be raised from Rs 1 to Rs 1½ per lb. The net effect of these measures would be the reduction of revenue by Rs 6,00,000, and the next year's surplus would thus be reduced to Rs 3,64,00,000.

**INSTITUTE OF BANKERS.**—Representatives of banking interests from all over India met in Bombay on March 17, 1927, at a conference convened by the managing governors of the Imperial Bank, when the preliminary details of inaugurating an Indian Institute of Bankers were discussed. It was proposed to make Bombay the headquarters of the organisation, with branches subsequently to be established in other banking centres.



**PRESIDENCY OF BOMBAY.**—The Budget for the Bombay Presidency was submitted to the Legislative Council by Sir Chunilal Mehta on February 21. The previous one had estimated a deficit of Rs 28 lakhs (£210,000), but the actual deficit was placed at Rs 75 lakhs (£502,500). This figure was attributed mainly to decreases respectively in excise revenue, land revenue (consequent upon a poor crop), and in stamp revenue, owing to slackness in trade. The Governor, Sir Leslie Wilson, stated that the Government did not propose to introduce any fresh taxation, as it looked forward to regaining trade prosperity, while relief would be forthcoming from a revision in favour of Bombay of the Meston settlement of provincial contributions to the central Exchequer.

**RUPEE RATIO BILL.**—On March 22 this Bill for standardising the rupee at eighteen-pence passed its third reading in the Legislative Assembly by 63 votes to 51. The closing speech of the Finance Minister, Sir Basil Blackett, showed how prices could not be adjusted on the basis of a sixteen-penny rupee, which had not been stable as a ratio of exchange since 1914.

The Council of State rejected (March 24) by 31 votes to 10 an amendment to the Bill to reduce the ratio to sixteen-pence, and on the following afternoon finally passed the measure introducing the eighteen-penny ratio. At the same time the Council passed a measure referring the Gold Standard and the Reserve Bank Bill to a Joint Select Committee.

**SALT DUTY.**—The Legislative Assembly agreed on March 28 by 52 votes to 41 to the decision of the Council of State restoring the salt duty to 20a per maund from the 10a per maund to which it had been lowered by a previous vote.

## AGRICULTURE

**CINCHONA.**—The cinchona plantations of the Government of Bengal have been steadily extended, the planted area in 1925-26 being 3,153 acres, nearly 100 acres more than the previous year's acreage. The quantity of bark harvested in 1925-26 was 539,000 lbs., compared with 432,000 lbs. in the preceding year. The Government quinine-producing factory made a profit during 1925-26 of Rs 1,93,000.

**COTTON CROP.**—The official forecast of the Indian cotton crop of 1926-27 gave the total area sown as 22,143,000 acres, the condition of the crop being reported fair and the total yield estimated at 6,000,000 bales.

**ROYAL COMMISSION.**—A Royal Commission on agriculture commenced to take evidence in Bombay on March 25, 1927. The first witnesses, Sir Joseph Kay, Vice-President, and Sir Henry Burt, Secretary of the Indian Central Cotton Committee, in the course of their depositions, urged the establishment of open cotton markets controlled by market committees on which cotton growers should be represented.

## IRRIGATION

**BHANDARDARA DAM OPENED.**—The Governor of Bombay opened on December 10 the Bhandardara Dam, which, situated in the Deccan a few miles from Nasik, is 284 ft. high from the bed level (and therefore the highest in the world), 234 ft. thick at the base, and is composed of 12,000,000 cu. ft. of masonry. It encloses a lake with a surface area of about six square miles, which now holds 12,146,000,000 cu. ft. of monsoon water gathered from a catchment area of 47 square miles. The dam, the total cost of which was Rs. 84 lakhs, will considerably reduce the dangers of famine in the Deccan.

## TRANSPORT

**CIVIL AVIATION (GOVERNMENT PROGRAMME).**—In February 1927 the Indian Government decided to establish a definite route for aircraft traversing the country by constructing a chain of aerodromes from Karachi to Victoria Point, on the Burma-Malaya border. A Government Vote for a supplementary grant of Rs 906,000 for the purchase of aerodromes in Bombay, Calcutta and Rangoon came before the Legislative Assembly on March 1 and was passed without a division.

**KARACHI-CAIRO AIR MAIL.**—What was described as the first air mail from Karachi to London, though the actual aeroplane transit was but from Basra to Cairo, was despatched from the Sind port on January 2, 1927. Letters left Karachi by the Gulf mail steamer for Basra, whence they were carried by biplane to Cairo for transmission by steamer to Marseilles and thence overland to London. It was intended, after experience in operating the route had been gained, to convey such mails by air direct from Karachi to Cairo and *vice versa*.

**RAILWAY EXPENDITURE.**—The expenditure on new lines during 1926-27 was estimated (March, 1927) by Sir Charles Innes, Commerce Member of the Indian Government, at Rs 6.47 crores, a reduction of Rs 9 lakhs on the sum estimated a year previously. For the current year the computed capital expenditure is Rs 25 crores, Rs 17.38 crores being allocated to open line works and the balance, Rs 7.62 crores, to new construction. Of the total expenditure, electrification projects absorb over Rs 3½ crores.

## COMMERCE

**FEDERATION OF CHAMBERS OF COMMERCE.**—In January 1927 the Indian Industrial and Commercial Congress approved the constitution of a new Federation of Indian Chambers of Commerce. This body, which will supersede the Congress itself, is intended to rival the largely European Associated Chambers of Commerce of India.

**KARACHI SHIPMENTS.**—During 1925-26 cotton shipments from Karachi, which had increased from 36,245 tons in 1921-22 to 119,504 tons in 1924-25, reached 179,679 tons. This total exceeded that recorded in 1913-14 by 104,993 tons, or 140 per cent.

**MOTOR-CARS (IMPORTS).**—During the fiscal year immediately preceding the War imports of motor cars into India numbered 2,880. Following the armistice the total rose to 15,432 cars, to fall again in 1921-22 to the pre-war figure. In the fiscal year 1925-26, however, the quota had increased to 12,757. Imports of self-propelled vehicles during the seven months April-October 1926 were motor-cars, 7,242; motor-cycles, 1,005; motor omnibuses, vans and lorries, 3,393.

## CEYLON

### ADMINISTRATION

**GOVERNORSHIP.**—In March 1927 the King approved the appointment of Sir Herbert James Stanley, K.C.M.G., Governor of Northern Rhodesia, to be Governor and Commander-in-Chief of Ceylon in succession to Sir Hugh Clifford.

### COMMERCE

**EXPORT TRADE.**—The shipments of Ceylon tea in 1926 amounted to 216,088,944 lbs., as compared with 209,493,536 lbs. in 1925, an increase of over 6½ million lbs. Of the total, the destinations were as follow, the

corresponding figures for 1925 being in parentheses. United Kingdom, 141,047,000 (133,952,697) lbs.; Europe, 3,191,318 (2,802,114); Soviet Union, 793,420 (1,596,220); Australia, 16,593,813 (16,337,096); New Zealand, 7,859,174 (6,247,180); Canada and Newfoundland, 6,867,455 (7,207,806); United States, 10,503,583 (17,280,032); Africa, 7,949,485 (7,182,899); Egypt, 6,104,846 (6,172,052); China, 1,691,354 (1,485,026); other countries, 7,486,596 (9,223,424). Shipments in 1922 amounted to 171,392,249 lbs., in 1923 to 183,501,928 lbs. and in 1924 to 203,680,013 lbs.

The exports of rubber in 1926 were 58,800 tons, against 45,697 tons in the previous year, the chief countries of destination being United Kingdom (18,260 tons) and United States (36,442), the United Kingdom having taken 12,149 tons in 1925 and the United States 29,893. There was a noticeable increase in latex shipments in 1926, the quantity being 13,096 gallons against 3,750 in 1925.

Exports of nearly all coconut products showed a decrease in 1926 as compared with the previous twelve months. Figures: Coconuts, 16,929,074 (against 22,951,458), desiccated coconut, 84,108,108 lbs. (against 89,431,100), copra, 2,425,880 cwt. (against 2,260,630), coconut oil, 570,015 cwt. (against 615,260), coconut ponnac, 150,814 cwt. (against 169,352), bristle fibre, 152,432 cwt. (against 155,400), mattress fibre, 302,792 cwt. (against 298,375), coir yarn, 110,142 cwt. (against 128,134). For copra the chief destinations were Germany, 775,099 cwt., Italy, 645,706, Norway, 332,858, and Holland, 248,246. Coconut oil went mainly to the United Kingdom (133,733 cwt.) and Denmark (149,499 cwt.), desiccated coconut principally to United Kingdom (27,051,900 lbs.), United States (20,968,965) and Germany (14,263,250), and coconuts to United Kingdom (5,826,303), Egypt (6,765,020), and Germany (2,317,305). Germany and Belgium took most of the coconut ponnac, the Continent about half of the bristle fibre, and the United Kingdom, Africa, Belgium, Germany, the United States and Australia most of the mattress fibre.

**RICE IMPORTS.**—During the fiscal year 1925-26 Ceylon was the largest purchaser of rice from India, taking 432,000 tons, as compared with 403,000 tons in 1924-25 and an average of 325,000 tons during the quinquennium ending 1913-14.

**TARIFF AMENDMENTS.**—Certain amendments to the Customs tariff of Ceylon came into operation as from July 22, 1926. The following items were transferred from the list of dutiable goods and added to the list of exemptions from duties:—Curry stuffs, coriander seed, cummin seed, fennel seed, garlic, mathe seed, tamarind, turmeric, etc.; exercise books in paper covers, fish, dried and salted; fish, maldiva; milk, including refrigerated, condensed, sweetened or unsweetened, sterilised, or powdered; and milk foods.

The following duties are imposed in lieu of those previously imposed:—Tobacco—manufactured, per lb.: Rs. 4.50; Cigars, per lb.: Rs. 4.50; Cigarettes and beedies, per lb.: Rs. 6.0.

## TRANSPORT

**MOTOR AND ENGINEERING EXHIBITION.**—The Automobile Club of Ceylon, with the co-operation of the Motor Traders' Association, organised at Colombo (January 6-16, 1927) an All-Ceylon Motor and General Engineering Exhibition, showing practically every type of motor car, accessories, radio and other mechanical equipment imported into the Island.



## FINAL NOTE

IN the preparation of this comprehensive work, notwithstanding our very complete organisation for the collection of necessary data, we have had recourse to books of reference and other periodical publications, to the publishers of which we desire to make the fullest acknowledgment. In this connection we are under an obligation in Great Britain to "The Board of Trade Journal," "The Times Trade and Engineering Supplement," and the "Manchester Guardian"; in the United States to the publications published by the Bureau of Commerce. We have also been indebted to the Department of Commerce for valuable information and trade of the review, as supplementary enabled to draw upon and Trade Commissioners' Reports of publications of countries under review free use, among these annually issued by the Government of the Union of South Africa, Egypt, India and Ceylon.



W. H. MORTON CAMERON.

To the High Commissioner for the Dominion of South Africa, the High Commissioner for Rhodesia, and the High Commissioner for India, as also to those with whom our representatives came in contact in social, professional and business circles, we are indebted for courteous and valuable assistance, all of which has materially contributed to the unique character of this volume.

GLOBE ENCYCLOPEDIA COMPANY.

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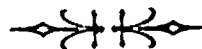
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