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FARMS OF BRITAIN

PROFESSOR H. G. SANDERS WITH THE YOUNG DAIRY SHORTHORN BULL KEPT AT READING UNIVERSITY FARM

FARMS OF BRITAIN

BY

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AND

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THE MEN WHO BROADCAST

The central figure in each of the farm discussions, of which I had the honour of being Chairman, was always the farmer himself. In some of the discussions, however, we had the most valuable help and support from County Executive Officers and others, and I should like in presenting this list to thank them one and all for their co-operation in the broadcasts and for allowing Geoffrey Eley and myself to place on record in book form so much of their wisdom.

(*Signed*) H. G. SANDERS.

Mr. W. J. Simmons, Oakhouse Farm, Hampstead Norris, Newbury, Berkshire.

Mr. F. Rockcliffe, Hill House, West Walton, Norfolk.

Mr. O. K. Peacock, College Farm, Broughton, Huntingdonshire, and Mr. Denys Bullard, Technical Officer, Huntingdonshire War Agricultural Committee.

Mr. W. T. Dunlop, Townhead of Gree, Fenwick, Ayrshire, and Mr. T. B. Manson, Chief Land Officer to the Scottish Department of Agriculture.

Mr. E. R. Greenwood, Poplars Farm, King's Road, Bradford, Yorkshire, and Dr. H. Ian Moore, Leeds University.

Mr. H. H. Pickering, Waterloo Farm, Market Harborough, Leicestershire, and Mr. D. H. Findlay, formerly Executive Officer of Leicestershire.

Mr. Tom Scott, Milsington, Hawick, Roxburghshire.

Mr. and Mrs. J. T. McClure, Hillview, Ballyminstra, Ahoghill, County Antrim.

Mr. Eric Buchan, Rashieriev, Newburgh, Aberdeenshire, and Mr. A. R. Wannop, Director of Advisory Services, North of Scotland College of Agriculture.

Mr. Thomas Rees, Pengwern Uchaf, Cenarth, Newcastle Emlyn, Cardiganshire, and Mr. John Griffiths, Agricultural Economics Department, Aberystwyth.

Mr. F. J. Tucker, Oakwell Farm, Muddiford, Near Barnstaple, Devon, and Mr. Colin Ross, formerly Executive Officer, Devon War Agricultural Committee.

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INTRODUCTORY

In none of the applied arts does the quality of achievement and standard of management vary more than in Britain's basic industry of agriculture. What is a good farmer? That is a question which defies a simple, short and straightforward answer. It is certainly wrong merely to arrive at an answer by applying the mercenary yardstick of profit—for profits were once excellent in what is now the dustbowl of America, where bad husbandry has left its indelible scar on the earth for all mankind to see. Granted the first necessity is that a farm must pay, but there is a multitude of science and practice beyond that which goes to the make-up of a "good farmer." Such a man is a trustee of the land he farms; the land is his heritage and must never be betrayed.

The tremendous variation in farming standards is to a great extent dictated by the equally big differences met with in these small islands between soils, climatic conditions, markets and labour supply. Successful farming on the rich, black soils of the Fens—where they think little of cutting eight or nine quarters of wheat to the acre or lifting twelve to fifteen tons of potatoes—is very different from making a living on a few acres of windswept, remote hillside somewhere in the north or west. If we admit that the soil is more than half the battle in this farming business then we must also admit that unless the man understands his soil and masters it he will never become a good farmer.

The same farm—in which the uncontrollable factors of soil, climate and markets are constant—can, and often does, produce quite different results when farmed by two different men. More than ever before there have been examples during the last few years of bad, even derelict farms being taken over by a new tenant, or often by a War Agricultural Committee, and raised from a C farm to an A farm in two or three years. From, say, an eighty-acre farm

where one man scratched nothing but a meagre living for himself and family, with perhaps a turnover of only three hundred to four hundred pounds, another man can come in and put the gross returns up to fifteen hundred pounds.

Good management, among other things, lies in the uses to which a farmer puts his labour, how he crops and stocks his land and how he uses his working capital. A good farmer knows, above all else, that he has never finished learning. No man can ever know all there is to know about agriculture, not even the agriculture of one county, and it was from a desire to help our farmers to become better farmers, by studying outstanding examples of good management, that the B.B.C. decided to broadcast a series of discussions called "THIS IS MY FARM" in the autumn of 1945 and early months of 1946. The discussions began about two months after the end of the war, but the Battle for Food was still on and likely to go on—even intensified—for a long time.

It is that series of talks, in which well-known farmers from eleven typical agricultural areas of Britain were interviewed, first on their farms and in their fields and, later, before the microphone in Broadcasting House, which forms the basis of this book. Our thanks are due to the B.B.C. itself, and to Mr. John Green and Mr. Alexander Hay, who, between them, planned the series and so ably chose the farms we were to visit. Our thanks, too, go out to each and every one of the farmers and their families on whose kindness and patience the success of the whole venture depended. Mr. John Green's task was an arduous one, a large part of the summer spent wandering round the country in search of eleven cases of first-class farmers who would be willing (and have the courage !) to face the microphone and tell the world the stories of their farms. The tact, judgment and sympathy which he needed in that search would have taxed the capacity of a philosopher-diplomat.

But it was done, and here perhaps it would be well to stress that eleven farms, however good they are, cannot be representative of *all* the many variations of British farm management, but we do think that they are all worth studying as examples of progressive, thoughtful and conscientious farming.

Of the characters of the men themselves who run these

farms we hope you will get some impression later in the book. Some of the observations they made, and which were so often packed full of wit and wisdom, we will set down in *their* words, not ours. When we say we think these eleven men are all really good farmers it is meant sincerely : to say more is unnecessary and, anyway, the farmer hates fulsomeness. Without exception, from Mr. J. T. McClure with fifty acres in Ulster to Mr. Tom Scott (his great-grandfather was first cousin of Sir Walter Scott, the poet) with his two-thousand-seven-hundred acres in the historical Scottish border country, every one of the farmers gave us complete freedom to see the whole of his farm, to ask as many questions as we liked and even to inquire into his accounts. Surely in no other industry could two inquisitive individuals, wandering through the countryside, be given such whole-hearted help as we received from these men and their wives.

We have endeavoured in writing this book faithfully to reproduce the opinions held and expressed to us by the farmers themselves, but the responsibility for passing on this information correctly is clearly our own.

Our farm pilgrimage began when, one day in the high summer, we travelled westward to a charming Devon farm, eight-hundred feet up and looking out one way over the vastness of the Atlantic and the other way towards the Lorna Doone country of Exmoor. This was Oakwell Farm, and our amiable host—Mr. F. J. Tucker. It was here that we met Colin Ross, the county's Executive Officer, and the man who is lucky enough to have had a grass seed mixture named after him to be his memorial. How infinitely more satisfying, more rational and more inspiring than a stone monument in the middle of Exeter !

Then came, with a change of direction, a scene so different from Devon as to make one marvel afresh at the diversity of British farming. This was Poplars Farm, King's Road, Bradford, Yorkshire—a farm of a hundred acres lying on a steep hillside rising sheer out of the grime and murky atmosphere of industrial Bradford, a green oasis surrounded by mills and houses. From Yorkshire we went to the chalk downs of Berkshire, and then far north again to the Scottish borders. It is impossible to be in this border country without

hearing one or two tales of the forays of bygone times, of strange adventures and of characters whose doings (often wrongdoings) make excellent entertainment. Thus it was that Mr. Tom Scott, whom we have already mentioned, told us the story about an occasion when the English were on the war-path and drove off a lot of Scottish sheep, only to find when daylight came that the sheep were all maggoty. The English returned the sheep the following night, hanged four Scots, and left a note asking that next time gentlemen called for the sheep would they please see that they were clean.

Then there were trips westward again, this time to Wales; eastwards to Huntingdon, Norfolk and the Shires of England; Scotland again and Northern Ireland. Ulster certainly came up to all our expectations. For three or four days we made our headquarters in Belfast—the "pub" was good, food excellent (a waiter apologised when we arrived at 8.30 on the first evening as there was "only turkey left, Sir") and the city we thought most intriguing with its perpetual air of happy hustle and its astonishing "crocodiles" of tramcars, so tightly packed that there is often no room to walk between them to cross the road. You have to wait for one complete lot to pass by. Of the taxi drivers in that part of the kingdom perhaps the least said the better . . . But we did decide quite early on in the first day that walking was a safer method of getting about. Applying the principle of "When in Rome . . ." we, too, hustled round Northern Ireland, and in a few days we managed to get into five of the six counties, including a magnificent morning up in the wild Sperrin Mountains. The sun shone all day and that was worthy of comment in those damp parts.

In all, this farm pilgrimage took us more than five-thousand miles through Britain, by rail, road and sea. It might perhaps be explained that the order of the journeying just mentioned is not the order in which the farms will be dealt with in this volume. It was a haphazard order, dictated by convenience of time for the individual farmers and not by any grouping of agricultural systems. For the purpose of this book, however, the farms will be brought into distinct categories, starting with those which are mainly arable.

Apparently it was not only farmers and countrymen who

listened to the broadcasts. We waited after each programme to hear what practical farmers thought, but we were also favoured with remarks (and generally quite polite ones) from such unexpected sources as a Harley Street physician, a publican in Finchley, a barrister in the Admiralty Division, and a grocer in Kent! Thirty-five thousand leaflets, giving an outline of the farms in the series and the dates on which they were to be discussed on the radio, were distributed in various ways, including the Ministry of Agriculture, War Agricultural Committees, Young Farmers' Clubs, and so on. Farmers' discussion groups in many parts of the country, although more particularly so in the northern counties, met regularly on Thursday evenings in village halls or farm-houses to continue the arguments which we began.

Obviously, one of the main results of all this viewing of farms, and this questioning of the men who ran them, was to throw up into great prominence the war-time achievements of British agriculture, and some of the problems of the future. The measure of these achievements, in which the eleven men we went to see played their full part, can all be boiled down to the fact that in 1938 Britain produced about one-third of her total food requirements on her own soil and imported the remaining two-thirds. To-day our farmers are growing well over two-thirds of the food that is needed. Ploughing-up tasks, which seemed impossible when the orders were served, were accomplished and idle acres were made to grow corn and practically all our own feeding stuffs for stock. Since war began, the output of milk—the nation's number one food—has gone up, and more milk is now being drunk than ever before. Undoubtedly, the appearance of our farms is much better than in 1939 and there are many farmers who would agree that the land itself is in better heart.

The eleven farmers we visited are themselves all good examples of men whose methods of husbandry will ensure that the fertility of their land is not cashed out. There is something to learn from each of these men, but before examining closely the specific cases, and differences in farm management, it would be well perhaps to outline a few of the principles of farm management in a general way.

When dealing with different systems of farm management

it will usually be found that wages form the largest single item of expenditure and therefore the labour organisation is of vital importance. Mr. Rockcliffe, farming on the prolific silt land in Norfolk, went out of his way to stress the value of his ample supply of seasonal labour, particularly the women workers. Throughout the war these women had been particularly valuable and had worked extremely hard, but for their part it was good money. They were often able to earn 25s. and more in a day picking potatoes at sixpence a bag. These conditions do not apply in all other parts of the country, and indeed on the remoter hill farms a man has problem enough in getting any labour at all, unless he is exceptionally lucky in regard to housing. In any scheme of successful farming the next most important thing, having made sure of the labour supply, is that of fitting together the separate enterprises into a general pattern that can be run economically.

A basis point in good farm management is the maintenance of soil fertility, and here the return of some organic matter to the soil is one of the big things. For instance, on farms having thin, dry soils on chalk, such as that of Mr. Simmons in Berkshire, or farms on sticky, heavy clay, such as Mr. Peacock's in Huntingdonshire, there is a fall-off in cropping power if a large proportion of the organic matter which they produce is not returned to the land. The handling and transport of large quantities of feeding crops and dung is a costly business when compared with allowing the livestock to deposit the fertility themselves out in the fields. Mr. Simmons put this well when he said that he carried a flock of arable sheep on his chalk downs because " no other muck cart is so easy to handle in isolated places."

Another constant concern of the good farmer is the control of diseases and pests, both among his animals and in his crops. A clean farm is one of the chief marks of the efficient farmer. Trouble in this way can be divided into two aspects : cases where direct method of control can be cheaply applied, and cases where attack can be escaped only by introducing changes in the farming system. Thus if land becomes infested with potato eelworm there is at present no satisfactory method of getting rid of it except by altering the

crop rotation so that successive potato crops are at least five years apart. Here again it is worth mentioning Mr. Rockcliffe's farm because there, on his silt land, about a third of his arable acreage grows potatoes every year. One would have thought it possible that with such a high proportion under potatoes this farmer might have run into the eelworm trouble, and although such a cropping policy was necessary during the war years it is more than likely that Mr. Rockcliffe will have to reduce the amount of land he devotes to potatoes. Generally speaking, there is least trouble in crop husbandry when the farmer adopts a long rotation, and farm animals are usually all the healthier when mixed stock is kept and when they can be given constant changes of land.

On the eleven farms with which we shall deal great changes in management have had to take place under war conditions. That is true of almost every farm in the kingdom. The whole appearance of our farming lands has been changed by the diverting of land from pasture to food crops and in the greater use of machines, from the smallest tractor to an expensive combine harvester. The general trend of these changes provides a fascinating study.

On a mechanised corn-growing farm—an outstanding example is Mr. Simmons' in Berkshire—the mechanisation of the corn shift has been balanced by long leys of sainfoin and mixtures to maintain fertility. In the old days few people in these isolated downland farms went in for milk because of the problems of water supply and transport. Now Mr. Simmons is milking a good-size herd of Friesians and Guernseys: by putting in pumps he has got water laid on in most of the fields and has skilfully adapted old buildings to modern requirements.

The changes in management of British dairy farms are typified in the story of Mr. Willie Dunlop, who farms in Ayrshire, the great milk county of Scotland. Mr. Dunlop—up there he's known just as "Gree," after Townhead of Gree, the name of one of his farms—kept a fine stock of black-faced ewes before the war. The ploughing-up campaign, and the scarcity of feeding stuffs, meant that they had to go. For his cattle "Gree" used to buy imported feeding stuffs heavily, but since 1939 he has had to grow more oats and

to try to make up his protein with silage. Owing to the high altitude of the land, which is quite unsheltered from the storms of the Atlantic, the change-over on this farm has not been as successful as in more sheltered spots.

Changes perhaps more sensational than those in any other area have had to be made on grazing farms, some of the best of which are in the counties of Leicestershire and Northamptonshire. Years ago it would have been considered a sin of the first order to plough these untouchable pastures, but in war-time these farms were no exception to the general policy, and their systems of management had to be adapted to war conditions. Such a task was beset with the greatest difficulties, and one cannot very well over-praise the men who did the job and the men who were on the county staffs behind them—such men as Mr. D. H. Findlay, then of the Leicestershire War Agricultural Committee, and now Chief Provincial Agricultural Adviser to the Leeds Province. Some of the difficulties which had to be overcome in ploughing up this kind of land, which had been down to grass for generations, included the lack of housing for workers, accommodation for livestock, and the usual trouble with pests such as wireworm.

There are, in the book, four examples of family farms. These holdings range between Mr. McClure's fifty acres in Ulster and Mr. Tucker's farm of two hundred and ten acres near Barnstaple. The acreage of cereals and potatoes has increased at the expense of pasture and fodder groups, and during the war a tractor has usually been acquired on farms of this size and the number of horses consequently reduced. Financial returns, in spite of higher wages and other increased costs, have been more than maintained because of the high war-time prices of grain and potatoes.

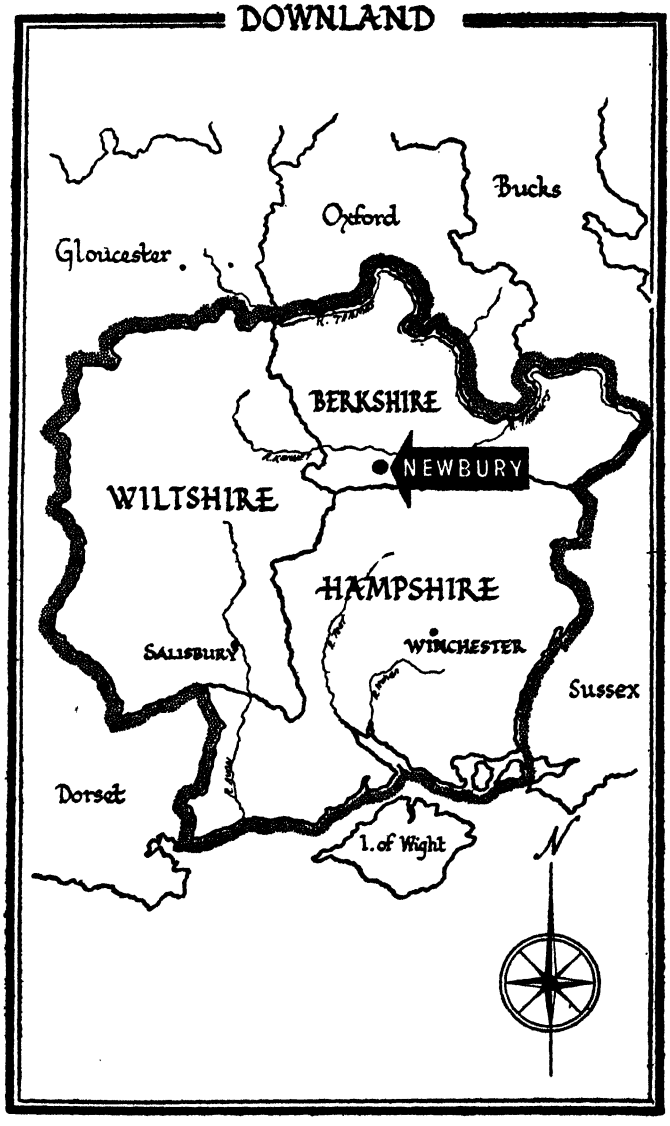
The good farmer also has to organise changes in the system of management with the minimum of cost and inconvenience. It is in this respect that some of our older farms, particularly in those areas where there is a natural and plentiful supply of stone or granite, are severely handicapped because their buildings are so tremendously solid that it is difficult, if not impossible, to adapt them to different and more modern purposes. This is very clearly seen in the granite farm buildings of Aberdeenshire where the walls, with openings

often too low or too narrow to allow a tractor to be driven in, are about two feet thick and rule out any chance of being altered.

As far as farm costs are concerned the whole question is a most thorny one. No one seems satisfied with any of the existing methods of costings, and our own experience, in this farm pilgrimage round Britain, was that when we got down to the accounts no matter what help we had it nearly always produced a headache. What interests the farmer most is not the cost of producing some particular crop but the net financial return from the farm over a long period. No matter what system of figure comparisons one tried to give between farm and farm they would not provide a complete answer to questions of farming policy. The figures we shall give in this book are based on the gross turnover of the farms : the figures do not represent profits, since there is a whole host of heavy expenses to be met before a farmer can say what is his profit. The figures for gross takings have, however, provided us with a reasonably fair standard by which to judge differences in production per acre and production per man on the different farms.

We found that these comparisons of production intensity on the eleven farms we visited varied between £10 and £40 per acre and between £500 and £1,500 per man. We found no evidence of the generally accepted fact that smaller farms show a more intensive production than larger ones. It is in this question of production that some of the most radical changes of the future may lie. British agriculture, based on dear land, is still organised for high production per acre, but times have altered and if we are to compete with producers overseas a maximum production per man-hour will have to become the principal aim.

In the coming years the British people will be grateful for all the food the countryside can grow, and the farmer has got his guaranteed prices. But there will come a time when the present enormous gaps in the world food needs are filled and when other countries again begin to look round for a place to sell, at whatever price, their surplus food. Between now and the time that situation arises the British farmer can least of all afford to " just carry on." He must increase his efficiency and so narrow as far as possible the gap between home-production figures and world costs.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Gloucester
BERKSHIRE
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SALISBURY
WINCHESTER
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Dorset
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CHAPTER I

MIXED FARMING ON THE DOWNS

Chalk land—Oakhouse Farm—water supply—buildings—cottages—mechanised corn growing—roots and leys—sainfoin—arable flock—muck on marginal land—costs and returns from sheep—shepherds—milking herds—livestock and fertility—sales off the farm—best size of farm—effect of war on Downland farming—mixed farming and the future.

CHALK land covers an important area of England, and in the southern counties, where it occurs at some elevation, it is referred to as "Down." In the three counties of Berkshire, Hampshire and Wiltshire there are more than 400,000 acres of chalk, and it is mostly on Downs, the elevation running from 300 to 800 feet. Whilst there are some steep slopes, Down country is best described as rolling and it is generally very open, with big fields and few hedges or trees. It gives an impression of emptiness—homesteads are far apart and there do not seem to be many cottages. Water supply presents a difficult problem on most farms. The soil itself is thin, particularly towards the tops of the Downs, where the land can often be described as marginal; rentable values are around 15s. an acre.

Thin chalk is not the sort of land that will keep on yielding good crops if little is put back into it. Until recent years dairying played a very small part on the Downs. Milk production was wellnigh impossible on isolated farms that were short of water; but now that the Milk Marketing Board makes a daily collection of milk, wherever the farm, and now that Government assistance is available for laying on water, conditions have changed and the cow is becoming an important animal on the Downs. The traditional method of maintaining fertility was by folding sheep; these walking muck carts kept up the condition of all fields, however remote, enabling them to grow satisfactory crops of corn, especially

barley. As arable sheep have decreased, their place has been taken to some extent by cows milked in movable bails, the Downs being the home of open-air dairying.

OAKHOUSE FARM.—Mr. Simmons farms Oakhouse Farm in partnership with his father, who is nearly 90 years old and who came to the farm 55 years ago; the Simmons family have farmed in Berkshire and the surrounding counties for generations. Originally the farm was 500 acres (about the average for the Downland corn farms in the horse days) but more land has been taken in and now there are 1,500 acres, all in a ring fence with public roads round it and a railway station close to one boundary.

In July 1945 the farm carried 300 attested dairy cattle, in two herds. At the home farm there were 70 Pedigree and Supplementary Register Friesian cows and at a neighbouring set of buildings there were 40 non-pedigree Guernseys. There was also a flock of 300 registered Hampshire Down ewes, but war-time restrictions had reduced to little more than a nucleus the herds of pigs and poultry. Permanent grass occupied 200 acres and a further 400 acres were under ley. The corn acreage was 600 and there was a 12-foot self-propelled combine and a pick-up baler; a drying plant had recently been constructed. To work the farm there was a staff of 25 men.

The present 1,500 acres were originally in five farms. Though the whole area is quite typical of Downland, Mr. Simmons has one great advantage in that he is well supplied with water. The supply is from deep wells, and water is laid on to the buildings and to many of the fields. The buildings have presented a number of problems. Oakhouse Farm itself was once a retreat for the monks of Reading Abbey and there are two large thatched barns which were built 400 years ago. There is also a large building, of the same age, which is a form of Dutch barn on steddles; this also has a thatched roof and it is still used for hay and for corn.

One of the two barns has been converted—with the use of concrete—to a cowhouse, with standings for 60 cows. It has electric light and is fully up to all modern requirements, while the height and the thatched roof give it a very even temperature. On the other hand, its layout is rather incon-

venient and the question arises—would it not have been better to have made a clean sweep and put up a modern cowshed? Mr. Simmons is not of that opinion, pointing out that that would have entailed much heavier expenditure and that requirements change, so what is ideal to-day may not suffice in 40 years' time. When he began producing T.T. milk in 1922 he put up a small model dairy where he thought it would conform best to the existing buildings, but it is really too far from the cowshed. It is 30 yards from the entrance to the old barn and that means 30 wasted steps each way every time milk has to be taken to it.

COTTAGES AND LABOUR.—The outstanding problem which the large farmer has to face is the question of cottages. A mixed corn farm cannot be run without good men, and they cannot be had without decent cottages; from the wives' point of view housing is as important as wages. Mr. Simmons has 25 cottages in all, some owned but the majority rented; this proportion of 1 to 60 acres is probably above the average of the county or the district, but not all the cottages are available for workers; some are occupied by elderly people who have done their bit on the land. Many of the cottages have electric light and all have water, though in some cases it has to be drawn from a well. But apart from these two amenities, cottages are often lacking in accommodation; many picturesque old Berkshire houses fail in this, and should have a couple more rooms built on to them.

Most arable farmers to-day are in a vulnerable position, as they have come to rely on gang labour, which may become unobtainable in the near future. Oakhouse Farm is relatively well supplied with cottages, and the problem is much more urgent on most Downland farms, but a proper system of mixed farming requires a large staff of stockmen; of course it would be possible to reduce the labour force by specialising on mechanised corn production—drastic reduction would indeed be necessary, because then the takings would not justify Mr. Simmons' present wage bill of £7,000 a year. If high farming is to continue, something must be done to provide decent houses for workers. Because countrymen have their roots in the soil it does not mean they want their feet in the mud.

The real difficulty is—who is going to pay for the improvements? The landlord cannot, unless he is able to pass on a percentage of the cost in higher rent. Even if local authorities are prepared to drop money on building new houses to let at farm rents the houses will be built in the village and so will not be much good to the stockmen. Wives may prefer living in a village because of tradesmen's deliveries and of getting the children to school, but good stockmen prefer to be near their work; successful livestock farming requires resident, responsible men.

CROPPING.—Corn growing and harvesting are fully mechanised, and though Mr. Simmons hesitated some time before getting a combine, and eventually bought one rather against his better judgment, he does not regret it now. One great advantage has been the elimination of winter threshing; so much labour is needed in the winter months to look after stock that a threshing gang can be ill afforded. The cost of full mechanisation has been heavy but it is justified in two ways. First, Mr. Simmons believes that by mechanisation he can reduce his costs of producing corn to compete with world markets. Secondly, supposing it becomes necessary to feed the bulk of the corn he grows as concentrates to livestock, it will still pay to have produced it cheaply; it is an obvious fallacy to think home-grown concentrates are cheap just because no merchant has to be paid for them. It will mean a very bad time for British agriculture if the corn acreage on so large a farm ever falls below 400; an important point in ley farming is that accumulated fertility is cashed in corn crops, and farming would be badly out of joint if at Oakhouse Farm the corn acreage fell to a level which would not justify a combine.

The new building which houses the grain drier, and which will contain storage bins, has been very skilfully sited. It is in the centre of the main corn-growing area, near the road and the railway station, and it is where electric power is available. Farm geography requires careful study when heavy outlay on new buildings is involved.

On the average, yields of wheat are about 9 sacks to the acre and of barley between 10 and 12 sacks; in 1945 the

barley crops promised very well and did in fact turn out better than usual. Somewhat surprising is the fact that the level of yield now is no higher than it was 40 years ago, despite tractor cultivations, new varieties and greater use of fertilisers. Tractors may have speeded up cultivations, but the working of the land is really no better than it was—they had a great number of horses in the old days. Mr. Simmons has eight tractors in all and three of them will take four-furrow ploughs, but, despite all his efforts, he has not yet succeeded in getting hold of a tracklayer; that is one of the penalties for being a member of the County Executive Committee! Basic cultivations are, of course, much cheapened by heavy tractors and ploughs, and this is an important point in favour of the larger-sized farm in poor-land districts like the Downs. In regard to varieties of the corn crops, new ones are grown, but the experience is that Squareheads Master is hard to beat as a general-purpose wheat.

The farm carries a root shift of nearly 100 acres, 40 of which are required for the sheep and these tend to be on the outlying fields. Naturally, roots for the dairy herds are grown near home and they consist of 15 acres of kale and some mangolds; the herds also get the sugar-beet tops. Silage is the great standby for a dry time and there are two silos on the farm which must be about the oldest in the country. They were built nearly 100 years ago; they are square, built of brick, and stand in the side of a chalk pit, so that filling is all down hill. They hold 60 tons apiece and are generally filled with lucerne, 20 acres of which are grown; young grass silage is sometimes made, as cutting for silage proves very helpful in controlling new leys.

There are 200 acres of permanent grass still left and this is not a large proportion of the farm in view of the fact that over 100 milking cows, as well as the stronger heifers, are out-wintered. The 400 acres of long ley include a good acreage of sainfoin. This is sown down for seven years with a few pounds of perennial ryegrass and S.100 white clover; the reason for sowing the ryegrass and clover is to keep out soft brome grass, known locally as "lop", which commonly infects sainfoin leys.

A lot of people complain nowadays of sainfoin not lasting as long as it used to do; there is probably something in this, the deterioration being due to the different strains there are about. The Simmons family have grown on from their own seed for the last 50 years, and are naturally careful to keep it going, as it is a good strain of the "Common", or long-lived, type.

Though it is possible to combine sainfoin seed the crop is a tricky one to handle and the mower is preferred for cutting. The thing is to cut and to carry it early in the morning while the dew is still on it, as it is very liable to shell. Sainfoin is at home on dry, chalky soil. It proves very valuable for hay and for grazing, and sheep seem to do better on it than on lucerne, which wants better and deeper land. Mixtures of grass and clover, down for three or four years, are grown, but sainfoin has some advantages over these. It gives a bigger bulk of high-protein herbage over a longer period and its fresh aftermath provides young growth from August to Christmas. An important point is that where there is a low rainfall on dry hills the deep-rooting nature of sainfoin enables it to give a hay crop when everything else would fail completely.

STOCK.—On many Downland farms it is now only possible to speak of arable sheep in the past tense. They have had a very honourable history on the Downs and in the past were held to be essential for the maintenance of fertility. It was certainly a great sight to see the 800 Hampshire ewes hurdled on the hillside, with their weaned lambs running on the other side of the valley, and it led to some considerable argument on the economic position of arable sheep. Mr. Simmons admitted that there may not be much direct profit in them, but on the marginal land at the more remote parts of the farm there must be stock, and it is hard to suggest any other form than arable sheep. There are fields two miles from a village, and up on the outlying Downs water is always a problem.

A great part of the year the sheep are folded on sainfoin leys, whose value has just been stressed but which, otherwise, it would be difficult to cash apart from the first cut of hay each year. The sheep are putting fertility back into the land

and producing mutton and wool; the nation would be poorer if the mutton were not produced and so would Mr. Simmons, in his own opinion, because—the land lacking fertility—yields of corn would be lower. It is well known that some Down farmers keep no livestock, but Mr. Simmons is quite ready to argue with them, taking a long view on this question of maintaining fertility on thin soils.

The sheep require about 40 acres of rape and turnips and 50 acres of catch crop—rye and trefoil, the latter to carry them through the very difficult period from April to June. The ewes lamb on the roots and they get crushed corn for five or six weeks before they lamb to steam them up—similar to the common practice with dairy cows. After lambing they are on catch crops and seeds and then folded on the sainfoin leys which have been cut for hay. Folding the leys, rather than allowing them free range, is preferred because the sheep do better if they have a fresh piece every day. If they are just turned on to the ley they spoil as much as they eat and there are overfed sheep for a couple of days and starved sheep after that. They should be fed regularly, and there is a question of discipline involved too; when sheep are fed and handled at regular intervals the shepherd is master of them.

Continual folding—every day of the year—is very expensive. Mr. Simmons reckons that, with mechanised cultivation, he can grow roots for £9 an acre and catch crops for £3. It is very difficult to put a price on lattermath seeds, but a figure of 10s. an acre would be somewhere near the mark. The yearly consumption of corn and cake is about 25 tons, and the shepherds' wages come to £450; some little extra labour over and above that of the shepherds may be required occasionally, but against that may be set the valuable help the shepherds give at busy times with other work. The approximate cost of the sheep can, therefore, be worked out as:

40 acres of roots at £9	£360
50 acres of catch crops at £3	150
60 acres of lattermath at 10s.	30
25 tons of corn and cake at £14	850
Labour	450
	£1,840

The returns are easier to compute because these sales figures for 1944 are available :

Fat wether lambs	£665
Ewe lambs	360
Draft ewes	350
	£1,375

From these figures there seems to be very little profit apart from wool, which would cover no more than overheads and incidentals like troughs and wire. It is worth reflecting that a generation or two ago those estimates of the cost of the crops could have been halved and the labour figure divided by four, and yet the returns would have been much the same. A budget which barely balances to-day must have shown a nice surplus then and this change gives a full explanation of why the sheep fold has nearly vanished from our countryside.

Some flocks of arable sheep may show better profits through selling ram lambs for crossing purposes, but Mr. Simmons is content if he has no direct profit, so strong is his opinion that good mutton makes good crops. The arable flock has the great merit that it prevents all the fertility being put into the lower ground about the buildings, to the detriment of the outlying land. The sheep must be taken as part of the economy of the farm as a whole and not costed as a separate item. From the *national* point of view the same doubts do not arise ; the nation is getting meat and wool (and corn) off poor land which might otherwise grow none.

Mr. Simmons favours Hampshires because they mature early and because they are at home on the Downs. Before the war he specialised in fat lambs for the Easter market. The lambs were born about Christmas, but now lambing is later, mostly in February. If the shepherd is asked when the flock lambs his answer is " whenever the weather's wrong. If you lamb at Christmas you probably get snow, but sometimes in February you get snow too, with a bit more kick in it ! " The Downs are very pleasant when the sun shines in summer but are pretty bleak when the wind blows in winter.

Oakhouse Farm has one rare advantage as far as the sheep are concerned as there are two shepherds, and both are young men. Tom, the head shepherd, is 34. His father and grandfather were shepherds before him, and Tom has been with the sheep from the time he could walk. The under-shepherd is 23, and both he and Tom are full time on the sheep, doing the whole job—dipping, shearing, tailing and so on.

There is a most important point involved here, a point that applies to all stockmen. A man must be given the right amount of stock to look after and then, if he is any good, he will develop a sense of responsibility. Nearly all of them will rise to it as long as the master does not tinker about with them. There is great scope for the specialist on a large farm, provided a self-contained unit is made for him and he is given a chance. Mr. Simmons has very strong views on this; he does not keep a bailiff, regarding his type of farming as a team job, with himself as the captain rather than the manager.

By getting their work forward during the week each shepherd gets a half-day every other week-end. This may not seem a large allowance of time off, but it does give some break in the constant tie which deters so many men from taking up shepherding. Theoretically, some sort of shift system might be introduced, but in practice the success of an arable flock depends on having a shepherd whose real interest is his sheep and who does not want just to do his work and get away from it. When it was suggested to Tom that someone else might look after his sheep for one day in the week he did not seem at all favourably disposed to the idea. He said that he would expect to find half of them on their backs next day! It was good to meet two young men so obviously keen and competent as shepherds; better still to learn that Tom had not forgotten the future and that there is another coming on in the next generation.

The milking herd at Oakhouse Farm was started in 1905, being about the first in the district, though to-day dairy cows can be found on many Downland farms. The average yearly yield per cow is now in the neighbourhood of 750 gallons, a very good result with upwards of 100 cows. All heifer calves are

reared but they are culled at all stages—as yearlings, as two-year-olds, and again when they are ready for the dairy. The bull calves are run on for veal on draft cows, so selling for an average of £4 10s. instead of the 30s. they would be worth at a few days old.

There is very little likelihood of Mr. Simmons changing over to open-air milking with movable bails. He has a bias against bail milking: in fact he regards the outside bail as one of the most horrible things ever invented—unpleasant both for the cows and the cowmen. Whatever is urged to the contrary, he insists that cows require individual attention and he is of opinion that if he adopted the bail system his average would drop to something like 450 gallons. As it is, the cows are milked by machine and lie out all the year round, saving labour and keeping them healthy; but the cowshed system allows of individual attention and makes proper rationing possible with plenty of time for them to eat their concentrates.

The cowmen get half a day a week off and one half Sunday in four, that is, five half-days a month. Here again, a shift system might be better in theory, but would be difficult in practice. A herd of cows can never be made into a machine that will respond the same to all people, and anyway at the moment the extra hands are not available. Women have been used with the cows, but dilution cannot proceed far, because men are needed for the heavy jobs. It is often said that for work with cows women are better than men, but Mr. Simmons does not agree with that view. It must be remembered that the women in dairy work to-day are volunteers and therefore naturally keen and good.

In the old days this 1,500 acres of land carried some 900 ewes, compared to 300 plus dairy cattle now. From the point of view of fertility, the larger sheep stock were taking less out of the land and putting more back than the smaller number and the dairy stock. The yields of the cereal crops now are much the same as they were 30 or 40 years ago, but the fertility lost has to be replaced with artificials and potash. For instance, hardly any fertiliser was used for barley, but to-day a normal dressing for that crop would include ½ cwt. of muriate of potash and 2 cwt. of superphosphate.

OUTPUT.—The total value of the sales works out at £10 to £12 per acre and £600 per man, figures which are just about the average of the farms described in this book; this is certainly a very satisfactory result in view of the low value of the land. Expenses are necessarily heavy and it would appear questionable whether, compared with the small family farmer, the margin of profit is commensurate with the investment and responsibility involved. Only intensive farming can justify a labour bill of £7,000 a year, and Mr. Simmons plans to meet it by increasing his sales of animal products to make up for any drop there may be in cereal prices. His philosophy is—more mechanisation and better organisation of labour to produce a greater output, which alone can justify a large labour force.

He thinks that the present size of his farm is just about right. If he had more land the system might become impersonal and standards would begin to go down. He expresses no opinion as to what anyone else can do, but for himself he feels 1,500 acres is the maximum he can direct to his own satisfaction. On the other hand, he feels that if he had less land he could not get a proper layout for full mechanisation.

Asked what effect the war had had on his farming and financial position, Mr. Simmons said: "I think my land is poorer in fertility, but better cultivated. I have better equipment and my stock has improved—that's what I *think*. What I *know* is that I've less cash in the bank!" This may surprise those who think farmers have made a fortune during the war; what they forget is war-time taxation.

Agriculturists have come to expect a high standard of farming from the Downland of Southern England, and Mr. Simmons has developed a system which must surely make that standard possible under any reasonable economic conditions.

The full mechanisation of the corn shift gives cereals a good chance of competing with world prices, and it is balanced by the long leys of sainfoin and mixtures to maintain fertility. The dairy herds provide a sheet anchor, and the methods adopted with the cows, compared with open-air bails, make constructive breeding possible. The arable flock, though

reduced, is still sizable and certainly benefits the land. Whether it is, and will remain, a paying proposition may be a matter of doubt, but in its present competent hands it will have every chance. There are alternatives if the worst should happen and the system has to be abandoned. There is a nucleus of high-class stock of both pigs and poultry, all ready for quick expansion when the Government gives the word.

Success in farming is not only a matter of balance and planning—the personality of the farmer counts for much. It is hoped that this description of Oakhouse Farm will have made it plain that the captaincy of the team is in very capable hands. Mr. Simmons, in the prime of his life, is very quick to adopt new ideas and he has a wonderful facility for incorporating them without jettisoning the good points of older systems. Very few farms can show such a happy marriage between the ancient and the modern as Oakhouse Farm. Mr. Simmons wants to bring money and employment into the countryside, and his well-balanced system is not likely to let down these broad acres in Berkshire, nor the men who work them.

HAMPSHIRE DOWN SHEEP ON MR. SIMMONS' FARM IN BERKSHIRE

CARTING GREEN PEAS TO THE CANNING FACTORY FROM A SILT LAND FIELD ON MR. F. ROCKCLIFFE'S FARM IN NORTH NORFOLK

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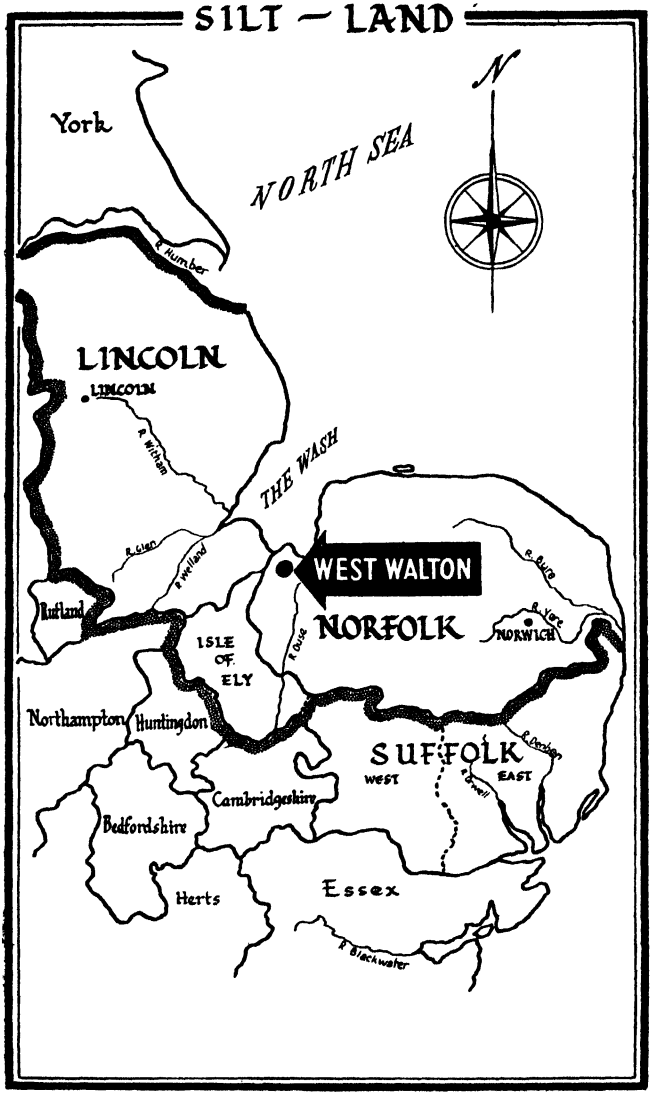
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R. Blackwater

CHAPTER II

RICH SILT LAND ACRES

Lincolnshire silt—farm roads—reclamation from the sea—drainage —depth of soil—potatoes—chitting—cattle as "heaters"—cultivation—acreage payment—three-course rotation—wheat—lodging on Fen soils —yields—clover—grazing seeds—taking three crops—peas—canning—pea harvesting—root seeds—manuring—artificials—stock for making dung—good grass—pea haulm silage—pigs and poultry—horses—permanent labour—women on piece-work—sales off farm.

ALTHOUGH there are other areas of very good land in Britain, for uniform high fertility over a wide area the district in Eastern England around the Wash stands supreme. Potato yields of 17 tons to the acre would generally be regarded as phenomenal, but Mr. Rockcliffe—farming not far from Wisbech—was lifting that weight of Majestics in early September 1935; after the elevator-type of digger had been along a row, there was no soil to be seen because it was completely covered with tubers. Other crops grow with like luxuriance so that farmers on poorer land come to think of the silts and fens as the Garden of Eden.

The true fens have been reclaimed from boggy land, lying below the high-tide level of the sea, by the construction of sea walls, building up the river banks and pumping the water from the dykes into main watercourses. Fen land is black, consisting very largely of humus, and it is very fertile, although the quality of the crops may not be of the best. The silts, which are often wrongly referred to as fens, are better still. They have been reclaimed from the sea itself and are very deep, but not black; drainage is cheaper and yields are even higher than on the fens, whilst quality is generally first-rate—a point of great importance in potato growing.

It is common to speak of the Lincolnshire silts, but this generous land is not confined to that county; some is in the

Isle of Ely, and about thirty-thousand acres are in Norfolk. Mr. Rockcliffe's farm, Hill House, West Walton, about four miles north of Wisbech, is just in Norfolk.

After his school days he was on a farm in Canada for five years and then, returning to England, he became assistant manager on a large estate near Cambridge. After that he rented a grass farm in Northamptonshire, and this was followed by seven years at Christchurch, near Welney, on skirt land—a sort of mixture of black fen and ordinary soil, and generally a very useful mixture too. He came to West Walton in 1921 and in all his wanderings he can never have farmed on better land than he has at present. Lincolnshire silt is commonly rented at £5 and upwards per acre.

The main farm is of 200 acres and is in a ring fence. It is triangular in shape with the base of the triangle running along the River Nene and the apex at the homestead, which is on a public road. There is some inconvenience in having the buildings at the thin end, but there is a cottage and a cattleyard right down on the river bank. It was a serious drawback to the farm that it had only a few yards of road frontage—the point is of great importance where a large tonnage of potatoes is grown because clamps must be alongside a hard road to make riddling and delivery possible all through the winter. Mr. Rockcliffe overcame his difficulty by building a road, half a mile long, down the middle of the farm; he made a foundation with nine inches depth of ragstone and gave it a surface of three inches of gravel. There are now plenty of suitable sites for potato clamps and the farther fields can be reached easily in all weathers. Road construction is an expensive business, but Mr. Rockcliffe is not likely to regret this capital expenditure. War Agricultural Committees have constructed many miles of concrete road since 1939 in the fen area, opening up thousands of acres of fertile land which were previously nearly, or quite, derelict. It is common to hear of old fen droves so soft and rutted that it took two horses to pull an empty cart.

The public road which leads past Mr. Rockcliffe's house and main buildings is on the top of a bank constructed by the Romans in their first reclamation of silt land from the Wash. The farm itself is on the outer or seaward side of

the bank, and the precise date of its reclamation cannot be determined. Apparently, 700 years ago the farm was part of a wide estuary that carried sea-going ships up to Wisbech. Gradually the estuary silted up and the land became a kind of marsh. No doubt as time passed it became marsh grazing, except at high tides, but it is certain that none of it was ploughed before 1830. There is still a narrow strip of 25 acres alongside the River Nene which is only marsh grazing and sometimes floods at spring tides and in the autumn.

Drainage of silt land is not usually much of a problem and Mr. Rockcliffe's farm drains naturally. There are no pumps—they are not wanted. There is a main dyke, with a slacker at the bottom, leading to the river; when there is water to get rid of, this slacker lets it out at low tide. In summer it can work the other way round; the slacker can be opened at high tide and the dyke filled, but by next day it will be empty, the water having soaked into the permeable soil. This natural drainage is in sharp contrast to the fens, where expensive and complicated systems of dykes have had to be dug to lead the water to large pumping stations. There are some pumping stations on the silts, but only for dealing with low-lying areas. At first Mr. Rockcliffe maintained his own drainage, but under the Act of 1930 his farm was included in the area of an Internal Drainage Board to which he now has to pay a drainage rate. The change has been costly to him and it is difficult to see any benefit as far as Hill House farm is concerned, but Mr. Rockcliffe takes the matter very philosophically, saying that over the whole area the change has been a good thing.

The proportion of clay in silt land varies a good deal and Mr. Rockcliffe's land is good strong silt around his homestead, becoming lighter towards the river. Light silt has the advantage that if it has been raining all the morning cultivation is possible in the afternoon, but it soon suffers in a dry summer, while it is much more prolific in annual weeds. The silt is at least 6 ft. deep all over the farm, but it is never ploughed more than 15 inches. Ploughing to a depth of 2 ft., a practice not unknown on some silts, would produce tilth that could not be got solid enough to grow a crop in the first year, and would bring to the surface raw,

yellow stuff without any humus, and that would probably need fully two years before it would grow a good crop. The silt as deposited by the sea is potentially, rather than actually, very fertile. It needs humus before it will grow the stupendous crops of the district. Under natural conditions it starts by growing native grasses and thus gradually accumulates humus—and it is this, with artificial control of the water table, which makes it so outstandingly productive.

In addition to his main farm Mr. Rockcliffe has 40 acres of heavier silt at Walpole, two and a half miles away, and 50 acres of Fen Wash at Welney, which is 17 miles from his home farm.

CROPPING.—The rich silts will grow almost any crop abundantly, and farmers naturally concentrate on high-value cash crops to cover their large rentable value. Before the war the Spalding area specialised in bulb growing, and in the Wisbech area fruit plays a large part on many farms. Mr. Rockcliffe's system centres round the potato, but neither of his two sons is following in his footsteps. The elder one is fruit growing and says he will not have anything on four legs—with the possible exception of a pig! The younger son grows fruit and horticultural crops.

Mr. Rockcliffe himself is not interested in fruit, though he admits that both of his sons are making more money than he is. He grows between 50 and 60 acres of potatoes every year—about one-third of his arable land. In this there is one great danger—the eelworm. Concentration on potatoes builds up a high population of this pest, and there are in the district fields on which potatoes cannot be grown at all because of eelworm, and many other fields where reduction in yield, more or less serious, is suffered. Mr. Rockcliffe is fully alive to this danger, and when the present national need for potatoes diminishes he intends to grow a smaller acreage, using some of the potato shift in growing root seed crops. Another possibility would be to displace some of the potatoes by sugar beet, but he has a great dislike for that crop. He contends that carting the beet off in late autumn ruins the land; such ruts are cut that they can be seen all the following summer. Then, when there is a big acreage of

potatoes the sugar beet has to be left until the potatoes are all off, and so it becomes very late in the season before the beet are cleared.

About one-fifth of the potatoes are earlies, and the main-crop varieties are King Edwards and Red King on the home farm, with Majestics on the stronger land at Walpole. All the seed is Scotch, and it is sprouted in a most intriguing " chitting " or sprouting house.

In the potato area around the Wash there are many glass-houses specially built for chitting potatoes. They are costly to build, and must be heated in cold weather. Mr. Rockcliffe uses the roof of one of his main buildings, but not in the old-fashioned way of doing it in the dark and producing long, colourless, weak sprouts. Both gable ends of the roof are of glass and there is glass half the way up each roof slope, so that there is light all round the chitting boxes. The main point, however, is that the roof has an open floor and cattle are fattened below. In the theoretical working out of rations for fattening cattle allowance is made for the fact that some of the food material has to be burned in the animal's body to maintain body heat, and it is common to speak regretfully of the loss through the dissipation of this heat. Mr. Rockcliffe's system—cattle on the ground floor of the chitting house—avoids this wastage, and it must be very uncommon for part of an animal's maintenance ration to be used for chitting potatoes ! He maintains that the natural heat they get sprouts the potatoes more evenly than the heat of lamps or stoves in a greenhouse.

The potatoes are all boxed before Christmas and if the weather allows they are planted in March. Mr. Rockcliffe is insistent on the advantages of early planting, pointing out that they all die away at the same time at the end of the summer, so that early planting gives a longer period of growth. Women plant the potatoes straight from the boxes, putting them 12 to 14 in. apart in the rows.

Thorough after-cultivation is supremely important for the potato crop. In other districts much foul land has been cleared under potatoes by harrowing down the ridges and raising them up again two or three times ; thorough working also gives adequate mellow tilth to build up a good broad

ridge at the end of the season. Mr. Rockcliffe has his ridges chain-harrowed down and raised up again at least twice and then hand hoed between the plants in the row, and runs the A-hoes between the ridges a time or two during the summer. For dusting against blight Mr. Rockcliffe uses an 11-row duster in the early morning or in the evening, when the dew is on the leaf, and usually dusts three or four times during the season. The dust costs £35 a ton and about 21 lb. are used to the acre; the total cost probably approaches 15s. a time, but he considers that the crop pays for it, especially the Edwards and Red Kings.

The aim is to finish lifting by Michaelmas, but that is not often possible. The Hoover type of lifter is preferred and that can usually be kept working till the middle of October. Taking one year with another the yield averages about 11 tons an acre.

Not unnaturally, Mr. Rockcliffe is critical of the present method of paying for potatoes. He does not like the £10 *acreage* payment and would much prefer a higher price per *ton*; he argues that those who can grow the crop are supporting the others who get a miserable yield on unsuitable land. There is, however, another side to this question. If the Government had asked the growers in the real potato districts to grow all the potatoes the country needed those districts would have been smothered in eelworm and then would not have been able to grow the crop at all. Farmers on unsuitable soils had therefore to grow potatoes, and, as they could not hope for yields such as the silts produce, it seems only fair that they should get part of the payment for the crop on an acreage basis. When they get the opportunity these other farmers will drop the potato crop quickly.

In recent years there have been a few isolated outbreaks of Colorado Beetle in England, though none in the Wisbech area. Mr. Rockcliffe has seen a crop cleared by this pest in Canada. In a few hours it will wipe out a field, although it depends on the weather how quickly it works. In hot, humid weather it will clear a field in a few hours, taking all the leaf and just leaving the stems standing like trees. The Colorado Beetle lays its eggs underneath the leaves and they

hatch out in millions ; wherever the black and yellow striped beetle goes there is devastation in a few hours.

Potatoes occupy one shift of a 3-course rotation on Mr. Rockcliffe's farm—potatoes, wheat, clover or peas. In practice the rotation is not quite so straight as that, since there are one or two fields of root seed crops. Wheat yields are consistently huge, and silt wheats do not generally lodge as the fen wheats, with their soft luxurious growth, commonly do ; in September this characteristic difference in growth was very noticeable in the potato crops, the tops still being quite green on the fens but all died down on the silts. Mr. Rockcliffe expects his wheat to stand up as long as he grows varieties such as Yeoman, Jubilégem or Redman. Two years previously he tried Steadfast but decided not to grow it again, in spite of the fact that he got 19½ sacks to the acre. It was too long in the straw ; fortunately that was a dry season and the crop stood up, but in a wet year it would go down. He likes a wheat with a short stout straw, and he does not drill before November—though he likes to get all in before Christmas. The acreage of wheat does not justify the purchase of a combine harvester, but last harvest one field was combined on contract and a very good job was made of it. Last year was a bad wheat year through lack of summer sunshine, Mr. Rockcliffe averaging a mere 14 sacks to the acre ! His chagrin at such a yield, which on many soils would be something to boast about, illustrates the power of the land. He expects to average 16 to 18 sacks (called "coombs" locally), and as he reckons to sell most of his wheat for seed the financial returns per acre must be such that would make the average farmer's mouth water.

About 20 acres of the wheat shift is undersown with straight broad red clover. Mr. Rockcliffe is strongly of the opinion that the new ley should be grazed in the autumn after the wheat is harvested ; he argues that grazing would make the land firmer and that this, together with the manurial value from the stock, would materially raise the hay yield in the following year. He would prefer sheep to cattle, but he has no sheep, and in general he cannot do this autumn grazing because the land is unfenced. In his view on this grazing in the first autumn he is supported by a single experiment

(no one field experiment can be conclusive) at Cambridge before the war. Red clover plots which were grazed produced more shoots in the following spring than ungrazed plots and, though there was not much difference in yield of hay, what difference there was, favoured the grazing. Then, of course, eating off the top growth would help to check the spread of stem rot.

The clover is cut for hay once, sometimes twice, and after that a generous growth comes for ploughing down. One end of a field was even cut three times in 1944, the other end twice, and in the following year the potatoes were better after the three cuts. Presumably, where the clover was left growing longer more nitrogen was fixed from the air, though it is sometimes hotly argued that it is the clover leaf, which falls to the ground, rather than the clover root, which does the good.

There remain some 30 acres of the wheat shift which are not undersown and on these the next crop is blue peas for human consumption. About half the peas are cut green for canning, a grass mower being used ; the other half are allowed to ripen for threshing normally and are cut by a Leverton harvester. In this there are three torpedoes fitted in front of the wheels of a John Deere tractor ; they part the peas into rows and on the tool bar of the tractor there are three very large A-hoes with blades running an inch or so below the ground surface, undercutting the lot. Weather permitting, 20-30 acres can be cut in a day, and after the swathes have been lying a bit they are threshed by a combine fitted with a pick-up.

Root crops grown for seed are swedes and white mustard. Swedes are sown in the first few days of September and the aim is to horse hoe them once when they are through ; in the spring they are horse hoed both ways and that is all the cleaning they need. No hand singling is necessary, but the crop has to be cut by hand. Mustard is sown in early April and harvested at about the same time as corn crops.

Some stress has already been laid on the tremendous crop yields from the silts, but it must not be supposed that this is all due to the inherent fertility and that these soils have a natural and adequate supply of plant foods. The high value

of the land is largely due to its physical make-up, which enables it to respond generously to fertilizers, both farmyard manure and the so-called artificials. Mr. Rockcliffe takes his full allowance of phosphate and potash, and puts every bit he can spare on his potatoes. In this he is helped because he needs no fertilizer for his wheat, and the small allowance for that crop helps to swell the dose for the potatoes. He is also a firm believer in muck, which he contends is essential if he is going to keep his land in condition; as he expresses it—"We simply keep stock to feed the land, to convert the straw into muck to grow potatoes. I feed bullocks at a loss to do it."

STOCK.—There are cow standings in the buildings and there used to be a fair-sized dairy herd, but the land is not dairying land at all. It is too good. It is meant to grow crops—especially potatoes—and apart from the marsh and wash land there are only 11 acres of grass, and that is next the main buildings. And lovely grass it is. In the middle of the last century a very large proportion of the silt land was grass and it was a famous fattening district. No doubt in those days farmers would have said that it was a shame to plough it up, but very few farmers of to-day would favour putting silt land down to grass. At the present time milk has such high priority that it seems almost sacrilegious to claim that any land is too good for dairying, but in normal times it is on the average to good land, rather than on the very cream of our soils, that cows have played their greatest part.

Mr. Rockcliffe still has 7 cows and a Hereford bull. He buys week-old calves—mostly half-bred Herefords—and in all rears 25 a year, eventually selling them fat. In the summer everything over 18 months old is sent away to the 50 acres of wash at Welney, the younger ones being kept at home. In the winter there is a yard of stores down by the river on the home farm, treading down straw and running on the 25 acres of marsh grass, except for the odd times when the marsh is flooded. The bigger ones come into the main buildings where there are two yards; some are tied up for the last six to eight weeks and it is these which act as heaters for the chitting potatoes.

Plenty of hay, straw and mangolds are available for winter feeding, and during summer pea haulm is carted back from the canning factory and a stack silo is made. Cattle are very partial to this silage, and do well on it. This practice of ensiling the pea haulm is a great advance on the wasteful procedure of ploughing it into the soil. These foods, together with 3-4 lb. a head a day of crushed tail and other corn, make a full and balanced ration possible for the fattening cattle.

Besides cattle there are a few pigs and 200-300 head of poultry—ducks, geese and hens. The only other livestock are horses, of which there are five for work and ten young ones growing up. Around the Wash they are very fond of horses—it costs little to breed them and not much to rear them, and what they fetch when they are sold comes in very handy.

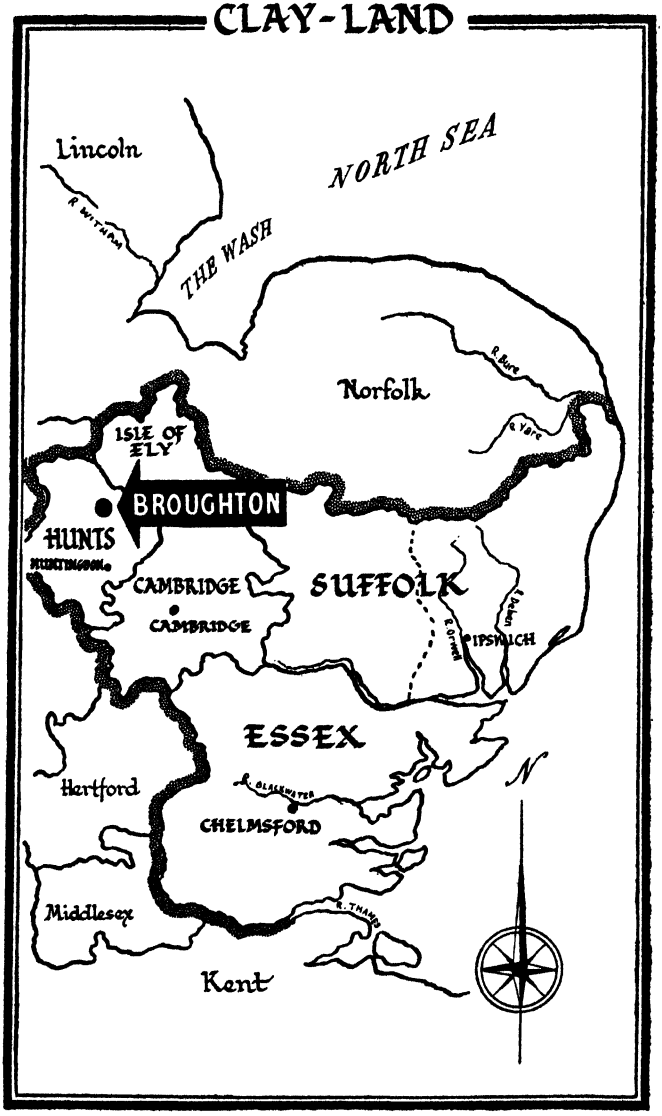
At first sight it would appear that the head of stock is low for a total of 86 acres of grass land, but the 50 acres of wash are unsuitable for winter grazing. In some years that grazing will let for £5 an acre, but one year in six or seven it gets flooded and cannot be used at all. The washes run alongside the main river; they take the flood water and hold it until it can be let out to sea, so saving the arable land from inundation. Thus, wash land is simply a sump for the Midlands, and if there is a wet summer the water comes down and floods them. It may be the middle of June, or even July, before the water leaves the wash, and when it goes it leaves mud on top of the grass, making it totally useless for that year. If the 50 acres at Welney are discounted because of the flood risk, the livestock are adequate for the grass acreage, especially as there are usually a few more head than have been allowed for, since Mr. Rockcliffe likes to do a bit of dealing.

Staff and Returns.—The farm has three tractors and a permanent staff of seven men and four women, but there is also a lot of casual labour. Casual labour cannot be avoided where there is a large acreage of potatoes, and a gang of 15 is needed for two or three months in the year. Women do a lot of land work in the district, and most jobs are paid for

at piece rates. Women often earn 25s. a day picking potatoes at 6d. a bag, but they only do it by working really hard—it suits them and it suits Mr. Rockcliffe!

Farming returns are always speculative, and nowhere more so than on the silts and fens. Total receipts on Mr. Rockcliffe's farm vary up and down quite a lot, but over the last few years the total takings have come to something over £10,000 a year. This gross figure works out at about £40 an acre, which is nearly four times the production on most other farms in this series. The rental value of silt land is very high, but its capabilities warrant a good rent. Making allowance for the casual labour it appears that the total sales come to roughly £700 per man employed—a figure slightly over the average. This type of farming calls, of course, for heavy expenditure, and the difference between the £700 and what the man actually earns does not appear very large to cover what must be heavy outgoings—and, it is to be hoped, to leave something for Mr. Rockcliffe.

This farm is unique among the eleven dealt with in this book, in that livestock play a very small part. It is true that they are valuable to convert straw into muck, but they cannot be rated higher than ancillary to the main farming system. High-priced land demands valuable crops to exploit its natural fertility. For this, potatoes are Mr. Rockcliffe's choice. Other silt-land farmers may go in for fruit, or bulbs; but Mr. Rockcliffe does not seem drawn in either of those directions, though he has a good sideline in root seeds, whilst peas and wheat are likely to remain profitable for a few years anyhow. It really is a revelation to see the marvellous crops on the silt for the first time—it evokes wonder at what other farmers are doing scratching about on poor soil.


CLAY-LAND
Lincoln
NORTH SEA
R. WITHAM
THE WASH
R. Bure
Norfolk
R. Yare
ISLE OF ELY
BROUGHTON
HUNTS
HUNTINGDON
CAMBRIDGE
CAMBRIDGE
SUFFOLK
R. Orwell
IPSWICH
R. Stour
ESSEX
Hertford
R. BLACKWATER
CHELMSFORD
N
Middlesex
R. THAMES
Kent

CHAPTER III

A CLAY LAND FARM

Clay land—heavy cost of farming—influence of tractors—Mr. O. K. Peacock's farm—drainage—labour—crop rotation—fallow—beans—sugar beet—wheat and barley—binder v. *combine—crop yields—muck—wild oats—calf rearing—dual-purpose Shorthorns—breeding calves—horses—sales—production figures—the future.*

THE clay lands of England cover a large acreage and present something of a problem. They are very difficult and expensive to work, but in the right hands they will give yields that would be regarded as very high in nearly all countries of the world, though generally only moderate according to British standards. In the old days this land used to be described by farmers as three- or four-horse land, in reference to the number of horses needed to pull a single-furrow plough. This compares with the two horses required on light land, and of course the same relation applies to the other tillages, which, in addition, must always be limited on clay to the days when the land is reasonably dry. It was on heavy land that steam ploughing tackle really earned its keep, both by providing adequate power and by avoiding the compaction of the soil by the hoofs of horses.

During the depression in the 1930's the value of clay land fell to a very low level. Rents were often nominal, whilst some heavy farms were sold for as little as £5 per acre. Heavy tractors, however, and particularly tracklayers, have brought a change and made this land a much more promising farming proposition; by their aid very fine crops have been grown during the war, and heavy land has played its full part in feeding the country. The advantage is not merely that of power with a minimum of surface compression—with heavy tractors full use can be made of fleeting spells of fair weather. On clay land a farmer needs to be completely master of his

work so that he can be early in his tillage and seeding; adequate power gives him this mastery.

A TYPICAL FARM.—College Farm, at Broughton in Huntingdonshire, is typical of the clay land in the Eastern Counties and East Midlands. The occupier is Mr. Peacock. He has a real love of the land, and is gifted with a quickness of thought and action which are most impressive. More than that, Mr. Peacock is a real glutton for work. In the neighbourhood he is known by his initials—O.K.—and there is something very appropriate about this. He entered the farm, as a tenant of Lord de Ramsey, at Michaelmas 1938, having farmed with his father or on his own on Huntingdonshire clay ever since he was demobilised after the 1914-18 war. The farm comprises 380 acres, only 10 of which are permanent pasture, with another 50 of long ley. Eighty-five per cent. of arable is well over the usual proportion in the locality, but even in the depression, before Mr. Peacock had it, College Farm was largely in tillage.

The soil is heavy clay, but it is not bad stuff by any means. In olden times a lot of Huntingdonshire, including this farm, was under forest, and the leafy remains then accumulated still help to lighten the land and make it easier to work; it is known as "woodland" clay, and is less livery and not so cold as some clays. It is land that holds a mole well—a great advantage, as there is nothing to compare with mole drainage in improving heavy land at relatively little cost. Tracklaying tractors have made the mole drainage of large acreages feasible, and it is the common practice in the district to aim at mole draining every six to eight years—every time a field carries seeds and before it is bastard fallowed. On this really heavy land there is much to be said for moling when the land is dry, so that the maximum bursting effect on the soil may be obtained. College Farm has all been drained and this had undoubtedly contributed to the really magnificent crops it grows.

The house and main buildings stand two fields back from the public road, and a new farmhouse has been built near the entrance to the farm from the road. There is one other, smaller, set of buildings to serve the farm, which is compact

MR. O. K. PEACOCK, OF BROUGHTON, HUNTINGDONSHIRE, IN HIS STOCKYARD. HIS CATTLE ARE MOSTLY CROSS-BRED DAIRY SHORTHORNS

THE FAMILY LENDS A HAND IN CORN-CARRYING ON MR. PEACOCK'S FARM, WITH HIS WIFE DRIVING THE TRACTOR

and in a ring fence, with nothing more than gentle slopes. Mr. Peacock lives in the new house and his son in the old one. Generally there are six other men and two land girls, but during the 1945 harvest two of the men were dismissed. Mr. Peacock seems able to imbue his whole gang with his own zest for work, and anyone who does not conform to his high standard is quickly packed off, even though it is at the busiest season of the year. The two land girls did every job that came along and were fully equal to men, but now there is only one, since the other married Mr. Peacock, Junior.

Poultry come under the care of Mrs. Peacock, who also drives a tractor when required, and some casual labour is hired for summer hoeing and autumn beet pulling. Thus the labour force is approximately equivalent to 11 full-time men, or about three men per 100 acres. This is probably near the average for the country, but it is low in the light of the very high proportion of arable crops; the surprising thing is that the regular hands, suddenly reduced by two, could cope with the really magnificent harvest that College Farm carried.

CROPPING.—The old Huntingdonshire rotation was a four-course one and gave a very restricted system of farming, with a quarter of the land under bare fallow. In the best practice the fallow was followed by spring barley, as this gave a chance to kill seedling weeds, which may appear in large numbers at the end of a fallow. After the barley came winter beans and finally wheat, which, in fact, often also took the place of barley. That rotation is now definitely a thing of the past, though custom still requires a quitting tenant to leave a quarter of his land fallow.

The biggest recent change in rotations is due to farmers who came off the market-garden soils of Bedfordshire and showed what heavy land could do in the way of growing potatoes and Brussels sprouts. When the land has been built up, heavily manured and well cultivated for those crops, it gets strength in it to grow any amount of corn; the whole nature of the land is altered. In any event, with the help of artificials and the combine drill two white straw crops running (occasionally even three) can be grown, and

the College Farm practice is to take these two crops and then follow them with seeds, beans, sugar beet or some other root crop.

Few experienced heavy-land farmers deny the value of a bare fallow on clay, and Mr. Peacock used to have 40 or 50 acres, but during the war the War Agricultural Committee would not allow it. Here again the heavy tractor is an important factor, diminishing the need for a bare fallow by its ability to cover a large acreage in a day or two, thus taking advantage of fine weather to get a quick cleaning effect. In place of bare fallow a bastard fallow is taken after the one-year seeds ley, which is largely trefoil; a cut of hay is taken and then the field is broken up quickly. After ploughing it is cultivated a time or two and then the muck is carted on and ploughed in. This is preferred to applying the muck before the first ploughing, as then it tends to dry out and " push " in front of the plough.

In 1945 there were 28 acres of beans and they gave promise of yielding well—4 to 5 quarters to the acre. They were drilled in rows 21 in. apart and were horse hoed three times in spring, as well as being harrowed each way. It is good to meet someone who does not think his bean yields are lower than those obtained in the old days. Denys Bullard, of Huntingdon, gave his opinion that this idea had got about because yields of beans have not improved during recent years like those of other crops. In the past it was always a favoured crop, receiving hand as well as horse hoeing—and, of course, being mucked. The modern treatment, using fertilizers, has not improved on that and the plant breeder has not been able to do much about it.

Doing the land well and draining, so that early cultivation and seeding are possible, give the best chance of success, but many Huntingdonshire farmers, growing a black crop to prepare for wheat, have gone over to peas—often blue peas—instead of beans. A fair acreage of beans, however, has put a farmer in a very strong position during the war, as he could, with his oats and tail corn, make up a balanced ration for his stock with home-grown grain.

The sugar beet area is about 20 acres, and that crop, too, was a very useful one, but Mr. Peacock does not look on it

with great favour. It holds up the work of the farm at two most important seasons. In the spring one has to be working the beet land and sowing that crop just when the land has dried and the corn crops should be cleaned. The singling starts and labour has to be taken off for that at hay-time. The worst time of the year, however, is in the autumn, when beet pulling clashes with drilling—a lot of wheat goes in late because the lorry has come for so many tons of beet. Sugar beet is a crop that shows good profit on paper, but with its heavy calls on labour at the critical seasons it can be an infernal nuisance; on light land, which can be worked at almost any time, it is a different matter, but on clay it is possible to lose as much on the wheat roundabouts as you make on the beet swings.

It was a real pleasure to walk round College Farm in late August, even though Mr. Peacock's kindly offer to provide a fork for anyone wishing to join his energetic gang gave a sense of guilt. Apart from the beans, the barley looked like yielding very heavily, but it was the wheat crops that were most impressive. Yields up to 8 quarters to the acre have since been threshed—that is, from land much of which went down to grass between the wars because economic conditions made wheatgrowing unprofitable.

Until very recently there has been no tracklaying tractor on College Farm, but in favourable weather the Fordsons have worked all the hours of daylight. Mr. Peacock holds the view that there is nothing wrong with clay provided you hit it hard and get at it early—"a clay-land farmer can't go to sleep like some of the others do," was the way he put it. With a tracklayer, cultivations will always be well in hand and it may yet be possible to compete with the prairie wheat grower, especially with further mechanisation in the form of a combine harvester.

Denys Bullard thinks there is a great future for the combine on clay land and sees no difficulty in dealing with heavy crops, himself having combined one of 7½ qr. to the acre. Mr. Peacock does not like combines at all, his opinion being that they leave too much work when they have done; the straw can be picked up, but there is the cost of baling it and carrying it about. By his present methods his wheat stacks

are up against the yards where his cattle are and the straw goes straight off the drum into the cattle. The extraordinary thing is that with the large corn acreage and such beautiful crops all the straw is wanted, and during the last year he has even bought straw. The idea of chewing up the straw left by a combine with a disc harrow and ploughing it in to maintain fertility without having to cart muck merely evokes Mr. Peacock's scorn. He does not think the amount of straw his land grows *can* be ploughed in, and anyway he is not at all frightened of the muck cart. He does the job with home-made trailers which take as much as five or six of the old-fashioned horse carts. He buys the chassis of an old lorry and gets the local blacksmith to fit a drawbar. It is then brought home behind the car and he and his son build on the body in the winter evenings. With solid bodies and fall-back ladders these trailers do all the carting jobs and they will take 25-30 quarters of wheat to the station.

On really heavy land there is nothing to beat muck. If artificials alone are applied year after year the land gets sad and livery, whereas with regular mucking it breaks up and is much easier to work. It is no use arguing with Mr. Peacock that the many handlings of the straw may make muck uneconomic. His reply is : " If my land requires humus and I want a beef steak, I don't see how we're to get them without muck and cattle," and he intends to go on until somebody stops him. Not that he neglects the artificials—he spends between £500 and £600 on them, sometimes more, and does not find they harm the land at all if it is full of muck.

Where such heavy crops are grown, where beans and roots are properly cleaned, and where regular bastard fallows are taken, it is only to be expected that the farm is clean. It certainly is, but, as frequently occurs under good farming, the wild oat is a serious problem. When Mr. Peacock first went to College Farm it had wild oats all over it and two fields are still bad. All sorts of methods of control have been tried. Spring wheat has been cut for hay and after that there did not seem to be any wild oats—until the field was ploughed, when they appeared apparently as thick as ever. Tares have been grown to smother them, and peas have been taken off early before the wild oats could ripen their seeds ;

they seem to flourish in a sugar-beet crop. There is enough seed in the land to last a lifetime. It has gone down the cracks and is pretty certain to be ploughed up some day. It is like most other weeds, you have to keep at it on every possible occasion—after harvest and before drilling in spring, keeping at it with cleaning crops and getting at it with early peas or some other crop that can be mown early. There is no one single remedy, but on College Farm mastery of the wild oat is gradually being gained.

STOCK.—There used to be a milking herd of 22 cows on the farm, but milking was given up in the second year of the war. Mr. Peacock came to the conclusion that he could not do two jobs together. He used to put in so much time in the morning milking the cows that he was neglecting the work on the land. If he did his full day on the land he found at the end of the day that the cows had still to be milked and he and his son, when he was at school, have milked 22 cows after ten o'clock at night, with Mrs. Peacock carrying away the milk, pailfuls at a time. It seems a pity that this farm, which does grow food to make up a balanced ration for cows, should have gone out of milk production, but Mr. Peacock's control is very personal and he is not content to leave important work to others. Of course, the ready money provided by a daily output of 70 to 75 gallons must have been acceptable, but, as with sugar beet, he managed to live before he had that income and he is perfectly certain he can do without it.

The alternative policy that has been adopted is to rear calves and sell them out at about two years old for someone else to fatten. Six cows are kept but the calves do not suckle them. The calves are bucket fed for about three months, although from a month old they nibble a bit of dry stuff—rolled oats and a few calf nuts.

About 40 calves are reared in a year and there has been difficulty in finding calves of the right type. They have been obtained from anybody who had a milking herd of dual-purpose Shorthorns, but the ill effects of the very common tendency to abandon dual-purpose stock in favour of more milky types have certainly been felt. Denys Bullard is not

very sure that breeding pure beef cattle and rearing them at the rate of one per cow is going to be a profitable business in the eastern part of the country, where there is so little grass and where cattle have to be kept in for a good part of the year if they are to make all the muck that is wanted. If more than one calf is to be reared per cow, where are the others to be found if all your neighbours are going all out for milk? This leads him to the weighty, but rather doleful conclusion that the best argument for dual-purpose cattle is that "you want your neighbours to keep them rather than yourself." At the present time it is the overall national economy, not that of the individual producer, which demands dual-purpose cattle. Of course, these cattle give their owner two chances to compete in an uncertain future—as Mr. Peacock says: "We want a bellyful of beef after the war. We don't all want milk—that's plain English. There's a terrible shortage of beef cattle just now."

If Mr. Peacock cannot buy good calves for rearing he will have to breed more, and he has already taken the necessary steps. He has paid 75 guineas (a good price for a bull for this sort of a job) for an Aberdeen-Angus bull, and intends to keep the heifers he breeds. This can make the farm self-sufficient in regard to calves, as the more beefy heifers can have their calves taken away from them at birth for rearing by the more milky cows, the beefy animals being sold fat.

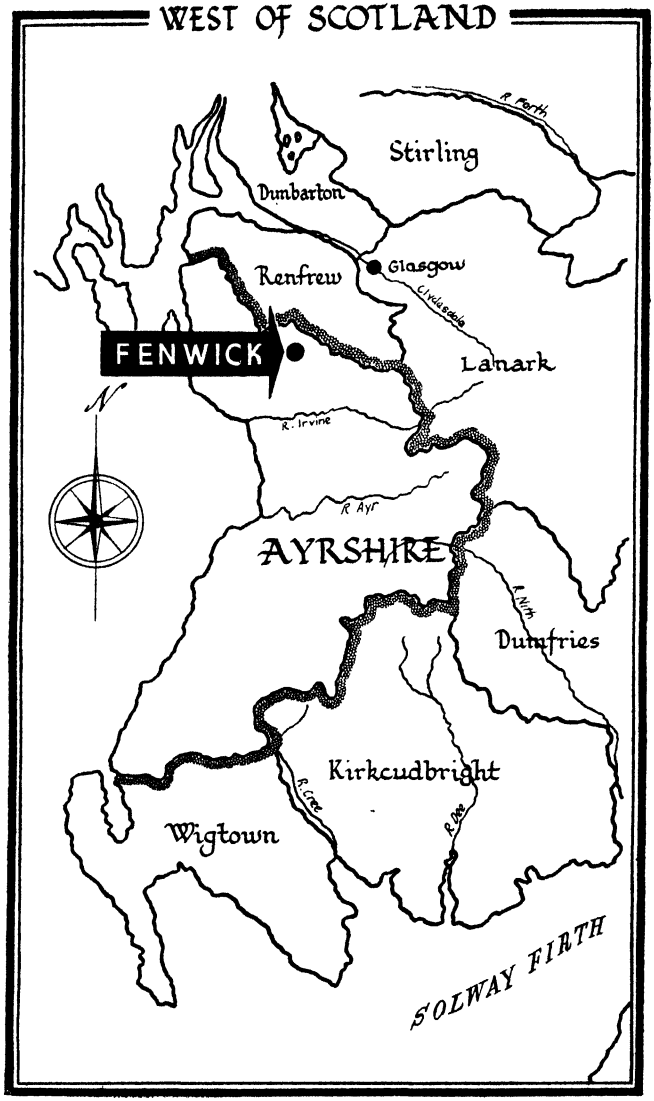
The only other stock that are kept are horses, with which Mr. Peacock likes to try a little speculation, though his son hates the sight of them! For nearly all their time these horses lead a gentleman's life, being out at grass in the summer and in a yard for the winter, but they are available for drilling beet and are a standby for working the land if the weather turns wet. Nowadays one often takes a horse straight out to work without any long period of breaking.

OUTPUT.—It is a difficult thing to say what the total sales come to—what is true of one season would not be true for the next. However, 94 acres of wheat, 80 of barley and the sugar beet and peas should give total crop sales of about £6,000. To this can be added just about another £1,000 for the sale of cattle and an odd horse or two. The £7,000 has

to cover a lot of expense, and with barley at 80s. a quarter and with the reduced acreage payment for wheat, there cannot be so very much profit left out of the clay-land farming. The total production works out at between £18 and £19 per acre, and this figure will be compared with similar ones to be obtained from other farms; it may be said at once that it is above the average. Taking the labour force as equivalent to eleven full-time men, the production per man is £640, just about the average for these farms. These rough estimates show that Mr. Peacock has built up a system which employs labour efficiently and makes heavy land highly productive.

In the drier parts of the country clay is not bad stuff to farm, and it would be a thousand pities if corn growing had to be given up on it—to see College Farm at harvest time is to be convinced that it ought to keep on growing corn. It would be a tragedy if it were all to go down to grass, although after the intensive corn growing of the war the land would benefit from some increase in the acreage of long ley. The farm is well suited to stock rearing, and the new system of breeding and rearing calves bids fair to succeed; this can easily be supported by a flock of grass sheep as more leys are established.

The future of clay land is an interesting subject for speculation. Is a high proportion of grass, preferably long ley rather than permanent pasture, inevitable, or will track-laying tractors succeed in keeping a large proportion in arable crops? There will undoubtedly be great changes in the next few years, but one thing is certain—whatever changes lie ahead, Mr. O. K. Peacock will be fully capable of coping with them.


WEST OF SCOTLAND
R. Forth
Stirling
Dumbarton
Glasgow
Renfrew
Clydeside
FENWICK
Lanark
N
R. Irvine
R. Ayr
AYRSHIRE
R. Nith
Dumfries
Kirkcudbright
R. Cree
R. Bladnoch
Wigtown
SOLWAY FIRTH

CHAPTER IV

HOME OF THE AYRSHIRES

Ayrshire breed origin—hard conditions—Ayr Derby—"Yeld" stock and "milk" stock—milk recording—Black-faced ewes—milk for Glasgow—imported feeding stuffs—wheat at £4 5s. a ton—home-grown feeding stuffs—lower milk yields—silage—kale—oats—hay—Timothy—liming—reclamation—drainage—labour—sales off farm—production.

AYRSHIRE cattle have come south in large numbers during recent years and now their cock horns are a common sight in nearly all English counties. Testing for tuberculosis has certainly had a lot to do with this, because our Scottish friends were quick off the mark and cleared large areas of all reactors; in consequence it is easy to find T.T. Ayrshires and this has weighed heavily with English farmers setting out for attestation—though of course the breed has other merits that attract the southern farmer. The milk yield, in relation to the weight of the cow, is very high, and hence production is efficient. The butterfat percentage is also very satisfactory. Ayrshires are renowned for their finely shaped udders, and though there have been grumblings that the teats are unduly small this tendency has been corrected. Ayrshires have proved very adaptable to all sorts of conditions and, being purely a dairy breed, the cows are probably more reliable as milkers than dual-purpose animals.

The origin of the Ayrshire breed is rather obscure, but there is reason for saying that the improved Ayrshire was started at Dunlop in that county. Aiton, publishing in 1811, remarked that the improved brown and white breed became fashionable in 1778 in the parish of Dunlop and Stewarton, and from there spread over Ayrshire. The brown and white colour was derived from imported cows, the Dutch, Teeswater and Lincoln breeds being mentioned. Before improvement the native cows were generally black

with a few white markings, and as far as can be ascertained were rather akin to the present Irish Kerry. It is doubtful if any Channel Island blood was introduced. Improvement of the breed coincided with the great advance in Scottish agriculture between the '45 Rebellion and the end of the eighteenth century.

The home of the Ayrshires is not a land of sheltered valleys and luscious pastures. It is boldly undulating and very windswept, with no shelter from the Atlantic, so that hedges are gnarled and twisted. The soil is sticky and there are great stretches of moss with the burns running angrily full. It is a hardy place and it rears good cattle and good men, who thrive all over the globe ; unkind people say that if you can survive Fenwick—about 18 miles south of Glasgow—then any other place is better !

As a nursery of dairy stock the area is unrivalled, growing the typical Ayrshire, fine of bone and horn, of modest weight, easily kept, and with great milking powers. The Fenwick moors do not conduce to coarseness, and in Scotland they lay great emphasis on fine bones for all stock. In that area there is a tradition of good farming, farming that has been a dour struggle against climatic conditions and has triumphed. It is often said that it takes good land to make good farmers, but if that is a rule Mr. Willie Dunlop is a notable exception to it. His name is known wherever the Ayrshire breed is known, and he lives about two miles from Fenwick, at Townhead of Gree, one of the highest farms in the country. In Scotland they have a very pleasing custom of referring to a farmer not by his own name but by the name of his farm ; thus Mr. Dunlop is addressed simply as " Gree."

He is the only man who has won the Ayr Derby six times, or who has won it for three years in succession. This event has nothing to do with horse racing. It is the Blue Ribbon of the Ayrshire breed. To enter, a heifer has to be three years old, and she is judged on appearance for the best-looking heifer in Ayrshire that year. A heifer that can win the Ayr Derby can win anywhere. It was the ambition of Gree's father to win this Derby, but he never did, though he was the breeder of a heifer with which Gree won in 1916. Gree's other victories were in 1929, 1931, 1937, 1938 and 1939,

and the photographs of the six winners are all prominent in his dining-room. The pictures show them to have been beautiful heifers and to the initiated their names—Bonnie Jean, Mary Morrison, Highland Mary—proclaim that Gree is a great admirer of Robbie Burns. This, of course, is Burns' home county, where he farmed and is reputed to have sold the highest-priced Ayrshire in his day (£6). Burns farmed Mossgill, in Ayrshire, and Ellisland, in Dumfries—" God riddled the haill o' creation and flung the riddlings on Ellisland."

At the beginning of the present century there was a bit of trouble among the Ayrshire breeders, in fact a bitter feud between two factions. The rivalry was between the " milk-stock " and the " yeld-stock " men, yeld being the word used to describe bulls and empty heifers, while cows and heifers in calf or in milk are referred to as " milk stock." Yeld-stock men bred solely for appearance of body, their methods too often resulting in big bones, big horns, and strong, wiry hair. Milk-stock men bred chiefly for a well-balanced vessel and well-placed teats.

The yeld-stock breeders were smart men and clever propagandists, and when milk recording started they quickly allied themselves to the movement and cleverly jockeyed their rivals into the false position of apparently being opposed to milk records. The feud was at its height in the early 1920's and even culminated in a " New Show " ; but this was a sickly effort from birth and quickly died out before the " new cow " was established. Some people argued that only an angular or ugly beast could be a big producer, but special show classes for milk-recorded animals proved that to be all nonsense. The bitter days of controversy are now past and, though there may still be a few smouldering embers in isolated places, Ayrshire breeders are a united happy family working for the general good of the whole breed. Gree watched that feud from a semi-detached position ; to him it seemed stupid, but it fired him with the ambition to breed beauty and utility in one and the same animal.

His father was one of the old school, a keen shower, and one of the worst fads of the show yard at that time was small teats. When he was a lad Gree had to take his share in the

milking and as he belonged to a football club who played their games in the evenings he fretted at the long time it took to milk cows with small teats ! He soon made up his mind that small teats were a pure fad and so, surprisingly enough, football played a part in the evolution of the Ayrshire breed.

One of the prime reasons for the success of dairying in Ayrshire was that the farmers there were the first people in Britain to feed accurately for yield, the first British milk-recording society being at Fenwick. The late John Speir, of Newton, went to Denmark and came back with the idea of milk recording. He and James Dunlop, of Midland, fired the parish of Fenwick with enthusiasm for the new idea and dairy farmers owe a big debt to them. The same two men were also the first in the district to test for tuberculosis.

The typical north Ayrshire farm is small, about a hundred acres. Gree has three farms totalling 412 acres, but about a quarter of that is very rough, 50 acres being heather and another 50 acres no more than rough grazing. There are 160 acres of Townhead of Gree where he lives and where the house has been largely rebuilt and the buildings considerably improved. At another farm, adjoining Townhead land, the cows are milked, and here the cowsheds have been renovated to conform to the high Scottish standards. Where cows lie in during winter rules have to be strict, but inspectors have their fads and there are farmers who think some inspectors are too fastidious. The third farm is Gree Law, which marches with the other two. The buildings there are rather remote and are almost derelict, but it was interesting to see there a cowshed built in 1860, unused now but with concrete standings, gutter and so on. It was the early model of what is now required for winter milk production, and testifies yet again to the pioneering spirit of these Ayrshire farmers.

The rough land is on Gree Law and before the war a flock of black-faced ewes was carried ; there were 150 to 200 breeding ewes, and lambs were usually bought at the back end. The rough land was just what was wanted for the sheep, although they were not limited to that, as rape was grown for them and, after that, very fine grass could be grown.

During the war, of course, sheep had to be abandoned,

every acre and all home-grown food being needed for the dairy herd. Now the rough land serves to carry the heifers for some months of the year. When the supply of feeding stuffs improves Gree intends to go back to sheep, but not to the same extent as previously, because the head of dairy stock has risen. At the present time the herd (now thoroughly established and numbering about 60 cows) is the sole source of income, which is quite typical of this district of small dairy farms producing milk for Glasgow. Where there is rough grazing there may be sheep, but it is milk on which these farmers rely for their livelihood.

In the old days a lot of the milk was made into butter and cheese, the buttermilk being retailed in Glasgow for baking and for porridge. The whole milk was churned in 200-gallon churns, using horses or steam to turn them, and the butter was sold four days a week in summer and three in winter. Retailing the buttermilk was no light job. It meant leaving home at 4 o'clock in the morning with a pony and milk cart and not getting back till 3 o'clock in the afternoon. The milk barrels held 60 gallons each and were mounted on a specially built spring cart on which they could be moved fore and aft by a screw to give balance. The horse had to be walked all the way into Glasgow but he could trot back.

Gree finished with buttermilk in 1915 and then sold whole milk in the city ; this had to be in even earlier as the shipyard workers demanded it at 6 a.m. so that they could have it, still warm from the cow, with their morning porridge. The distance, however, was too far. Fenwick was on the fringe of the district where the farmers sent their milk individually to Glasgow, and it is not surprising that one of the first creameries in Scotland started there. A private dairyman bought an old mill, collected the farmers' milk there and drove it into the city with horses and, later, lorries ; finally the dairyman was bought out by the farmers, who formed the Fenwick Farmers' Creamery at Waterside. That went on till the days of the Milk Marketing Board who now collect from the farms.

STOCK.—Before the war Gree bought a lot of concentrates.

Indian maize was fed heavily and flaked maize proved very good for the sheep. Ground-nut cake was also used in quantity, though not much linseed, which was obtained only for the young calves. At the Highland Show in 1939 Gree bought 10 tons of wheat for feeding at £4 5s. a ton, and he found that the best way to use it was cooked and flaked. He says that he was inveigled into buying that lot by a cup of tea in the merchant's tent on the showground. It must generally take more than a cup of tea to get a Scotsman's order!

The purchase of that wheat would have been economic then; to-day it sounds fantastic. There are few windfalls like that for the dairy farmer in war-time, though Gree was greatly helped through one winter by potatoes put back on the market at £3 12s. 6d. a ton, and recently he has used brewers' grains (or draff), and that is proving very useful in producing milk. The change-over to war-time feeding has cut the milk records by 40 per cent. His cows used to average 1,000 gallons, and the heifers about 800. Now the average is not 700 gallons for the cows. There just is not the food to bring the stock into condition in spring; if a heifer starts off badly at the beginning of her lactation the loss can never be made up and big yields cannot be obtained. Before the war people near big ports could buy imported food cheaply and they became real specialists in feeding. Their milk yields were tremendous, but of course they were in a vulnerable position and the war hit them much harder than arable farmers. It may be that the latter had some leeway to make up, but it is worth commenting that there has been an equalisation of yield over farms as a whole, and that the arable man has had an easier job in the war years.

CROPPING.—The land at Gree is too strong, the elevation too great, and the rainfall too heavy for successful arable cropping. That is why silage has had to play a big part in making good the deficiency of imported food, and particularly of protein. Green crops have difficulty in competing with the weeds and it is uneconomic to grow beans and peas. Gree's silage pit is near the cowsheds. It holds about 100 tons of green stuff and has been very cunningly made.

All that has been done is to build a retaining wall 10 feet from the side of one of the sheds, running parallel to it, and to scoop out the area between the wall and the shed to a depth of 5 feet, and put drains in. This pit silo takes up no room to count and the silage is all handy for winter feeding.

Last year's silage was the best ever made at Gree. The grass was about 6 in. high and was cut in the morning for carting in the afternoon, so there was not much wilting. The cut material was collected by a horse rake going along behind the mowing machine. As wilting is not considered important a Cutlift would be a good investment, since silage has probably come to stay on farms like this. Molasses was sprinkled on at the rate of 2 to 2½ per cent. of the weight of green stuff, and the pit was constantly rolled during filling by driving the tractor and trailer over it.

Cutting for silage helps the new leys, as it is a way of topping them. In a wet district like Gree, if cows are put on to first-year grass they are apt to poach it badly and ruin the pasture for years to come; the practice is, therefore, to cut for hay the first year and to top for silage in June of the second year, grazing after that. Autumn silage is not much good; where silage is the only succulent food, and an important source of protein, quality is supremely important.

The only arable crops that could be grown for the cows in 1945 were 28 acres of oats and one acre of kale. This quantity of kale seems very niggardly for 60 cows, but some Ayrshire farmers have lost a lot of money trying to grow kale. It is a very successful crop on the better land near the coast, but in north Ayrshire cold land and exposure prevent the crop making up for what must always be a late start. The land is sour at Gree and is being dressed in rotation with four tons of ground limestone to the acre.

Before the war the only arable cropping was 8 acres of oats, but now the War Agricultural Committee require 30 acres to be ploughed every year, and quite satisfactory crops are being grown. The great difficulty is harvesting—in 1930 about a third of the oats grown in the district was never harvested at all. Since then the tripod system has been adopted and this has saved many crops. With oats, as with hay, small " rucks " have to be built in the field. The corn

is built around tripods, a step ladder being used to get the rucks 8 or 9 feet high; when the rucks are built they are tied round with twine and coir rope and left to stand for a few weeks.

The oat crop is really a by-product of grass renovation. Leys need renewal every few years and the practice is to plough them, take oats for one year and undersow to take the field back to ley in the following year. If more than one white crop is taken there is considerable risk of failure in the reseeding; where the field is only ploughed once ryegrass takes readily, but after twice ploughing a hard winter tends to throw out the ryegrass. Leys are cut for hay on the green side and the aim is to have all in the rick by the end of June.

The timothy pastures of Ayrshire are renowned, and it certainly is impressive to see the hay crop standing in the field rucks, which seem to be all over the ground. The conditions, apart from the acidity, must be just right for timothy. In 1928 Gree had one meadow where no timothy could be seen, but after heavy dressing with lime it quickly re-established itself and has persisted ever since. These timothy pastures seem to be more partial to lime than to slag, and they benefit from farmyard manure, though not, in Gree's opinion, from artificial nitrogen, which tends to make them soft and rank.

Hay yields of 4-5 tons an acre are common from timothy pastures, and a large acreage might be expected on Gree's heavily stocked land, but he has only two fields of timothy. The labour of haymaking in that climate is very heavy and it has been easier to buy hay than to save all he requires on the farm. Gree admits he is partial to good timothy hay, though men who have tried the experiment have concluded that first-class ryegrass hay "has more milk in it." All the hay is made in these rucks of a quarter to half a ton each, and later in the summer the rucks are brought home on bogies.

In 1942 Gree did a very successful piece of reclamation. He had a field of 26 acres—very large for the district—of old meadow land which was full of rushes, and was very poor grazing. The estimate for drainage came to £840 (or £82 an acre), a large expense for land that would never be worth

GROUP OF AYRSHIRE COWS OWNED BY W. T. DUNLOP, A LEADING BREEDER, OF FENWICK

MR. GREENWOOD'S DAIRY FARM LIES ON A STEEP HILLSIDE RISING SHEER UP FROM THE SMOKE-COVERED CITY OF BRADFORD

a rent of more than 30s. an acre. The field, however, was an eyesore, and a good farmer cannot tolerate that indefinitely, so Gree took the chance of getting half the cost from the Department, drained the field and reseeded it. In the summer of 1945 the field carried 27 heifers as against the eight that were all it could manage before treatment. Draining and reseeding have been carried out on other fields, at considerably less cost per acre. Without these improvements he would have been very hard put to it to carry all his stock through the war years, so the work has been well worth while. Even on the improved land there are many small rushes to be seen—these are due to the heavy nature of the land and do not necessarily imply a lack of drain tiles.

STAFF AND RETURNS.—The permanent labour on the farm consists of a dairyman and his two sisters, who do all the milking, and a tractor driver who lives in. There is need for a good man for the horses, of which there are two, but he could not be found, though casual labour is available from the Agricultural Committee for hay time and other rush periods. The total labour employed is about the equivalent of five full-time men.

In 1944 the milk sold came to nearly £3,800. The main return from the herd was from the sale of stock, but the actual figures for this would not be much of a guide for the rest of the district, because Gree's herd is in the very first rank, and Ayrshire cattle are not exactly being given away at the present time. To make a fair comparison with the other farms it seems best to put commercial prices on the cattle sold, and on this basis the returns in 1944 were :

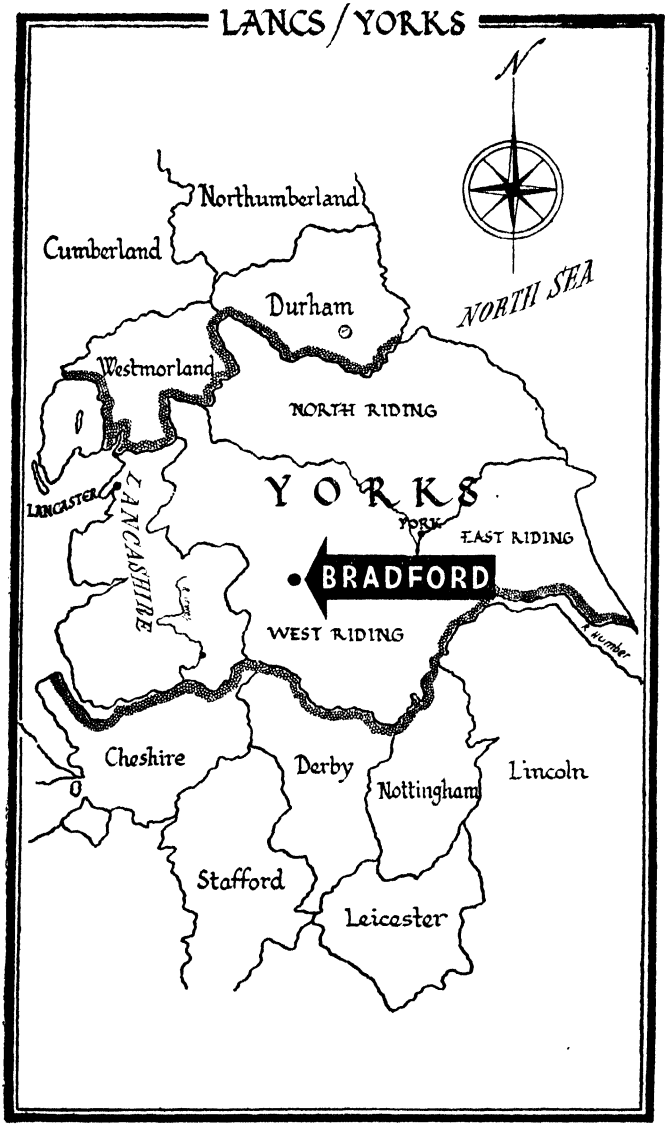
40 cows at £60	£2,400
23 heifers at £50	1,150
15 bulls at £25	375
	£3,925

The actual figures were very much higher but there is some offset in that the herd was reduced a little in 1944, so that a part of the receipts represented some reduction of capital. Taken on the above basis the gross receipts totalled £7,700 off 412 windswept acres—nearly £19 an acre. This figure is

high, but that per man—over £1,500—is astonishingly large, and easily the greatest in the whole series. If nothing whatever is allowed for the sale of the cattle, the milk cheque alone represents over £9 an acre and £760 a man. Even these figures would be very satisfactory in view of the limitations of soil and climate, and their severe effect on milk yield under war-time conditions. But the windy and remote situation has one advantage—it is very healthy for cattle, so that there is always a valuable surplus for disposal.

Gree's herd, of course, is attested. He has no mastitis, and inoculation saves him from abortion. He is naturally proud of having sold cows 12 years old for £80 apiece—and still giving 1,000 gallons.

The farm is an object lesson in what the specialist milk producer can do, under the hardest conditions, if his cows are good enough and his management is at a sufficiently high level. Little has been said about the superlative quality of Gree's herd, but his unique sequence of success in the Ayr Derby is eloquent testimony. Farmers in the south are just as eager to buy Ayrshires as ever they were, and it is a very safe bet that Gree's stock will continue to sell like hot cakes.


LANCS / YORKS
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Northumberland
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NORTH SEA
Westmorland
NORTH RIDING
YORKS
LANCASTER
YORK
EAST RIDING
LANCASHIRE
BRADFORD
WEST RIDING
R. HUMBER
Cheshire
Derby
Nottingham
Lincoln
Stafford
Leicester

CHAPTER V

MILK FROM A CITY HILLSIDE

The producer/retailer—six heifers for a start—free charabanc rides—attested pedigree Ayrshires—rearing farm at Ilkley—marrying hill and low land—pre-war concentrates—home-grown foods—silage in the hillside—level output—cows on two storeys—hill sheep—labour and receipts.

THERE is a good margin—farmers think too good a margin—between the wholesale and retail prices of milk, and the man who retails all that he produces is in a stronger financial position than he who leaves this margin to a distributor. It is not at all surprising that there have always been many producer-retailers of milk in thickly populated districts, and in the West Riding of Yorkshire this class of farmer accounted for 57 per cent. of all those registered with the Milk Marketing Board before the war. In farming circles this type of business, admittedly lucrative, is not held in very high repute because it is not self-contained nor conducive to constructive breeding. The producer-retailer usually depends to a very large extent on bought feeding stuffs and is a waster of cows—he buys them when in full profit and sells them when worn out, or serves them with any bull that will bring them to profit again. Mr. Greenwood, however, whose main farm is practically in the city of Bradford, has shown that these criticisms need not necessarily apply to the business, having developed a system to which no possible exception could be taken.

His story is very definitely one of success. It is not merely that he has achieved financial success. He has made his land, on two farms, very highly productive, while his milk-production methods are above reproach and he is carrying out a constructive breeding policy. It is difficult to see that he has had any advantages over other producer-retailers, certainly not in regard to his soil, which is Millstone Grit,

naturally poor and acid and steadily receiving a gentle shower of soot from the industrial area around him; also, most of his land is very steep.

GROWTH OF THE BUSINESS.—In the first world war Mr. Greenwood served three years in the Army. His elder brother was demobilised before he was and when, eventually, he got home himself he found there was no room for him on the family's farm, which was later " developed " as a building estate. Poplars Farm, where Mr. Greenwood is at present, was then more or less derelict and the occupier was willing to walk out for £250. Within a week Mr. Greenwood was established as the tenant of 30 acres. One Monday he went to Otley and bought six heifers, driving them home himself as he could not afford to pay anyone to take them; but on the following Saturday he had a cheque for £14 for milk and from that start he has never looked back, though he has had setbacks which might have daunted a less determined man.

In 1924 his brothers sold the original family farm and he took over the milk business, a round of 50 gallons a day. The next five years were a continuous struggle with the dairy combines, out to drive the small men off the street. They were canvassing and offering every sort of inducement to new customers and this competition sent Mr. Greenwood's round down to 25 gallons, and any surplus he produced had to be sold wholesale. Up to 1926 he had only his original 30 acres, but then he managed to rent another 50 acres.

During the winters of 1921, '22 and '23 he attended night classes at Leeds University and got to know Professor McGregor and others. As the milk round continued to decline Mr. Greenwood called in these experts for advice, being naturally scared about the position. They suggested that he should offer something that the others had not got, so he went in for Grade A milk, which was just being started, and he quickly got the trade back. In 1929 he won the Yorkshire Clean Milk Competition—at least he and Mrs. Greenwood did, for it was she who did the cooling and bottling. He was the only competitor who had no sample fail at all. Since then this producer-retailer has never had enough milk to meet all the demands of his customers.

Immediately he won the competition he made a big shout about it. Every Wednesday afternoon he sent a charabanc into the city with big placards on saying " Come to Greenwood's—showing the milking." He got many mothers and children to come to his farm in the charabanc and he used to persuade someone from the University to give them a little address. One day in 1931 Professor McGregor was giving the address and was placed in a very awkward position when a doctor's wife asked publicly whether even Grade A milk was safe to give to her child. The only possible answer was " no."

Mr. Greenwood decided that it should never be necessary again to give an answer like that and he rang up his vet. the same night. Next week all the cows were tested with tuberculin. There were 52 cows by then, and every one reacted—but this worst possible start was not enough to appal Mr. Greenwood. He sold the lot straight away and bought in 60 attested heifers from Scotland—and 30 of these reacted at the next test. This involved him in a big loss, as he had paid £50 apiece for them and had to sell them at £12 each. It took him three years to get a clean herd, as there were no clean areas nor attested markets in those days from which to buy.

Mr. Greenwood started with dual-purpose Shorthorns bred in the Dales. To get clean cattle he went to Scotland for Ayrshire heifers and he still used good Shorthorn bulls from Birmingham. He was disappointed in the cross-bred heifers he got. They were not like their mothers in performance, nor like their sire in appearance—in fact he was getting the worst of both worlds. He turned over to using Ayrshire bulls but the Shorthorn blood was still coming out and when, during the recent war, the War Agricultural Committee's officers inspected his cows for the bull-breeding register they failed to find one suitable because the blood was so mixed.

Since 1939 Mr. Greenwood had been serving the War Committee as machinery officer, but it was more than he could manage and his health was beginning to suffer. After the unsatisfactory inspection for bull breeders he decided it was time to attend to his own business, so he resigned from the Committee and started to clear out the cross-bred cows

as they came to profit, replacing them by pedigree Ayrshires. His son John probably had some influence in this connection. He is a keen member of a Young Farmers' Club, in which he has won two silver cups for calves he has reared, and has definite and enlightened views on breeding.

There have been ups and downs, it is true, but 20 years is not a long time to expand from the original six heifers to an attested herd of pedigree cattle. His reasons for choosing Ayrshires are interesting, and typical of his keenness and drive. He likes the Ayrshire cow because she is neat and lively and you do not have to take a stick to her ; if you give the Ayrshire a jab she gives you one back. Then the fat globules in the milk are small and the cream does not rise. With bottled milk from Channel Island cows the cream is up when the milk comes to the housewife's door and she is apt to criticise and say that the cream is not so far down the bottle as yesterday. Where there is no cream line these awkward comparisons are impossible.

Hill Farm at Ilkley.—Mr. Greenwood has extended his holding at Bradford from time to time and now has 200 acres there. When he had trouble with the tuberculin test he realised that what he really wanted was clean land to rear his young stock, and in 1936 he took a farm of 200 acres at Ilkley. It is not actually on Ilkley Moor, where " worms eat men and ducks eat worms," but on a hill on the other side of the town. It is poor hill land running up to the heather and it was completely run out when he took the farm. It was a sheep farm and still has rights for 200 sheep on the hill. The farm was overrun with rabbits and the grass was all sedge and agrostis, as can be seen now from the margins of some of the fields.

The land was acid and he has applied lime generously. This, with slag, has enabled good crops of oats and really first-class long leys to be grown. As Mr. Greenwood points out, it was not good land he was seeking, but healthy land on which there had not been a cow. The Ilkley farm is 20 miles from Bradford, but Mr. Greenwood has a trailer for his car and moving stock backwards and forwards between the two farms is no great trouble. Calves are taken to Ilkley

as soon as they are born and cows as soon as they are dry. It is wonderful how the cows improve when they get on the moor, and they return to Bradford when they come again to profit.

A combination of hill farm and town dairy is a most interesting and promising development. Distance is no very great obstacle in these days of easy transport, and it is good to know that other producer-retailers are adopting the same plan. It is a way of putting some of the money from the low ground back into the hills. For many years hill sheep farming has been in a bad way and some of those engaged in it have been living very near to the border line of existence.

This poor but healthy land can be married up with the land near to the markets, to the great benefit of both. In fact, the practice is not entirely new, as for many years farmers in the Craven district have accepted dry cows from the low-ground farms for a rest on the hill. This almost amounts to the same thing as Mr. Greenwood is doing, but such an arrangement is a chancy business. Where the two are run by one man he can plan ahead and rear attested stock on cheap clean land, so that livestock improvement can be carried out in conjunction with intensive milk production. The system has not only helped Mr. Greenwood with his breeding policy, but has greatly eased the fodder situation during critical years.

War-time Feeding.—In 1939 Mr. Greenwood had 112 cows and their followers, fed very largely on imported food. In the year before war broke out he spent no less than £1,600 on feeding stuffs. It is easy to imagine the disturbance caused in his system by the war, for now he can spend no more than £400 a year, and £1 buys much less than it did in 1939.

Mr. Greenwood has always been interested in costings and liked scheming to knock a farthing a gallon off his food costs. He used to watch the *Yorkshire Post*, and when he read, say, that a ship was due at Liverpool from the Argentine he would buy direct and have ten or twenty tons delivered to his yard at something like 90s. a ton. It was mostly maize, palm kernel and ground-nut that he bought, with sometimes a little soya bean meal and cotton-seed meal. Every July he

bought enough high-protein foods to carry him through the whole of the next winter, never paying, even for them, more than £7 5s. a ton. He used to reckon to keep the price of the mixed ration under 1d. per lb. and he bought some 200 tons each year. With this high feeding of concentrates his cows averaged from 900 to 1,000 gallons, but that figure dropped to 750 in war-time. It is interesting to note in passing how closely these figures, pre-war and war-time, agree with Mr. Dunlop's in Ayrshire.

Mr. Greenwood is not wholly despondent over the war-time drop in yield as he is convinced that his cows live longer on the largely home-grown ration they now get. This is an interesting point, though there are no adequate data to give general proof of the contention. Anyhow, Mr. Greenwood does not suffer from the deaths of three or four cows every winter as happened previously. He has found it difficult to bring the herd to the end of the winter in good condition. In the spring of 1943 he was a little ashamed of his cows, but in the spring of 1944 the valuer said he had never seen them look so well.

The real crisis came in 1941. The stocks on hand enabled him to weather the first winter of the war but the winter of 1940-41 was a great headache. Sixty acres had been ploughed up the year before, and there was some help from oats and kale, but the crops did not yield well—there was not much tackle for arable work and he had been unable to get his seed-beds firm enough. By 1945 the picture was altogether brighter and the farms had been reorganised so that there was no danger of winter starvation for the cows. Taking the two farms together—and this must be done, as threshed grain is brought from Ilkley to Bradford—he had 80 acres of oats, 5 of beans, 20 of oats and tares for silage, 8 of kale, 3 of mangolds and 11 of swedes.

He may not have been an arable farmer before the war, but he has certainly learnt that art in the last six years and all the crops were really first class. As he says, he gives them "plenty of ginger." The corn and root acreages usually recommended for 10 cows are 10 and 3 respectively, and Mr. Greenwood's figures are not far short of this standard (7·6 compared to 10 and 2·0 compared to 3). This, however,

is excluding the silage, for which there are 20 acres of oats and tares and any herbage that can be spared on the young leys. He has replaced practically all the old grass by new leys, and here again has been very successful, the new swards being very clovery and full of growth.

Some silage was being made before the war, but Mr. Greenwood speaks with scorn of the sort of stuff that he admits he then thought was marvellous. It was made chiefly from foggage and was rich smelling and dark brown—and probably very indigestible. Now he makes 300 tons a year, all good stuff and much of it from new leys, so that silage makes a great contribution to his foodstuffs, particularly in the way of protein. Mr. Greenwood can be depended on to think of any labour-saving dodge, and he has one with the silos, which are wooden towers built into the hillside ; the material is chopped and dropped in from above and when it is wanted it is thrown out to the bottom.

This Yorkshireman is no prodigal with his winter fodder, which he ekes out to see him right through. In the autumn there is still a bite of grass, and kale provides some protein, so then he feeds oat straw, conserving his hay. After Christmas silage comes into its own, and with hay, swedes and mangolds he can maintain adequate rations to the end of the winter. To guard against shortage in early spring he sows a couple of acres of rye in the late summer and this comes for cutting green in March and April.

Level Output.—Maintenance of a level output is supremely important in the dairy, where there are 2,000 registrations to deal with—mothers and their children, fathers, doctors' certificates, and all the lot. He has to keep his cows yielding nearly 200 gallons a day, because he does not buy milk (he has bought a little in the past but it has always run him into trouble). He has installed a refrigerator and that enables him to level out his supplies over a day or two, but he cannot rely entirely on the small adjustment this allows. Supply must be regulated from the herd. The office side of the business is in the capable hands of Alice, and she may say : " We've no milk left this morning, you'll have to be doing something." In summer he keeps some

reseeded pasture in reserve, and by turning 60 of his best cows into it he can push up production by 20 gallons. In winter the hay for the best milkers can be increased, and the great value of the 2 acres of rye is that it is enough for 20 cows and will just about get an extra 200 gallons out of them before the grass grows.

It is well known, of course, that to get the highest yield from a cow she should be fed well all through her lactation, and it would be inaccurate to say that Mr. Greenwood lets his cows go a little on the downward path and then pulls them up when extra milk is wanted. He keeps them milking steadily and when the appeal comes from Alice, "Milk's going down," he just stimulates some of the best cows a little to meet the situation. The herd is like a high-powered engine running well within itself that can be accelerated a bit when necessary. Mr. Greenwood's retail business makes him think in pints: in fact, he measures everything—crop yields, grass, silage—in pints.

The impression of the herd as a milk factory is heightened by the cowsheds, which are in two storeys. The sheds were built by the farm staff from stone quarried behind the homestead, and the steep slope of the ground has been used so that the bottom floor is at ground level on one side and the top floor at ground level on the other side. All that seems lacking is a lift with attendant: "Calf-rearing and dry cows—going up!"

Steep slopes make for difficult working on a farm, and are generally regarded unfavourably, but Mr. Greenwood neatly turns them to advantage both in his cowsheds and his silos. The main part of the herd is milked on the ground floor of one long shed, and when a step in improvement is taken the better animals take pride of place at the top end; as numbers of the higher-grade animals increase, the older type are worked downwards until, as it might be expressed, they tumble out of the bottom into the discard.

Labour and Receipts.—It is practically true to say that the only sales from Poplars Farm are of milk. Some cows are sold, but with his progressive breeding policy Mr. Greenwood does not sell his best cows and it will be a few years yet

before the sale of bulls becomes important. There are a few sheep associated with the hill farm. That farm runs up to the moors, which stretch for miles, and there some hefted Black Faces are run. They are sometimes brought down to graze the leys, but the sheep are of little consequence in this scheme of farming.

At the Ilkley farm the labour consists of a man and a boy—brothers—and they run it and look after the young stock and the sheep with a little help from the home-farm staff at rush times.

At Bradford there are four in the cowsheds—the head stockman and three others to manage the seven-unit milking machine. There are also a tractor man and a horseman, making a total of eight in addition to Mr. Greenwood himself, who keeps things moving as, for instance, in driving the tractor during dinner time. There are, of course, others on the retailing side, but they can be omitted in the reckoning.

To compare it with other farms in the series the value of the milk will be put at 2s. a gallon over all. On this basis, the milk comes to £6,500 a year. As regards other receipts, full accounts for the last year have been seen and, without going into tedious and impertinent detail, it can be said that the sales of cattle, appreciation of stock and a few oddments came to £940, making a total of £7,440 for all receipts. The acreage of both farms being 400, the value of gross sales works out to about £18 10s. an acre, and to £930 a man. These figures must be regarded as very good. Admittedly the situation close to a large urban area is favourable, but the soil and the steep slopes on the land are both very unfavourable.

If this account has given a true picture it will have brought out the fact that Mr. Greenwood is very energetic and capable, quick to appreciate new possibilities, a keen business man, and able to get willing service from all his staff. As pure farming the whole enterprise must rank very high. It makes poor land very productive and provides, in urban surroundings, for constructive breeding. The usual evils of town dairying—dependence on other people for feeding stuffs, wastage of good cows—are absent, and in combining the Ilkley hill farm with his home farm Mr. Greenwood has hit on what appears to be an entirely satisfactory solution of the problem of the town dairy.


MIDLAND GRAZING
N
Nottingham
Derby
R Trent
R Trent
Lincoln
OAKHAM
RUTLAND
LEICESTER
LEICESTER
Soke of Peterborough
R Welland
MARKET HARBOROUGH
R Lee
NORTHAMPTON
Huntingdon
Warwick
R Nene
NORTHAMPTON
Bedford
Buckingham
Oxford

CHAPTER VI

A MIDLAND GRAZIER

Famous fattening pastures—management of sward—ploughing-up in Leicestershire—Waterloo Farm—outwintered stores—breeding and rearing cattle—ewe flock—decline in Leicestershire sheep—crop yields—wheat and beans—potatoes and vegetables—old v. *new pastures—sowing out to grass—high production by mixed farming—future policy.*

In the centre of England there is a large area that has for many years been renowned for the excellence of its permanent pastures. It centres round Leicestershire, but it spreads over into several counties and forms what hunting people know as the Shires. In pre-war days the area was practically all grass land, old-established permanent pasture, and it was fattening grass; that is to say, a store animal turned on to it during the grazing season (from May to October) would get fat on the herbage alone, without any supplementary feeding. There are, of course, degrees of excellence within the Midland grazing district. Much land, in fact, grows very ordinary grass that will do no more than keep a store animal growing, and other fields will fatten a heifer but not a bullock; but the best will fatten up to two bullocks an acre in the season, though they must be strong bullocks three years old.

There are other areas of fattening grass in Britain, and new leys in many parts will fatten cattle, but the Midland grazier is particularly favoured and has built his farming system on the basis of this first-class permanent pasture. The system had much to commend it. The grass land was stocked to capacity in summer and very sparingly in winter, and for much of the year the farmer's main—almost his only—job was to keep an eye on his stock. Few existences could be more pleasant than this dog-and-stick farming, and it had the great advantage that it had a low labour demand. Financial success depended partly on a grasp of the high art

of managing grass land, largely on the ability to judge a store beast, and to appreciate when animals were "doing" well and when not, but probably most of all it depended on skill in buying and selling.

The supreme value of this really first-class pasture is still a bit difficult to explain, and it cannot be appraised by mere inspection, however careful and highly trained the inspector is. A fertile soil is one contributory factor, but the type of soil may vary over a wide range. The soil is generally on the heavy side and not greatly subject to drought; reasonably efficient drainage is also a factor. Growth of grass is highly dependent on season, and the area normally has a well-distributed rainfall.

All these points are important, but, even given them all, it would be very easy to ruin the best pasture in a short time by bad management. It is good management that ensures that the pasture shall carry the right kind of herbage, dominated by perennial ryegrass and wild white clover. It is well known that young grass has a much higher feeding value than grass that has been allowed to grow up, and the Midland grazier is careful to stock heavily enough to keep the herbage short; but it must not be too short, because the stock must be able to get a good mouthful—and for the same reason a dense sward is essential.

The grazier has developed a system of management that achieves these ends. Cattle are turned into a field in the spring when the green shoots are appearing, and the head of stock is gradually increased until there are from one to one and a half beasts per acre—perhaps even two on the very cream of the pastures. The grass is kept well under control, the stocking of a field being adjusted according to the rate of growth during May and June. In August—sometimes earlier—the field is rested and the cattle are turned off, but they are back again in early September when the autumn growth begins. Some of the autumn-grazed cattle will not get fat before Christmas and they are run round again—on store grass on the same farm or away in another district—and fattened the following spring.

Clearly a farmer cannot keep buying and selling to make his numbers fit into this system, so that he must have other land

IN THE MILK ROOM AT POPLARS FARM, BRADFORD. MILK IS TRICKLING THROUGH THE COOLER, FILLING THE BOTTLES, WHICH ARE CAPPED BY MACHINE

WASHING DOWN THE COWS BEFORE MILKING AT POPLARS FARM

to act as his reservoir, holding areas of relatively poor pasture. During autumn and winter sheep help to clear up any herbage that is left at the end of the grazing season, and the sheep are on the farm for the flush of grass in the following spring. They go off fat, after shearing, about midsummer, reducing the burden on the fields at the time of year when growth of grass slows up.

There are fattening pastures, not quite in the very first class, that will fatten young cattle, but around Market Harborough the grass is too strong for beasts younger than three years old. In a mild, dry season, if the growth is not too luscious, most cattle will fatten, but so often there is a strong growth in the spring and then a spell with cold showers and a north-east wind. That is when young cattle go back on these strong Harborough pastures; they scour, their coats stare, and they lose condition.

Few areas of the country can have been harder hit by the demands of war than the Midland fattening district. Here was good pasture obviously capable of growing bumper arable crops, and the country was bound to ask the graziers to plough up large acreages. This was not a matter of merely shifting the emphasis from grass to arable farming—it was one of changing the whole system. A countryside of almost unbroken verdure had to be converted to one with a large proportion of arable land, despite the fact that there were few cultivating implements on the farms and still fewer men who knew how to work them.

The difficulties in this area must have been formidable, and yet in the figures drawn up by the Ministry of Agriculture to show, county by county, how the arable acreage has been increased during the war, no result is more striking than that for Leicestershire. The farmed area of the county is 450,000 acres, and before the war one-seventh was arable. During the war 180,000 acres of permanent grass were ploughed up, and now four-sevenths of the county is arable. In the purely grazing district around Market Harborough the change has been even more drastic. In an area of 60,000 acres there was scarcely any arable at all in 1939—less than 8 per cent.—and you could drive for many miles without seeing a single ploughed field. To-day that district is a

patchwork of grass and arable, and 54 per cent. of it is under the plough !

WATERLOO FARM.—Mr. Pickering, who farms Waterloo Farm, was chairman of the Market Harborough District Committee for the first three years of the war and since then he has been a member of the Executive Committee for Leicestershire. His farm, however, is just over the border—in Northamptonshire, lying along the north-east side of the main road from Harborough to Northampton and about three miles out from Harborough.

He began as a butcher when a young man and still has his butcher's business in Harborough. As far back as 1911 he started to take land for " keeping " (that is, summer grazing) and he has been a grazier ever since. He came to his present farm as tenant in 1924 when it was all grass, and it remained all grass till 1939. The farm extends to 400 acres, but this includes 27 acres of woodland (Waterloo Covert is a name that frequently occurs in hunting literature). There are 146 acres of tip-top land that will fatten two bullocks to the acre—and two sheep, too, until the middle of June. The soil is fairly heavy and the farm is typical of the Harborough area except that it has better buildings than most of these grazing farms, which are generally very badly equipped. Over the whole farm—taking the 227 acres of store land with the 146 acres of fattening land—the rental value is 32s. an acre.

It is the usual thing in the district for a farm to include an acreage of store land, which, as has been said earlier, serves a valuable purpose when married to the best land, as it will hold the stock when the finishing fields are not ready for them. Mr. Pickering would rather run the risk of losing money on one lot of cattle than defeat his grazing possibilities for the future. Rightly or wrongly he studies the pasture first. It is an accusation frequently made against those who speak of grass land that they imagine farmers keep stock only to make pastures look pretty ; here is a high priest of graziers who may be quoted in defence.

Mr. Pickering's practice before the war was to buy cross-bred Herefords from Wales and the Welsh borders and well-

bred Shorthorns from the Melton and Stamford districts. He was turning out nearly 300 fat cattle a year and, in addition, he had a ewe flock of 140. Between the wars there was a change in the method of wintering such cattle as did not get fat by the end of the season. Twenty years ago these cattle were wintered out, mainly on other people's farms at from 50s. to 60s. per head. They got roughage and hay and used to come back in very poor condition. It was argued that cattle with rough coats, to show a hard wintering, did better when put out to grass in spring than cattle that had been wintered in yards. They had a lot of leeway to make up, however, and the rough-coated ones took longer to fatten ; most of the grass beef was going on to the market at the end of the year. Now it is realised that there is more money in wintering them in yards, as then they will be fat from June onwards. Of course the grazier does not want cattle that have been pampered in the winter, because they do undoubtedly suffer a severe setback when turned out to grass. Rough coats are still held to be desirable, but the stores should be wintered in open yards, or if outwintered it should be in a sheltered field so that they carry a bit of flesh in spring.

If a fair proportion of those turned out are in forward condition they will become marketable from June onwards, an important point because the possibilities of drought have to be allowed for when fields are closely grazed. With forward stores it will be possible to sell some fat in a droughty midsummer period, whereas if the season is wet and there is plenty of grass they can be carried on to make greater weight. Mr. Pickering had a ewe flock, and was by no means alone in the district in this respect, but the more common practice was to buy lambs in early autumn and sell them fat in late spring. These dovetailed in with the cattle to make a stocking policy most admirably designed to fit in with the growth of the grass. It was a policy that maintained the grass in superlative condition in peace-time, but it called for a drastic change when war came.

EFFECT OF WAR.—Between 1939 and 1945 Mr. Pickering ploughed up 197 acres of his permanent grass—over half the

farm. This has changed the whole appearance of the place, and he might be expected to have changed over to winter fattening. He has not done that, and is probably wise to have avoided it, in the light of the unsatisfactory financial results so many people get from winter fattening. He is not really well off for yard room and labour would probably beat him. Instead, he has taken a more constructive line and started to breed a proportion of the cattle he still needs for summer fattening. The present craze for milk has made it very difficult for him to find enough calves of the right sort to buy, so he breeds some himself and buys others to rear by suckling; given an animal with some beef potentialities, a sound start by suckling will produce a good commercial carcase in the end. He bought Lincoln heifers and a Hereford bull as a start, these giving him the type of calf he likes to rear, and he has also some milky-looking cows to suckle calves. His cow herd now numbers 25. In addition to the 25 calves these cows breed, he buys about 60 others—the best he can get, although they are not as good in beef type as he would like. Thus his cows, on the average, rear between three and four calves apiece, an occasional milky one rearing eight or even nine.

In September 1945 he was carrying 72 yearling cattle and 42 calves. He had not, however, altogether abandoned summer fattening in the old style, and the rich old pastures that still remained were carrying 85 very beautiful strong cattle. About 35 of these were Scotch Blue Greys, which he bought at Leicester, and the rest were Shorthorns. The extraordinary thing about the head of cattle on the farm was that the total came to 224, which is not very far short of the pre-war numbers when there was twice as much grass. It is true that he sells fewer fat cattle than he did previously, but he is breeding and rearing a good proportion of them, so that his real contribution to the country's beef supply does not fall far behind his pre-war standard.

Mr. Pickering has managed to maintain his ewe flock, but whereas he used to keep Scotch Half-Breds he turned over to Mashams during the war. His reasons for this were that the Masham was easier to lamb and the lambs got up quicker, these points being great advantages in view of difficult war-

time labour conditions. He has now returned to keeping Scotch Half-Breds. His normal practice is to use Suffolk rams, and he bought two very good specimens last year, but he has also used Wiltshire Horn rams on Mashams, as these cross well to give large and quite satisfactory carcases. Many of the lambs—about a quarter of them—go straight from the ewe and most of the rest by the end of summer. He buys another lot in during the autumn to run through the winter and fatten in the following spring.

It is a matter for concern that the sheep population in the Midlands has declined seriously during the war. The numbers have been halved, and yet sheep are badly needed to graze the young leys, to say nothing of the country's need for meat. Mr. Pickering intends to increase his ewe flock, and it is to be hoped that other farmers will do the same thing. There is not much indication at present of any general increase in ewe flocks, except that it was encouraging in the autumn of 1945 that there was greater interest in ewe sales; people were seeking after breeding sheep rather more than after lambs.

CROPPING.—It has been said that Mr. Pickering ploughed up more than half his farm. For the first three years the crops were nearly all wheat, with some oats. After that he began to think more in terms of feed for his own cattle, so he increased the area of roots to about 20 acres and grew beans, reducing his acreage of wheat. The satisfactory thing about breaking up this beautiful grass land is that it will grow bumper arable crops. Wheat has been very, very good, Mr. Pickering's yields ranging between 5 and 10 qr. per acre, with an average, taking good and bad sides of the farm together, between 6 and 7 qr. Strange to say, these high yields are no more than typical of what the Midland fattening land has done—there have been some terrific wheat crops rivalling those on the silts and fens.

Oats, on the other hand, have been disappointing; big crops have been grown, but too often they have gone down before harvest. The first variety Mr. Pickering tried was Star, but it used to go down badly. He tried Eagle and got a yield of 18 qr. to the acre, but even then some of it was left

on the field. Barley crops have been no more than average ; it is feeding barley, never of malting quality.

Both winter and spring beans have been grown, with yields of 5 and 6 qr. Mr. Pickering horse hoes and hand hoes these crops, and if more people did that—grew them properly—there would be less wailing about the bean not being the plant it was in grandfather's time. The potato quota on Waterloo Farm is 5 acres, and taking one year with another Mr. Pickering does not average much over 6 tons, though in 1945 he sold 10 tons of ware Edwards per acre. Green crops show up the natural fertility of his land. His kale crop looks like a tropical forest, and he has done very well with savoys and Brussels sprouts.

RETURN TO GRASS.—The fertile Midland soils have stood up well to war-time cropping and as yet there seems no sign of a fall in yields, but this cannot go on indefinitely and the graziers will see to it that, as soon as they are free to sow out, a big acreage will return to grass. The crucial point is whether it will be permanent grass or whether long-ley farming will get established. This brings up the much-argued question about the relative merits of new and old grass, because ley farming will never catch on unless the graziers are convinced that the young ley, properly treated, is at least as good as the old pastures to which they are accustomed.

Trials are now being conducted to test this matter, and early results show that new grass produces much more beef to the acre than old. This result is not to be wondered at when the trial is carried out in districts of poor grass land, but two centres are in Leicestershire and even there the new grass seems to be proving itself superior to the old. Most of England had a wet summer in 1945, but just around Market Harborough it was a dry one, and Mr. Pickering thinks that may explain the good showing under trial of the new leys, and that in a wetter year the cattle would have put on more weight on the old than the new grass. Mr. Findlay doubts this, but points out that the management of old pasture has been brought to a fine art—it is a *tradition* and graziers have been doing it for years. On the other hand, the best manage-

ment of new pastures has still to be determined, and when that has been done they will probably show to even greater advantage compared with the old pastures.

Mr. Pickering awaits proof of this, but agrees that the management of young pastures must be different. There is not the same consistency of growth, and if a ley is grazed in the same way as old pastures are it will probably suffer damage. He thinks that for leys the on-and-off system of grazing must be adopted; the young pastures need a rest now and then, if for nothing else than to give a chance for root development. The obvious aim is to get the maximum production per acre over the whole season. On young leys a lot of milk or beef can be produced over a short period, but the farmer wants the process to go on right through the year. Old grass will fatten out the stores and when they have gone will keep the sheep flock going, but the young ley is finished early in the autumn. There is certainly some danger of poaching a young ley in autumn, but it should be possible for it to carry a few sheep through the winter; against this Mr. Pickering points out that the sheep is a discerning grazer and will go for the clover, probably harming the clover crowns.

There have been very few failures in the Midlands in establishing new leys, in spite of some difficult seasons. Mr. Findlay is prepared to be quite dogmatic about the right methods of sowing out. He maintains that if the sowing is on a decent tilth, the seed mixture a suitable one, any soil deficiencies are corrected with lime and fertilizers, and—above all—if the seeds are drilled, there is no more risk of failure than with any other crop grown from seed. It is a pity there are not more grass-seed drills available—drills with coulters 3½ or 4 in. apart. Most Midland farmers still sow out under a nurse crop, and some perfect swards have been established around Market Harborough in this way, but bare ground sowing is increasing and is proving the surest way of getting a "take." Mr. Pickering has directly reseeded two of his worst fields, which would only carry few stock, except in a really growthy season. He ploughed them in autumn, did the necessary cultivations, and sowed them down in spring without a nurse crop, but with a few

pounds of rape in the seeds mixture, to give an early graze. Results have been very good.

PRODUCTION.—In calculating the production per acre and per man on Mr. Pickering's farm a slight departure must be made from the usual rule of taking the simple gross receipts. He still buys an appreciable number of stores every year to sell fat a few months later, and so to compare this with other farms one must bear in mind that they were not wholly produced on the farm. The value of total production, with this adjustment, is £9,500, and on 373 acres this amounts to just over £25 an acre.

The power on the farm consists of three horses and two tractors, a tracklayer and a rowcrop. Mr. Pickering's son manages the farm and there are three experienced workers and five others, including two land girls, who were all new to farming but now have good war-time experience behind them. Little casual labour is required—occasionally at hay time and harvest—and it seems that the labour force is about equivalent to eight full-time men, which means that the value of sales per man is nearly £1,200. In the whole of this series, Mr. Pickering stands second in production per man and third in acreage production, which is surely a fine achievement in view of the fact that he is not a milk producer and that his land, though good, is scarcely up to Mr. Rockcliffe's silt land. Then, Mr. Pickering's contribution to the war effort is impressive. He has produced a lot of wheat, some vegetables and his fair share of potatoes, and all this he has done without cutting down his production of meat to any very great extent.

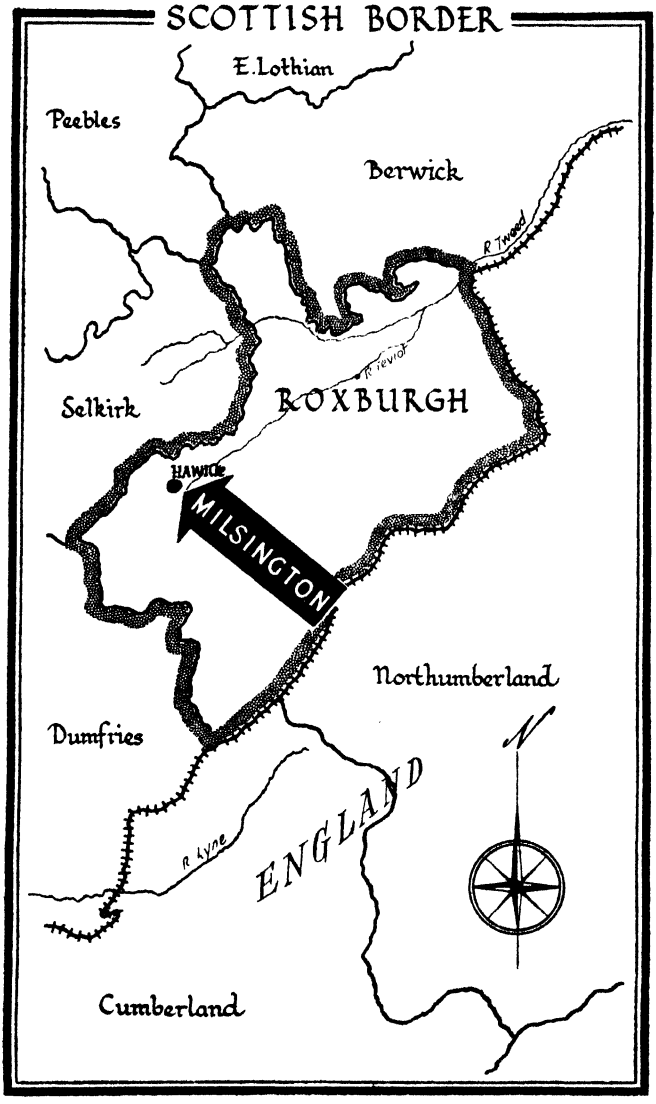
THE FUTURE.—It is interesting, and not altogether idle, to speculate on the future of the Midland fattening area. Owing to the war the grazier has been forced out of his traditional system into mixed farming, and has proved himself fully capable of dealing with arable land. His land will grow bountiful arable crops, but will he take the first opportunity to slip back to the less troublesome dog-and-stick farming?

One suggestion that is frequently made is that potato growing should, and will, shift into the Midlands. The main

potato districts are running into trouble with eelworm, and Midland farms have grown good crops of potatoes in the last few years. No doubt some Midland farmers will stick to the crop, but there is not much prospect of potato growing becoming a permanent feature of Leicestershire farming. Around the Wash there is a much bigger local population working on the land, many of the workers having their own small holdings and many being very highly skilled in dealing with the crop. A shift of the potato crop to the Midlands would require a much larger number of farm cottages and many skilled workers to put into them.

Mr. Pickering hopes in the future to continue as self-supporting as possible. He will need a good deal of hay and roots and plenty of beans and oats, and hopes to keep about 100 acres growing tillage crops, most of it farmed on a four-course rotation, but part of it possibly under long ley. He will retain his herd of cows and expects to turn out 60 finished cattle of his own rearing every year—but as he should be able to graze 160 he will have to buy 100 stores. His limit will not be his acreage of fattening grass but his acreage of poorer pasture ; he really wants more " holding " acres, as he has not enough leg room for all his stock at present. With sheep, too, his policy will be partly breeding and partly buying. Some increase in his ewe flock may be expected, but his own lambs will go about the end of summer, so he will still need to buy lambs in autumn as he did in pre-war days.

Few men can speak on Midland farming with more authority than Mr. Pickering. He was a most successful grazier before the war, he has turned over to mixed farming, proved himself a master of that, and his duties with the War Committee have kept him in the closest touch with Leicestershire farmers. It is, therefore, encouraging to know that he intends to stick to mixed farming. The fattening area that his farm represents is the very heart of England—and mixed farming is the very core of agriculture.


SCOTTISH BORDER
E.Lothian
Peebles
Berwick
R.Tweed
R.Teviot
Selkirk
ROXBURGH
HAWICK
MILSINGTON
Northumberland
Dumfries
N
ENGLAND
R.Lyne
Cumberland

CHAPTER VII

BREEDING CHEVIOT SHEEP

Scottish borders—in-bye and out-bye—Milsington and Hoscote—labour—housing—blood horses—pedigree Cheviots—ewes, Dinmonts and wethers—shepherding—hirsel—controlled grazing—clipping—disease—cattle—a cowboy show—Blue Greys and Shorthorns—winter feeding—Hill Cattle Subsidy—the shepherd's patch—expense of improvement—effect of improvement—production.

THERE is stern country on the borders of England and Scotland. Some of it is good farming land—for instance, along Tweedside—but the area is dominated by the Cheviot hills. For some centuries this area was a sort of No Man's Land and, though there could be no more hospitable people than the present Border farmers, they still delight to tell bloodthirsty tales of the old forays. In a country with traditions of plunder and revenge it is not surprising that human habitations are few and far between.

Mr. Scott's farm at Milsington, some seven miles west of Hawick, is a typical hill farm, all of it over the 1,000-foot contour, and it carries 2,000 Cheviot sheep. The homestead stands alone at the end of a hard road and commands a magnificent view ; the bulk of the land lies behind the homestead, stretching higher into the hills. Scotsmen insist that these are hills, not mountains, as a southerner feels inclined to call them. They are steep but not rugged, and there are wide green slopes leading up to the heather. The higher ground seems to stretch away indefinitely, and it is wild country without fences or shelter, and with no demarcation between one sheep run and another. The lower parts of the farms, however, are enclosed ; the fences are stone walls or wire, and the fields, some of which are under arable cultivation, are on the small side. This enclosed land is known as in-bye, and the open hill is called out-bye.

The Milsington farm, which has been held by the Scott family since 1831, has 200 acres of in-bye and 1,100 of out-

bye. Since May 1941 Mr. Scott has rented another farm, Hoscote, which marches with the Milsington land. This brings the total area he farms to 2,700 acres, of which 286 acres are in-bye, though 60 acres of this are subject to flooding and are very unsafe for arable cropping. His permanent labour staff consists of a married cattleman about the homestead, a single horseman living in the bothy, and one married shepherd living in a really outlandish cottage away over the hills. Then he has two Irishmen for two or three months in late summer—the same two come to him each year. They are brothers, and they bring their sister with them. This Irish lass helps in the house, but also outside when needed. Besides this labour Mr. Scott gets considerable help from his family. His son Charles is 15 and he does the full work of a shepherd during the school holidays; Mrs. Scott and her daughter give some timely help at lambing and other rush seasons.

The labour staff is about equivalent to six full-time men, and it is none too much. There is room for another man or two, but there is the usual shortage of cottages. The labour demand is greater because the work on the in-bye cannot be spread evenly over the year. With luck the harvest is completed by the end of October and then it will rain steadily; after that snow and frost more often than not completely shut off the farm from the rest of the world. Consequently ploughing cannot start till the middle of March and there is a great rush of work whenever the weather allows.

It is doubtful if all the work would get done if Mr. Scott and his son did not get round the hills on horseback. Quite often for four or five hours at a stretch his horses have to tramp up to the knees in snow when lost sheep have to be found. It might be expected that he would keep tough hill ponies for this work, but that is not Mr. Scott's idea—he breeds blood horses and before the war always reckoned to sell one a year at a good price. That source of income was, of course, all washed away by the war, but he is a horse lover and has kept his horses and utilised them for shepherding—a very useful job of work for a thoroughbred to do in wartime. At present he has five blood mares, and in 1945 he bred three foals.

The soil on the in-bye fields is easy working and is farmed on a seven-course rotation of oats, roots, oats, and four-years ley. The practice is to lime once in a rotation and the farmyard manure is applied for the root shift, which is all turnips except for five acres of potatoes. The potatoes do not yield more than about five tons to the acre, but they all go as " seed " at £10 a ton.

SHEEP.—The Milsington flock of Cheviots has been well known for many years, so Mr. Scott sells a good number of rams—as his father did before him. There are 2,000 altogether, of which 1,500 are ewes and 500 hoggs. The lambing percentage averages around 75, say 1,100 lambs. This may not sound a very high figure, but is well up to the normal for hill sheep. There are always some tup eild sheep (barren ewes) and small gimmers that get missed, as well as losses from tickborne anæmia and abortion. This abortion is a nuisance, but it is not contagious, being caused by a deficiency of minerals in the grazing.

All the ewe lambs are brought into the flock, a corresponding number of ewes being drafted and sold to lower farms where they may have several more crops of lambs. The culling is done at clipping time and the culls fetch 30s. to 35s. apiece. Each year about 50 of the male lambs are selected for rams; this is about 10 per cent. and is the usual proportion aimed at for Down flocks. Mr. Scott uses the Dinmonts (i.e. shearling rams) on his own flock and sells them after one year's work. He is, in fact, selling proven sires, though selection on the first year's results reduces the number for sale well below the original fifty. There are some 500 wethers for sale each year and the practice was to send them in small lots to sales in Hawick. This used to make a weekly holiday for Mr. Scott and his shepherd, but latterly a change has been made and now they are all taken in one bunch to Annan. A large proportion of those that were sold at Hawick were bought by small farmers in the Annan neighbourhood, and the buyers always had great difficulty in getting them transported from Hawick. Prices vary a good deal, but on average would be 28s. a head.

SHEPHERDING.—All over the country there is a sad dearth of shepherds, and this problem is particularly acute in the hills where success depends even more than elsewhere on good shepherding—yet it is in these parts that the housing difficulty is at its worst. A shepherd should live close to his sheep, and in the hills this means miles away from any other habitation. These old shepherds' houses are to be seen dotted thinly about the hills, but they are mostly empty and dilapidated. They command wonderful views and would have a great appeal for the escapist, but to the shepherd's wife they are anathema. The difficulty of bringing up a family on those hills is only too obvious. A postman may call once a week, but tradesmen will not deliver; and then there is the problem of getting the children to school—often they have to walk several miles over the hills. In the past people have been content to put up with such things, but few will do so nowadays.

It may be that shepherds in the future will have their houses in villages and will be mounted to get quickly out to their sheep. It is true that older shepherds do not approve of the horseback method and that it is preferable for the shepherd to live among his sheep, but the problem is a very real one and some such solution must be found. The shepherd gets no more pay for living out in the wilds, nor does his pay depend on the number of sheep he has. A shepherd's beat is called a hirsel and that normally carries about 35 score of sheep. Formerly a farmer would keep an old shepherd on and he would be content with a lower wage for looking after a small number of sheep, but nowadays they must all be paid the same whether they have 20 or 40 score.

To look at the vast expanse of hill at Milsington is to wonder how on earth a shepherd ever finds his sheep. The secret is that the sheep are "hefted"—that is to say they go with the farm and do not wander from it. Presumably knowledge as to the boundaries is handed down from ewe to lamb, for there is little else to tell them where their own land ends! It is very valuable knowledge and makes the sheep worth more on their own hill than they would be elsewhere. When a new occupier takes over a hill farm he takes the sheep

with it and he has to pay a heft value over and above the market value. Mr. Scott's two farms constitute three hirsels, but he has only one shepherd. Mr. Scott and Charles manage the other two in the holidays, and when Charles is at school Mr. Scott does it alone.

The shepherd tries to get round all the hill tops every morning. The sheep lie on the heights at night and there is a large amount of " tath " there—soft, washy grass. If left alone they may stay out there for days and they get a lot of foot rot and other troubles. So they have to be sent down to the lower ground for the day, and it is a good plan not to go too early to the hill; just when the sheep are beginning to get up themselves is the proper time, then they will rake away more easily. The sheep are not sent down in one big lot, but are allowed to stray off in small numbers. If a couple of hundred were sent down over good grazing they would just roll it up and waste it, and it would be useless for the rest of the season. During the day the sheep draw upwards and in the evening the shepherd goes round the bottoms to see that no stragglers are left. The whole secret is to keep them moving and give them a change of pasture, and proper herding makes them graze the whole farm.

On a warm day in summer the hills are very pleasant and the herding routine is not very exacting, but in winter it is very, very different and the shepherd's job is tough. Then he must always be on the look-out for snow, and when a storm is coming he must get the sheep down to the low ground, to the stells or natural shelter. When the snow is deep and hard the sheep must have hay twice a day—the only time when they do get any hay. Although hill sheep do not need the same careful treatment—shelter pens and the rest—as other breeds at lambing time, nevertheless it is a busy season and from the beginning of lambing to clipping time the shepherd must go round his sheep twice a day without fail.

Clipping is started at the beginning of July. Formerly the farmers in a district would join together and go round to each one's flock in turn, but nowadays they mostly just do the clipping with their own men. Mr. Scott hires three or four clippers and works with them himself. The men are paid

by the score of sheep they do, and a good man will clip about a hundred in a day. The weight of fleece varies according to the climate during the winter and spring, and also with the type of land on which the sheep has grazed—on hard land like the hills a sheep clips from 3½ to 4 lb. The sheep are all brought down to the farm homestead for clipping. It is a busy time, for it is then that the culls are sorted out and the remainder marked ; a stock mark is put in one ear and an age mark in the other.

The main flock spends all its time on the hills, on the out-bye, but some sheep are to be seen on the in-bye during the summer. These are old ewes and others that needed assistance during the spring. They will never go back to the hill. Once sheep are brought down off the hill it is a mistake to put them back again ; they may seem perfectly all right, but they will " melt away " again as soon as severe weather comes.

Shepherding is getting a very scientific job nowadays, and Mr. Scott is fully informed on all the newer methods of controlling sheep diseases. He does not find it necessary to use phenothiazin for stomach worms on the hills, but he does use carbon tetrachloride for the fluke, and is sure that it is well worth while. He inoculates for louping ill, for lamb dysentery, and for pulpy kidney; sometimes he also inoculates for braxy, but he is not at all fond of doing so, as he finds that that inoculation has a most detrimental effect on the sheep. His sheep get a good deal of foot rot and he tries to protect them from that by putting them through troughs before the trouble begins, running them through the troughs two or three times during the summer. Then, of course, he dips, but does not find the dip so good since derris has been unobtainable. Mr. Scott thinks the Highland fly dip is the best, even allowing for the fact that it is coloured, and that this tinting reduces the price he gets for his wool by three farthings a pound.

CATTLE.—It is very often said that the hills of Scotland are suffering because they do not carry enough cattle. It is not that the head of cattle is decreasing (in fact it has remained fairly constant for the last few decades) but that the general level of numbers is far too low. Mr. Scott is sure that mixed

MR. PICKERING FARMS IN THE HEART OF THE FAMOUS FEEDING PASTURES OF LEICESTERSHIRE AND NORTHAMPTONSHIRE. HERE HE IS WITH ONE OF HIS BULLOCKS

IN THE BORDER COUNTRY, AMID THE HILLS OF ROXBURGHSHIRE

grazing does do good, because the cattle fine down the pasture. When he took Hoscote it was only just possible to see a sheep's back on the land, it being covered with long, coarse grass. By grazing with cattle he has got rid of all that and improved Hoscote out of all recognition. The white land—pasture that is mostly bent grass—is splendid grazing for cattle until it begins to fade about the end of September, but if cattle are kept on it later than that they tend to go back, and they spoil the grazing for another year.

Though Mr. Scott thinks cattle do hill grazing good, that is not his main reason for keeping them. He wants to make his farm as productive as he can and cattle raise the total amount he has to sell. He has, of course, put a lot of money into his cattle, and he regards them as a somewhat risky venture, as there is no telling when the hill subsidy will come off. It would be a great misfortune if they had to be given up, if for no other reason than the loss it would be in local colour. When the farm was visited it was August, and Charles was sent out " into the blue " on a horse to bring a herd of 25 cows, with their calves and a bull, from the high hill to somewhat lower ground. It was at once clear that there is no need to go to Texas for a real-life cowboy demonstration, and the patriarchal air of the bull surrounded by his cows was something to linger in one's memory. These cattle are not hefted as the sheep are and they wander afield, sometimes getting into trouble which may bring a claim for compensation. Generally speaking the cows that have wintered on the place, and have their calves at foot, are much less trouble than bullocks or eild (empty) heifers.

Mr. Scott thinks that cows suckling just their own calves make the safest venture at the present time. He has 59 cows in all, Shorthorns and Shorthorn-Galloway crosses (Blue Greys), and he always uses a Shorthorn bull. He does not reckon to keep back any of his heifer calves for breeding, but buys all his replacements for the herd—he has made up his mind to buy only Galloway heifers in future because of their extra hardiness. The cows mostly calve in April and the calves are sold at Hawick in October at an average of £13 apiece. They may be smaller than calves brought up on lower ground but they do well when they get on to better

land and hence they find a ready sale. Farmers on higher-priced land are rearing three or more calves on a cow in a lactation, but on these stern hills a cow does a good year's work if she breeds a first-class calf and rears it well.

Some land has to be sacrificed from the sheep to grow hay for the cattle. Nearly all the cows are brought to the in-bye for the winter, though if a rick of hay has been made on the out-bye perhaps ten or a dozen are kept out there for a time; hay does not last out there for long and it cannot be thatched because of the high winds. It is better to bring the cattle to the hay rather than cart the hay out to them, and they winter better where there is some shelter, and so they mostly spend all the winter on the in-bye. Straw is all right for fodder up to the New Year, but cows must have hay after that and plenty of it; about two stones a head a day is what Mr. Scott allows, but they get nothing else. He likes to get them fed early in the day and not go to them in the evening at all, because they are likely to come looking for more hay a little earlier every afternoon; a second haying in the day is given only when there is deep snow. They are kept on the in-bye until after they have calved, otherwise they might calve and go away half a mile or more and perhaps leave the calf in a drain—there are a number of open ditch drains on parts of the out-bye.

Hill Cattle Subsidy.—This is payable on all cattle that have been sixteen weeks or more on the hill, and in-bye pasture qualifies if it has been down for over two years. Mr. Scott takes cattle for summer grazing from farmers on the lower ground, but with these the subsidy seems to work in a peculiar way. In 1941 there was no subsidy and he advertised, and got, about 120 at £2 a head—that is, the owners of the cattle paid him £2 for the grazing. Immediately a subsidy of £3 was announced the whole thing changed. The low-ground farmers said that as Mr. Scott was getting this he must graze their cattle for nothing, or they would send them elsewhere! The next year was even worse, as Mr. Scott had to pay 10s. a head to get the cattle and, though no doubt he was very eloquent in the discussion

with the other farmers, they pointed out that they could get their cattle grazed well somewhere else on the same terms.

This is a very curious result from a subsidy given to encourage hill farmers to keep more cattle on their hills since, in effect, the cash goes to the farmers on the low ground, who get their summer grazing for nothing, or even get paid a little by the provider. Though it may appear cumbersome it does, in fact, achieve its object, and it is difficult to see how that could be done by any other method. The point is that the hill farmer cannot afford to buy all the cattle the country wants him to have, and which it is very desirable he should have to make the most of his hill grazing. In addition to his own Mr. Scott needs at least another 100 cattle at Milsington in summer and these go into courts on other farms in the autumn ; most of them will be sold fat by Christmas and thus they make a very useful contribution to the nation's food supply. But to buy these cattle would entail an outlay approaching £4,000. It is much easier to criticise the roundabout way in which the subsidy works than to suggest a direct method which would not make impossible demands on the hill farmer's capital.

Hill Grazing Improvement.—There are three fairly distinct types of hill grazing at Milsington—the white, the black, and the moss toppit land. The " white " land has a green sward, which is dominated by bent grasses ; the black land is heather covered ; and the moss toppit land, which is covered with a dry type of sphagnum moss, occurs on fairly level areas near the tops of the hills. Strange to say, this moss has considerable value. If the sheep can reach it in March it is something which helps them more than anything else. They eat it and it is a good change when grass is scarce and puts them in good condition—something like sheep that have been on turnips. It all goes to show that value is a purely relative matter. The feeding value of moss could not rank very high on any absolute scale, but it comes into its own at this particular time of the year when otherwise there would be a serious gap.

It is doubtful if the Cheviot Hills are carrying the sheep they did. For one thing, the bracken is extending, despite

the bracken-cutting machinery now available. The ground is bad for working these machines because of the risk of getting them bogged and the obvious chance of hitting a boulder. Then again, heather burning has been neglected, though it is difficult to see why this should be so. The right time of year to burn heather is in March, and preferably when there is a black frost. Sheep eat heather when it is young and do very well on it, but it is good for nothing when old and it should be burnt every three or five years. In other words, heather should be controlled like an ordinary crop.

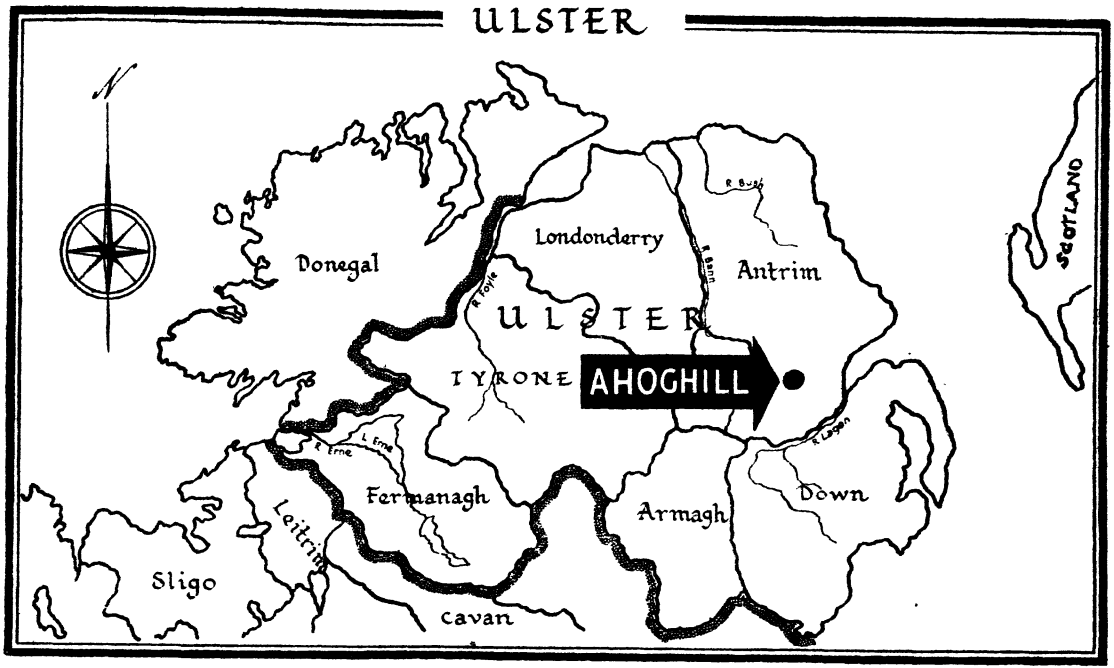
There is one small patch on Milsington which gives a visitor very furiously to think. It is an acre patch of beautiful wild white clover sward set in a big expanse of hillside. The sward on the acre patch would not look out of place on Mr. Pickering's Midland farm, but the herbage on the hills around it is, to put it mildly, coarse. The acre, on which the sheep obviously congregate, used to be a shepherd's patch and he grew potatoes on it for 20 years or more. It was well ploughed and had a lot of dung every year while the shepherd had it, and it was sown out to grass three years ago. Admittedly, it would be impossible to treat large acreages of the hills in the same intensive way, but this patch does show that much of the hill is capable of growing really good pasture. With crawler tractors, lime and phosphate, and improved strains of grass and clover, there seems no reason why thousands of acres should not be radically improved. The cost would be very high because there would be draining to do, and fencing so that the improved pasture could be properly grazed in paddocks of ten acres or thereabouts. It would cost probably £20 an acre and, though no one could afford to tackle a hill farm all at once, it appears that much might be done if each farmer did a bit every year. Presumably it is the uncertainty of the outlook for farming that explains why more hill land is not taken in hand; this uncertainty and the risk of the land quickly going back to its original condition mean that the cost of reclamation would have to be written off in a few years.

The problem has, of course, been studied by those who are much more competent than the writers to express an opinion on matters concerning hill farming. Mr. Martin Jones, for

instance, argues that the wintering of the hoggs is the crucial point, and that in this respect reclaimed hill land could play an extremely important part. He holds that cattle should graze the reclaimed areas from mid-May to mid-August and maintains that for every acre reseeded twenty other acres of hill would benefit and give an increased production. This last would mitigate the high cost per acre of reclamation, and it is very desirable that economic conditions may favour the treatment of large areas so that more sheep, and many more cattle, may be bred on the hills of Scotland. If the hill farmer could increase the numbers of stock he bred the other farmers of Britain would not be slow to snap up the extra cattle and sheep. However, it must be stated that Mr. Scott does not entirely agree with the argument of Mr. Martin Jones. Mr. Scott holds that, generally speaking, a properly bred hogg ought to winter on the hill with its mother. In that way it fails gradually in winter and mends naturally during the spring months, thus fitting itself for these conditions in the coming years.

PRODUCTION.—Nearly the whole of Mr. Scott's farm receipts are from the sale of cattle and sheep. There are the seed potatoes he grows and also a few pigs and poultry, but these are of quite secondary importance. Putting everything together the gross receipts come to about £1 10s. per acre, a figure hardly comparable with those obtained from other farmers in the series because of the low rentable value (about 2s. 6d.) of Mr. Scott's land. What is of more interest is that the gross receipts work out at over £600 per man employed, this figure being about the average of the other farms.

It is a pity that an appreciable proportion (about 25 per cent.) of the gross receipts come in the form of Hill Subsidies for cattle and sheep, but these could be more accurately described as deficiency payments, since it is the consumer rather than the farmer who is being subsidised. Without control the hill farmer could make enough of his first-class mutton and high-grade beef stores to get along quite comfortably without any subsidy at all.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Leitrim
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CHAPTER VIII

MILK AND POULTRY IN NORTHERN IRELAND

Family farms—Northern Ireland agriculture—conacre land—Hillview Farm—cropping—leys—oats—potatoes—seed inspection—catch cropping—flax—manuring—dairy herd—Shorthorns and Ayrshires—double dairy—rationing scheme—milk yield—poultry on free range—chicks—poussins—production.

THE four farms remaining to be described in this book are all family farms, in that each is of a size that can be worked by the occupier and his family. In that sentence the emphasis must be on the word " can," because in three of the four hired labour comes into the picture, and, obviously, the necessity for outside help must depend on the size of the family and whether the younger members are of an age to play their part.

Mr. McClure's farm is the perfect example of a family farm, being worked entirely by him and his family and providing the whole-time employment of all of them. As Mrs. McClure says, " There has been no extra labour this last while since the children have grown up. Ruby does the poultry ; Lily looks after the dairy ; Isa helps with the foddering and so on ; John drives the tractor." Then there is " himself "—by which flattering title Mrs. McClure refers to her husband—who looks after the dry stock and gives general supervision. Nor would the list be complete without Mrs. McClure, who does a full day's work and has the management responsibility of the poultry. However, someone has to run the house so that the labour force may be taken as equivalent to five full-time men ; it would be ridiculous to rate these girls at less than men since they do a deal more than many men. This, then, is a true family farm, run exclusively by a very united family all keenly interested in the work.

Northern Ireland is a country of family farms. Nearly

half of it is in holdings of under 50 acres, and anything over 100 acres is regarded as a large farm. The fields are small, about two or three acres, and the general impression gathered from a tour of the six counties is that the land is well farmed. There is considerable variation between districts, but intensive farming is the rule, except in places like the Sperrin Mountains, where there is typical hill-sheep farming.

Mr. McClure's farm, Hillview, is in the parish of Ahoghill (easy to spell but very difficult to pronounce correctly unless you have hiccoughs) a few miles from Ballymena, a small township some 30 miles north-west of Belfast. Mr. McClure was born only a few miles away and he came to live at Hillview when he was four years old ; his uncle had the farm then and Mr. McClure later worked on it before he took it over in 1912. There were then 26 acres of it, but he has taken over two more bits since and now owns 52 acres. Mr. McClure has always had, in addition to his own land, some conacre land and at the present time he has 52 acres of that, in one piece, about two miles from his home. Some explanation must be given of this term, conacre. As a result of the Irish Land Acts practically all (95 per cent.) land in Ireland is owned by the men who farm it, and it cannot be let without the sanction of the Government. Consequently, it is sometimes hired out on an eleven-months let, being taken for one season only and handed back in November, for which letting no Government sanction is necessary. This is conacre land. Very often it is not farmed so well as the rest, but Mr. McClure is doing his pretty well, considering that it is two miles away and that it consists mostly of low-lying river meadows subject to flooding.

When Mr. McClure took over the farm there was no hard road leading to it, only an old lane. The lane is now a public road and in 1930 he built his present house and practically all the buildings. The homestead and all the fields now have water ; all the fields are watered by springs, except one, which is supplied, along with the house and buildings, by a ram. Electric light is supplied by his own plant and laid on to the buildings as well as the house. Mr. McClure has grubbed up several hedges and, as a result, his fields are rather larger than those on most farms in the neighbourhood.

The layout is a convenient one with the homestead pretty well in the middle. The land is fairly flat—gently undulating would perhaps best describe it—the altitude is low and the rainfall is about 35 in. and well distributed over the year. The soil is a deep light loam, some of it almost as black as the fens; though this farmer ploughs only about 5 in. deep, there is any amount of depth all over it and no big stones. Lime is required periodically and the practice is to apply twelve tons every year. Much tile drainage has been done—as Mr. McClure puts it: "We've put in a brave touch of pipes. There's maybe miles of pipes. We do a wee bit every year."

CROPPING.—The system of cropping is to have a field down to ley for about seven years and then to plough for oats, then potatoes, and oats again with long ley seeds undersown. The Ministry of Agriculture has required every farmer to have a certain proportion of tillage during the war, 45 per cent. being the general proportion, though some allowance is made where the farm is heavily stocked. Mr. McClure has raised his tillage by ploughing up his leys earlier rather than by raising the number of tillage crops in the rotation. There are only 4 acres of permanent pasture at Hillview—a field which is cut for hay every year and which compares very poorly with his leys.

Leys are sown out with an ordinary mixture of the Cockle Park type, including a pound of wild white clover. Outstanding in the management of the leys is the fact that they are cut three times before an animal is put on them at all. In the first harvest year leys are cut twice and in the second harvest year a hay cut is also taken, and it is not till then that they are grazed, and grazing continues for the remainder of the ley. In 1945 the new ley gave a hay crop and after that it was cut by a binder for a crop of ryegrass seed. This early treatment of leys is very different from the best practice in Southern England, where there is now practical unanimity that new leys should be grazed at the very first opportunity; to cut three times before grazing in the drier conditions of south-east England would not leave a bit of clover. Mr. McClure does not get much clover in the first two years, but

it comes along all right as soon as grazing starts, presumably because of the wet climate, though the high fertility of the land probably has something to do with it. By cutting for hay in the first two years, poaching of the new ley, a serious danger where rainfall is high, is avoided, and there is, of course, the simple point that the hay is needed.

Leys are ploughed up in February and the furrows are disced, oats broadcast, and the field disced again to give a good cover for the seed and put it safely away from the birds. The variety of oats that is usually grown is Stormont Arrow and the average yield would be about a ton of grain to the acre, but this is rather a guess as the yield is not accurately known. Mr. McClure has a threshing machine of his own in the barn, and he threshes and crushes the grain as it is required, without any weighing or counting of sacks.

There are about 10 acres of potatoes on the farm, and the crop is grown primarily for " seed." Most of the acreage is devoted to earlies—Arran Pilot and Ulster Chieftain—the remainder being Arran Consul, with a few Arran Peak. Home-grown seed is used for part of the acreage, but some fresh seed is bought every year from higher, bleaker areas where stocks can be kept healthy for a long time; the stocks in these areas are good enough to enable farmers on the flat land to keep the health of their crops up to the standard required for certification. For a certificate the crop has to be inspected during the time it is growing, and the inspector comes again at the time of selling to check the grading and to seal the bags on the farm. If the seed is large it is cut, Mr. McClure and Ruby doing that whilst the other two girls drop the setts; the two planters have the night and morning milkings to do as well, but they reckon to plant two acres a day, which is very good going. As Mr. McClure says, " There's droppers and ones that can't drop. It would take me two days to do an acre ! " So that they get a high proportion of seed-size tubers planting is close, the width between rows being 24 in., while the setts are dropped every 8 or 9 in. in the drill.

Mr. McClure believes in thorough after-cultivation for the potato crop. He saddle harrows the ridges down, grubs and moulds up again before the potatoes are through and then

when they are well up they are grubbed again, hand hoed and moulded up. Then there is a last grubbing before the final earthing up. He sprays with Burgundy during the summer, and sprays to burn off the tops before lifting—for this job he prefers sulphuric acid because it kills the weeds better than sodium chlorate, which he was persuaded to try last year.

The method of clamping in seed-growing districts, Scotland as well as Ireland, is surprising to an English potato grower. The clamps are very small, holding only a ton or two, and they are dotted about higgledy-piggledy all over the field. The reason for this is that the gang at lifting is a small one and the baskets are emptied straight on to the clamp, thus saving extra hands and carts to take them to a large clamp. The little clamps do not get in the way of later working, as might be supposed, because they are usually all cleared by the end of October and the following crop is spring oats and not winter wheat. The usual yield of " seed " is about 6 tons to the acre, though the cold wet spring of 1945 delayed inter-cultivation and reduced the yield to 5 tons, and there are, in addition, the chats and some ware.

Mr. McClure grows only one acre of kale but he takes a catch crop of vetches, rye and Italian ryegrass, which he sows in August after the first early potatoes. In a good winter this catch crop may be used for the cows soon after Christmas and may yield four good cuts before the spring is out. After that he has broadcast cocksfoot, timothy and white clover over it to bring it for hay in the following year and by then it is established as a ley. It is very easy to see why ley farming has long been accepted in wet districts; they are spared the very considerable care needed to establish leys in drier climes with the risk of failure.

The land is manured very generously. The midden at the farm holds only about 20 or 30 loads of dung and so it has to be cleared frequently. During the winter the dung is put on the land coming for potatoes and during the rest of the year some 10 acres of ley will get a dressing. The necessity for frequent carting suggests that a mechanical spreader would be very useful at Hillview, the dung being drawn out as soon as a load has accumulated. Mr. McClure agrees that he could do with one, but adds that if you spend

all your money you have none left, a point of view that never seems to worry our mechanically minded farmers. In addition to muck, potatoes receive 1 cwt. sulphate of ammonia, 4 cwt. superphosphate and 1 cwt. muriate of potash. Oats receive no artificials—"sure the biggest trouble with us is keeping the oats standing anyway!" says the Ulsterman.

It is the leys which get the most liberal treatment. When the corn crop in which a ley is undersown has been harvested, two tons of ground limestone are applied, then in early winter a coat of farmyard manure, 3 cwt. superphosphate in January, and 1 cwt. sulphate of ammonia in March or April. As soon as the hay is cut in June the ley is top-dressed with 3 cwt. superphosphate and 1 cwt. sulphate of ammonia; after the second cut it gets another dressing of muck and that is followed by another 1 cwt. sulphate of ammonia the next spring. During the years it is grazed it receives 3 cwt. superphosphate and at least 1 cwt. sulphate of ammonia every year. The catch crop receives the poultry manure from the hen houses.

In the 1914-18 war Mr. McClure was a flax grower and, in fact, he grew some two years ago on his conacre land. He used to have 10 or 12 acres every year, but his own land is now too rich—the crop just lies down and rots—and he prefers to grow fodder for his cows. Flax is an important crop in Northern Ireland which is the only part of the British Empire that produces dam-retted flax, the best stuff for aeroplane fabric.

Stock.—Milk is the mainstay of the McClure farm. In September 1945 there were 25 cows in milk, 6 in calf and dry, and 9 in-calf heifers. There were also a few strangers down on the conacre land, but they hardly come into the picture—Mr. McClure likes a bit of dealing and buys a few cattle for fattening on the grass. Ten years ago the dairy herd was pure Shorthorn but then he bought an Ayrshire bull. In this he was doing the same thing as many other farmers in Northern Ireland, for many Ayrshire crosses are to be seen in the country. The explanation of this lies in the difficulty there has been in getting Shorthorn bulls that will breed

milk ; there is much Scotch blood about and farmers have been going for the square type of bull. A bull whose dam and sire's dam both qualify for milk yield is known as " double dairy," but the qualifying yield—600 gallons for a heifer and 650 gallons for a cow—is very modest.

The trouble is that bulls that have the " double dairy " label, which cannot mean much with such low qualifications, are regarded as satisfactory from the milk angle and are then selected on beef points. A higher qualification for milk has been introduced recently. With this shortage of really dairy bulls it might be expected that Dairy Shorthorn bulls would have been imported from England, but this, unfortunately, has been impossible in recent years, since there have been only fleeting periods when England has been free of foot-and-mouth disease long enough to satisfy the requirements for import. Something has been done, in the early part of 1946, to get over this difficulty by hiring the quarantine station at Liverpool.

Statistics show that the Shorthorn is still the chief breed of cattle in Northern Ireland, since the breed provides three-quarters of all the bulls in use ; Ayrshires still account for only 10 per cent. It is since farmers have been averaging about 2s. a gallon for milk the year round that there has been a temptation to go in for a bull of a pure dairy breed. The crossing policy makes many herds look a little nondescript at the moment, but most farmers will, presumably, work to a definite breeding policy and keep on using Ayrshire bulls.

Mr. McClure sounds just a little dubious when discussing this point ; he argues that a good mixture is good and that there is more substance, more size and weight, with a cross-bred animal. He takes some delight in showing twin heifers which he has by a Friesian bull, and says that he " likes a bit of colour " ; but the explanation of this cross—absolutely divorced from his real breeding policy—is that the dam was a heifer by his present bull and so he had to use someone else's bull and a Friesian was the handiest one. His son has definite ideas on the subject and is all in favour of straight breeding, so that it is long odds that the herd at Hillview will be continuously headed by an Ayrshire bull. It is interesting to note that the total sales of milk off Northern Ireland

farms stood at 40 million gallons in 1939, and that by 1945 this had gone up to 60 million.

Heifer calves at Hillview get about 30 gallons of milk altogether, and Mr. McClure thinks that is barely enough. When they are a month or five weeks old they go on to crushed oats, sometimes mixed with treacle and water. They are well grown for their age and are bulled to calve down at about two and a half years old. The herd is tied up in the milking sheds entirely from the middle of October to April.

For several years Mr. McClure made grass silage but he has now given that up. For feeding the herd he has something green all the year round—grass, the acre of kale, and the catch crop, which must prove a very valuable addition to his feeding stuffs. There is oat straw and 35 acres of hay ; the acreage of hay, a little over an acre per cow, is nearly up to what is recommended to dairy farmers in England and should prove adequate, for the generous and well-distributed rainfall of Northern Ireland produces heavy crops of hay.

The rationing system for concentrates works differently from the English one. There is one feeding-stuffs department at Belfast for all the six counties, and the aim has been to keep the system as simple as possible. There is a flat issue per cow during the winter of 4 lb. and 2 lb. in summer, with no special issue for calves. The ration is dependent on the farmer being graded as a producer of clean milk, but is not related to yield. Another difference is that in Northern Ireland a farmer can buy oats at the controlled price from another farmer, off the ration, the only stipulation being that the buyer must feed the oats to stock on his own farm. There is good corn-growing country in the Limavady district and Mr. McClure reckons to buy about 10 tons a year. Taken altogether, there should be enough starchy food available for the herd, though protein must be a little tight, as it is in England. The daily yield averages a little over 40 gallons all the year round, and the milk is collected from the farm.

POULTRY.—It is impossible to be in Northern Ireland for more than a day or two without realising that poultry play a large part in their farming. There seem to be hens in every grass field, and it is a fact that during the war Northern Ireland sent over enough eggs to meet the whole of the egg

ration for Greater London—a very useful contribution, though Londoners could have wished for even more! Very frequently the farmers' wives look after the poultry and many of them reckon to provide all the housekeeping money from the poultry sales. It is not worked like that at Hillview; as Mrs. McClure says, "There's only one purse in our house, and if the boss is out he mostly has it with him."

During the war poultry numbers in Northern Ireland have increased; this is in marked contrast to pigs, which have been drastically reduced. Nearly all the poultry are kept under free-range conditions, and this makes them less dependent on imported food. Experience has shown that they can get along very well with oats and chat potatoes, with a small proportion of rationed foods. Another factor favouring poultry is that rations have not been based on the number on the holding in 1939 but on the number shown on the latest June return, so that if a farmer manages to support a good head in one year it helps with his rations in the following year. All the same, the ration is only a quarter of an ounce per bird, which is one-sixteenth of what a bird requires. Mrs. McClure uses whatever she can lay her hands on for the poultry—greens, potatoes, and so on—and she also gets a good share of the oats, even if it means the hens are pulling against the cows!

The present number of hens is between 600 and 700 and is about the same as pre-war, though the total has occasionally been up to 1,000. Half are pullets and half old hens. The method is to put a poultry house in the middle of a grass field and allow the birds free range over the field. A house is not usually on one field for more than two years, and these are normally the last years before the field is ploughed up; arable crops must gain a lot from the poultry. There are many foxes in the neighbourhood and some losses have been suffered (Irish foxes are like English ones in killing many more than they eat) though the birds are all closed up at night. Most of the hens are Rhode Island Reds and the chicks are hatched in two incubators, going out to a field when they are about a month old. No day-old chicks are sold, but the cockerels are usually disposed of as soon as possible. A lot go as poussins, but at some times of the year

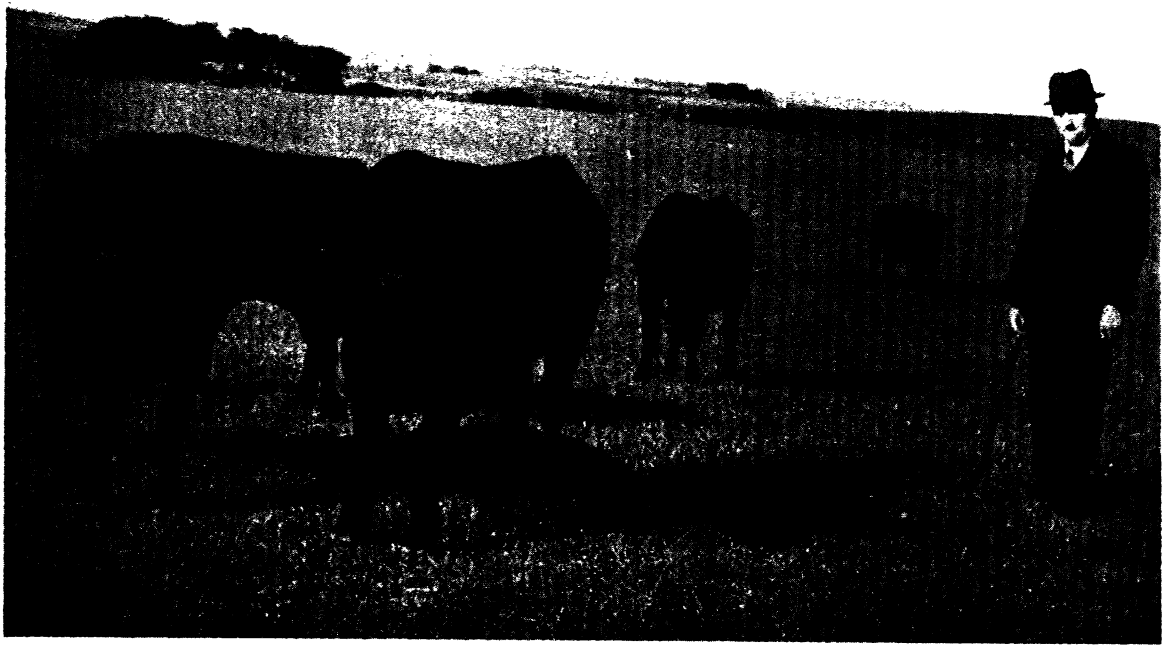
there is no sale for these and then the cockerels are fed on to be sold by weight. Eggs are taken by car to a store at Ballymena.

PRODUCTION.—The labour of the family has been assessed as the equivalent of five full-time men and it must be repeated that there is absolutely no outside labour. There is a Ford-Ferguson tractor complete with its implements, a binder and power take-off mower and potato digger.

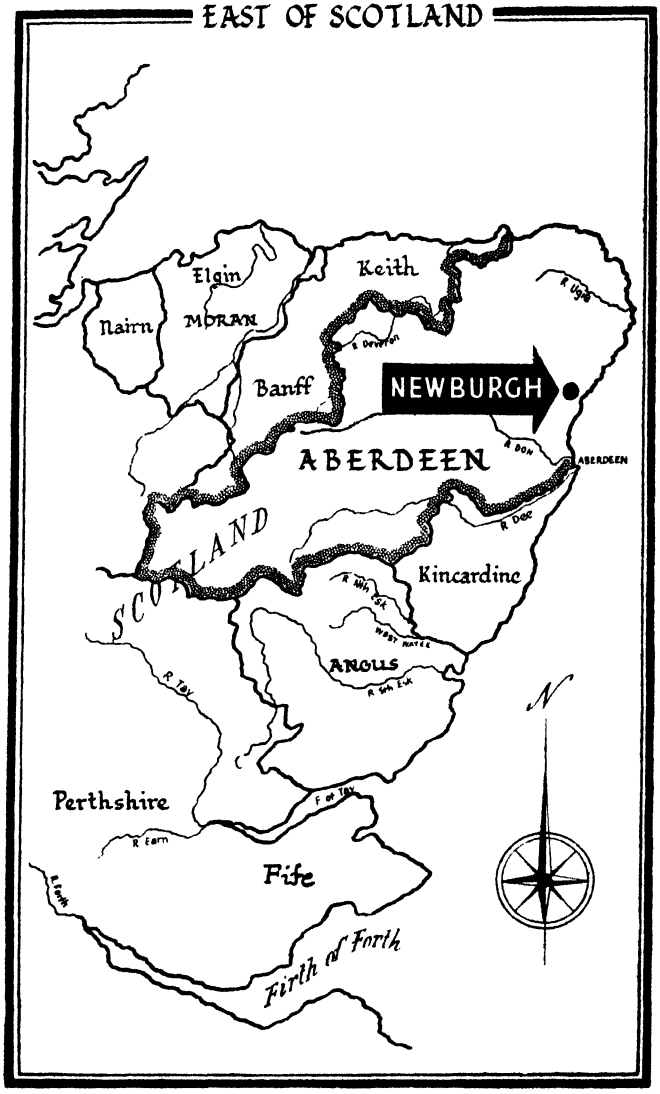
Total receipts come to just about £8,000 in the year, of which half is from milk, a quarter from poultry, and the other quarter nearly all from potatoes. Including the conacre land there are 104 acres in all, so that the gross receipts come to £29 an acre. This is a very high figure, partly explained by the excellence of the land, but chiefly due to the intensive nature of the farming system. The gross receipts are £600 per worker, which is about the level of the majority of the farms visited.

No farming system could have a greater air of permanence than that at Hillview. There is a nice balance, with three main products, none of which is likely to let the whole enterprise down. The stocking is heavy according to most standards, and this has undoubtedly greatly improved the farm, which is now in really high condition. It was both a privilege and an encouraging experience to meet the very united McClure family and to see the keenness and competence of each member of it.

A REALLY UNITED FAMILY EFFORT IS THE KEYNOTE OF THE McCLURE FARM IN ULSTER. MR. McCLURE, HIS SON, AND TWO DAUGHTERS BAGGING CERTIFIED SEED POTATOES FOR EXPORT



RASHIERIEVE IS A TYPICAL FAMILY MIXED FARM IN THE EAST OF SCOTLAND—HERE IS MR. BUCHAN WITH SOME OF HIS HOME-BRED BULLOCKS


EAST OF SCOTLAND
Elgin
Keith
Nairn
MORAY
R. Deveron
R. Ugie
Banff
NEWBURGH
R. Don
ABERDEEN
ABERDEEN
R. Dee
SCOTLAND
Kincardine
R. Esk
West Water
ANGUS
R. Esk
R. Tay
N
Perthshire
R. Earn
Fife
R. Forth
Firth of Forth

CHAPTER IX

BEEF IN ABERDEEN

Bullock fattening—10,000 Aberdeenshire farms—the "milk strip"—Rashierieve Farm—why no home breeding?—buying districts—Orkney as a milk county—Angus and Shorthorn crosses—methods of fattening—hay and silage—farm buildings—light land—a Bone Davey—"hard and easy seven"—roots—"neeps"—alternatives to neeps—oats and barley—production figures—future of cattle fattening.

FREQUENT reference has been made in earlier chapters to the drift away from beef and over to milk, but in Aberdeenshire the movement has not been very pronounced. This is despite the fact that fattening cattle is largely done in yards—courts is the commoner word up north—and it is this method which is generally acknowledged to be, if not the quickest or the most pleasant, at least the most certain way of losing money. Even in Aberdeenshire there is a strip of land, running from the city right out along the coast and inland a few miles, in which dairying is the main type of farming, but taking the county as a whole the Milk Marketing Board draws milk only from about 900 farms—less than 10 per cent. of the total number. Bullock-fattening is the usual thing in Aberdeenshire, but it must be remembered that some of the 10,000 farms in the county are breeding farms on the slopes of the Grampians.

Mr. Buchan's farm, at Rashierieve, lies alongside the road leading from Aberdeen to Peterhead and it is about 10 miles north of Aberdeen. This means that it is in the "milk strip," but the dairy fashion has not attracted him and he is a typical cattle fattener. The house and buildings are right against the main road, which indeed forms one boundary of four of the six fields of the farm. Looking across the road from his house the North Sea can be seen about a mile and a half off. The rise in the land as you go back from the sea is only gentle, and the house itself is on the 200-foot contour line.

It was at the adjoining farm of Overhill that Mr. Buchan was born and brought up. He took over Rashierieve, a farm of 85 acres, in 1925. Mr. Wannop, Director of Advisory Services for the whole of the North of Scotland, considers Rashierieve a typical Aberdeenshire family farm and points out that two-thirds of the land in the county is in farms between 50 and 100 acres. This is the size of farm that is normally run by the farmer and one man ; but Mr. Buchan has two paid workers, a horseman and a cattleman. He himself is a very busy man and can have little time to spare for working his own land. For one thing, he manages Overhill, a 200-acre farm, for his sister, and also manages three other farms, extending to 500 acres and five or six miles away.

Then he is a member of the Executive Committee for Aberdeen and Ellon. Scottish counties are, on the whole, small, the average area being little bigger than that covered by a District Committee in England. Aberdeenshire is so much larger than other Scottish counties that they divided it into four and set up four committees, all of equal standing and all directly responsible to the Secretary of State. Aberdeen and Ellon is one of the four. Mr. Buchan's work as a member of the Executive takes a further slice from his time, so that the labour at Rashierieve may be taken as just two full-time men.

Power on the farm is provided by two young horses, but there is a tractor at Overhill and naturally where two adjoining farms are managed by one man they are worked in together to some extent, and the tractor does some work on Rashierieve. Nowadays many Aberdeenshire farms of 80 acres or thereabouts are worked by one tractor and one horse.

CATTLE.—It is generally reckoned that the chief loss in winter beef production is borne by the fattener, rather than the breeder or rearer, and hence it might be argued that Mr. Buchan should breed his own cattle instead of buying stores. That was, indeed, his original policy, but he abandoned it after sustaining two really hard knocks. In 1928 all his cows aborted, and there was no strain 19 vaccine then, and in September of the same year he lost a number of the previous

year's calves from husk, or hoose. This decided him to buy older cattle and to fatten them.

Before the late war he got his cattle mainly from Orkney and he would still have them from there if he could get the right sort at a reasonable price, especially as his cattleman is an Orcadian and has a soft side for them. The Orcadians, however, seem to be getting the milk fever like everyone else; the Milk Marketing Board is putting up a creamery there and this will rule out one more source of beef stores. Mr. Buchan now buys his cattle in Aberdeen, but they are bred in Strathdon and the Cabrach, that is, the high ground of Aberdeenshire and Banffshire. He gets them when they are about two years old and weigh about 8 cwt., the price averaging a little over £30. They are Angus and Shorthorn cross, many three parts Angus and some getting very near to pure bred, as they have been using Angus bulls for generations in some parts. Mr. Buchan prefers something nearer to the first cross as they have more weight; a good-sized Irish or English cow and an Angus bull can breed the kind of stock he likes best.

Most of the cattle are bought in September or October, when the price is at its lowest, and then in January or February others are bought to replace the ones that go fat from the byres. Cattle fattening is a continuous process at Rashierieve and 60 go out during the winter and 40 in summer. Summer fattening calls for little comment. The cattle are turned out from the courts in April and kept going well with turnips and swedes until the grass grows. Most of them go away fat from June to August, and it is evident that they are well finished from the 1945 returns, which showed all but one to have been super-specials, the exception being A plus.

Winter fattening is the more interesting, since for the last couple of months the cattle are tied up individually in two long byres. Of course this entails much more labour than fattening in courts, but Mr. Buchan favours the old custom of tying up because they waste less of their food in movement and because they can be given individual attention. In the old days cattle were groomed daily, but this cannot be done in courts, and the grooming made a big difference to the way

a beast thrived and looked. The old idea was that the cattleman fed his cattle in the morning, cleaned them out and groomed them, and then gave them another feed before he stopped for dinner. In the afternoon he helped for two or three hours at other farm work and after that he came back and fed his cattle again. All grooming has gone by the board in these days of labour scarcity, and the cattleman spends more of his time outside, but he still mucks out morning and night—and he makes a real job of it, too. The muck and dirty straw are wheeled out in a barrow to the courts, where there are loose cattle, and by the time clean straw has been put down and the place swept up it approaches a milking parlour in appearance. It is all magnificent, but can it be economic ?

In Mr. Buchan's view a man can do 50 cattle tied up and also pull turnips for them ; in courts he could manage 120, though he would hardly be able to pull turnips for that number. The latter statement is perhaps a bit academic because there are very few Aberdeenshire farms which would have 120 cattle at one time, but the general conclusion is that a man can look after twice as many loose in courts as he can tied up in byres. Mr. Buchan likes to have some of both and finds that 30 tied up and 40 to 50 loose make a good combination. As the ones tied up go out fat the byres are filled from the courts. Whatever the economics of the matter—and it will be seen that in Mr. Buchan's capable hands the system is economic—these cattle, all black and very neat in type, in a long line are a really beautiful sight.

In the early part of the winter the cattle get swedes (or turnips) and straw, and nothing else. In a year when swedes are plentiful big bullocks get as much as 1½ cwt. a day ; they are given as much as they will stand without scouring. They have plenty of straw, both to eat and to lie on—bullocks must have a dry bed when tied up or they will not thrive. It is nearly all oat straw at Rashierieve, though barley straw may be used for bedding. When the cattle get a little flesh on them they get 8-4 lb. of bruised corn, but very rarely any cake—Mr. Buchan says " There's plenty of work with coupons in the house without starting them in the byre ! "

Without cake they must be very short of protein, and whilst it is common enough to hear of cattle fattening on nothing but roots and straw it is a slow process. Mr. Buchan argues that "what you don't buy isn't to pay for," but agrees that without cake it takes two or three months longer to finish cattle. The saving in feeding costs must be put against a slower turnover, and probably at present prices one way is as good as the other. Roughly 6 acres are cut for hay each year, but this is mainly fed to horses. No one has persuaded Mr. Buchan to go in for silage; his opinion is that if you can grow a good swede there is no reason to make silage. Whether his "protein-starved" cattle would take the same view is perhaps doubtful.

Over the year the difference between buying and selling price averages about £11, this figure allowing for the odd one that does not do or is lost. This result must be regarded as very satisfactory, but then Mr. Buchan is obviously a shrewd buyer and it is only such men who have been able to keep going with this fattening in the grand manner. With most Aberdeenshire farmers the profit has not been good in recent years—often there has been none at all—and it is only the high prices of arable crops that have allowed winter fattening of cattle to be continued through the war. A lot of farmers would have stopped it, but they consider that they cannot farm without muck. Mr. Buchan's experience is that a well-dunged field is worth double a field that has not been dunged. He is prepared to admit that a farm in good order could be carried on without a lot of muck, but he has had to pull his farm round and he is sure that his cattle have been mainly responsible for the improvement.

Farm Buildings.—The buildings, or steading, at Rashierieve are like many other sets to be seen in Aberdeenshire, where the layout seems to be almost standard. They are very solidly built in the form of a square with one side missing, and the middle, which in the old days was an open midden, is now often roofed over, as at Rashierieve, to form covered yards or courts. Many steadings are built of granite, which is to be found all over the county and used to be as cheap to erect as anything, though the cost

would be prohibitive now. Latterly concrete has displaced granite.

The layout usually includes one or two byres for tying up cattle, a stable, a neep shed (for storing neeps—i.e. turnips and swedes), a cart and implement shed, a granary and a built-in mill (in English, a stationary threshing machine). The mill is very convenient, as it enables one or two of the small round stacks of the district to be carted in and threshed in a day with a gang of only two or three. Some steadings have long straw conveyors by which the straw can be delivered as threshed at nearly any point of the range of buildings. There is much to be said for this threshing arrangement and some Scottish farmers reckon to thresh once a week, say on every Saturday morning, to give them freshly threshed straw all through the winter. This is much sweeter than straw that has been threshed for a long time and probably has some advantage in feeding value, though science is not yet able to specify what the advantage is.

These Scottish buildings, with walls often two feet thick, were made to last, and in a changing world this immutability has its drawbacks. If an atomic bomb removed all the buildings at Rashierieve (no ordinary bomb could do it), and Mr. Buchan still remained to build another set, he would put up a barn more or less in the centre—a barn with neep shed and with grain loft and food store above it. There would be an opening on each side of the barn for feeding to courts or byres, a system which would cut down walking and carrying. He would have a separate shed, a big one, for implements to lessen the danger of fire in these days of tractors. The doors would be much bigger than those in his present steadings, where a driver has to be very careful in taking a tractor and trailer into the neep shed to avoid being decapitated at the entrance.

As his old cottages had to come down because of a road-widening scheme, Mr. Buchan built two new ones just before the war. They are three-roomed houses with kitchenette, bathroom, hot and cold water, washing tub and inside sanitation, but without electricity as the grid has not yet come there. He has an electricity plant for his own house and the steadings.

CROPPING.—The tenants before Mr. Buchan had been in the farm for 49 years and the only stock they kept were two horses and two cows. They sold everything off the place—straw, hay and turnips all went away. Consequently the farm was in very bad heart—an 11-acre field of third-year grass would not even carry the two horses and two cows through the first summer Mr. Buchan was there. The farm was foul, too: there were a lot of annual weeds and thistles, and that worst-of-all weed, onion couch, which is known locally as knot-grass. These weeds are now all well under control and, as far as could be judged in early January, the farm seemed clean. Well-grown root crops and good leys, with plenty of wild white clover, must be given the credit for the great improvement in cleanliness.

Though the land has a clay bottom it is nothing like so heavy as the English clays; a good working, deep loam would be a fair description of it. Mr. Buchan has taken out many stones, but Rashierieve is naturally freer of stones than most Aberdeenshire farms. Ploughing is usually 7 in. deep for a cereal crop, with an inch or two more for a root crop.

In 1942 all the fields were tested and the samples showed lime requirements varying from 30 to 55 cwt. per acre. Since then every field has had a dressing of 20 cwt. of ground limestone to the acre, and now they are getting 15 cwt. of burnt lime in turn. The lime comes from England and the long carriage makes its cost over £4 a ton on the farm; Mr. Buchan takes delivery during the winter and puts it straight on to the land. It is put on by a manure distributor that enjoys the name of "Bone Davey" in the neighbourhood—the first word obviously derives from bone manures, but the origin of the second word is a mystery. In Banffshire there are thousands of tons of really good-quality limestone rock, quite enough to cater for all north-east Scotland when it is properly developed. This will be a boon to Aberdeenshire farmers, who used lime very sparingly before the war on account of the distance it had to come and its consequent high price.

When they talk of rotations in Aberdeenshire they speak of the "hard seven" and the "easy seven." The "hard" is four years arable and three years grass, and the "easy"

one has it the other way round. Where land is free and easy to work, and generally all the better land, it is often farmed on the hard seven, as, for instance, in the Turriff district. Naturally in the depressed pre-war years many farmers slipped into the easy seven. Taking the county as a whole, the six-course—three arable, three grass—is the most common rotation. A surprising number of Aberdeenshire farms are laid out in six fields—not all equal in size, because if any part of the farm has poorer soil than the rest the fields there are bigger.

In many parts of Britain farmers have a sequence of cropping that is somewhat fluid, but in Aberdeenshire they have a definite rotation and they stick rigidly to it. Thus, in the depression farms did not go down to grass in the way they did elsewhere, and in the year war broke out 44 per cent. of all the farmed land in the county was still in arable crops. During the war the arable was pushed up to 60 per cent., which could be achieved by changing from the easy to the hard seven and taking two corn crops running after the ley, or when the rotation was a six-course by changing from three and three to four and two. The common arable sequence is the usual one for wet districts—oats (and oats again if there are four arable shifts), roots, oats—but Mr. Buchan found that the oat crop after ley was usually lodged, and to avoid that risk, now that his land is in good heart, he takes the roots first and follows with two corn crops. Rich wild-white-clover pastures have done much to raise the condition of many farms, and before the war the rotation that was being recommended was potatoes, oats, roots, oats, and four years ley. This gives 50 per cent. of tillage and was advocated to develop the seed-potato trade which could be a big thing in Aberdeenshire.

About the first thing that strikes an Englishman travelling through the east of Scotland is the big swede and turnip crop; it is not only that a great acreage is devoted to it but also that the yield is very much higher than can be obtained in the South. Another surprising thing is that they are left out all winter and do not seem to take any harm. Apparently they may suffer if there is a frost and then a sudden thaw followed quickly by another frost; if they freeze in and

thaw out gradually it does not harm them and they take no hurt from snow.

Mr. Buchan ploughs his ley up at about the turn of the year, in preparation for swedes or turnips. When his land was foul he grew his turnips after stubble and in the spring he took off two or three " fleeces " of weeds (mostly onion couch) before sowing. The furrow was broken by cultivator or grubber as soon as the land could be worked in spring and this brought the weed to the surface, where it was collected by harrows and gathered off by hand for burning. Now there is no necessity for this extra labour and he sows his swedes as early as he can in May, the seed rate being 5 lb. per acre at first and falling down to 3 lb. later on. The funny thing about swedes is that the young plants seem to like company, so that when the sowing is early and there may be frost to come the seedlings should be thick. Turnip fly is common and blamed for many failures, but Mr. Wannop believes that the real cause in many instances is frost. Finger-and-toe frequently attacks crops and is bound to be bad if turnips or swedes are taken more often than once in six years. Roots are grown on the ridge, and the first after-cultivation is to run a scarifier along the rows, and singling is then a fairly quick job. Then they will be horse hoed two or three times and, though a second hand hoeing is now out of date, the men go through again cutting thistles.

Harvesting of swedes and turnips needs no description as they are left growing in the field until required. In good weather they are brought in every day, but Mr. Buchan likes to have a few days' supply in the neep shed and also a fortnight's supply handy in a clamp. He only grows about one acre of yellow turnips, the rest of his roots being swedes. The yellows are softer and easier for the cattle to start on when they first come off the grass, and another point is that swedes are slower growing and are often not ready by the time they are first wanted.

Mr. Wannop is rather worried over the large acreage of swedes and turnips grown in Aberdeenshire—one-sixth or one-seventh of every farm. The crop is not yet mechanised and after the seed is in it is hand operations all the way. It does

not seem likely that grass silage will provide the alternative unless suitable mechanisation for the small farm is developed. If the switch to grass silage were made there would have to be some other cleaning crop; potatoes would fill the bill, but any crop that would smother the ground might do. One farmer, farther south in Perthshire, has replaced part of his root crop by a mixture of Italian ryegrass and barley, which he puts in late, with potato fertilizer to make the maximum bulk. He gets a tremendous growth of stuff that smothers everything else, and he makes silage of it; but the operations must be fully and cheaply mechanised if this practice is to spread in a county of small farmers. Mr. Buchan does not think much of the idea because he fears the leys would suffer. His experience is that if a piece of land misses its root crop during the arable years it never makes as good grass as the rest when its turn comes round for ley.

The potato crop is not an important one at Rashierieve. Every farmer is expected to grow potatoes to the extent of 4 per cent. of his acreage, but he works the 3 or 4 acres required in with the crops grown on other farms in his care. He says "I've nae love for growing tatties. I like them best on the plate," and this is a sentiment with which many English farmers are in cordial agreement.

Before the war the corn grown in Aberdeenshire was 95 per cent. oats, and during the war, when some bread corn had to be produced, the increase was usually in barley rather than wheat. The difficulty with wheat is that, taking one year with another, it must be in by the end of September and that is not often possible. If the crop gets established all right in the autumn the yield is often five quarters or more. Standard Red is the usual variety, though Little Joss and Als do well. The barley area of Aberdeenshire is now three times what it was before the war and reaches 40,000 acres, farmers having been asked to devote one of their corn shifts to it. The traditional barley variety is one known as Common, which suits the distiller; he does not object to a high nitrogen content nor a hard steely barley, but he likes plump grain from an evenly ripened crop, and an even, low moisture content. In recent years Maja and

Kenia have been grown, and they have yielded better than Common.

Yielder and Victory are the commonest oat varieties. Mr. Buchan has tried Onward and the Danish Sun but their great trouble is the shape of the heads, which hold water. Oats are sown as early as the land is ready, from the beginning of March onwards. Craibstone experiments have shown that every day's delay in sowing after April 1 means the loss of a bushel of grain to the acre at harvest. The seed is broadcast on the plough furrow at 7 bus. per acre and with 4 and 5 cwt. of fertilizer, chiefly phosphate. If it is a second corn crop Mr. Buchan likes to give it, in addition, 1 cwt. of potash and 20 cwt. of slag, and if the slag is not available to harrow in with the seeds it is put on the grass after the corn is harvested. The land is deficient in phosphate.

There is no fertilizer rationing scheme in Scotland, but an allocation for the county based on pre-war consumption and on experimental results. There has been a gentleman's agreement among the merchants that they would not supply any farmer with more than he used in a basic year, so that people who were farming well before the war have the advantage. With a high rainfall phosphate is particularly needed, but, although most farmers could have done with more, it seems to be generally agreed that the allocation has been reasonable.

PRODUCTION.—It is always an impertinence to ask a farmer for his turnover—it's what Mr. Buchan calls the " kittly bit " and he says an Aberdonian gives nothing away ! All the same, he produced very full accounts from which a few figures only need be given.

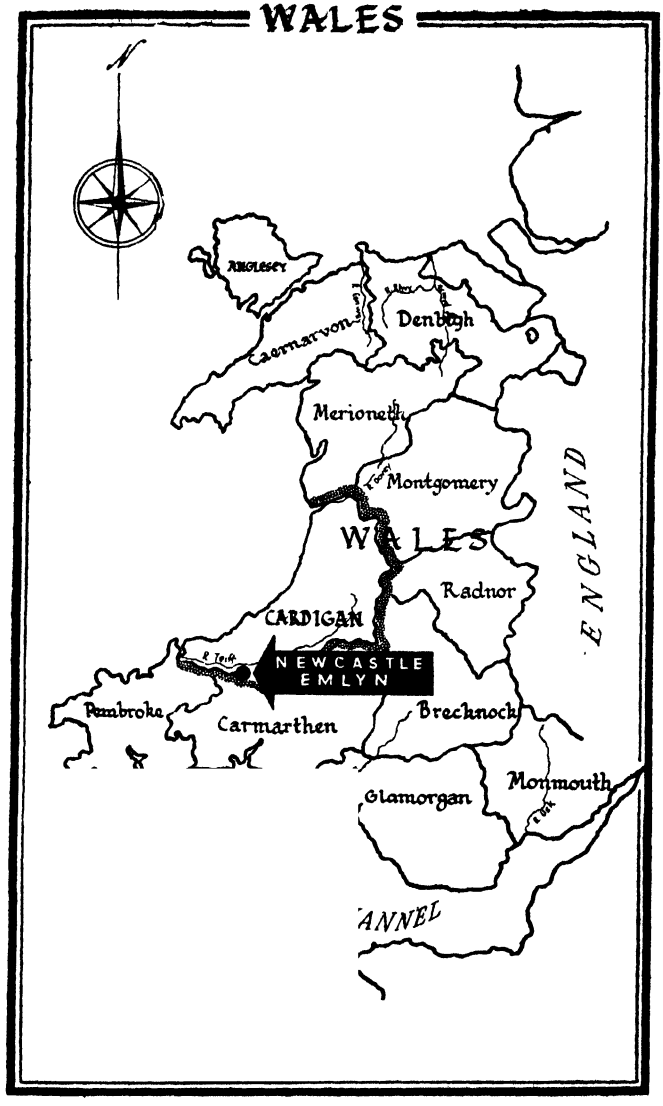
It has already been said that 100 fat cattle are sold each year from the farm, and that the average difference between buying and selling price for the years 1942-45 was £11 ; in conformity with the calculation for Mr. Pickering's farm, the gross receipts from cattle will be taken at £1,100. Mr. Buchan grows more oats than he needs for feeding and he disposes of what he has to spare as seed, the receipts for these averaging over the last three years £650 a year. There are only about 200 head of poultry, although there are large

numbers on other farms managed by Mr. Buchan. He likes to buy young horses, break them and sell them, and if all these things are included the gross receipts come to about £2,250. This has to cover all the running expenses and Mr. Buchan makes out that all he has to live on are " my losses and my luck pennies."

Gross receipts come to £26 an acre and £1,100 a man. Both of these figures are very high, and show that the most is made of the land and that labour is well employed. The high receipts per man are interesting in view of the heavy labour of tending cattle that are tied up; the explanation of this apparent anomaly must lie in the fact that direct labour is not the main expense of fattening cattle.

The success of the whole venture clearly turns on this fattening, and success in fattening means getting cattle of the right sort. If the supply of good stores dries up Mr. Buchan intends to return to the policy of breeding them himself. He would have some cows for rearing calves and also heifers just for producing calves. They would all calve in February and March and their calves would be taken from the heifers at birth, to be reared by the cows; the heifers would be fattened straight away. This might prove profitable, but Rashierieve is not really a rearing farm; rearing is better done on cheap hill land.

With alterations to the steading, Rashierieve would be very suitable for milk production, since it is hard against a main road, but Mr. Buchan has no love for that and is very unlikely to switch from beef to milk. He can claim that his present system gives good returns and it has certainly led to great improvement of the land. Whatever may be said about the expense and labour of growing a large acreage of swedes, and of tending cattle that are tied up, it must be remembered that the depression between the wars did not knock out Mr. Buchan, nor others farming similarly in Aberdeenshire.


WALES
ANGLESEY
Carnarvon
Denbigh
Merioneth
Montgomery
WALES
Radnor
CARDIGAN
R. Teifi
NEWCASTLE EMLYN
Pembroke
Carmarthen
Brecknock
Glamorgan
Monmouth
ENGLAND
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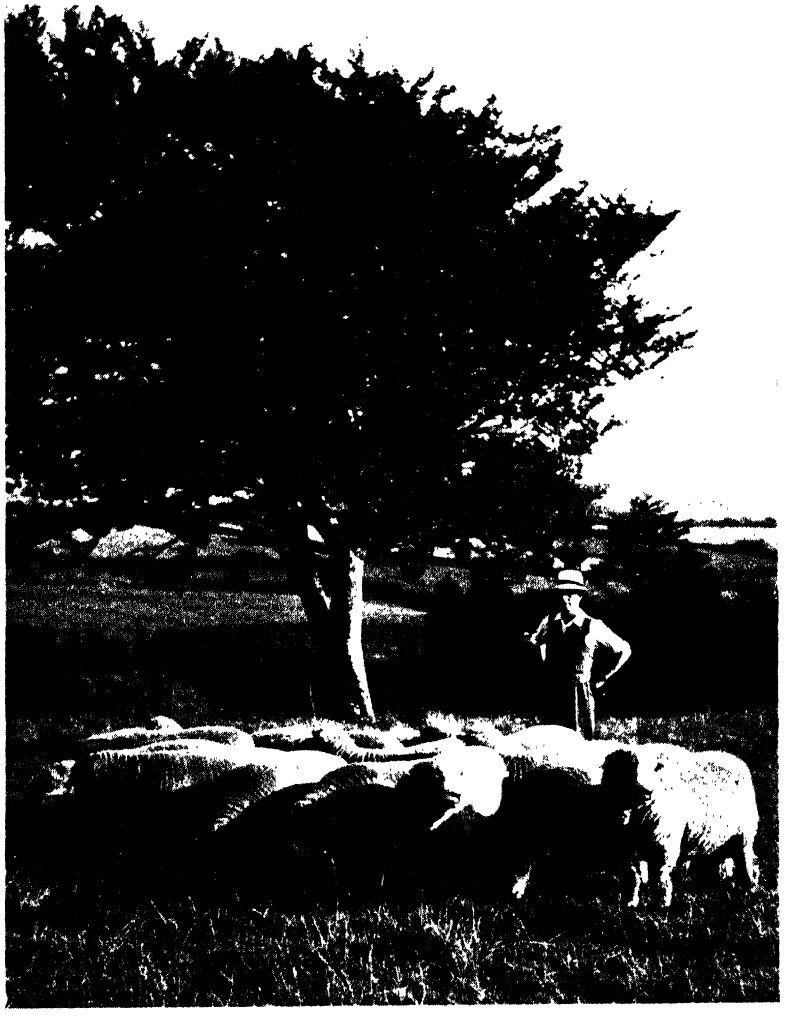
A QUALIFIED DAIRY SHORTHORN BULL USED IN THE HERD ON THE REES BROTHERS' FARM IN WALES



A GROUP OF DEVON CLOSE-WOOL SHEEP ON OAKWELL FARM. THIS COMPARATIVELY NEW BREED HAS PROVED VERY HARDY IN A DISTRICT WITH FREQUENT DRIVING RAINSTORMS

CHAPTER X

THREE BROTHERS IN WALES

Welsh family farms—clean areas—the Rees farm—switching over to milk—Milk Marketing Board—milk collection—sales of bulls—buildings—yields—sheep—change of policy—cropping rotations—leys—horses v. *tractor—shipreys—oats—barley and wheat—farm returns.*

WALES is a land of family farms, but when that has been said it is difficult to generalise much farther. Welsh farmers have to contend with ground that is often very steep and with a high rainfall, and in normal times it appears no place for the plough. Even so it is surprising how much arable some Welsh counties always have, and in war-time the arable acreage has gone up to high proportions. The main purpose of Welsh farmers, however, is to make the most of grass, to turn it to the maximum advantage in the production of livestock and livestock products. In the days of depression Welsh farms proved remarkably resilient, showing great capacity to weather economic storms and to recover; and the ones that suffered least and recovered most quickly were those that in recent years have gone over to milk production.

This change to dairying has occurred very widely in Carmarthenshire, and this county now has a very high percentage of herds that are clean from tuberculosis. It was most unfortunate that shortage of manpower forced the closing down of the attested scheme at the beginning of the war, because withdrawing such a scheme greatly discourages farmers and gives them the impression that it is unimportant; when attestation was restarted many farmers were less zealous, but in the last few years much of the lost ground has been regained. If there had been no interruption it is very probable that the whole county would have been a clean area by now.

No one farm could be typical of all the varied agriculture

of Wales, but Pengwern Uchaf, occupied by the Rees brothers, is fairly representative of the mixed farm at a moderate elevation (600 to 700 ft.). It is 157 acres in extent and that is large compared with farms on the low ground—say, in Anglesey and Caernarvon—and it is not one of the hill farms that carry unenclosed mountain grazing. The Rees family have occupied the farm for 45 years, and owned it since 1919. A good many Welsh farmers bought their farms after the first world war, and some regretted it later when the depression came. Where the paying off had not been completed some found that they could not go on with the payments and the farms had to revert to the original owners or mortgagees. It is not everyone who has the ambition to own the land he farms, and many farmers still prefer a good landlord so that a large slice of their capital may not be eaten up by repairs.

At the present time there are three brothers at Pengwern Uchaf, but one of them, Mr. Thomas Rees, who came to the microphone to describe the farm, is working for the War Agricultural Committee and consequently cannot be counted in the labour force available for working the farm. A sister keeps house and she and the maid fit their domestic duties in between morning and evening milkings, in which they play a full part. In 1945 there was also an Italian prisoner of war (he lived in a room over the cowshed), so that the total labour force may be taken as the equivalent of four full-time men.

The land at Pengwern Uchaf is medium to light in texture, and a fair proportion of it has always been kept under the plough. The Rees brothers have been pioneers in reseeding (they were among the earliest users of S strains of grasses and clovers) and in building up a dairy herd.

CATTLE.—Milk selling was started at Pengwern Uchaf in 1941. Before that the cattle were beef Shorthorns and the policy was to rear calves and to churn any surplus milk, selling the butter to private customers in Newcastle Emlyn, a small town about three miles away. In the early thirties farmers working on this policy had really terrible experiences and it is surprising that whole areas of Wales did not become more or less derelict. The price of butter went down so low

that farmers were refusing to make it, and the summer price of milk dropped to as little as 4d. a gallon. In 1932 things were so bad that some farmers upset a load of milk going into Carmarthen as a protest. They were bargaining for their milk with three or four factories on a competitive basis and the factories can hardly be blamed if they paid as little as possible. The whole system of milk distribution was chaotic. The industrial area of Swansea was too far away, and, anyhow, there was only a limited market there because of the general economic depression at the time. A good deal of milk for the big centres of population in South Wales was coming from Somerset, through Bristol, whilst Welsh milk was being sold in the West End of London. Welsh farmers were working hard and living on their reserves. Hired labour left the land and much arable land went down to grass. Although some areas, like that around Pengwern Uchaf, stuck to the plough, there was growing up a generation of farmers who did not know how to produce cereals, most of those in the Teify Valley, for instance, having given up ploughing in 1923.

The coming of the Milk Marketing Board made the difference between mere existence and a fair living for Welsh dairy farmers. Nowadays the factories make it easy, and they have the collection of milk so well organised that there are few difficulties over collecting from even the most outlying farm. Pengwern Uchaf is a bit remote, and a long hill road, with very indifferent surface, has to be climbed to reach it, but there is a milk stand about 400 yards from Messrs. Rees' cowshed and the milk lorry calls at the stand every morning. It is surprising where the milk lorries do go in Wales, to say nothing of the roads on which they travel! Milk lorries have made a tremendous difference, and most farmers have in recent times decided to take up milk production, and now milk provides nearly one-third of the total cash receipts on the average farm—it is over one-third of the returns at Pengwern Uchaf. The tendency to change to dairying started in the bad times, and then from 1941 onwards the priority in feeding stuffs for milk production has put all other lines of production pretty well in the background. The records of the Advisory Economist show that, taking comparable

farms, those selling milk make twice as much profit as those rearing calves. Some black cattle are still reared for fattening in North Wales, and Herefords in other districts, but the dairy farmers of South Wales send their male calves for slaughter. They raise about eight heifers to one steer.

The Rees brothers did not make a clean sweep of their beefy cows, but they went in for Dairy Shorthorn bulls, so that the herd is still rather in the transitional stage. They started milk recording officially so that their cows could become qualified as bull breeders under the Ministry's scheme, and they are doing very well from the sale of bulls.

There are sales of bulls in the spring and autumn at Carmarthen, and there are very few bidders for animals unless their dams show satisfactory records. Bulls that are entered are judged before the sale, and in the judging Pengwern Uchaf bulls have several times been quite successful. The Rees brothers are disappointed if the price does not reach £80, and they have received up to £120. These figures seem very satisfactory, since the bulls are non-pedigree. The fact is that Carmarthenshire has established for itself a reputation as a bull-raising county, and buyers come from all over Wales. This reputation for useful and dependable Dairy Shorthorn bulls explains why the switch to dairying has not, in general, been accompanied by a change to the purely dairy breeds. Ayrshires would probably stand up well to the conditions in Carmarthenshire, but there would be no sale for Ayrshire bulls.

Buildings on many Welsh farms are ill-suited to dairying, and at Pengwern Uchaf major conversions had to be undertaken to give the present well-designed modern cowshed, dairy and boiler house. Mr. Thomas Rees drew up the design and the work was done by the labour on the farm, helped by the local mason. The rebuilding of the cowshed was somewhat hampered by a public road that runs hard alongside the site; the road is not exactly a first-class one and is hardly ever used by the public, but, of course, to encroach on it at all was quite impossible. Mr. Rees is pleased with the cowshed, as well he may be, particularly with the gutter, which is a yard wide and allows the liquid

manure a good chance to run away, and with the short tie that stops the cows paddling down into the gutter. This means that the bedding is kept clean, an important point since the cows lie in the shed during the winter. The shed holds 18 cows, but it is hoped to extend it slightly to raise its capacity to 22.

Machine milking is practised, and though it is often argued that with a machine there should be at least 30 cows Mr. Rees will be quite content with 22. With the present labour he regards that as the ideal number, and thinks that if there were any more, milking would not fit in so well with the other work on the farm, nor with Miss Rees' domestic duties. The gang for milking consists of one man and the two women, and milking hours are 7 a.m. and 6 p.m. This is one of the great advantages of the family farm, that milking intervals can be more or less equal and there is no worry over summer-time, or shifts or relief milkers; these are matters which cause many a headache nowadays and it seems that they must lead to small herds like this one on family farms, or large ones with a shift system such as has been seen on the farms of Mr. Simmons in Berkshire and Mr. Greenwood in Yorkshire.

The average yield is about 600 gallons, which compares well with the normal for Wales, which lies between 400 and 500 gallons. It is true that there is one herd down by the river, and not so very far from Pengwern Uchaf, with an average exceeding 1,000 gallons, but big yields cannot be expected at high altitudes and Mr. Rees will be well satisfied when he has got his yield up from 650 to 700 gallons; but he adds the proviso that this must be from cows with plenty of constitution to stand up to the climate and to survive for a long milking life.

SHEEP.—As with cattle, so with sheep. The system has been changed in recent years. The ewe flock consists of 60-70 Black-faced sheep, which are a local type; they do not resemble the Scotch Black-face but are bigger and look as if they had a touch of Suffolk in them. Mr. Griffiths says they may have some Suffolk blood in them, but thinks the breed more likely related to the Clun Forest. Anyhow it is a

type that has been persistent in Carmarthenshire and the neighbouring counties for many years.

The old practice was to cross them with a Welsh Mountain ram and to lamb in January, with the object of selling off as many lambs as possible before the end of May, when the price dropped. But it was a very chancy business, getting these early lambs off. They used to be bought "over the gate." The buyer would go round and pick 20 from one farm, 30 from another and so on. The farmer might easily find himself with more on his hands than the buyer wanted and in those days of small joints the buyers often left the larger lambs. If the farmer was left with his lambs the price might turn against him and he would have to keep them round another year. The butchers fixed the price and it was a race against time for the farmer to get rid of his lambs before the price fell.

Since 1939 the farmer has had an assured market, and the bigger joint has paid better, so that the longer the lambs are kept the better the price. With rationing the butcher wants the biggest possible proportion of edible meat with the minimum of waste to cut away. At Pengwern Uchaf they now use a Kerry Hill ram, and lamb in March, weaning in August and carrying the lambs through the next winter on rape to sell in the following spring. Unlike Mr. Simmons, who says that unless his Hampshires are folded they waste half the field, the Rees brothers give their lambs free range on the rape and claim that they clear it up as they go; they just eat into it from the outside and they are given a free run back on to grass. Last year there were 66 of these over-year lambs to sell.

CULTIVATION.—The cropping of land near the west coast of Wales is largely dictated by the heavy rainfall, which in some years is around 70 in. That is why grass is the whole foundation of the farming, and it is easy to see that Sir George Stapledon's work has had a very big influence. Messrs. Rees do not farm quite to the same rotation as that generally found in wet districts. They like to keep about 50 acres under tillage, but there is land at Pengwern Uchaf that is always grass and unsuitable for cultivation, though

much of it has been directly reseeded. On the lower land the rotation is: ley, two white straw crops, rape, mixed corn, roots, corn; on the higher land the soil is thin and will not stand such heavy cropping, consequently only one white straw crop is taken after the ley. The difference between these rotations and the ones found on the other wet-district farms in this series lies in the roots and corn added after four (on high land, three) arable crops.

Sowing out on bare ground, whether it is directly reseeding or laying down after an arable sequence, would appear to be the best thing to do under the conditions at Pengwern Uchaf. There is serious risk of any nurse crop of corn being laid, and bare-ground sowing gives a better chance for the seed to establish itself, whilst there is absolute certainty of excellent grazing in eight or ten weeks. Admittedly the land must be clean, but after the two root crops, done as well as the Rees brothers do them, that is assured; if it is a case of direct reseeding, the new plants can be given a good start over the weeds by complete inversion of the old turf. More and more people are becoming convinced that bare-ground sowing is the best practice even in dry districts, and the arguments for it would appear to be even more cogent where the rainfall is high. At Pengwern Uchaf the seeds mixture now being used for leys is:

5 lb.	Italian ryegrass
16 ,,	Perennial ryegrass (9 Kent and 7 Commercial)
3 ,,	Timothy
2 ,,	Cocksfoot (S.26)
½ ,,	Crested dogstail
4 ,,	Red clover (1 broad and 3 late-flowering)
1 ,,	Kent wild white clover
31½ lb.	

It is very common to see Welsh strains of grasses and clovers used in eastern England, so that it was interesting (even pleasing) to find Kent ryegrass and wild white clover being sown on the western seaboard of Wales! The timothy is not only used on the lower land, but also on the top land, where it is found to do quite well; this is, of course, rather against the book, but timothy is a grass that does not always

conform to the rules, and it often thrives in unexpected and improbable places. The low seeding of cocksfoot would be frowned on in many parts, as being likely to cause tufts without giving a cocksfoot-dominant sward more likely to be managed with a view to controlling tuftiness; in point of fact one ley was seen which did show this condition. Leys last longer on the lower ground than on the hill-tops; the soil at higher altitudes is light and friable, and farmyard manure is often applied to leys there since the land needs all the humus it can get. The reseeded land in the valley still carries some rushes, but it is very good grazing land all the same; it would fatten off Welsh Runts that had done a bit of growing on the top land first.

There is no tractor on the farm, and Mr. Thomas Rees has little desire for one, despite a lot of experience he has had with tractors as an officer of the War Committee. He says that if anything gets caught the tractor will break it, but with a horse it will bend or bulge, and if the man is quick enough will not even do that, because the horse eases up when he feels the extra draught. The impression was gathered that many Welsh farmers look on tractors with disfavour—primarily, it can be guessed, because they are keenly interested in horses and like rearing them and working with them. There are always five or six horses at Pengwern Uchaf. Five is the minimum required to work the farm and the aim is to breed two foals a year; young horses that are not required for work on the farm are sold unbroken as two-year-olds. Tractors are hardly ever hired, even for breaking grass, 8-10 acres of which come up every year.

In Wales they use the word "shipreys" to describe a mixture of oats and barley—what is known as dredge in England. The oat crops are spring-sown, and Victory was the variety commonly used, but it grew rather too long in the straw so a change was made to Star, which has done better; Supreme and S.84 have also been grown. In all livestock districts the feeding value of the straw is an important point to consider in an oat variety, and one that ranks high in this respect rejoices in the name of Ceirch du bach (meaning "small black oat"); apart from its straw quality, and ability to grow in adverse conditions, there is

little to be said for this one, though it has proved fairly useful in Wales. One that is proving excellent for the local conditions is called Ceirch Llwyd Cwta—the "little grey oat." The practice is to change the seed of oats every two or three years, but Mr. Thomas Rees thinks this is really necessary only where the home-grown sample is unsatisfactory; the old belief in some mysterious gain from changing seed still lingers on with some farmers, but since Mr. Rees always uses organic mercury seed dressing, his own, if well ripened, should be as good as any he can buy.

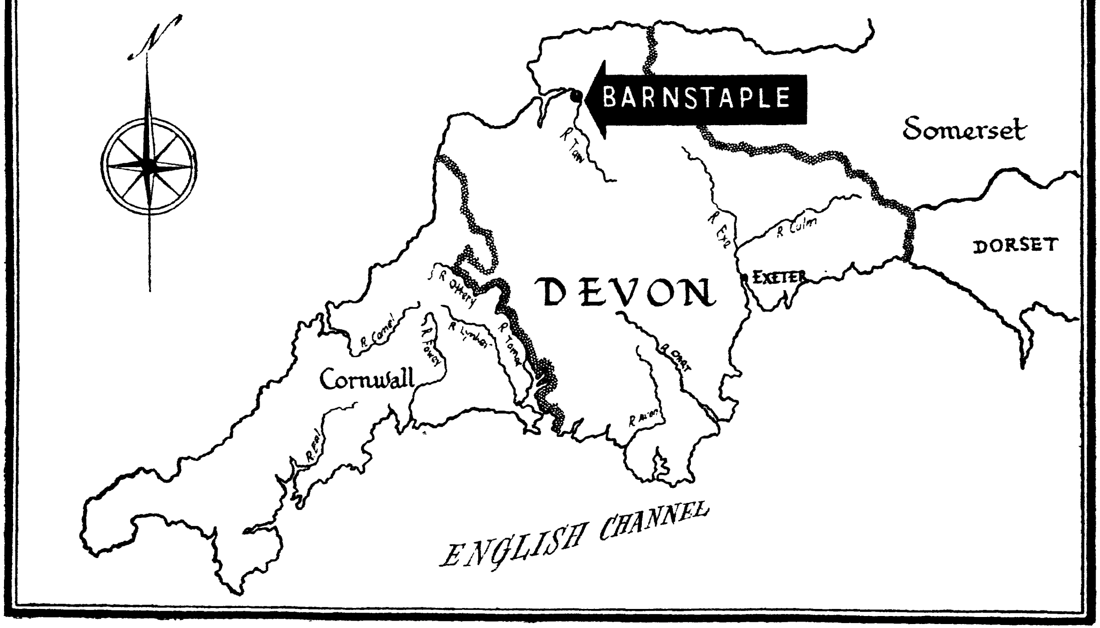
It was interesting to learn that there is a belt of land along the Cardigan coast, from Verwig up through Aberayron, which grew malting barley right up to 1910 and that the brewery at Aberystwyth was using Welsh barley entirely. It is doubtful if the quality even on that belt would come up to the brewer's requirements nowadays, and on the hills a variety that has no other name but "Welsh" is by far the best, since it spoils less in bad harvesting conditions. Those hills at Pengwern Uchaf are no fit places for wheat, yet Messrs. Rees grow a small acreage for the national loaf; the crop does not look very impressive and can only be regarded as a small but very heroic contribution to the nation's needs. The usual wheat in those parts is a thin-looking variety known as Hen-gymro, but Little Joss has beaten it in yield.

Farm Returns.—The gross receipts in a year come to just a little under £2,000, of which £750 is from milk, £800 from sheep, and the remainder from cattle (chiefly bulls) and horses sold, and from a few pigs and a small flock of hens. These gross returns work out to a little over £12 per acre, which is near the normal for most of the farms in this series and which therefore must be considered very good indeed in view of the high and exposed land. Taking the labour force as equivalent to four full-time men, the gross receipts are £500 per man, which is below the normal, but to a farmer who is accustomed to land that is reasonably flat the wonder is how anyone can wring a living out of those gaunt Welsh hills.

Wales is always thought of as sheep country, and in Car-

marthenshire sheep play a useful part, but only a minor one in terms of total income; it is the milk cattle that really count. Farmers in the east have come rather to depend on Wales for a supply of good beef stores, but it is clear that they will have to find them somewhere else in future. It is very obvious that the general swing to milk has paid Welsh farmers well and there is little chance that this is merely a pendulum that will swing back. Indeed, the present indications are that there will be further progress to the dairy type. The dairy bulls from Pengwern Uchaf are a most useful source of income, but the maintenance of the present good prices must be problematical unless and until the herd becomes fully pedigree. If bad farming times come again it is long odds that the Rees brothers will weather them as well as anyone. They have no expensive Friday night, and yet the production is varied and the figure per acre is in line with that from English farms—this is a most outstanding fact in view of the rugged conditions.

DEVON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CHAPTER XI

A DEVONIAN FARM

Stock-rearing farm—North Devon climate—pre-war position—butter and cream—the pannier market—milk—Red Rubies for beef—premium bull scheme—calf rearing—12 calves to a cow—sheep—Devon Closewools—wintering the flock—crop management—long leys—Colin Ross mixture—Richland Iowa oats—reclaimed Exmoor—farm returns.

THERE is nothing standard about the farms of Britain. Over the whole country the most characteristic trend in farming policy at the present time is the swing away from beef and over to milk, but this chapter describes a farm where the movement has been in the opposite direction, where the farmer gave up milk production in 1944 to concentrate on breeding for beef. His cattle are North Devons, or Red Rubies as they are called in the West Country, and the many friends of the breed in the Midlands and elsewhere will be glad to know that at least one farmer in their home country intends to preserve their beef qualities.

Oakwell Farm, at Muddiford, was bought by Mr. Tucker 20 years ago and now he farms it with his son John, who is 19 years old. The area is 235 acres, and that is large as farms go in North Devon. The land lies from 700 to 800 ft. above sea level, and it certainly is a very lovely place. From the farm you can look out over Hartland Point to the Atlantic; on the other side there is the rising ground of Exmoor, and miles away to the south you can see the edge of Dartmoor. The farm was visited on a hot day in July, but apparently the countryside round there is not normally bathed in the glorious sunshine which gave it such a beauty on that day; the rainfall is high, about 55 inches annually, and the land is exposed to the full force of the gales blowing in from the Atlantic. The soil is a good, free-draining and easy-working loam, and with the heavy rainfall grows

abundant grass. Excellent pasture and the healthiness of the situation make the farm ideal for stock rearing.

In pre-war days the only tillage crops were 20 acres of oats and 10 acres of roots, but during the war the farm had to become self-sufficient and the tillage acreage has been as high as 90 acres. In July 1945 the general picture of the farm was: 65 acres of tillage crops, all for stock food except 4 acres of potatoes and 12 acres of barley; 170 acres of grass, of which 30 had been mown for hay: no fewer than 521 sheep, 74 cattle and 3 working horses. A tractor was bought during the war to make the extra cropping programme possible, and now the farm is worked by Mr. Tucker, his son and one other man, with an extra lad during the summer. For the district and size of the farm this labour force would be about normal, but many farmers have to call upon the Women's Land Army or prisoners of war to help them out. Mr. Tucker reckons to get along without much extra labour.

CATTLE.—All the cattle are pedigree North Devons and at the time the farm was visited there were 15 cows with 55 followers, and, in addition, the bull and three bull calves being reared. All the steers are fattened on grass, together with any heifers that are not quite good enough for the pedigree herd.

In these days it seems almost indecent to mention it, but before the war the aim was to make as much cream as possible, especially during the summer when the visitor trade gave a very good outlet for it. There used to be something like 40,000 people in and around Ilfracombe in the holiday season and they would lap up all the cream they could get, beside sending some away to their friends at home. This was, of course, the real Devonshire cream. The milk was put into a deep pan and left all night for the cream to rise; then it was heated till the cream scalded on top and that top layer was the Devonshire cream. There was some sale for the scald milk, that is the milk left in the pan after the cream had been skimmed off, but it was used mainly for calf rearing. How sad it is to have to write all this in the *past* tense!

Not all the milk was used for cream, and some butter was made throughout the year—though more in winter than

summer. Even in those days butter making was not a very paying proposition; the price was only 1s. 8d. a pound as against 2s. 6d. for cream. At present butter is making only 1s. 7d. a pound, and as it takes 2½ gallons of milk to make a pound of butter there is very little inducement to churn, and indeed there does not seem any future at all for farm-house butter making. There is, perhaps, little cause for regret in this since the work of making butter generally fell on the farmers' wives, and it may be argued that no man has the right to ask his womenfolk to work like that again.

In pre-war days holiday-makers must have played an important part in Devonshire farming. It was not only cream and butter, but poultry, eggs and fruit that they bought, these often being sold in what was known as the "pannier" market. This dates far back in Devon history. The pannier was the basket which the lady of the farm used for bringing her cream and so on to the town on market days for sale to the public. Many Devon towns—Barnstaple is an instance—provided special accommodation for the sale of this produce. A fee, usually about £1 a quarter, was charged for the right to have a stall and sit in the market, and practically all the wives from rearing farms in North Devon took butter and cream to these pannier markets. When rationing came this trade was almost completely stopped because selling cream was barred, though a few women carried on and had their own registered customers for butter. The great majority of farmers stopped rearing calves, except for herd replacements, and sold their milk to the Milk Marketing Board.

Mr. Tucker did this for a year or two, but then decided to give it up. Though milk is the first priority, his farm is one where the national interest is better served by calf rearing than by milk selling. The farm is remote, and the milk had to be taken two miles to a point where the lorry collected it. By the time the man had done his four miles there and back in a horse and light cart his day was spoilt. It would have been different if there had been a lot to send, but when the milk for rearing the heifer calves and a bull or two had been taken there was only about 10 gallons a day left for the Milk Marketing Board. Mr. Tucker decided he must choose

between going in for milk in a proper manner or returning to breeding and rearing. He has a real love for Devon cattle and so he decided to build up his herd with a view to selling pedigree bulls and heifers and he applied for a grant towards a premium bull.

Under the Premium Bull Scheme a small number of farmers—say six to twelve—form themselves into a society and one of the members is elected to buy the bull and act as its custodian. If the society is approved by the Ministry a grant is made of half the cost of the bull, up to a maximum of £40 for a beef bull, with a further grant of £10 if he is still working in the third year. Mr. Tucker paid 170 guineas for his bull at Exeter and he is certainly a grand animal. Nine other farmers use the bull and last year he had 120 cows; the cows are not attested but for each one there has to be a certificate that she has not aborted within the last two months. The scheme gives small farmers a chance of getting the services of a really good bull, and that is the first and big step in livestock improvement.

At Oakwell bull calves each suckle one cow, but with other calves the method is to rear three calves to a cow (the old West Country word for suckling is "busking"). If two cows calve down together one cow rears the two calves, the other cow providing milk for the house or being available for sale, and after three months the two calves are taken away and a third is put on. Mr. Tucker is very emphatic and eloquent on the necessity for doing calves well. He claims that a hard feeder never gets very rich, and he scorns calves of nine to twelve months old that "can be picked up under one arm." Calves that are starved of milk go right off with husk when it comes to autumn. He thinks that stinting of milk, and, of course, breeding for milk, have already had a very injurious effect on the quality of the store cattle produced in the district. Since the majority of North Devon farmers are now rearing only enough heifers to keep up their herds there are plenty of Devon calves to be bought. During the last few years a number have been sent for rearing to the Eastern Counties where they have done very well.

Bull calves must be treated generously if they are to sell well, but with the others it may be argued that three calves

reared on a cow is not enough and Mr. Colin Ross thinks the number could, and should, be raised very considerably. The Devon W.A.E.C. have run an experiment where 60 calves, in four batches, were reared on five cows, each batch staying on the cows for about two months. The calves were not specially selected, but taken out of the grading pens, and would otherwise have gone for slaughter. What is more, they were subsequently reared on home-grown food, with only the allowance of bought concentrates that any farmer could have obtained if he were doing the same sort of thing. Hundreds of farmers have seen these calves and have agreed that they did the Committee great credit, and that they made stores that were quite up to the average of those produced in the area.

This experiment and its result are very important. If all the farmers who are well placed for rearing carried out busking on a similar plan it would go a long way to maintaining the numbers of good beef stores; an alternative that might well be tested against the above method when normal conditions bring back a steady trade for cream is the use of scald milk for calf rearing in the pre-war way. The North Devon has proved itself a valuable breed and has earned great popularity farther east, and it would be tragic if a large proportion of the calves were slaughtered at birth or if the breed lost its good beef qualities.

SHEEP.—There are five native breeds of sheep in Devon, and that is more than the county's fair share of the 50 odd breeds of sheep in Britain. It is often said that we have too many breeds and that we should do well to reduce the number—but it would be a very rash man who named the breeds which ought to be dropped. Mr. Tucker's breed—the Devon Closewool—is a newcomer, as the official society was formed only in 1924; all the same, it has a definite niche in British farming and cannot be classed as superfluous. The breed probably arose from an accidental crossing years ago between the Devon Longwool and the Exmoor Horn. It has proved itself very hardy and admirably suited to the district and it is extending its range into other counties. The Closewool is smaller and neater than the Longwool but larger

than the Exmoor Horn, and it can live practically anywhere where the latter breed can survive. It is not considered a mountain breed and does not qualify for the Hill Subsidy, though half subsidy is paid—subject to altitude conditions—on the progeny of Closewool ewes and Exmoor Horn rams.

These sheep are not called Closewool for nothing. The fleece has a very thick staple, which Mr. Tucker demonstrates with justifiable pride. This characteristic is supremely important at Oakwell because it means that the westerly gales coming off the Atlantic in winter cannot blow the wool apart and drive the rain right down to the skin : the water just drips off.

Mr. Tucker's father farmed down along near the coast and he kept Devon Longwools and when Mr. Tucker went to Oakwell he took some of that breed with him. In his first summer he employed an old man to shear them and this veteran's comment was : " If I was you young man I shouldn't keep those yer things yer. If you do you'll lose them all ; they'll die like rats." Mr. Tucker was a youngster then and did not listen to the old chap but he learnt from bitter experience ; the Longwools could not stand up to the climate and they did die in the following spring. Mr. Tucker's Closewools require no justification because they are fine, short-legged sheep, but to him their really outstanding merit is that they will survive the winter gales.

The ewe flock numbers 170, about half being two-tooth (one year old) and half four-tooth (two years old). The rams are turned in during October and the lamb crop is usually in the neighbourhood of 200. Thus there are about 100 ewe lambs and all these are retained for the flock, a corresponding number of six-tooth ewes being sold in the autumn at registered sales. (These had not left the farm at the time it was visited so that the total head of sheep was at its highest just then.) About 20 of the male lambs are selected for rearing as rams and these are sold as shearlings at the autumn sales ; the flock is very prominent in the breed and the bunch of shearling rams seen were a beautiful, level lot. After the rams are selected there remain about 80 wether lambs and these are folded on rape (one acre is reckoned to fatten 20) and sold fat in the autumn, averaging 44 lb. deadweight. The older ewes that are sold (they cannot be called culls, as

they go to make room for the new entry) go to farms at lower altitudes where they are mostly mated with Down rams and have proved excellent for early fat lamb production. The ewe flock is run on grass, with nothing else, until the middle of January, after which a load of swedes is carted to them every day and hay is also fed. The ewe lambs that will join the flock in the next autumn are folded on swedes, with a grass run back, from the beginning of December.

Mr. Tucker is clearly as good a man with sheep as he is with cattle, and his sheep policy is carefully thought out. He is developing the breed and providing the nation with fat lamb and wool; and the older ewes, which he sells for crossing, are popular with the farmers who buy them. There is danger with Closewools that they may get too fat for breeding, and farmers on lower ground like to get them from a fair altitude so that they can be in improving condition when they are mated. Mr. Tucker's rams are undoubtedly playing a big part in developing Closewool flocks, and the Closewool breed is establishing a place for itself despite the fact that it was a late-comer.

CROPPING.—Of the 170 acres now in grass, about 100 are permanent and the rest in ley. Twenty-five acres have been directly reseeded, but the normal method is to sow down under corn in rotation, using the ley to restore fertility. The heavy rainfall may make corn growing a difficult and uncertain business, but it does a very good turn to the leys; the sward of ryegrass and clover, with never a sign of the drill rows, which is got in the first year has to be seen to be believed by one who farms in a dry district.

The seeds mixture, which has done very well, and which Mr. Tucker says "takes a lot of whacking," is the Colin Ross mixture. The mixture is:

4 lb.	Italian rye-grass
12 ,,	Perennial rye-grass (half of it S.23)
8 ,,	Cocksfoot (half of it Akaroa)
4 ,,	Timothy
2 ,,	Rough-stalked meadow grass
5 ,,	Red clover (including 3 of late-flowering)
1 ,,	S.100 or New Zealand white clover
1 ,,	Kent wild white clover.
37 lb.	

This mixture gives an early bite in the first season, a good hay crop and then established pasture by the second season.

If the ley is down for no more than three or four years it is followed by oats, then roots, oats again (or barley or dredge) and back to ley. Leys, however, may stay down longer, and after five or six years the fertility is too high for corn, so roots must be taken first and then oats; after old pasture it is apparently an established custom in the district to take roots as the first arable crop. In dry parts of the country roots are commonly poor because of drought, and then when it rains they seem to get foul overnight with all sorts of weeds, but at Oakwell it does not happen like that; the swedes and rape that were seen would have graced any garden, with no plant missing and, as far as could be observed, no weed ever having grown in them!

Farmers in North Devon have had some trouble in the past over the seed for their oat crops and a number of trials were made before the war with seed from various sources. The general conclusion was that Scotch seed was best. On farms at sea level it is necessary to ring the changes only every three or four years and then mainly to keep the stock pure, but on farms at an altitude it is general to use Scotch seed or "last season's," as the once-grown is called. Mr. Tucker always dresses his seed oats with organic mercury dust, but he still finds it essential to change his seed every couple of years. The explanation of this need for frequent change probably lies in the mists and rainfall—primarily the mists. At the end of August and in September there is usually a "dropping" time, wet and showery, and that means that oats go into the stack a little damp, so that unless they are quite ripe they get a bit warm and that would, of course, affect their germination.

A variety of oats called Richland Iowa, imported from America, suits Oakwell Farm. It ripens a full fortnight earlier than anything else (it is known as the 90-day oat), a very important point in a late district; the normal time to start harvest is at Bratton Fair, which is about August 19, but in 1945 the Richland Iowa were cut on August 4. In some years rust is very serious on oats in North Devon, greatly reducing the yield of late-ripening crops. Mr. Tucker

says he has known years (such as 1948) when a white dog would come out of the corn all brown. Richland Iowa, because of its early maturity, escapes the rust. This variety also has a very fine quality straw which the cows eat readily. Good oat straw has high value on a rearing farm because it can be used to make the hay last out. The grain of Richland Iowa is thin (though this is offset somewhat by its thin skin) but its earliness, consequent freedom from rust, and high quality straw make it very suitable for the district.

Mr. Tucker has reclaimed 25 acres from heather and furze, and has found that with lime and phosphate, a reasonable rotation, and proper management of grazing, it is not difficult to keep reclaimed land in good heart; he has had some very fine crops on it. All the farmed land bordering Exmoor was reclaimed from the Forest of Exmoor about 150 years ago, and ever since then it has been farmed, mostly on the alternate husbandry system.

FARM RETURNS.—The gross sales in the year come to about £10 an acre. At present there are potatoes and barley to sell, but these will not be continued when there is complete freedom of cropping; anyhow these crops do not account for much of the gross receipts. Nearly all the income is from cattle and sheep, which contribute in just about equal amounts. Taking the labour force as three full-time men and one part-time, the gross sales work out to about £600 per man employed. In production per acre and per man Mr. Tucker's is, therefore, in line with other farms in this series.

There are obvious difficulties in growing corn in a rainy district, and Mr. Tucker is not well placed for selling milk, but he can grow beautiful grass and fine crops of swedes and rape. His is a natural rearing farm and he must be right in resisting the temptation of the milk cheque. He is concentrating on that for which he has great natural aptitude, the breeding of first-class cattle and sheep, and there will be any amount of room for his system as long as the people of this country still want to eat good meat.

CHAPTER XII

SUMMARY

THE series of talks on which this book is based did not and could not constitute a piece of research work; discussion over the air is scarcely a method suitable for serious research. The object of the talks was to give as faithful a description as possible of the eleven farms and of the systems on which they are being farmed. The farmers who were kind enough to submit to this probing of their private businesses were very carefully selected; they should not be thought of as "average" farmers in their districts, but as representative of the best and most progressive methods used therein.

It is very often said, as a self-evident truth to introduce a talk, that farming varies greatly over this small country, and nothing could bring this truism home more forcibly than to walk round these eleven farms and discuss their problems with the eleven farmers concerned. Obviously, however carefully they are chosen, eleven holdings are far too few to represent all types of British agriculture. No two were faced with the same problem, and no two had developed the same system.

It might be expected that conditions are not very dissimilar in North Devon and South Wales—indeed, they are very much alike in altitude and rainfall, and, to some extent, in the opportunities offered by a holiday trade. The soil on Mr. Tucker's farm in Devon, however, is better, and communications worse, than on the Messrs. Rees' farm in Carmarthenshire, and consequently entirely different systems have been developed. Perhaps the soil and communications may not be the whole explanation, because personal preference and natural aptitude of the farmer play important parts. Anyhow, in these two instances very successful farming enterprises have been built up, the Devon one based

on pedigree sheep and beef cattle and the Welsh one on milk and sheer hard work. These two might be described as family farms, but they are very different from the other two family farms—Mr. McClure's in Northern Ireland and Mr. Buchan's in Aberdeenshire, both of which have good land at a low altitude. Here again, one has gone for milk and one for beef, though this difference appears entirely due to personal predilection—Mr. Buchan could switch to dairying if he liked, but it is a wildly improbable eventuality.

There were two farmers who depended utterly on dairying—Mr. Greenwood in Bradford and Mr. Dunlop, the well-known Ayrshire breeder. Both of these men are outstandingly successful and both of them are on land which, in weaker hands, might easily go derelict. Mr. Greenwood's home farm is on a hill rising out of the city of Bradford ; his market is all around him and so his herd has become a milk machine which can even be " revved " up occasionally when a spurt is required. The herd itself has not been established very long and a constructive breeding policy has only lately developed. In Ayrshire Mr. Dunlop has a farm that is remote from population and his most valuable product is cattle ; he is a master breeder possessing a long-established herd and his cattle are at the very summit of the breed. The milk cheque, even there, is an important item—the Milk Marketing Board, with its organised collection, irrespective of distance and amount, has made a tremendous difference to outlying farms.

There are three farms in the series which may be classed as arable, but there is no other similarity among them. The silt lands around the Wash are renowned for their fertility and are naturally kept almost entirely under the plough, a large proportion growing high-value cash crops. Mr. Rockcliffe, of West Norfolk, has built up a most successful business around the potato crop. Other silt land farmers go in for fruit or bulbs, but though Mr. Rockcliffe's system is quite varied, the hub of the whole thing is the humble potato. Mr. Peacock is also in eastern England, and not far from the Wash either, but his land is stiff Huntingdonshire clay, the sort of land that masters the farmer if he does not master it. There is no doubt about the mastery on Mr. O. K.

Peacock's farm. He is the master and his system is based on corn, though again he is by no means a single cropper. He is one of those rare people who like work, and, what is more, he seems able to infuse his love for it in those around him. It seems unbelievable that he managed, with only a modest labour gang, to get in the tremendous crops of wheat and barley he had in September 1945; but he did—and, impossible as it seems, he was well up to time with his autumn work. The third arable farmer was Mr. Simmons, of Berkshire, with his big acreage of thin, light downland. His is a farm chock full of interest, and an organisation eloquent of his own alert mind; he has dairy cattle, arable sheep and mechanised corn growing all welded together in an admirable example of mixed farming on the grand scale.

The two remaining farms were alike in being all, or nearly all, grazing before the war, but there the similarity stops short. Mr. Scott, of Milsington in Roxburghshire, has many acres of hill grazing, and pedigree Cheviots are the main venture, but the breeding of beef stores is proving a good second string—a very important point to which further reference will have to be made later. In contrast to the Scottish hills, nearly half of Mr. Pickering's all-grass (pre-war) farm in Northamptonshire is fattening land—making some of the best pasture in the world. Before the war this Midland farmer relied entirely on beef and mutton, but he has made a magnificent contribution to the war effort and changed to a more varied and better-balanced system.

LEYS.—In these days it is scarcely decent to talk about farming without mentioning leys. People often speak as though ley farming were one of the things that England owes to Scotland, but that is very questionable. It is a matter of long standing not only in the North but also in the West, everywhere, in fact, where the rainfall is high; on Exmoor alternate husbandry was practised on a large scale 150 years ago. The farmers in the wetter districts keep more strictly to a settled rotation than those in the South and East, the almost universal sequence being of the form oats, roots, oats, ley. This was easily adapted to war-time by doubling the first oat crop, though when fertility is high roots may be

taken first after the ley and followed by two or even three corn crops; in Northern Ireland, where the normal length of ley was seven or more years, the method was to shorten that and adhere to the arable sequence.

It is remarkable how easily and quickly a ley can be established in wet districts, but it is necessary to be very careful about treading a new ley; in the south-east of England it is well known that a new ley should be grazed at the very first chance, but in Ireland Mr. McClure reckons to cut it three times before allowing an animal to tread on it. That new grass is more productive than old was generally agreed by all, except Mr. Pickering—and he is a very notable exception. He claims that the old gives the steadier growth and is suitable for continuous stocking, whereas the new needs periodic rests—the off-and-on system of grazing, as it is usually expressed. If Mr. Pickering is right, and he is certainly a competent judge, it is a point against new grass, as the off-and-on system is easier to preach than to practise.

Of the three arable farmers, one—Mr. Simmons—has long leys, and here again the system is of considerable antiquity, for sainfoin must be included as a ley. On those open, rolling Downs, largely unfenced, it is easy to see the value of sainfoin, but he also has long leys of ryegrass and white clover, and very beautiful ones too. In Huntingdonshire the single-year ley—hay and bastard fallow—is favoured, but Mr. Peacock is quite ready to embark on long leys if corn growing ceases to pay. Lincolnshire silt is never likely to be farmed on a long-ley system, but Mr. Rockcliffe is all for his short ley of red clover, giving two or even three crops a year, and preferably grazed off in the autumn of the seeding year.

Varieties and Breeds.—Some people say that we have too many varieties and that two or three of each crop would meet all our needs. In the brief tours of these farms time did not permit of going thoroughly into all questions, and choice of variety is not a major factor in farm management, but a surprising number of different varieties were encountered. It is possible to write down a whole list of desirable characteristics, and a farmer could weigh all these

in his mind before deciding which was the most suitable variety for his farm and purpose. It does not work out that way, however. There are usually one or two overriding considerations that determine the choice. On good soils the standing power of Holdfast wheat or Eagle and Star oats makes them the most popular, whilst in wetter districts earliness and feeding value of the straw are of great importance, as instanced by Mr. Tucker's choice of Richland Iowa oats or Mr. Rees' of Hen-Gymro wheat.

More interesting than choice of variety is the question of choice of breed; it is a subject which would repay closer study in a much wider field than is offered by eleven farms. Here, again, the decision often turns on some one crucial point. Mr. Tucker's Devon Closewools are beautiful sheep but their supreme merit is the thick staple of their wool, thick enough to keep out the rain driving before an Atlantic gale; it enables them to live where others die. Mr. Pickering favours the Masham rather than the Half-bred because it needs less attention at lambing; and Mr. Greenwood has two quite original justifications for choosing Ayrshires—their liveliness and the absence of a cream line in their milk.

The trend away from beef and over to milk was a subject that cropped up nearly everywhere. There is no intention, here, to embark on any argument for or against dual-purpose cattle—every Discussion Society in the country must have devoted at least one evening to it—but time and time again the fact was brought out that milk producers are giving up dual-purpose cows for the more milky types. On three of these farms the problem was seen from the milk producer's end. Mr. Greenwood, of Bradford, got tired of the uncertain breeding of cross-breds and it is not really surprising that for his milk factory he should have a purely dairy breed. Mr. Rees has gone for Dairy Shorthorn bulls in place of more beefy ones, and that change is almost universal in Carmarthenshire since the Milk Marketing Board organised milk collection. Mr. McClure in Northern Ireland turned to Ayrshire bulls because of the scarcity of Shorthorn bulls that would get milk, and travel in that country soon shows that Ayrshire bulls are being widely used.

All this is creating a real problem at the other end—where

are the cattle fatteners to get their good beef stores and where is Britain to get her beef? Presumably the ultimate fate of dual-purpose cattle depends on the future relation between the prices of beef and milk, but at the moment the position is, as Denys Bullard, of Huntingdon, brought out, that a farmer wants his neighbour to keep them rather than keep them himself. None of these eleven progressive farmers is likely to be caught by the shortage of beef stores. Mr. Pickering and Mr. Peacock have already started breeding their own, and though they still need to buy stores or calves they can if necessary soon become independent. Mr. Rockcliffe is moving in the same direction though he still finds a number of cross-bred Herefords to buy. In Aberdeenshire Mr. Buchan buys all his cattle at present, but if the supply of the right sort dries up he is prepared to breed them, calving down heifers which he will then fatten immediately, whilst a few cows rear the heifers' calves.

Mr. Buchan's is not a rearing farm, however; rearing is a job for the cheapest land, and we ought to get the beef stores from the hills. Mr. Tucker is breeding good beef stock in Devon, but his land is not poor hill land. Mr. Scott, of Milsington, has the type of land that can produce beef stores and is cheap enough to make their production an economic possibility. It was a pleasure to see him doing it and it is greatly to be hoped that many more follow the same plan, for there is plenty of room in Scotland. With modern tractors and transport, and the knowledge of reclamation we now have, the improvement of hill grazing raises no technical difficulty; there is only one stumbling block, the formidable one of cost. The cost of reclaiming a large area might well be prohibitive, but to improve a hillside little by little should be possible; the whole of our farming would benefit greatly if the hill lands of Britain could be fully developed as a reservoir of sheep and beef cattle.

Intensity of Production.—On each farm a figure was given for the value of the total production; that is, the gross receipts for everything sold in a year. Economists get figures like that with meticulous accuracy, but it is always under a pledge of secrecy and in anything they publish they

are careful to make sure that no individual farm can be identified. It was, perhaps, impudent to ask these eleven farmers to give any cash figure over the air and it was clearly impossible to make any estimate of the profit an individual was making and then to broadcast it; if efficiency can only be measured by profit then no measure of efficiency can be given. The total receipts bear no necessary relation to profit, but they do give a measure of intensity of production and can give one of the efficiency of labour utilisation. Many listeners objected to the crude figures that were given, and at times it was regretted that finance had ever been introduced into the talks! A majority of the letters received about the talks, however, was with reference to these figures, so that it may at least be claimed that the figures led to some discussion. Admittedly no great precision was possible, but the figures did serve to bring out broad differences.

By dividing the total receipts by the acreage of the farm a measure of intensity of production emerges. The eleven farms can be grouped into the following five groups:

GROSS PRODUCTION PER ACRE

£1 10s.	Mr. Scott (Roxburghshire)
£10	Mr. Simmons (Berkshire)
	Mr. Tucker (Devon)
	Mr. Rees (Carmarthenshire)
£20	Mr. Peacock (Huntingdonshire)
	Mr. Dunlop (Ayrshire)
	Mr. Greenwood (Yorkshire)
£25	Mr. Buchan (Aberdeenshire)
	Mr. Pickering (Northamptonshire)
£30	Mr. McClure (N. Ireland)
	Mr. Rockcliffe (Norfolk)

This places the farms approximately in order of the fertility of the soils—as might be expected, the better the soil the higher the production per acre. Certainly Mr. Scott's land is the least fertile, and Mr. Rockcliffe's the most fertile. The intermediate ones are in just about the right order, except for some modification according to the parts played by milk production and by sheep in the farm economy. Dairying raises the intensity of production and sheep lower it. Mr. Tucker, producing no milk and running a flock, is lower than his soil might warrant, whilst Mr. Dunlop and Mr.

Greenwood, relying entirely on their dairy herds, are much higher than would be expected from their poor soils. Fertility of soil, and concentration on milk or sheep, between them, provide the full explanation of each and every placing, which may be held to show that the figures were reasonably accurate. There is no evidence that the smaller farms were producing more intensively than the larger ones; it is true that the largest two farms came at the top of the list, but Mr. Scott's soil compares with no other and Mr. Simmons has poor land and a system in which milk does not play a dominant part, whilst his ewe flock is sizable.

There seems to have been some misunderstanding of the figures given in each broadcast for the value of the total receipts per man employed; since the figures ranged between £500 and £1,500 and a man's wage comes to about £200 a year some listeners appeared to think that the farmer pocketed the difference! That, of course, is ridiculous, as it is out of the difference that he has to meet all his other expenses (rent, feeding stuffs, manures, seeds, machinery and many others) before he can find anything for himself. In this connection the farms fall roughly into three groups:

GROSS PRODUCTION PER MAN EMPLOYED

£600	Mr. Rees (Carmarthenshire)
	Mr. Tucker (Devon)
	Mr. Scott (Roxburghshire)
	Mr. Peacock (Huntingdonshire)
	Mr. Rockcliffe (Norfolk)
	Mr. Simmons (Berkshire)
	Mr. McClure (N. Ireland)
£1,000	Mr. Greenwood (Yorkshire)
	Mr. Buchan (Aberdeenshire)
£1,200	Mr. Pickering (Northamptonshire)
	Mr. Dunlop (Ayrshire)

There is very little comment that can be made on these figures. Of the four whose labour utilisation is high, two are intensive milk producers (Mr. Dunlop is outstanding because of his high sales of cattle) and two beef producers. Chapter IX includes some discussion over the high labour requirements Mr. Buchan incurred by tying up his fattening cattle. He himself said a man could look after twice as many in courts as he could in byres, but all the same his output per

man is very high; the explanation is that, although the fattening of cattle may be financially very doubtful, the cattle in the fattening period does not incur labour charges that are heavy compared with their increase in value, whether they are tied up or loose.

EFFECT OF WAR.—It was interesting to see how these gentlemen had been affected by war conditions and how their systems had been modified to meet the country's need. Milk production has probably been the most difficult job in the war. Everybody has been calling for more of it, and the farmer has been largely cut off from imported concentrates, to say nothing of his labour troubles. There were five dairy farmers in the eleven and two of them must have felt themselves to be in a real fix—Mr. Greenwood and Mr. Dunlop. Both were getting very high yields and depending on vast amounts of imported concentrates. Mr. Greenwood could meet the situation to some extent by developing his outlying farm, but Mr. Dunlop's farm will not grow roots and his difficulties of harvesting would discourage most farmers from growing many oats. It is significant that both of them have become devotees of silage and have come to rely on that for an appreciable proportion of their protein.

The campaign for more silage has not been a success in the drier parts of the country, but Mr. Dunlop and Mr. Greenwood have found in silage a real life-saver; even then their average yield has gone down by about one-third. The other farmers with dairy herds suffered no such fall. Mr. Simmons has a large acreage and can grow what kale and mangolds he likes, but he also is a believer in silage. Mr. Rees in Wales had kept the plough going all through the years of depression and so was able to make his farm reasonably self-sufficient in stock food, in addition to making a gallant contribution to the national loaf. In Northern Ireland Mr. McClure has also managed to keep going without losing much milk. There is, indeed, much to be said for mixed farming.

Apart from the specialist milk producers, only one other of these gentlemen seems to have had his farming really upset by the war. In the wetter districts, where the long-ley system has been long established, to plough the ley a bit

earlier or to slip in an extra oat crop is no great revolution. In the arable districts the normal crops for the land have been the very ones the country has wanted, and it will be the adapting of the system to post-war conditions that will be the greater upheaval. What Mr. Pickering has done in the Midlands is very striking. His farm was all grass, but he has ploughed up half of it, done all that any Government could ask in the way of crops for human consumption and still managed to keep up a big contribution to the meat supply.

There was no evidence that any of these farms have lost fertility or condition during the war. Mr. Pickering would argue that on his best land he has cashed in some accumulated reserve of fertility, but even if he is right that his new grass will not equal the old until it has been down for seven years, that is not a long time to wait to get back to the original level. All of these farmers believe in muck and have returned their straw, as it should be returned, to the land; Mr. Buchan in Aberdeenshire has clearly been raising the fertility of his land year by year with no break during the war. It is true that Mr. Simmons said he thought his Berkshire farm was poorer in fertility than in 1939, but against this he admitted that his land was better cultivated and equipped, and that his stock had improved. He went on to say that what he knew was that he had less money in the bank. Too many people still think that the farmers have made fortunes during the war. Some smaller farmers may have managed to scramble out of debt, but it is very difficult to see how a large farmer can have made a pile of money.

One thing that the war has done is to get a wider mixture, a better balance, into these farming systems, and according to present intentions this will persist. Of course the two milk specialists will get back to imported concentrates as soon as they can, but their conditions are very special; all the others have got a real and apparently permanent balance into their farming. Clearly Mr. Simmons is quite outstanding in this respect, but, for example, Mr. Buchan's fat cattle are supported by large receipts for oats, Mr. McClure's milk cheque is just about equalled by what he gets for potatoes and poultry, and so on with all. The only view expressed against

diversity in farming was that of Mr. Peacock, who said he could not do two jobs at once—a statement which is refuted by his own skill in both corn growing and calf rearing.

No attempt has been made to draw invidious comparisons between the eleven farmers ; it would be hopeless to try to place them in order of merit, because each has his own special problem and there is no yardstick by which their excellence can be measured. Each one has found a system suited to his conditions of soil and climate, and developed it according to his own particular bent. They are all great farmers.

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