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CHROMOSOME NUMBERS IN ANGIOSPERMS IV

BY

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In preparing this annual publication of chromosome numbers in angiosperms, any papers published earlier than 1930 and not included in previous lists (GAISER 1926, 1930*a*, 1930*b*) have been first assembled in the supplement. Thus the main list consists entirely of reports published in 1930.

The same method of arrangement as had been used previously has again been followed here.

Reports of chromosome numbers published in 1931 and 1932 will be published pointly after the completion of the latter.

L. O. GAISER

CHROMOSOME NUMBERS IN ANGIOSPERMS III

Genetica XII, 1930

ERRATA

- Page 176 — *Malus coronaria* MILL., $n = 34$, $2n = 68$, NEBEL, 1929b.
Malus prunifolia BORKH., $2n = 51$ instead of 102, NEBEL, 1929b.
- Page 185 — *Linum usitatissimum*, $n = 16$ instead of 6, INOUE, 1929.
- Page 188 — Include CHRISTOFF, 1929 after *Vitis riparia grand glabre*.
Vitis vinifera var. *Grand noir d. la c.*, $2n = 38$, NEGRUL, 1929 instead of 1928.
- Page 190 — Seibel 28 should be Seibel 128.
Insert *Vitis Chasselas* × *Berlandieri* 41B., $2n = 28$, NEGRUL, 1929.
Insert *Vitis riparia* × *Gamay* (Oberlin 595), $2n = 38$, NEGRUL, 1929.
- Page 191 — Insert for *Vitis riparia* × *V. vinifera* var. *Gamay* 595 Oberlin, $2n = 38$, NEGRUL, 1929.
- Page 223 — *Panicum dichotomiflorum* MICHX. to *P. scribnerianum* NASH are by CHURCH, 1929b instead of RAU, 1929a.
- Page 239 — Omit $n = 12$ for *Rhoco discolor*, DARLINGTON, 1929e.
- Page 240 — *Hemerocallis fulva*, clon *Europa*, chromosome number by STOUT and SUSA, 1929, *Hemerocallis longituba* and following by TAKENAKA, 1929.
- Page 243 — *Muscari* species should be on page 242 before *Yucca filamentosa*.
- Page 245 — Insert *Iris susiana*, $2n = 20$, SIMONET, 1929c.
For *Iris Alberti* REGEL, $n = 12$ instead of $2n = 12$, SIMONET, 1929d.

CHROMOSOME NUMBERS IN ANGIOSPERMS II

Bibliographia Genetica VI, 1930

ADDITIONAL ERRATA ¹⁾

- Page 220 — *Pirus malus* var. *Canadian Reinette*, $2n = 51$ instead of 15, RYBIN, 1927a.
- Page 239 — *Prunus nivea* MIYASHI, $n = 16$, OKABE, 1927, but $n = 24$, OKABE, 1928.

¹⁾ See also Genetica XII, 1930.

- Page 263 — Insert *Viola Humboldtii* TR. et PL., $n = 27$, HEILBORN, 1926.
Insert *Viola riviniana* RCHB., $n = 20$, CLAUSEN, 1927b.
- Page 289 — Insert *Primula Forbesii*, $n = 9$, SUGIURA, 1928a.
Primula officinalis, $n = 9$, instead of 11, MARCHAL, 1920.
- Page 322 — The two last species of *Sambucus* should be *Lonicera alseuosmoides* GRAEB. and *L. stabiana* GUSS., DE VILMORIN & SIMONET, 1927b.
Bryonia dioica, $n = 12$ instead of 10, STRASBURGER, 1910c and *Bryonia dioica* JACQ, $n = 10$ instead of 12, MEURMAN 1925b.
- Page 324 — *Cucurbita pepo*, $n = 12$ instead of 14, LUNDEGARDH, 1914.
- Page 330 — *Calendula officinalis*, $2n = 28$ instead of 24, LUNDEGARDH, 1909.
- Pages 390, 391 — *Lilium Kolpakowsiana* REGEL etc. to L. sp. (?) Murillo (hort.) should be *Tulipa*.
- Page 394 — Chromosome numbers for *Ornithogalum narbonense*, *O. nutans*, *O. pyrenaicum* and *O. umbellatum*, SPRUMONT, 1928 should be in the $2n$ instead of the n column.
- Page 400 — Insert $2n = 12$, for *Yucca glauca*, FOLSOM, 1916.
- Page 411 — *Cypripedium insignis*, $2n = 24-26$ instead of 24-36, HEITZ, 1926.
- Page 412 — *Ionopsidium acaule* RCHB., $n = 12$, $2n = 24$, CHIARUGI, 1928.
" *Savianum* (CAR.) BALL., $n = 16$, $2n = 32$, CHIARUGI, 1928
should be transferred to page 204 before *Iberis amara*.
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Supplement
CHROMOSOME NUMBERS IN ANGIOSPERMS TO YEAR 1930

DICOTYLEDONEAE

	n	2n	
URTICALES			
MORACEAE			
<i>Humulus japonica</i> SIEB. et Zucc. ♂	7+13 ¹⁾ , 6+15		KIHARA, 1929b.
<i>Humulus lupulus</i> ♀		20	" , 1929a.
<i>Cannabis sativa</i> L. var. <i>Karajuto</i>	10 ²⁾		HIRATA, 1929.
<i>Cannabis sativa</i> L. var. <i>Tochigi</i>	10 ²⁾		" , "
PROTEALES			
PROTEACEAE			
<i>Grevillea macrostachya</i> BRONGN. et GRIS.	8		MESSERI, 1928.
CENTROSPERMAE			
CHENOPODIACEAE			
<i>Beta vulgaris</i>		18	OKSIJUK, 1927.
SARRACENIALES			
DROSERACEAE			
<i>Drosophyllum lusitanicum</i> LINK		12	BEHRE, 1929.
<i>Dionaea muscipula</i> ELLIS. . .		32	" "
<i>Dionaea muscipula</i>	15		SMITH, 1929.
DROSERA			
Section <i>Rossolis</i>			
<i>Drosera anglica</i>		40	BEHRE, 1929.
" <i>capensis</i> L.		40	" "

¹⁾ In the male plants there are usually 7 pairs of autosomes and a tripartite sex chromosome ($y_1 \times y_2$). In one male plant there were found 6 bivalents and a pentapartite chromosome complex consisting of a pair of autosomes and the 3 sex chromosomes ($y_1 \text{ s s } \times y_2$).

²⁾ In the male and male intersexual plants there occurred an XY pair of chromosomes and in the female and female intersexual plants an XX pair.

DROSERACEAE (continued)	n	2n	
<i>Drosera</i> (continued)			
Section <i>Rossolis</i> (continued)			
<i>Drosera intermedia</i>		20	BEHRE, 1929.
" <i>rotundifolia</i>		20	" "
" <i>spathulata</i> LABILL.		80	" "
Section <i>Ptycnostigma</i>			
<i>Drosera cistiflora</i>		60	" "
Section <i>Phycopsis</i>			
<i>Drosera binata</i> LABILL.		32	" "
Section <i>Psychophila</i>			
<i>Drosera regia</i>		34	" "
Section <i>Bryastrum</i>			
<i>Drosera pygmaea</i> D. C.	probably	32	" "
ROSALES			
PITTOSPORACEAE			
<i>Pittosporum Tobira</i>	12		SCHÜRHOFF, 1929b.
LEGUMINOSAE			
<i>Lupinus mutabilis</i>		42	MILOVIDOV, 1926.
<i>Medicago sativa</i>		32	ELDERS, 1926.
<i>Melilotus alba</i>		16	" "
<i>Melilotus alba annua</i>		16	" "
<i>Melilotus officinalis</i>		16	" "
<i>Vicia amphicarpa</i>		10	SVESHNIKOVA, 1929.
" <i>angustifolia brachisomica</i>		12	" "
" <i>angustifolia dolichosomica</i>		12	" "
" <i>cracca</i> (one race)		14	" "
" <i>cracca</i> (another race)		28	" "
" <i>sativa</i>		12	" "
" <i>angustifolia brachisomica</i>			
× <i>V. angustifolia dolichosomica</i>		12	" "
" <i>cracca</i> (2n = 14) × <i>V.</i>			
<i>cracca</i> (2n = 28)		21	" "
" <i>cracca</i> (2n = 12) × <i>V.</i>			
<i>cracca</i> (2n = 14)		13	" "
" <i>sativa</i> × <i>V. amphicarpa</i>		11	" "
" <i>sativa</i> × <i>V. angustifolia</i>			
<i>brachisomica</i>		12	" "
" <i>sativa</i> × <i>V. angustifolia</i>			
<i>dolichosomica</i>		12	" "
" <i>sativa</i> × <i>V. macrocarpa</i>		12	" "
GERANIALES			
LINACEAE			
<i>Linum alpinum</i> JACQ.	18	36	KIKUCHI, 1929.

LINACEAE (continued)	n	2n	
<i>Linum</i> (continued)			
<i>Linum altaicum</i> FISCH. (from Delft)	9	18	KIKUCHI, 1929.
" <i>americanum</i> L. (from Tabore)	15	30	" "
" <i>angustifolium</i> HUDS. (from Holland)	15	30	" "
" <i>austriacum</i> L. (from Trieste)	9	18	" "
" <i>corymbifolium</i> DESF. (from Tabore)	15	30	" "
" <i>extraaxillare</i> KIT. (from Switzerland)	9	18	" "
" <i>flavum</i> L. (from Amsterdam)	15	30	" "
" <i>hologynum</i> REICHB. (from Lithuania)	9	18	" "
" <i>Lewisii</i> PURSH. (from Tabore)	9	18	" "
" <i>monogynum</i> FORST.	43?	86?	" "
" <i>muelleri</i> MORIS (from Edinburgh)	9	18	" "
" <i>narbonense</i> L. (from Amsterdam)	9	18	" "
" <i>perenne</i> L. (from Trieste)	9	18	" "
" <i>sibiricum</i> DC. (from Sutton)	9	18	" "
" <i>usitatissimum</i> L. (from Sapporo)	15	30	" "
" <i>alpinum</i> JACQ. × <i>L. perenne</i> L. F ₁	$9 + \frac{9_1}{2}$	27	" "
" <i>alpinum</i> JACQ. × <i>L. perenne</i> L. F ₂		20, 28, 34	" "
RUTACEAE			
<i>Citrus sinensis</i> var. <i>Shamouti</i>	9		OPPENHEIM & FRANKEL, 1929
EUPHORBIACEAE			
<i>Mercurialis annua</i>	8 ¹⁾		SZTAJGERWALDÓWNA, 1929.
<i>Euphorbia dulcis</i> L.	14		CARANO, 1926.
SAPINDALES			
BALSAMINACEAE			
<i>Impatiens Balsamina</i>	7		KANNA, 1926.

¹⁾ One pair of chromosomes was very small.

MALVALES	n	2n
MALVACEAE		
<i>Gossypium herbaceum</i>		52—56 VUKOVIC & GLISIC, 1929.
MYRTIFLORAE		
OENOTHERACEAE		
<i>Oenothera biennis</i>	$\frac{14^1)}{2}$	TUDA, 1929.
„ <i>fallax</i>	$\frac{14^2)}{2}$	HÄKANSSON, 1928.
„ <i>gigantea</i> (diploid)	$\frac{14^3)}{2}$	„ „
„ <i>grandiflora</i> (self-pollinated F ₁)	$\frac{14^4)}{2}$	GERHARD, 1929.
„ <i>Lamarckiana</i>	$\frac{14^5)}{2}$	HÄKANSSON, 1928; TUDA, 1929.
„ <i>lata</i>	$\frac{15^6)}{2}$	HÄKANSSON, 1928.
„ <i>ochracea</i> (self-pollinated F ₁)	7	GERHARD, 1929.
„ <i>pulla</i>	$\frac{15^4)}{2}$	HÄKANSSON, 1928.
„ <i>rubrinervis</i> 1 and 2	$\frac{14^5)}{2}$	„ „
„ <i>rubrisepala</i>	$\frac{14^6)}{2}$	„ „
„ <i>rubristachys</i>	$\frac{14^2)}{2}$	„ „
„ <i>sinuata</i>	$\frac{14^6)}{2}$	TUDA, 1929.
„ <i>stricta</i>	$\frac{15^3)}{2}$	HÄKANSSON, 1928.
„ <i>biennis</i> × <i>O. biennis</i> <i>cruciata</i>	$\frac{14^1)}{2}$	TUDA, 1929.
„ <i>biennis</i> × <i>O. cruciata</i>	$\frac{14^1)}{2}$	„ „
„ <i>biennis</i> × <i>O. Lamarckiana</i>	$\frac{14^7)}{2}$	„ „

1) Arranged as a ring of 6 plus a ring of 8 chromosomes.
 2) Arranged as a ring of 12 plus 1 pair of chromosomes.
 3) Arranged as a ring of 13 plus 1 pair of chromosomes.
 4) Arranged as a ring of 6 plus 3 pairs plus 1 trivalent chromosomes.
 5) Arranged as a ring of 6 plus 4 pairs of chromosomes.
 6) Arranged as a ring of 14 chromosomes.
 7) Arranged as a ring of 6 plus a ring of 8, as a ring of 12 plus one pair etc.

OENOTHERACEAE (continued)		2n
<i>Oenothera</i> (continued)		
<i>Oenothera biennis</i> × <i>O. sinuata</i>	$\frac{14^1)}{2}$	TUDA, 1929.
„ <i>Cockerelli</i> × <i>O. grandiflora</i> F ₂ <i>curvitruncata</i>	$\frac{14^2)}{2}$	GERHARD, 1929.
„ <i>grandiflora</i> × <i>O. biennis</i> F ₂ <i>rubiocuta</i>	$\frac{14^3)}{2}$	„ „
„ <i>rubitrunata</i>	$\frac{14^4)}{2}$	„ „
„ <i>grandiflora</i> × <i>O. cruciata</i> F ₂ <i>flexitruncata</i>	$\frac{14^5)}{2}$	„ „
„ <i>semigigas</i>	$\frac{21}{2}$	„ „
„ <i>grandiflora</i> × <i>O. Hookeri</i> F ₂ No. 1.	$\frac{14^6)}{2}$	„ „
„ No. 7	7	„ „
„ <i>grandiflora</i> × <i>O. muricata</i> F ₂ <i>curvitruncata</i>	$\frac{14^1}{2}$	„ „
„ <i>grandiflora</i> × <i>O. suaveolens</i> F ₂ <i>flaviacuta</i>	$\frac{14^6)}{2}$	„ „
„ <i>flavitruncata</i>	$\frac{14^7)}{2}$	„ „
„ <i>Lamarckiana</i> × <i>O. biennis cruciata</i>	$\frac{14^7)}{2}$	TUDA, 1929.

¹⁾ See foot-note 1 page 111.

²⁾ See foot-note 6 page 111.

³⁾ Arranged as a ring of 10 plus 2 pairs of chromosomes.

⁴⁾ Arranged as a ring of 10 plus a ring of 4 chromosomes.

⁵⁾ Arranged as a ring of 8 plus 3 pairs of chromosomes.

⁶⁾ Arranged as a ring of 4 plus 5 pairs of chromosomes.

⁷⁾ See foot-note 2 page 111.

OENOTHERACEAE (continued)	n	2n
<i>Oenothera</i> (continued)		
<i>Oenothera Lamarckiana</i> × <i>O.</i>		
<i>grandiflora</i> F ₂		
<i>acutilaeta</i>	14 ¹⁾	GERHARD, 1929.
	$\frac{2}{2}$	
<i>acutivelutina</i>	14 ²⁾	" "
	$\frac{2}{2}$	
<i>truncovelutina</i>	14 ³⁾	" "
	$\frac{2}{2}$	
No. 6	14 ³⁾	" "
	$\frac{2}{2}$	
No. 9	7	" "
No. 12	7	" "
" <i>muricata</i> × <i>O. grandiflora</i> F ₂		
<i>rigidiacuta</i>	14 ⁴⁾	" "
	$\frac{2}{2}$	
<i>rigiditruncata</i>	14 ⁵⁾	" "
	$\frac{2}{2}$	
" <i>sinuata</i> × <i>O. biennis</i>	14 ⁶⁾	TUDA, 1929.
	$\frac{2}{2}$	
" <i>sinuata</i> × <i>O. Lamarckiana</i>	14 ⁶⁾	" "
	$\frac{2}{2}$	
" <i>suavcolens</i> × <i>O. grandiflora</i> F ₂		
<i>albiacuta</i>	14 ¹⁾	GERHARD, 1929.
	$\frac{2}{2}$	
<i>albitruncata</i>	14 ⁷⁾	" "
	$\frac{2}{2}$	

PRIMULALES

PRIMULACEAE

<i>Primula jesoana</i>	13	MIYAJI, 1929.
<i>malacoides</i>	9	KOBEL, 1927.
<i>malacoides</i> (gigas)	18	" "
<i>malacoides</i> (one plant)	17	34 " " "

CONTORTAE

ASCLEPIADACEAE

<i>Cynanchium acutum</i>	9	FRANCINI, 1927.
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¹⁾ See foot-note 3 page 112.

²⁾ Arranged as a ring of 6 plus a ring of 4 plus 2 pairs of chromosomes.

³⁾ See foot-note 7 page 112.

⁴⁾ Arranged as a ring of 8 plus a ring of 4 plus 2 pairs of chromosomes.

⁵⁾ See foot-note 6 page 111.

⁶⁾ Arranged partly as a ring of 10 plus a ring of 4 chromosomes.

⁷⁾ See foot-note 2 page 111.

TUBIFLORAE	n	2n
POLEMONIACEAE		
<i>Phlox divaricata</i>	14	KELLY & WAHL, 1929.
„ <i>Drummondi</i>	14	„ „ „
„ <i>glaberrima</i>	14	„ „ „
„ <i>maculata</i>	14	„ „ „
„ <i>ovata</i>	14	„ „ „
„ <i>paniculata</i>	14	„ „ „
„ <i>pilosa</i>	14	„ „ „
„ <i>stolonifera</i>	14	„ „ „
„ <i>subulata</i>	14	„ „ „
LABIATAE		
<i>Mentha aquatica</i>	18	SCHÜRHOFF, 1929 ^a .
„ <i>arvensis</i>	36	„ „
„ <i>canadensis</i>	27	„ „
„ <i>pipritha</i>	18	„ „
„ <i>rotundifolia</i>	27? ¹⁾	„ „
„ <i>silvestris</i>	9	„ „
„ <i>verticillata</i>	27	„ „
„ <i>viridis</i>	18	„ „
SOLANACEAE		
<i>Datura metel</i> L.	12	GLISIC, 1928.
<i>Nicotiana Bigelovii</i>	24	CHRISTOFF, 1929.
„ <i>glutinosa</i>	12	„ „
„ <i>longiflora</i>	10	„ „
„ <i>nudicaulis</i>	24	„ „
„ <i>paniculata</i>	12	„ „
„ <i>plumbaginifolia</i>	10	„ „
„ <i>sylvestris</i>	12	„ „
„ <i>suaveolens</i>	16	„ „
„ <i>Tabacum</i> var. <i>macrophylla</i>	24	„ „
„ <i>trigonophylla</i>	12	„ „
„ <i>Bigelovii</i> × <i>N. nudicaulis</i>	48	„ „
	$\frac{2}{2}$	
„ <i>Bigelovii</i> × <i>N. Tabacum</i> var. <i>macrophylla</i>	48	„ „
	$\frac{2}{2}$	
„ <i>glutinosa</i> × <i>N. nudicaulis</i>	36	„ „
	$\frac{2}{2}$	

¹⁾ The chromosomes have not been counted in this form but he estimated them to be 27.

SOLANACEAE (continued)	n	2n	
<i>Nicotiana</i> (continued)			
<i>Nicotiana nudicaulis</i> × <i>N. trigonophylla</i>	$\frac{36}{2}$		CHRISTOFF, 1929.
„ <i>paniculata</i> × <i>N. glutinosa</i>	$\frac{24}{2}$		„ „
„ <i>suaveolens</i> × <i>N. longiflora</i>	$\frac{26}{2}$		„ „
„ <i>suaveolens</i> × <i>N. plumbaginifolia</i>	$\frac{26}{2}$		„ „
„ <i>Tabacum</i> var. <i>macrophylla</i> × <i>N. glutinosa</i>	$\frac{36}{2}$		„ „
„ <i>Tabacum</i> var. <i>macrophylla</i> × <i>N. sylvestris</i>	$12 + \frac{12_1}{2}$		„ „
SCROPHULARIACEAE			
<i>Pentstemon laevigatus</i>		96	LA COUR, 1929.
CAMPANULATAE			
COMPOSITAE			
<i>Crepis reuteriana</i>	4		BABCOCK & HOLLINGSHEAD, 1929.

MONOCOTYLEDONEAE

GLUMIFLORAE	n	2n	
GRAMINEAE			
<i>Avena barbata</i> POTT.	14		NISHIYAMA, 1929.
„ <i>byzantina</i> C. KOCH.	21		„ „
„ <i>fatua</i> L.	21		„ „
„ <i>sativa</i> L.	21		„ „
„ <i>sterilis</i> L.	21		„ „
„ <i>strigosa</i> SCHREB.	7		„ „
<i>Avena</i> hybrids			
<i>Avena barbata</i> POTT. × <i>A. strigosa</i> SCHREB.	7—9 ¹⁾	21	„ „
„ <i>barbata</i> POTT. × <i>A. fatua</i> L.	2—11 ²⁾	35	„ „

¹⁾ This number included 0—3 trivalents and occasionally a tetravalent.

²⁾ Frequently 1—4 trivalents were found.

GRAMINEAE (continued)	n	2n	
<i>Avena</i> hybrids (continued)			
<i>Avena barbata</i> POTT. × <i>A. sterilis</i> L.	7—13 ¹⁾	35	NISHIYAMA, 1929.
„ <i>fatua</i> L. × <i>A. sativa</i> L.	21 ²⁾		„ „
„ <i>fatua</i> L. × <i>A. sterilis</i> L.	21 ²⁾		„ „
„ <i>sativa</i> L. × <i>A. byzantina</i> C. KOCH.	21 ²⁾		„ „
„ <i>sterilis</i> L. × <i>A. byzantina</i> C. KOCH.	21 ²⁾		„ „
<i>Arrhenatherum avenaceum</i>		ca 40	DAVIES, 1927.
<i>Dactylis glomerata</i>	14	28	„ „
<i>Triticum compactum creticum</i> × <i>T. vulgare lutescens</i> (Marquis) F ₂ progeny normal	21	42	VASILJEV, 1929.
heterozygous speltoids	20+1 ₁	41	„ „
homozygous speltoids		40	„ „
(<i>Triticum polonicum</i> × <i>T. spelta</i>) F ₄ F ₈ (KIHARA's dwarfs lacking f or g chromosomes)	20		WAKAKUWA, 1929.
(KIHARA's dwarfs n = 20 crossed) F ₁	19+ $\frac{2_1}{2}$		„ „
(KIHARA's dwarfs n = 20 crossed) F ₂	19, 19+1 ₁ , 19+ $\frac{2_1}{2}$		
	20, 20+1, 21		„ „
(KIHARA's dwarfs 2n = 39 crossed) progeny	19, 19+1 ₁ 20		„ „
<i>Hordeum sativum</i> JESS.	7		INOUE, 1929.
LILIFLORAE			
LILIACEAE			
<i>Colchicum autumnale</i>	7		FURLANI, 1904.
<i>Lilium Matimowicssii</i> REGEL	12		SISA, 1929.
<i>Fritillaria persica</i> L.	12		BAMBACIONI, 1928.
MICROSPERMAE			
ORCHIDACEAE			
<i>Nigritiella nigra</i> RCHB.	19		CHIARUGI, 1929.
„ <i>rubra</i> RCHB.	19		„ „

¹⁾ Frequently 0—4 trivalents were found.

²⁾ Irregularities occurred as members of a pair remained separate as univalents or united with another bivalent to form trivalents.

BIBLIOGRAPHY FOR SUPPLEMENT

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CHROMOSOME NUMBERS IN ANGIOSPERMS IV

DICOTYLEDONEAE

PIPERALES	n	2n
SAURURACEAE		
<i>Houttuynia cordata</i> ¹⁾		94—98 OKABE, 1930.
GARRYALES		
GARRYACEAE		
<i>Garrya elliptica</i>	11	MEURMAN, 1930.
JUGLANDALES		
JUGLANDACEAE		
<i>Juglans cinerea</i> L.	16	WOODWORTH, 1930c.
" <i>mandshurica</i> MAXIM.	16	" "
" <i>nigra</i> L.	16	" "
" <i>regia</i> L.	16	" "
" <i>rupestris</i> ENGELM.	16	" "
" <i>Sieboldiana</i> var. <i>cordi-</i> <i>formis</i> MAK.	16	" "
× " <i>notha</i> REHD. (<i>J. Siebol-</i> <i>diana</i> × <i>J. regia</i>)	16 ²⁾	" "
<i>Carya alba</i> K. KOCH.	32	" "
" <i>cordiformis</i> K. KOCH.	16	" "
" <i>glabra</i> SWEET.	32	" "
" <i>laciniosa</i> LOUD.	16	" "
× " <i>Laneyi</i> var. <i>chateauga-</i> <i>yensis</i> SARG.	16 ³⁾	" "
" <i>ovalis</i> SARG.	32	" "
" <i>ovata</i> K. KOCH.	16	" "
× <i>Pterocarya Rehderiana</i> SCHNEID. (<i>P. fraxinifolia</i> × <i>P. stenoptera</i>)	16 ⁴⁾	" "

¹⁾ Reduction division in the pollen-mother-cells was very irregular. In the embryo-sac mother-cell there were either many bivalents with some univalents or all the chromosomes appeared as univalents and no reduction of number followed.

²⁾ Meiosis was very irregular.

³⁾ Meiosis was not normal.

⁴⁾ Meiosis was irregular.

FAGALES	n	2n
BETULACEAE		
<i>Carpinus betulus</i> L.	8	WOODWORTH, 1930b; JARETZKY, 1930.
" <i>betulus</i> var. <i>fastigiata</i> NICHOLS	32	WOODWORTH, 1930b.
" <i>caroliniana</i> WALT.	8	" "
" <i>cordata</i> BL.	8 ¹⁾	" "
" <i>japonica</i> BL.	8	" "
" <i>laxiflora</i> BL.	8	" "
" <i>orientalis</i> MILL.	8	" "
" <i>turczaninowii</i> HAN- CE	8	" "
<i>Ostrya carpinifolia</i> SCOP.	8	" " ; JARETZKY, 1930.
" <i>japonica</i> SARG.	8	WOODWORTH, 1930b.
" <i>virginiana</i> K. KOCH	8	" "
" <i>virginiana</i> var. <i>glandulosa</i> SARG.	8	" "
<i>Ostryopsis davidiana</i> DCNE.	8	" "
<i>Corylus americana</i> MILL.	11	JARETZKY, 1930.
" <i>avellana</i> L.	11	" "
" <i>maxima</i> MILL.	11	" "
" <i>rostrata</i> AIT. var. <i>mandshurica</i> MAXIM.	10 or 11	" "
<i>Betula humilis</i> SCHR.	14	" "
" <i>lutea</i> MICHX. (from Minn.) ²⁾	42	WOODWORTH, 1930b.
" <i>nana</i> L.	14	JARETZKY, 1930.
" <i>papyrifera</i> var. <i>kenaica</i> HENRY	35	WOODWORTH, 1930b.
" <i>papyrifera</i> var. <i>occidentalis</i> SARG.	42	" "
" <i>papyrifera</i> var. <i>subcordata</i> SARG.	28	" "
" <i>pumila</i> var. <i>glandulifera</i> REGEL	28	" "
" <i>urticifolia</i> REGEL	28	JARETZKY, 1930.
" <i>utilis</i> var. <i>prattii</i> BURK.	14	WOODWORTH, 1930b.
× " <i>purpurii</i> SCHNEID. (<i>B.</i> <i>lutea</i> × <i>B. pumila</i> var. <i>glandulifera</i>)	45 ³⁾	" "

¹⁾ Meiosis was very abnormal. Some of the chromosomes did not pair in diakinesis.

²⁾ *Betula lutea* reported on by WOODWORTH, 1929a (see GAISER, 1930b) came from Massachusetts (U. S. A.)

³⁾ Meiosis was very abnormal.

BETULACEAE (continued)		n	2n
<i>Alnus cordata</i> DESF. var. <i>genuina</i> REGEL	21		JARETZKY, 1930.
<i>Alnus glutinosa</i> var. <i>vulgaris</i> SPACH.	14		" "
<i>Alnus incana</i> MOLNCH.	14		" "
<i>Alnus japonica</i> SIEB. et ZUCC.	28 ¹⁾		" "
<i>Alnus rubra</i> BONG.	14		" "
<i>Alnus rugosa</i> (DU ROI) SPRING.		28 ²⁾	WOODWORTH, 1930a.
<i>Alnus subcordata</i> C. A. MEY	21 ³⁾		JARETZKY, 1930.
<i>Alnus viridis</i> (CHAIX.) DC.	14		" "
FAGACEAE			
<i>Fagus sylvatica</i> L.		24	" "
(<i>astanea sativa</i> MILL.	12 ⁴⁾		" "
" <i>dentata</i> BORCKH.	12		" "
QUERCUS			
Subgenus <i>Lepidobalanus</i>			
<i>Quercus alba</i>	12		SAX, H. J., 1930.
" <i>alba</i> L.		12	FRIESNER, 1930.
" <i>bicolor</i>	12		SAX, H. J. 1930.
" <i>macrocarpa</i>	12 ± 1		" " " "
" <i>macrocarpa</i> MICHX.		12	FRIESNER, 1930.
" <i>mongolica</i>	12 ± 1		SAX, H. J., 1930.
" <i>montana</i>	12		" " " "
" <i>muhlenbergii</i>	12		" " " "
" <i>muhlenbergii</i> ENGL ⁵⁾		12	FRIESNER, 1930.
Subgenus <i>Erythrobalanus</i>			
<i>Quercus exacta</i>	12		SAX, H. J., 1930.
" <i>umbricaria</i>	12		" " " "
× " <i>leana</i>	12 ± 1		" " " "
× " <i>ludoviciana</i>	12 ± 1		" " " "
" <i>palustris</i>	12		" " " "
" <i>palustris</i> DU ROI		24	GHIMPU, 1930.
× " <i>velutina</i>	12 ± 1		SAX, H. J., 1930.
" <i>velutina</i> LAM.		12	FRIESNER, 1930.
QUERCUS (unclassified as to subgenus)			
<i>Quercus borealis maxima</i> ASHE ⁶⁾		12	FRIESNER, 1930.

¹⁾ Only 25 units were counted in metaphase, one unit supposedly consisting of 3 fused units.

²⁾ This number was determined in the ovule where no reduction division was found to occur (embryos arising from parthenogenesis).

³⁾ Meiotic divisions were more or less irregular.

⁴⁾ Equatorial plates showing 10 and 11 chromosomes were explained as having been the result of fusion of chromosomes.

⁵⁾ Mitotic chromosome behavior was somewhat abnormal.

⁶⁾ Mitotic chromosome behavior was slightly abnormal.

FAGACEAE (continued)	n	2n	
<i>Quercus</i> (continued)			
<i>Quercus cerris</i> L.		24	GHIMPU, 1930; JARETZKY, 1930.
„ <i>coccifera</i> LINN.		24	GHIMPU, 1930.
„ <i>coccinea</i> MUENCH. ¹⁾		12	FRIESNER, 1930.
„ <i>coccinea</i> WANGENH.	12		JARETZKY, 1930.
„ <i>Dalechampii</i> TEN.	12		„ „
„ <i>glandulifera</i> BL.	12 ²⁾		„ „
„ <i>ilex</i> LINN.		24	GHIMPU, 1930.
„ <i>Kochnii</i> (<i>Q. ilex</i> × <i>Q. sessilis</i>)		24 ³⁾	JARETZKY, 1930.
„ <i>Libani</i> OLIV.	12		„ „
„ <i>macranthera</i> FISCH. et MEY.	12		„ „
„ <i>marilandica</i> MUENCH.		12	FRIESNER, 1930.
„ <i>Michauxii</i> NUTT. ⁴⁾		12	„ „
„ <i>nigra</i> L.		24	JARETZKY, 1930.
„ <i>pontica</i> K. KOCH.	12 ²⁾		„ „
„ <i>prinoides</i> WILLD.		12	FRIESNER, 1930.
„ <i>Prinus</i> L.		12	„ „
„ <i>robur</i> L.	12		JARETZKY, 1930.
„ <i>sessilis</i> EHRH.	12		„ „
„ <i>suber</i> LINN.		24	GHIMPU, 1930.

URTICALES

ULMACEAE

Ulmus montana WITH. 14 KRAUSE, 1930.

MORACEAE

<i>Humulus japonicus</i> S. et Z.	7+13 ⁵⁾	16, 17, 32 ⁶⁾	TUSCHNJAKOWA, 1930.
<i>Dorstenia argentata</i> HOOK.	14		KRAUSE, 1930.
„ <i>Barteri</i> BUR.	12		„ „
„ <i>contrajerva</i> L.	15		„ „
„ <i>convexa</i> DE WILD.	12		„ „
„ <i>multiformis</i> MIQ. var. <i>arifolia</i>	16		„ „
„ <i>multiformis</i> MIQ. var. <i>Ceratosanthes</i>	16		„ „

¹⁾ Mitotic chromosome behavior was somewhat abnormal.

²⁾ Equatorial plates showing 10 and 11 chromosomes were explained as having been the result of fusion of chromosomes.

³⁾ Judged by meiotic divisions where 13 or 14 chromosomes were found and it was thought that several univalent chromosomes were present.

⁴⁾ See foot-note 6 page 122.

⁵⁾ The trivalent chromosome is represented as a + b₁ + b₂.

⁶⁾ Tetraploid cells occurred occasionally in the diploid plants.

MORACEAE (continued)	n	2n	
<i>Dorstenia</i> (continued)			
<i>Dorstenia plumariaefolia</i> FISCH. et MEY.	13		KRAUSE, 1930.
„ <i>Psilurus</i> WELW.	14(?)		„ „
„ <i>yambuyaensis</i> DE WILD.	12		„ „
<i>Brosimum Alicastrum</i> SW.		26	„ „
<i>Ficus elastica</i> ROXB.		26(?)	„ „
„ <i>panduraefolia</i> VILL.		26(?)	„ „
„ <i>Schlechteri</i>		26(?)	„ „
<i>Cecropia peltata</i> L.		26(?)	„ „
URTICACEAE			
<i>Urtica caudata</i> VAHL. (<i>Urtica</i> <i>membranacea</i> POIR.)	12	24	NEGODI, 1930.
<i>Pellionia Daveauana</i> BR.	13		KRAUSE, 1930.
<i>Boehmeria biloba</i> WEDD.		28(?)	„ „
<i>Parietaria judaica</i> L.	13		„ „
„ <i>officinalis</i> L.		14	„ „
„ <i>officinalis</i> L. var. <i>angustifolia</i> L.	7		„ „
POLYGONALES			
POLYGONACEAE			
<i>Rumex acetosa</i> ♂		15 ¹⁾	ONO, 1930a.
„ <i>acetosa</i> ♀		14 ²⁾	„ „
„ <i>acetosa</i> (intersex.)		15 ³⁾	ONO, 1930a, b.
		22 ⁴⁾	„ „ „
		29 ⁵⁾	„ „ „
„ <i>acetosa</i> (offspring of tri- ploids and intersexual plants)		15, 16, 20 ⁶⁾	„ „ „
„ <i>acetosella</i> (intersex.)	20+1 ₁	41(?)	ONO, 1930b.
„ <i>montanus</i> ♂		15 ¹⁾	„ „
„ <i>montanus</i> ♀		14 ²⁾	„ „

¹⁾ The complex is written $15 = x + 2y + 12a$.

²⁾ The complex is written $14 = 2x + 12a$.

³⁾ The complex is written $15 = x + 2y + a' + 11a$. The a' chromosome is one of a heteromorphic pair, apparent in certain division stages.

⁴⁾ The complex is written $22 = 2x + 2y + 18a$ or $2x + 2y + a' + 17a$, of which those having the a' chromosome show greater degrees of intersexualism. Of four other plants showing marked intersexualism the complex was $2x + 3y + a' + 16a$ or $2x + 2y + 3a' + 15a$.

⁵⁾ The complex is written $29 = 3x + 2y + 24a$.

⁶⁾ The complex is written $15 = x + 3y + 2a' + 9a$ or $2x + 13a$; $16 = x + 2y + 13a$; and $20 = 2x + y + 17a$.

POLYGONACEAE (continued)		n	2n
<i>Rumex</i> (continued)			
<i>Rumex montanus</i> (intersex.)			22 ¹⁾ ONO, 1930b.
„ <i>montanus</i> DESF. ♂			15 ²⁾ TAKENAKA, 1930.
„ <i>montanus</i> DESF. ♀			14 ³⁾ „ „
„ <i>papilio</i> COSS. et BAL.	9		ONO, 1930c.
„ <i>scutatus</i> var. <i>typicus</i>	20		FIKRY, 1930.
CENTROSPERMAE			
CHENOPODIACEAE			
<i>Beta patellaris</i>	9		BLEIER, 1930b.
„ <i>vulgaris</i>	9		„ „
	9	18	LEVINE, 1930.
„ <i>vulgaris</i> (Crown Gall tissue)		18, 36,	
		72 ³⁾	„ „
PORTULACACEAE			
<i>Portulaca grandiflora</i> LINDL.	9		TJEBBES, 1930.
CARYOPHYLLACEAE			
<i>Silene inflata</i> SMITH		24 ⁴⁾	BLACKBURN & BOULT, 1930.
„ <i>tatarica</i> PERS.		24 ⁴⁾	„ „ „ „
<i>Vaccaria segetalis</i> (NECK.) GARCKE	15	30	„ „ „ „
<i>Dianthus allwoodii</i> HORT.		90	SHIBUKAWA, 1930.
„ <i>Armeria</i>		30	ISHII, 1930.
„ <i>atrorubens</i>		90	„ „
„ <i>barbatus</i>		30	„ „
„ <i>chinensis</i>		30	„ „
„ <i>chinensis</i> L.	15	30	SHIBUKAWA, 1930.
„ <i>compactus</i>		90	ISHII, 1930.
„ <i>cruentus</i>		30	„ „
„ <i>dentosus</i>		30	„ „
„ <i>erythrocoreus</i>		30	„ „
„ <i>fragrans</i>		90	„ „
„ <i>Hoeltzeri</i>		90	„ „
„ <i>japonicus</i>		30	„ „
„ <i>laciniatus</i>		60	„ „
„ <i>latifolius</i> HORT.		60	SHIBUKAWA, 1930.
„ <i>liburunicus</i>		90	ISHII, 1930.
„ <i>orbelicus</i>		90	„ „

¹⁾ The complex is written $22 = 2x + 2y + 18a$.

²⁾ At heterotypic metaphase 6 gemini + 1 tripartitic chromosome were observed. Thus the complex is written $2n \delta = 12a + x + Y_1 + Y_2$; $2n \text{♀} = 12a + 2x$.

³⁾ Tetraploid cells were more numerous than octoploid cells, but diploid cells were the most numerous.

⁴⁾ By figure of somatic plate from root-tip.

CARYOPHYLLACEAE (continued) n		-2n	
<i>Dianthus</i> (continued)			
<i>Dianthus pallens</i>		90	ISHII, 1930.
" <i>petracus</i>		90	" "
" <i>pubescens</i>		90	" "
" <i>racemosus</i>		90	" "
" <i>squarrosus</i>		90	" "
" <i>subfastigiatus</i>		30	" "
" <i>sylvestris</i>		30	" "
" <i>Velenowskyi</i>		30	" "
" <i>versicolor</i>		90	" "
" <i>wimmeri</i>		60	" "
SAPONARIA ¹⁾			
I. Saponariella			
1. <i>Smegmathamnium</i>			
<i>Saponaria caespitosa</i> D.C.	14	28	BLACKBURN & BOULT, 1930.
" <i>lutea</i> L.		28	" " " "
" <i>Pumilio</i> FENZL.		28	" " " "
2. <i>Kabylia</i>			
<i>Saponaria glutinosa</i> BIEB.		28	" " " "
3. <i>Bootia</i>			
<i>Saponaria calabrica</i> GUSS.	14	28	" " " "
" <i>ocymoides</i> L.	14		" " " "
" <i>officinalis</i> L.	14	28	" " " "
" <i>pulchella</i> hybrid	14		" " " "
II. Saporhizaea			
2. <i>Silenoides</i>			
<i>Saponaria cerastiodes</i>			
FISCH.	14	28	" " " "
RANALES			
RANUNCULACEAE			
<i>Clematis virginiana</i>	8		LINDSAY, 1930.
BERBERIDACEAE			
<i>Diphylleia Grayi</i> FR. SCHOM.		12	MIJAYI, 1930b.
<i>Podophyllum pleianthum</i> HAN- CE.		12	" "
<i>Nandina domestica</i> THUNB.		20	" "
<i>Epimedium macranthum</i> MORR. et DECNE. var. <i>violaceum</i> FRANCH.		12	" "
<i>Ranzania japonica</i> T. ITO		14	" "
<i>Jeffersonia dubia</i> MAXIM.		12	" "
MENISPERMACEAE			
<i>Menispermum canadense</i>	26		LINDSAY, 1930.

¹⁾ Arrangement is according to SIMMLER (1910).

CALYCANTHACEAE	n	2n	
<i>Calycanthus</i>	12	24	BROFFERIO, 1930.
RHOEADALES			
PAPAVERACEAE			
<i>Eschscholtzia californica</i> . . .	6		LAWRENCE, 1930.
" <i>molle</i>	8		" "
<i>Papaver Rhoeas</i>	7		" "
<i>Corydalis cava</i>	8		" "
CRUCIFERAE			
<i>Ionopsidium acaule</i> (DESF.)			
REICHB.	12		CORTI, 1930b.
" <i>Savianum</i> (CAR.)			
BALL. ex CARUEL	16		" "
<i>Iberis pinnata</i>	8		LAWRENCE, 1930b.
<i>Brassica alba</i> RABH. (white mustard) (from U.S.A. and England)	12		NAGAI & SASAOKA, 1930a.
<i>Brassica alba</i> RABH. (<i>B. nigra</i>) (from Switzerland)	12		" " "
<i>Brassica alba</i> RABH. (<i>Sinapis</i> <i>alba</i>) (from Germany)	12		" " "; 1930b.
<i>Brassica arvensis</i> RABH. (<i>B. ar-</i> <i>vensis</i>) (from U.S.A.)	9		" " 1930a.
<i>Brassica arvensis</i> RABH. (<i>Sina-</i> <i>pis arvensis</i>) (from Germany)	9		" " "
<i>Brassica campestris</i> L.		10	KARPECHENKO, 1930.
" <i>campestris</i> L. var. <i>af-</i> <i>ghanica</i>	10		NAGAI & SASAOKA, 1930b.
" <i>campestris</i> L. var. <i>al-</i> <i>taica</i>	10		" " "
" <i>campestris</i> L. var. <i>cau-</i> <i>casica</i>	10		" " "
" <i>campestris</i> L. var. <i>ka-</i> <i>bulica</i>	10		" " "
" <i>campestris</i> L. var. <i>vul-</i> <i>garis</i>	10		" " "
" <i>campestris</i> L. (Sawi Biji)	10		" " "
" <i>campestris</i> L. (Tamba- na) (from Japan)	10		" " 1930a.
" <i>campestris</i> L. (<i>B. glau-</i> <i>ca</i>)	10		" " 1930b.
" <i>campestris</i> L. (two other types)	10		" " "
" <i>carinata</i> BRAUN.	18		" " "

CRUCIFERAE (continued)	n	2n	
<i>Brassica</i> (continued)			
	17		MORINAGA & FUKUSHIMA, 1930.
	17	34	KARPECHENKO, 1930.
<i>Brassica chinensis</i> L. (Chang-Keng-pai-tsai) (from China)	10		NAGAI & SASAOKA, 1930a.
" <i>chinensis</i> L. (Chung-ming-pai-tsai) (from China)	10		" " "
" <i>chinensis</i> L. (Huailan Pai-tsai) (from China)	10		" " "
" <i>chinensis</i> L. (Kun-ping-pai-tsai) (from China)	10		" " "
" <i>chinensis</i> L. (Peking Yu-tsai) (from China)	10		" " "
" <i>chinensis</i> L. (Mustard Chinese White) (from U.S.A.)	10		" " "
" <i>chinensis</i> L. (Sawi Daun) (from Malay)	10		" " "
" <i>chinensis</i> L. (Sawi Puteh) (from Malay) .	10		" " "
" <i>chinensis</i> L. (Sawi Puteh Daun Kechil) (from Malay) . . .	10		" " "
" <i>chinensis</i> L. (Seppaku Taisai) (from Japan).	10		" " "
" <i>chinensis</i> L. (Tai-huching-tsai) (from China)	10		" " "
" <i>chinensis</i> L. (Tai-touching-tsai) (from China)	10		" " "
" <i>chinensis</i> L. (Wu-chin-pai-tsai) from China)	10		" " "
" <i>juncea</i> Coss. (Chinese Mustard) (from U. S.A.)	18		" " "
" <i>juncea</i> Coss. (Cha-tsai) (from China) . . .	18		" " "
" <i>juncea</i> Coss. (Ching-tsai) (from China) .	18		" " " ; SA-
			SAOKA, 1930.

CRUCIFERAE (continued)	n	2n
<i>Brassica</i> (continued)		
<i>Brassica juncea</i> Coss. (Hagashina) (from Japan)	18	NAGAI & SASAOKA, 1930a.
" <i>juncea</i> Coss. (Hsieh-chieh) (from China).	18	" " "
" <i>juncea</i> Coss. (Hsieh-li-hung) (from China)	18	" " "
" <i>juncea</i> Coss. (Hua-chieh) (from China).	18	" " "
" <i>juncea</i> Coss. (Huang-chieh-tsai) (from China)	18	" " "
" <i>juncea</i> Coss. (Pai-chieh) (from China).	18	" " "
" <i>juncea</i> Coss. (Peking-Hsieh-li-hung) (from China)	18	" " "
" <i>juncea</i> Coss. (Peking-Hsiao-chieh-tsai) (from China).	18	" " "
" <i>juncea</i> Coss. (Pi-chieh) (from China)	18	" " "
" <i>juncea</i> Coss. (Sawi Hitam) (from Malay)	18	" " "
" <i>juncea</i> Coss. (Tai-chieh-tsai) (from China)	18	" " " ; SAOKA, 1930.
" <i>juncea</i> var. <i>crispifolia</i> BAILEY (Fordhook Fancy) (from U.S.A.)	18	NAGAI & SASAOKA, 1930a.
" <i>juncea</i> var. <i>crispifolia</i> BAILEY (Giant Southern Curled) (from U.S.A.)	18	" " "
" <i>juncea napiformis</i> BAILEY (Chêng-Kung-chieh) (from China)	18	" " "
" <i>juncea napiformis</i> BAILEY (Peking-chieh-tsai-Ko-chu) (from China)	18	" " "

CRUCIFERAE (continued)	n	2n
<i>Brassica</i> (continued)		
<i>Brassica juncea napiformis</i> BAILEY (Tai-tou-tsai)		
(from China) . . .	18	NAGAI & SASAOKA, 1930a.
" <i>napus</i> L.	18	KARPECHENKO, 1930.
	19	MORINAGA & FUKUSHIMA, 1930.
" <i>napus</i> var. <i>Napobrassica</i> REICHB. (<i>B. napus esculenta</i> DC.)		
(from Russia) . . .	19	NAGAI & SASAOKA, 1930a.
" <i>napus</i> var. <i>napobrassica</i> REICHB. (Imperial Purple Rutabaga)		
(from U.S.A.) . . .	19	" " "
" <i>napus</i> var. <i>napobrassica</i> REICHB. (Rutabaga)	19	SASAOKA, 1930.
" <i>napus</i> var. <i>napobrassica</i> REICHB. (Yellow Golden) (from England)	19	NAGAI & SASAOKA, 1930a.
" <i>napus</i> L. var. <i>oleifera</i> DC.	19	MORINAGA & FUKUSHIMA, 1930.
" <i>napus</i> L. var. <i>oleifera</i> DC. (<i>B. napus oleifera annua</i>) (from Russia)	19	NAGAI & SASAOKA, 1930a.
" <i>napus</i> L. var. <i>oleifera</i> DC. (<i>B. napella</i> CHAIX. „Kochosen” (from Japan) . . .	19	" " "
" <i>napus</i> L. var. <i>oleifera</i> DC. (Favorite Kale) (from England) . .	19	" " "
" <i>napus</i> L. var. <i>oleifera</i> DC. (Ōchosen 2 types) (from Japan) .	19	" " " ; SASAOKA, 1930.
" <i>napus</i> L. var. <i>oleifera</i> DC. (Rape) (from England and Germany)	19	NAGAI & SASAOKA, 1930a; SASAOKA, 1930.
" <i>narinosa</i> BAILEY (Piao erh-tsai) (from China)	10	NAGAI & SASAOKA, 1930a.

CRUCIFERAE (continued)	n	2n
<i>Brassica</i> (continued)		
<i>Brassica nigra</i> KOCH (<i>B. nigra</i>) (from Germany)	8	NAGAI & SASAOKA, 1930a.
" <i>nigra</i> KOCH (<i>B. nigra</i> , 2 types) (from Rus- sia)	8	" " "
" <i>nigra</i> KOCH (Brown Mustard) (from Eng- land)	8	" " "
" <i>nigra</i> KOCH (Noire de Sicile) (from France)	8	" " "
" <i>nipposinica</i> BAILEY (Nakate Mibuna) (from Japan)	10	" " "
" <i>nipposinica</i> BAILEY (Nakate Sensuji-Ky- ôna) (from Japan)	10	" " "
" <i>nipposinica</i> BAILEY (Okute Mibuna) (from Japan)	10	" " "
" <i>nipposinica</i> BAILEY (Okute Sensujikyôna) (from Japan)	10	" " " ; SA- SAOKA, 1930.
" <i>nipposinica</i> BAILEY (Wase Mibuna) (from Japan)	10	NAGAI & SASAOKA, 1930a.
" <i>oleracea</i> var. <i>acephala</i> DC. (Collard) (from England)	9	" " "
" <i>oleracea</i> var. <i>acephala</i> DC. (Chieh-lan) (from China)	9	" " "
" <i>oleracea</i> var. <i>acephala</i> DC. (Extra Curled Scotch Kale) (from England)	9	" " "
" <i>oleracea</i> var. <i>acephala</i> DC. (Sawi Hitan Tu- ah) (from Malay)	9	" " "
" <i>oleracea</i> var. <i>acephala</i> DC. (<i>B. alboglabra</i> BAILEY)	9	" " 1930b.

CRUCIFERAE (continued)	n	2n
<i>Brassica</i> (continued)		
<i>Brassica oleracea</i> var. <i>botrytis</i>		
L. (Michaelmas White) (from England) .	9	NAGAI & SASAOKA, 1930a.
" <i>oleracea</i> var. <i>capitata</i>		
L. (Baby Head) (from U.S.A.)	9	" " "
" <i>oleracea</i> var. <i>capitata</i>		
L. (Denmark Market) (from England) . .	9	" " "
" <i>oleracea</i> var. <i>capitata</i>		
L. (Toyoda-wase) (from Japan) . . .	9	" " "
" <i>oleracea</i> var. <i>gemmifera</i> ZENKER (Holborn Exhibition) (from England)	9	" " "
" <i>oleracea</i> var. <i>gongyloides</i> L. (Early White) (from England) . .	9	" " "
" <i>pekinensis</i> RUPR. . .	10	KARPECHENKO, 1930.
" <i>pekinensis</i> RUPR. (Chihli Pai-tsai) (from China)	10	NAGAI & SASAOKA, 1930a; SASAOKA, 1930.
" <i>pekinensis</i> RUPR. (Chinko Undai) (from China)	10	NAGAI & SASAOKA, 1930a.
" <i>pekinensis</i> RUPR. (Hakukei Santôsai) (from Japan)	10	" " "
" <i>pekinensis</i> RUPR. (Harumaki Kekkyu-hakusai) (from Japan) .	10	" " "
" <i>pekinensis</i> RUPR. (Hua-hsin-tsai) (from China)	10	" " "
" <i>pekinensis</i> RUPR. (Kawachi Undai) (from Japan)	10	" " "
" <i>pekinensis</i> RUPR. (Kekkyu Sauto-hakusai) (from Japan) . . .	10	" " "
" <i>pekinensis</i> RUPR. (Ô-		

CRUCIFERAE (continued)	n	2n
<i>Brassica</i> (continued)		
gomba Santôсай (from Japan) . . .	10	NAGAI & SASAOKA, 1930a.
<i>Brassica pekinensis</i> RUPR. (Peking Hsiao-pai-tsai) (from China) . . .	10	" " "
" <i>pekinensis</i> RUPR. (Peking Tai-pai-tsai) (from China) . . .	10	" " "
" <i>pekinensis</i> RUPR. (Sawi Daunca) (from Malay)	10	" " "
" <i>pekinensis</i> RUPR. (Sawi Puteh Daun Besar) (from Malay) .	10	" " "
" <i>pekinensis</i> RUPR. (Tai-pai-tsai) (from China)	10	" " " ; SA- SAOKA, 1930.
" <i>pekinensis</i> RUPR. (Untai, 3 types) (from China)	10	NAGAI & SASAOKA, 1930a.
" <i>pekinensis</i> RUPR. (Yasu Undai) (from Japan)	10	" " "
" <i>rapa</i> L. (<i>B. campestris</i>) (from Russia) .	10	" " "
" <i>rapa</i> L. (Habirona) (from Japan) . . .	10	" " "
" <i>rapa</i> L. (Hatakéna) (from Japan) . . .	10	" " "
" <i>rapa</i> L. (Hikabu) (from Japan)	10	" " "
" <i>rapa</i> L. (Hinona) (from Japan)	10	" " "
" <i>rapa</i> L. (Imaichi Kaba) (from Japan) . .	10	" " "
" <i>rapa</i> L. (Kisona) (from Japan)	10	" " "
" <i>rapa</i> L. (Komatsna) (from Japan) . . .	10	" " "
" <i>rapa</i> L. (Kurona) (from Japan)	10	" " "
" <i>rapa</i> L. (Man-Ching) (from China) . . .	10	" " "

CRUCIFERAE (continued)	n	2n
<i>Brassica</i> (continued)		
<i>Brassica rapa</i> L. (Nozawana) (from Japan) . . .	10	NAGAI & SASAOKA, 1930a.
" <i>rapa</i> L. (Purple-top Mammoth) (from England)	10	" " "
" <i>rapa</i> L. (Shôgoin Ka- bu) (from Japan) . .	10	" " " ; SA- SAOKA, 1930.
" <i>rapa</i> L. (Suigukina) (from Japan) . . .	10	NAGAI & SASAOKA, 1930a.
<i>Brassica</i> hybrids:		
<i>Brassica juncea</i> Coss. (Ching- tsai) × <i>B. napus</i> L. var. <i>napobrassica</i> REICHB. (Rutabaga)	$10 + \frac{17_1}{2}$	SASAOKA, 1930.
" <i>juncea</i> Coss. (Ching- tsai) × <i>B. napus</i> L. var. <i>napobrassica</i> REICHB. (Rutabaga) F ₂	$12 + \frac{9_1}{2}$, $12 + \frac{10_1}{2} +$ $1\frac{1}{2}$, $10 + \frac{12_1}{2}$	" "
" <i>napus</i> L. var. <i>napo- brassica</i> REICHB. (Rutabaga) × <i>B. jun- cea</i> Coss. (Tai-chieh- tsai)	$10 + \frac{17_1}{2}$	" "
" <i>napus</i> L. var. <i>napo- brassica</i> REICHB. (Rutabaga) × <i>B. na- pus</i> L. var. <i>oleifera</i> DC. (Ochosen) . . .	19	" "
<i>Brassica napus</i> L. var. <i>napo- brassica</i> REICHB. (Rutabaga) × <i>B. nip- posinica</i> BAILEY (O- kute sensujikyôna)	$10 + \frac{9_1}{2}$	" "

CRUCIFERAE (continued)	n	2n	
Brassica hybrids (continued)			
<i>Brassica napus</i> L. var. <i>napobrassica</i> REICHB. (Rutabaga) × <i>B. pekinensis</i> RUPR. (Tai- psai-tsai)	$10 + \frac{9_1}{2}$		SASAOKA, 1930.
" <i>napus</i> L. var. <i>oleifera</i> DC. (Ochosen) × <i>B.</i> <i>napus</i> L. var. <i>oleifera</i> DC. (Rape)	19		" "
" <i>napus</i> L. var. <i>oleifera</i> DC. (Ochosen) × <i>B.</i> <i>rapa</i> L. (Shogoin- Kabu) F ₁	$10 + \frac{9_1}{2}$		" "
" <i>napus</i> L. var. <i>oleifera</i> DC. (Ochosen) × <i>B.</i> <i>rapa</i> L. (Shogoin- Kabu) F ₂	$\frac{12-20}{2}$		" "
" <i>napus</i> L. var. <i>oleifera</i> DC. (Ochosen) × <i>B.</i> <i>pekinensis</i> RUPR. (Chili-pai-tsai) F ₂ one plant	$11 + \frac{9_1}{2}$		" "
" <i>pekinensis</i> RUPR. (Chi- li-pai-tsai) × <i>B. na-</i> <i>pus</i> L. var. <i>oleifera</i> DC. (Ochosen)	$10 + \frac{9_1}{2}$		
<i>Raphanus raphanistrum</i>	9	18	KARPECHENKO, 1930.
" <i>sativus</i> L. (Indian radish)	9		SUTARIA, 1930.
<i>Raphanobrassica</i> (<i>Raphanus sa-</i> <i>tivus</i> L. × <i>Brassica oleracea</i> L.	18	36	KARPECHENKO, 1930.
<i>Raphanobrassica</i> × <i>Brassica</i> <i>campestris</i>		28	" "
<i>Raphanobrassica</i> × <i>Brassica</i> <i>carinata</i>		35	" "
<i>Raphanobrassica</i> × <i>Brassica</i> <i>napus</i>		36	" "

CRUCIFERAE (continued)		n	2n	
<i>Raphanobrassica</i> × <i>Brassica</i>				
<i>pekinensis</i>			28	KARPECHENKO, 1930.
<i>Raphanobrassica</i> × <i>Raphanus</i>				
<i>raphanistrum</i>			27	" " "
<i>Bursa grandiflora</i>	8			LAWRENCE, 1930.
<i>Cardamine pratensis</i>	15 ¹⁾			" "
<i>Lobularia maritima</i>	12			" "
<i>Hesperis tristis</i>	14			" "
<i>Matthiola bicornis</i> D.C.		14		MANTON, 1930.
" <i>fenestralis</i> R. Br.		14		" "
" <i>odoratissima</i> R. Br.		12		" "
" <i>parviflora</i> R. Br.		14		" "
" <i>sinuata</i> R. Br.		14		" "
" <i>tatarica</i> D.C.		12		" "
" <i>Thessala</i> Boiss. et O.		12		" "
ROSALES				
SAXIFRAGACEAE				
<i>Saxifraga granulata</i>	ca. 16			WHYTE, 1930.
" <i>rosacea</i>	ca. 16			" "
" <i>rosacea</i> × <i>S. granulata</i> F ₂ = <i>S. potter-nensis</i>	32—36			" "
ROSACEAE				
<i>Pyrus communis</i>	17			LAWRENCE, 1930.
" <i>floribunda</i> KIRCHN.		34		DARLINGTON & MOFFETT, 1930.
" <i>malus</i>	17, 51			LAWRENCE, 1930.
	$\frac{2}{2}$			
<i>Pyrus malus</i> L. varieties:				
<i>Akero</i> ²⁾	17			HEILBORN, 1930.
<i>Allington pippin</i>		34		DARLINGTON & MOFFETT, 1930.
<i>Annie Elizabeth</i>		34		" " " "
<i>Baldwin</i>	51			" " " "
	$\frac{2}{2}$			
<i>Beauty of Bath</i>		34		" " " "
<i>Blenheim Orange</i>		51		" " " "
<i>Bramley's Seedling</i>		51		" " " "
" " (seedlings) ³⁾		38-41, 43		" " " "
		46, 47		" " " "
<i>Carlisle pippin</i>		34		" " " "

¹⁾ The number 16 as published in *Genetica* was corrected by LAWRENCE in a reprint received from him.

²⁾ The buds of cut twigs placed in water and subjected to various temperatures (10° to 35°) showed varying numbers of univalent chromosomes.

³⁾ Chromosome numbers of 17 seedlings obtained from open pollination of Bramley's Seedling were obtained from their root-tips.

ROSACEAE (continued)	n	2n	
<i>Pyrus malus</i> L. varieties (continued)			
<i>Cox's orange pippin</i>		34	DARLINGTON & MOFFETT, 1930.
<i>Cox's Pomona</i>		34	" " " "
" " ¹⁾	17		HEILBORN, 1930.
<i>Crimson Bramley</i>		51	DARLINGTON & MOFFETT, 1930.
<i>Duchess Favorite</i>		34	" " " "
<i>Early Victoria</i>		34	" " " "
<i>Genet Moyle</i>		51	" " " "
<i>Grenadier</i>		34	" " " "
<i>Irish Peach</i>		34	" " " "
<i>Kentish</i>		34	" " " "
<i>Keswick Codlin</i>		34	" " " "
<i>Lane's Prince Albert</i>		34	" " " "
<i>Lord Derby</i>		34	" " " "
<i>Manx Codlin</i>		34	" " " "
<i>Newton Wonder</i>		34	" " " "
<i>Northern Spy</i>		34	" " " "
<i>Odlins</i>		34	" " " "
<i>Reinette Zuccamaglio</i>		34	" " " "
<i>Ribston pippin</i>	51		" " " "
	$\frac{2}{}$		
<i>Rival</i>		34	" " " "
<i>Säustaholm</i> ¹⁾	17		HEILBORN, 1930.
<i>Weisser Astrachan</i> ¹⁾	17		" "
<i>Winter Magetin</i>		34	DARLINGTON & MOFFETT, 1930.
<i>Worcester Pearmain</i>		34	" " " "
<i>Doucin</i> (Malling Type VI)		34	" " " "
<i>Jaune de Metz</i> (Malling Type IX)		34	" " " "
<i>Nonsuch</i> (Malling Type VI)		34	" " " "
<i>Old English Broadleaf Paradise</i> (Malling stock Type I)		34	" " " "
<i>Pyrus Ringo</i> L.		34	" " " "
<i>Fragaria americana alba</i> (PORTER)	7 ²⁾		ICHIJIMA, 1930.
" <i>bracteata</i> HELLER	7 ²⁾		" "
" <i>californica</i> CHAM. et SCHLECHT.	7 ²⁾		" "
" <i>chiloensis</i>	28		SCHIEMANN, 1930.
		56	EAST, 1930a.

¹⁾ See foot-note 2 page 136.

²⁾ In this species one pair of chromosomes sometimes passed to the poles in early metaphase before the other chromosomes had started to separate („precursory chromosomes”). Non-disjunction of one pair often gave rise to different numbers of chromosomes in the two daughter nuclei. Doubling of the chromosome number also occurred.

ROSACEAE (continued)	n	2n	
<i>Fragaria</i> (continued)			
<i>Fragaria chilensis</i> L.	28 ¹⁾		ICHIJIMA, 1930.
" <i>chilensis</i> var. <i>Chesapeake</i>	28 ⁴⁾		" "
" <i>collina</i>	7		SCHIEMANN, 1930; RUDLOFF, 1930a.
" <i>collina</i> EHRH.	7 ²⁾	14	ICHIJIMA, 1930.
" <i>Daltoniana</i>	7		SCHIEMANN, 1930.
" <i>elatior</i>	21		" "
" <i>elatior</i> EHRH.	21 ²⁾	42	KIHARA, 1930.
" <i>glauca</i> WATSON	21 ⁴⁾	42	ICHIJIMA, 1930.
" <i>grandiflora</i>	28		" " SCHIEMANN, 1930.
" <i>Hagenbachiana</i>	7	56	KIHARA, 1930.
" <i>maxima</i>	7 ²⁾		SCHIEMANN, 1930; RUDLOFF, 1930a.
" <i>monophylla</i>	7		ICHIJIMA, 1930.
" <i>nilgerrensis</i> SCHLECHT	7 ⁵⁾		ICHIJIMA, 1930.
" <i>vesca</i>	7		SCHIEMANN, 1930; EAST, 1930b.
" <i>vesca</i> L.	7 ⁵⁾	14	EAST, 1930a.
" <i>vesca</i> (?)	7		ICHIJIMA, 1930.
" <i>vesca</i> (hybrid).	7		RUDLOFF, 1930a.
" <i>vesca</i> var. <i>rosea</i> ROS-TRUP	7 ⁵⁾		SCHIEMANN, 1930.
" <i>virginiana</i>	28		SCHIEMANN, 1930; RUDLOFF, 1930a; EAST, 1930b.
" <i>virginiana</i> DUCHESNE	28 ⁵⁾	56	EAST, 1930a.
" sp. „Schöne Meissnerin”	7		ICHIJIMA, 1930.
" sp. (429) (white fruited from Hawaii)	7 ⁵⁾		RUDLOFF, 1930a.
			ICHIJIMA, 1930.

¹⁾ Non-disjunction as well as the precursory behavior of a pair of chromosomes was frequently observed. Sometimes 29 chromosomes were counted at early diakinesis.

²⁾ In this species one pair of chromosomes was smaller than the other six pairs and frequently failed to divide at metaphase, passing to either pole without separation of the two chromosomes.

³⁾ In the embryo-sac-mother-cell division of female plants one pair of heterochromosomes (the W Z pair) was distinguishable.

⁴⁾ Non-disjunction and lagging of chromosomes was observed in this species. There were present chromosomes of two different shapes.

⁵⁾ See foot-note 2 page 137.

⁶⁾ The chromosome behavior was much more regular in this species than in the other tetraploid species.

ROSACEAE (continued)	n	2n	
<i>Fragaria</i> (continued)			
<i>Fragaria</i> sp. (F. P. I. 64856)			
(seeds from Hingan, Manchuria)	7		ICHIJIMA, 1930
<i>Fragaria</i> hybrids:			
<i>Fragaria americana alba</i> × <i>F. vesca</i> var. <i>rosea</i> F ₁	7 ¹⁾		" "
" (<i>alba</i> × <i>rosea</i>) × <i>F. chiloensis</i> (Point Arena Beach)	7		" "
" <i>californica</i> × <i>F. chiloensis</i> (P.A.B.) F ₁	$7 + \frac{21_1}{2}$	35	" "
" <i>chiloensis</i> (P.A.B.) × <i>F. bracteata</i> F ₁ . . .		35	" "
" <i>chiloensis</i> (P.A.B.) × <i>F. collina</i> F ₁		35	" "
" <i>chiloensis</i> (P.A.B.) × <i>F. maxima</i> F ₁ . . .	$7 + \frac{21_1}{2}$		" "
" <i>chiloensis</i> (P.A.B.) × <i>F. nilgerrensis</i> F ₁ . .		35	" "
" <i>chiloensis</i> (P.A.B.) × <i>F. sp.</i> (F.P.I.) F ₁ . .	$7 + \frac{21_1}{2}$	35	" "
" <i>collina</i> × <i>F. maxima</i> F ₁		14	" "
" <i>collina</i> × <i>F. nilgerrensis</i> F ₁		14	" "
" <i>collina</i> × <i>F. vesca</i> . .	7		RUDLOFF, 1930a.
" <i>elatior</i> × <i>F. bracteata</i> F ₁		42	ICHIJIMA, 1930a.
" <i>elatior</i> × <i>F. nilgerrensis</i> F ₁		42	" "
" <i>grandiflora</i> × <i>F. elatior</i>	ca. 28 ²⁾ units	49	KIHARA, 1930.
" <i>grandiflora</i> × <i>F. Hagenbachiana</i>	35		SCHIEMANN, 1930.
" <i>grandiflora</i> × <i>F. vesca</i>	$14 + \frac{7_1}{2}$		RUDLOFF, 1930a.
" <i>Hagenbachiana</i> × <i>F. grandiflora</i>	35		SCHIEMANN, 1930.

¹⁾ Non-disjunction was occasionally observed.

²⁾ The number of univalents was variable.

ROSACEAE (continued)	n	2n	
<i>Fragaria</i> hybrids (continued)			
<i>Fragaria maxima</i> × <i>F. collina</i>			
F ₁ (3 types)		14	ICHIJIMA, 1930.
" <i>nilgerrensis</i> × <i>F. collina</i> F ₁		14	" "
" <i>nilgerrensis</i> × <i>F. Duchesnea</i> F ₁		14	" "
" <i>nilgerrensis</i> × <i>F. elatior</i> F ₁		14	" "
" <i>nilgerrensis</i> × <i>F. sp.</i> (429) F ₁		14	" "
" (<i>rosea</i> × <i>alba</i>) × <i>F. elatior</i>	7	14	" "
" (<i>rosea</i> × <i>alba</i>) × <i>F. virginiana</i>		35	" "
" (<i>rosea</i> × <i>alba</i>) × <i>F. virginiana</i> (one exceptional plant)		56	" "
" <i>vesca</i> × <i>F. americana alba</i> F ₁	7 ¹⁾		" "
" <i>vesca</i> × <i>F. chiloensis</i>	7		RUDLOFF, 1930a.
" <i>vesca</i> × <i>F. virginiana</i>	7		" "
		35	EAST, 1930b.
" <i>vesca</i> × <i>F. virginiana</i> (one plant)		14	" "
" (<i>vesca</i> × <i>F. vesca</i> F ₁) × <i>F. chiloensis</i>		14 ²⁾	" 1930a.
" <i>vesca rosea</i> × <i>F. collina</i> F ₁		14	ICHIJIMA, 1930.
" (<i>vesca rosea</i> × <i>collina</i>) × <i>F. vesca rosea</i> (large and dwarf)		14	" "
" (<i>virginiana</i> × <i>glauca</i>) × <i>F. collina</i>	$\frac{7+21_1}{2}$		" "
" sp. (429) × <i>F. americana alba</i> F ₁	7		" "
" sp. (429) × <i>F. collina</i> F ₁		14	" "
" sp. (429) × <i>F. elatior</i> F ₁	7	14	" "

¹⁾ Non-disjunction and a pair of precursory chromosomes were occasionally observed.

²⁾ Twenty-four such plants may have been produced through division of vegetative cells or through induced parthenogenesis.

ROSACEAE (continued)	n	2n	
<i>Fragaria</i> hybrids (continued)			
<i>Fragaria</i> sp. (429) × <i>F. maxima</i>			
F ₁		14	ICHIJIMA, 1930.
" sp. (429) × <i>F. nilgerrensis</i> F ₁		14	" "
" sp. (429) × <i>F. sp.</i> (F.P.I.) F ₁	7 ¹⁾		" "
POTENTILLA ²⁾			
Section I. <i>Potentillae</i> Trichocarpae			
Fruticosae			
<i>Potentilla fruticosa</i>		14	SHIMOTOMAI, 1930a, b.
Tridentatae			
<i>Potentilla tridentata</i>		28	" " "
Speciosae			
<i>Potentilla speciosa</i>		14	" " "
Nitidae			
<i>Potentilla alchimilloides</i>		14	" " "
Crassinerviae			
<i>Potentilla valderia</i>		14	" " "
Section II. <i>Potentillae</i> Gymnocarpae			
Subsect. A. <i>Closterostylae</i>			
Rupestres			
<i>Potentilla calycina</i>		14	" " "
" <i>glandulosa</i>		14	" " "
" <i>glandulosa</i> var. <i>fissa</i>		14	" " "
" <i>glandulosa</i> var. <i>glutinosa</i>		14	" " "
" <i>glandulosa</i> var. <i>Wrangeiana</i>		14	" " "
" <i>rupestris</i>		14	" " "
Subsect. B. <i>Conostylae</i>			
Multifidae			
<i>Potentilla bipinnatifida</i>		42	" " "
" <i>multifida</i>		42	" " "
" <i>pennsylvanica</i>		28	" " "
Graciles			
<i>Potentilla crinita</i>		84	" " "
" <i>flabelliformis</i>		70	" " "
" <i>gracilis</i>		70	" " "
" <i>Hippiana</i>		42	" " "
" <i>megalantha</i>		70	" " "

¹⁾ Non-disjunction was occasionally observed.

²⁾ Classification is according to WOLF (1908).

ROSACEAE (continued)	n	2n	
<i>Potentilla</i> (continued)			
Subsect. B. (continued)			
H a e m a t o c h r o a e			
<i>Potentilla argyrophylla</i>		56	SHIMOTOMAI, 1930a, b.
" <i>atrisanguinea</i>		56	" " "
" <i>haematochrus</i>		112	" " "
" <i>nepalensis</i>		42	" " "
" <i>sibthorpiana</i>		98	" " "
N i v e a e			
<i>Potentilla nivea</i>		70	" " "
A r g e n t e a e			
<i>Potentilla argentea</i>		42	" " "
" <i>canescens</i>		42	" " "
" <i>canescens</i> var. <i>inciso-</i>			
<i>serrata</i>		42	" " "
" <i>canescens</i> var. <i>Typica</i>		42	" " "
" <i>dealbata</i>		42	" " "
" <i>Meyeri</i>		42	" " "
C o l l i n a e			
<i>Potentilla collina</i>		42	" " "
" <i>Sommieri</i>		42	" " "
" <i>sordida</i>		42	" " "
R e c t a e			
<i>Potentilla hirta</i>		28	" " "
" <i>laciniosa</i>		28	" " "
" <i>recta</i>		42	" " "
" <i>recta</i> var. <i>Herbichii</i> .		42	" " "
" <i>recta</i> var. <i>obscura</i> f.			
<i>fallacina</i>		42	" " "
" <i>taurica</i> var. <i>Nicicii</i> .		42	" " "
" <i>transcaspia</i>		42	" " "
R i v a l e s			
<i>Potentilla Dombeyi</i>		42	" " "
" <i>intermedia</i>		28	" " "
" <i>supina</i>		28	" " "
P e r s i c a e			
<i>Potentilla nevadensis</i>		28	" " "
G r a n d i f l o r a e			
<i>Potentilla Buccoana</i>		28	" " "
" <i>pyrenaica</i>		28	" " "
" <i>umbrosa</i>		70	" " "
C h r y s a n t h a e			
<i>Potentilla chrysantha</i>		42	" " "
" <i>chrysantha</i> var. <i>nor-</i>			
<i>malis</i>		42	" " "
" <i>thuringiaca</i>		42	" " "

ROSACEAE (Continued)	n	2n	
<i>Potentilla</i> (continued)			
Subsect. C. Gomphostylae			
Aureae			
<i>Potentilla alpestris</i>		42	SHIMOTOMAI, 1930a, b.
" <i>gelida</i>		42	" " "
" <i>velutina</i>		42	" " "
Fragarioides			
<i>Potentilla Freyniana</i>		14	" " "
Tomentillae			
<i>Potentilla reptans</i>		28	" " "
Rosa			
Section Caninae			
Subsection vestitae			
<i>Rosa tomentosa</i> var. <i>Richardsoniana</i> HARRISON var. nov.		35	HARRISON, J. W. H., 1930.
Section Spinosissimae			
<i>Rosa spinosissima</i> var. <i>rivalis</i> HARRISON var. nov.		28	" " " " "
Wild roses of Western U.S.A.			
Group Rosa Woodsii			
LINDL.			
<i>Rosa adenocephala</i>		14	ERLANSSON, 1930.
" <i>arizonica</i>		14	" "
" <i>Fendleri</i>		14	" "
" <i>granulifera</i>		14	" "
" <i>gratissima</i>		14	" "
" <i>hypoleuca</i>		14	" "
" <i>Macounii</i>		14	" "
" <i>mohavensis</i>		14	" "
" <i>neomexicana</i>		14	" "
" <i>pyrifera</i>		14	" "
" <i>salicetorum</i>		14	" "
" <i>ultramontana</i>		14	" "
" <i>Woodsii</i>		14	" "
Group Rosa pisocarpa			
A. GRAY			
<i>Rosa anacantha</i>		14	" "
" <i>Copelandii</i>		14	" "
" <i>Eastwoodiae</i>		14	" "
" <i>pisocarpa</i>		14	" "
" <i>Pringlei</i>		14	" "
Group Rosa nutkana			
PRESL.			
<i>Rosa manca</i>		42	" "

ROSACEAE (continued)	n	2n	
Wild roses of Western U.S.A. (continued)			
Group <i>Rosa nutkana</i> PRESL. (continued)			
<i>Rosa melina</i>		42	ERLANSOON, 1930.
" <i>muriculata</i>		42	" "
" <i>nutkana</i>		42	" "
" <i>Spaldingii</i>		42	" "
Group <i>Rosa californica</i>			
<i>Rosa Aldersonii</i>		28	" "
" <i>brachycarpa</i>		28	" "
" <i>Breweri</i>		28	" "
" <i>californica</i>		28	" "
(?) " <i>corymbiflora</i>		28	" "
" <i>Dudleyi</i>		28	" "
" <i>Greenii</i>		28	" "
" <i>Johnstonii</i>		28	" "
" <i>myriantha</i>		28	" "
" <i>rotundata</i>		28	" "
" <i>Santa-Crucis</i>		28	" "
(?) " <i>spithamea</i> (dwarf)		28	" "
<i>Prunus amygdalus</i> STOKES	8		DARLINGTON, 1930a.
" <i>avium</i>	8		LAWRENCE, 1930.
" <i>avium</i> LINN. var. Bigarreau Kentish	8		DARLINGTON, 1930a.
" <i>avium</i> LINN. var. Bigarreau Noir de Schmidt	8		" "
" <i>avium</i> LINN. var. Governor Wood	8		" "
" <i>avium nana</i>	$\frac{24}{2}$		" "
" <i>cerasifera</i> EHRH. var. Red Myrobalan	8		" "
" <i>cerasus</i>	16		LAWRENCE, 1930.
" <i>domestica</i>	24		" "
" <i>domestica</i> LINN.	24		DARLINGTON, 1930a.
" <i>domestica</i> var. Cambridge Gage ¹⁾	$8+3_4+2_3+2_1$		" "
" <i>domestica</i> var. Coe's Violet ¹⁾	$18+3_3+3_1$		" "
" <i>domestica</i> var. Comte d'Althan ¹⁾	$24, 23+2_1$		" "

¹⁾ This is either a hybrid between *P. domestica* LINN. and *P. insititia* LINN. or a variety of either.

ROSACEAE (continued)	n	2n		
<i>Prunus</i> (continued)				
<i>Prunus domestica</i> var. Old				
Greengage	20 + 8 ₁		DARLINGTON, 1930a.	
" <i>domestica</i> (Washington seedling)	24, 21 + 2 ₃ , 22 + 4 ₁			
" <i>Fenzliana</i>		16	"	"
" <i>insilitia</i> LINN.	24		"	"
" <i>lannesiana amabilis</i> . .	8		"	"
" <i>persica</i> STOKES var. Chinese Flat Peach . .	8		"	"
" <i>persica</i> STOKES var. Darwin	8		"	"
" <i>persica</i> STOKES var. Earliest of All	8		"	"
" <i>persica</i> STOKES (an ornamental form, Kew) .	8		"	"
" <i>spinosa</i> LINN. (wild seedling, Merton) . .	14 + 14		"	"
" <i>spinosa</i>	16		LAWRENCE, 1930.	
" <i>triflora</i> var. SHIRO . .	8		DARLINGTON, 1930a.	
" <i>domestica</i> × <i>P. Amygdalus</i> var. Jefferson × <i>P. cerasifera</i> var. Red Myrobalan	16, 6 + 54, 13 + 1 ₃ + 3 ₁ , 15 + 2 ₁			
" <i>persica</i> (variety) × <i>P. Amygdalus</i> (variety of Bitter Almond) . . .	8		"	"
" <i>triflora</i> var. SHIRO × <i>P. cerasifera</i> var. <i>Pissardii</i>	8		"	"
" <i>triflora</i> (Japanese Plum) × <i>P. persica</i> var. Sea Eagle	8		"	"
LEGUMINOSAE				
<i>Acacia arabica</i> WILLD.		± 52 and		
" <i>cyanophylla</i> LINDL. . .		± 104	GHIMPU, 1930.	
" <i>dealbata</i> LINK.		26	"	"
" <i>decurrens</i> WILLD. . . .		26	"	"
" <i>eburnea</i> WILLD.		± 52 and		
		± 104	"	"

LEGUMINOSAE (continued)	n	2n	
<i>Acacia</i> (continued)			
<i>Acacia Farnesiana</i> WILLD.	26	± 52 and ± 104	GHIMPU, 1930.
„ <i>horrida</i> WILLD.	26	± 52 and ± 104	„ „
„ <i>longifolia</i> WILLD.		26	„ „
„ <i>podalyriaefolia</i> A. CUNN.		26	„ „
„ <i>saligna</i> WENDL.		26	„ „
„ <i>scorpioides</i> A. CHEV. var. <i>adstringens</i> (SCHUN. et THONN.) A. CHEV.		52, 104 and 208	„ „
„ <i>scorpioides</i> A. CHEV. var. <i>nilotica</i> BENTH.		± 52 and ± 104	„ „
„ <i>scorpioides</i> A. CHEV. var. <i>pubescens</i> BENTH.		± 52 and ± 104	„ „
<i>Mimosa pudica</i> L.	24		KAWAKAMI, 1930.
<i>Cassia didymbotrya</i>	14		SETHI, 1930.
„ <i>Leschenaltiana</i> D.C.	24		KAWAKAMI, 1930.
„ <i>mimosoides</i> L. 1.	8		„ „
„ <i>mimosoides</i> L. 2.	16		„ „
„ <i>sophora</i> L.	12		„ „
<i>Sophora angustifolium</i> SIEB. et ZUCC.	9		„ „
<i>Crotalaria alata</i> HAM.	8		„ „
„ <i>avegyroides</i> H. B. K.	8		„ „
„ <i>retusa</i> L.	8	16	„ „
„ <i>usaramoensis</i> BACK.	8		„ „
„ <i>valetonil</i>	8		„ „
<i>Lupinus angustifolius</i> L.	24		„ „
„ <i>luteus</i> L.	24		„ „
<i>Cytisus scoparius</i> LINK.	24		„ „
TRIGONELLA ¹⁾			
Section <i>Eutrigonella</i>			
Subsection <i>Capitatae</i>			
<i>Trigonella coerulea</i> (L.) SER.		16	FRYER, 1930.
Subsection <i>Gliadiatae</i>			
<i>Trigonella foenum graecum</i> L.		16	„ „
Section <i>Pocockia</i>			
Subsection <i>Samaroideae</i>			
<i>Trigonella cretica</i> L. DESR.		probably 16	„ „

¹⁾ Classification into sections is according to TAUBERT (1891).

LEGUMINOSAE (continued)	n	2n	
<i>Medicago apiculata</i> WILLD. . .		16	GHIMPU, 1930.
" <i>arborea</i> LINN.		32	" "
" <i>ciliaris</i> KROCK.		16	" "
" <i>denticulata</i> WILLD.		16	" "
" <i>disciformis</i> D.C.		16	" "
" <i>Echinus</i> D.C.		16	" "
" <i>falcata</i> LINN.		32	" "
" <i>Gerardi</i> WALDST. et KIF.		16	" "
" <i>Helix</i> WILLD.		16	" "
" <i>laciniata</i> MILL.		16	" "
" <i>lappacea</i> DESR.		16	" "
" <i>littoralis</i> RHODE		16	" "
" <i>lupulina</i> LINN.		16	" "
" <i>maculata</i> WILLD.		16	" "
" <i>marina</i> LINN.		16	" "
" <i>minima</i> LINN.		16	" "
" <i>Murex</i> WILLD.		16	" "
" <i>nigra</i> KROCK.		16	" "
" <i>oliviformis</i> GUSS.		16	" "
" <i>orbicularis</i> ALL.		16	" "
" <i>pentacycla</i> D.C.		16	" "
" <i>rigidula</i> D.C.		16	" "
" <i>sativa</i> L.	16		KAWAKAMI, 1930.
" <i>sativa</i> L. ¹⁾	16	32	REEVES, 1930.
" <i>sativa</i> LINN. (sensu lato)		32	GHIMPU, 1930.
" <i>sativa</i> LINN. var. <i>de Poitou</i>		32	" "
" <i>sativa</i> LINN. var. <i>Gé- ante</i>		32	" "
" <i>scutellata</i> MILL.		32	" "
" <i>sphaerocarpa</i> BERTOL. <i>Tenoreana</i> SER.		16	" "
" <i>tribuloides</i> DESR.		16	" "
" <i>truncatula</i> GAERTN.		16	" "
" <i>tuberculata</i> WILLD.		16	" "
" <i>turbinata</i> WILLD.		16	" "

MEDICAGO ²⁾Section *Lupularia*

<i>Medicago lupulina</i> L.	8	16	FRYER, 1930.
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¹⁾ The common and variegated varieties were examined cytologically but no consistent differences were found.

²⁾ Classification into sections is according to TAUBERT (1891).

LEGUMINOSAE (continued)	n	2n	
<i>Medicago</i> (continued)			
Section <i>Falcata</i>			
<i>Medicago falcata</i> L.			
strains I, II		32	FRYER, 1930.
strain III		16 ¹⁾	" "
" <i>media</i> PERS. („GRIMM")		32	" "
" <i>media</i> ²⁾		35	" "
" <i>platycarpa</i> (L.)			
TRAUTV.		16	" "
" <i>ruthenica</i> TRAUTV. .		16	" "
" <i>sativa</i> L.		32	" "
Section <i>Spirocarpos</i>			
Subsection <i>Orbiculares</i>			
<i>Medicago carstiensis</i> WULF . .		16	" "
" <i>orbicularis</i> ALL. . .		16	" "
" <i>solcivalii</i> DUBY. . .		16	" "
Subsection <i>Intertextae</i>			
<i>Medicago ciliaris</i> L. (ALL.) . .		16	" "
" <i>echinus</i> D.C.		16	" "
" <i>intertexta</i> MILL. . . .		16	" "
Subsection <i>Scutellatae</i>			
<i>Medicago rugosa</i> DESR. . . .		32	" "
" <i>scutellata</i> L. WILLD. .		32	" "
Subsection <i>Rotatae</i>			
<i>Medicago rotata</i> BOISS. . . .		16	" "
Subsection <i>Pachyspirae</i>			
<i>Medicago littoralis</i> RHODE . .		16	" "
" <i>murx</i> (L.) ALL. . . .		16	" "
" <i>muricata</i> (L.) ALL. . .		16	" "
" <i>obscura</i> RETZ.	16, 17 or		
		18	" "
" <i>rigidula</i> (L.) DESR. . .		14	" "
" <i>tuberculata aculeata</i> .		16	" "
Subsection <i>Euspirocarpae</i>			
<i>Medicago arabica</i> (L.) ALL. . .		16	" "
" <i>hispida confinis</i>			
KOCH (BURNAT)		14	" "
" <i>hispida denticulata</i>			
WILLD. URBAN		14	" "
" <i>hispida nigra</i> WILLD.			
BURNAT		14	" "
" <i>hispida terebellum</i>			
WILLD. URBAN		14	" "

¹⁾ One tetraploid cell with 32 chromosomes was found.

²⁾ Though this one plant was *Media* — like it was thought to be a hybrid by its irregular meiosis.

LEGUMINOSAE (continued)	n	2n	
<i>Medicago</i> (continued)			
Subsection <i>Leptospirae</i>			
<i>Medicago coronata</i> DESR.		16	FRYER, 1930.
„ <i>laciniata</i> MILL.		16	„ „
MELILOTUS ¹⁾			
Section <i>Campyloritis</i>			
<i>Melilotus sulcatus</i> DESF.		16	„ „
Section <i>Plagiorytis</i>			
<i>Melilotus officinalis</i> (L.) MEDIKUS		16	„ „
Section <i>Coelorytis</i>			
<i>Melilotus alba</i> MEDIKUS		16	„ „
„ <i>indica</i> ALL.	8	16	„ „
<i>Trifolium hybridum</i> L.	8		KAWAKAMI, 1930.
„ <i>pratense</i> L.	7		„ „
„ <i>repens</i> L.	16		„ „
<i>Lotus corniculatus</i> L. var. <i>japonicus</i> REGEN	6		„ „
Tribe <i>Galegeae</i> BRONN ²⁾			
II. Subtribe <i>Psoraleinae</i> TAUB.			
<i>Psoralea bituminosa</i> L.		20	TSCHECHOW, 1930.
	10	20	KREUTER, 1930.
„ <i>glandulosa</i> L.		20	„ „
„ <i>macrostachya</i> L.		20	„ „
„ <i>palaestina</i> L.		20	„ „
<i>Amorpha Californica</i> Nutt.	10		„ „
„ <i>fruticosa</i> L.		40	TSCHECHOW, 1930.
	ca. 20 ³⁾		KREUTER, 1930.
„ <i>fruticosa</i> var. <i>glabra</i> . ca. 20 ³⁾			„ „
„ <i>microphylla</i> PURSH.	10		„ „
I. Subtribe <i>Indigoferinae</i> TAUB.			
<i>Indigofera decora</i> LINDL.		48	TSCHECHOW, 1930.
„ <i>Gerardiana</i> WALL.	24		KREUTER, 1930.
„ <i>Kirilowi</i> MAXIM.	8		KAWAKAMI, 1930.
„ <i>pseudo-tinktoria</i> MATSUM.	8		„ „
„ <i>saffruticosa</i> MILL.	16		„ „

¹⁾ Classification into sections is according to TAUBERT (1891).

²⁾ Classification is according to ASCHERSON & GRAEBNER, supplemented by Monograph by BUNGE (1869 & 1874) on *Astragalus* and *Oxytropis*.

³⁾ Because the chromosomes were „clumped” on the heterotypic division stages it was difficult to determine the haploid number exactly.

LEGUMINOSAE (continued)	n	2n	
Tribe Galegeae BRONN (continued)			
III. Subtribe Tephroseinae TAUB.			
<i>Galega officinalis</i> L.		16	TSCHECHOW, 1930.
	8		KREUTER, 1930.
" <i>orientalis</i> LAM. . . . (probably) 8			" "
<i>Millettia japonica</i> A. GRAY . .	8		KAWAKAMI, 1930.
<i>Tephrosia Hookeriana</i> WET. A.	16		" "
<i>Wistaria brachybotrys</i> SIEB. et			
Zucc.	8		" "
" <i>floribunda</i> D.C.	8		" "
" <i>multijuga</i> VAN HOUTTE			
(<i>W. chinensis</i> var.			
<i>multijuga</i> HOOK.)		48	TSCHECHOW, 1930.
IV. Subtribe Robiniinae TAUB.			
<i>Robinia hispida</i>	30 ¹⁾	30	KREUTER, 1930.
	$\frac{2}{2}$		
" <i>pseudacacia</i> L.		22	TSCHECHOW, 1930.
	(probably) 10		KREUTER, 1930.
<i>Sesbania aculeata</i> PERS.	16		KAWAKAMI, 1930.
<i>Carmichaelia australis</i> R. BR. .	15		KREUTER, 1930.
V. Subtribe Coluteinae TAUB.			
<i>Colutea arborescens</i> L.		16	TSCHECHOW, 1930.
" <i>halepica</i> LAM.	8		KREUTER, 1930.
" <i>media</i> WILLD. (<i>C. ar-</i>			
<i>borescens</i> L. \times <i>C.</i>			
<i>orientalis</i> LAM.)	8		" "
" <i>orientalis</i> LAM.	8		" "
VI. Subtribe Astragalinae TAUB.			
<i>Caragana arborescens</i> LAM. . . .		16	TSCHECHOW, 1930; KREUTER,
			1930.
" <i>frutescens</i> D.C.		32	TSCHECHOW, 1930.
Genus <i>Astragalus</i> TOURN.			
Subgenus <i>Trimeniaeus</i> BUNGE			
<i>Astragalus baeticus</i> L.	8		KREUTER, 1930.
" <i>edulis</i> DUR.	ca. 14		" "
" <i>hamosus</i> L.	24 ²⁾		" "
		48	TSCHECHOW, 1930.
" <i>sesameus</i> L.	8		KREUTER, 1930.
		16	TSCHECHOW, 1930.

¹⁾ Reduction division was irregular showing 10 large and 20 smaller chromosomes.

²⁾ Several pairs of chromosomes showed a tendency to become associated in the metaphase plate so that only 22 chromosomes were sometimes counted.

LEGUMINOSAE (continued)	n	2n	
Tribe Galegeae BRONN (continued)			
VI. Subtribe Astragalinae			
TAUB. (Continued)			
Genus Astragalus TOURN. (continued)			
Subgenus Phaca BUNGE			
<i>Astragalus altaicus</i> BUNGE . . .		16	TSCHECHOW, 1930.
" <i>exscapus</i> B. <i>Trans-</i> <i>silvanicus</i> A. & G. = <i>A. Transsilvani-</i> <i>cus</i> BARTH. . . .		16	" "
" <i>galegiformis</i> L. . . .	8		KREUTER, 1930.
" <i>membranaceus</i> FISCH.		16	TSCHECHOW, 1930.
" <i>Sieversianus</i> PALL..		16	" "
Subgenus Hypoglottis BUNGE			
<i>Astragalus hypoglottis</i> L. . . .		16	" "
Subgenus Tragacantha BUNGE			
<i>Astragalus Echinus</i> D.C. . . .		64	" "
Subgenus Cercidothrix BUNGE			
<i>Astragalus candidissimus</i> LED.		16	" "
" <i>falcatus</i> LAM. . . .	8		KREUTER, 1930.
" <i>massiliensis</i> LAM. . .		16	" "
" <i>monspeulanus</i> L. . . .	8		" "
Subgenus Calycophya			
<i>Astragalus alopecurioides</i> L. . .	8		KREUTER, 1930.
" <i>vulpinus</i> WILLD. . . .	8		" "
Subgenus?			
<i>Astragalus sinicus</i> L.	8		KAWAKAMI, 1930.
<i>Biserrula Pelecinus</i> L.	8		KREUTER, 1930.
<i>Calophaca wolgarica</i> FISCH. . .	8		" "
Genus Oxytropis D.C.			
Subgenus Euoxytropis BOISS.			
Section Ortholoma BUNGE			
<i>Oxytropis vaginata</i> FISCH. . .		16	TSCHECHOW, 1930.
Section Diphragma BUNGE			
<i>Oxytropis Halleri</i> BUNGE . . .		16	" "
" <i>uralensis</i> PALL. . . .		16	" "
Genus Glycyrrhiza L.			
<i>Glycyrrhiza aspera</i> PALL. . . .		16	" "
" <i>echinata</i> L.	8		KREUTER, 1930.
" <i>uralensis</i> FISCH. . . .		16	TSCHECHOW, 1930.
<i>Ornithopus sativus</i> BROT.	8	16	KAWAKAMI, 1930.
<i>Onobrychis viciaefolia</i> SCOP. . .	11		CORTI, 1930a.
<i>Aeschynomene indica</i> L.	20		KAWAKAMI, 1930.
<i>Arachis hypogaea</i> L.	20	40	" "

LEGUMINOSAE (continued)	n	2n	
<i>Arachis</i> (continued)			
<i>Arachis hipogaea</i> var. <i>microcarpa</i> A. CHEV.		±40	GHIMPU, 1930.
„ <i>prostrata</i> BENTH. var. <i>Rasteiro</i>		±40	„ „
<i>Desmodium perpesium</i> D.C.	11		KAWAKAMI, 1930.
<i>Lespedeza bicolor</i> TURCZ.	9		„ „
„ <i>cyrtobotrya</i> MIQ.	9		„ „
„ <i>homoloba</i> NAKAI	9		„ „
„ <i>Sieboldi</i> MIQ.	9		„ „
„ <i>Sieboldi</i> var. <i>albiflora</i> SCHNEID.	9		„ „
<i>Vicia amphicarpa</i> L.	5	10	SVESHNIKOVA, 1930.
„ <i>angustifolia brachisomica</i> Sv.		12	„ „
„ <i>angustifolia dolichosomica</i> Sv.	6	12	„ „
„ <i>jaba</i> L.	6	12	KAWAKAMI, 1930.
„ <i>jaba</i> L. var. <i>megalosperma</i>	6 ¹⁾	12 ¹⁾	MAEDA, 1930b.
„ <i>hirsuta</i> KOCH.	7		KAWAKAMI, 1930.
„ <i>sativa</i> L.	6	12	SVESHNIKOVA, 1930.
	7		KAWAKAMI, 1930.
„ <i>sativa</i> L. var. <i>normalis</i> MAKINO	7		„ „
„ <i>tetrasperma</i> MOENCH.	7		„ „
„ <i>unijuga</i> AL.BR.	18		„ „
„ <i>amphicarpa</i> L. × <i>Vicia sativa</i> L.	6		SVESHNIKOVA, 1930.
„ <i>saliva</i> L. × <i>Vicia amphicarpa</i> L.	6 or $\frac{12_1}{2}$		„ „
„ <i>sativa</i> L. × <i>Vicia angustifolia dolichosomica</i> Sv.	$4 + \frac{4_1}{2}$		„ „
<i>Lathyrus aphaca</i>	7		CORTI, 1930a.
„ <i>maritimus</i> BIGEL.	7		KAWAKAMI, 1930.
„ <i>odoratus</i>	7		„ „
„ <i>odoratus</i> L.	7	14	MAEDA, 1930a.
<i>Pisum arvense</i> L.	7	14	LUTKOV, 1930.
„ <i>elatius</i> BIEB.	7	14	„ „

¹⁾ One pair of chromosomes in the root-tips and also in the heterotypic division of the pollen mother-cells is longer than the other 5 pairs.

LEGUMINOSAE (continued)	n	2n	
<i>Pisum</i> (continued)			
<i>Pisum fulvum</i> SIBTH.	7	14	LUTKOV, 1930.
" <i>humile</i> BOISS.	7	14	" "
" <i>Jomardi</i> SCHRANK.	7	14	" "
" <i>sativum</i>	7 ¹⁾		HAMMARLUND & HÅKANSSON, 1930.
		14	LEVITSKY, 1930.
	7	14	KAWAKAMI, 1930.
" <i>sativum</i> L.	7	14	LUTKOV, 1930.
" <i>sativum</i> L. (Gradus type and rogue)		14	BUNTEN, 1930.
" <i>humile</i> BOISS. × <i>Pisum</i> <i>sativum</i> L. F ₁ , F ₂ , F ₃	7	14	LUTKOV, 1930.
<i>Glycine Soja</i> BENTH. ²⁾	20	40	KAWAKAMI, 1930.
<i>Canavalia ensiformis</i> D.C.	11		" "
<i>Phaseolus lunatus</i> L. ³⁾	11	22	" "
" <i>radiatus</i> L. var. <i>au-</i> <i>rea</i> PRAIN	11	22	" "
" <i>radiatus</i> L. var. <i>typi-</i> <i>cus</i> PRAIN ⁴⁾	11	22	" "
" <i>vulgaris</i> L. ⁵⁾	11	22	" "
<i>Vigna sinensis</i> ENDL.	12		" "
" <i>sinensis</i> var. <i>Catiang</i> NAKAI	12		" "
" <i>sesuquipedalis</i> A. I. PIER- TERS	12		" "
" <i>sesuquipedalis</i> A. I. PIER- TERS var. <i>melanophthal-</i> <i>mus</i> NAKAI	12		" "
" <i>sesuquipedalis</i> A. I. PIER- TERS var. <i>purpurascens</i> NAKAI	12		" "
<i>Dolichos Lablab</i> L.	11		" "

GERANIALES

RUTACEAE

<i>Ruta patavina</i> L.	9	18	CAPPELETTI, 1930.
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¹⁾ Of 45 plants (cross progeny of F₂ plants used by HÅKANSSON, 1929a (GAISER 1930b) with a double recessive) 19 had 7 free gemini and 26 had 5 gemini and a ring or chain of 4 chromosomes.

²⁾ For 35 varieties examined the haploid number was found to be 20. Two varieties were examined somatically.

³⁾ For 5 varieties examined the haploid number was found to be 11. Two varieties were examined somatically.

⁴⁾ For 5 horticultural varieties examined the haploid number was found to be 11. One variety was examined somatically.

⁵⁾ 4 horticultural varieties were examined.

EUPHORBIACEAE		n	2n	
<i>Daphniphyllum macropodum</i> MIQ.		16		VENTURA, 1930.
EUPHORBIA ¹⁾)				
Subgenus <i>Tithymalus</i>				
Section <i>Esulae</i>				
<i>Euphorbia</i>	<i>corollata</i>		18	HARRISON, H. H., 1930.
"	<i>helioscopia</i>		18	" " " "
"	<i>platyphyllos</i>		18	" " " "
"	<i>terraccina</i>	18 and 36 ²⁾		" " " "
"	<i>verrucosa</i>		18	" " " "
"	<i>welwitschii</i>	18 and 36 ³⁾		" " " "
RHAMNALES				
RHAMNACEAE				
<i>Zizyphus sativa</i> GAERTN. var.				
	<i>inermis</i>	13	26	CHIARUGI, 1930b.
VITACEAE				
<i>Vitis</i>	<i>labrusca</i>		38	GHIMPU, 1930.
"	<i>quadrangularis</i> WALL.			
-	(<i>Cissus quadrangularis</i>			
	LINNE.)		44—53	" "
"	<i>riparia</i>		38	" "
"	<i>riparia</i> var. <i>Gloir de Mont-</i>			
	<i>pellier</i>	19		NEGRUL, 1930.
"	<i>riparia</i> var. <i>Grand Glabr.</i>	19		" "
"	<i>riparia</i> var. <i>Scuppernong</i>	19		" "
"	<i>rupestris</i> var. <i>du Lot</i> . .	19	38	" "
"	<i>vinifera</i>		38	GHIMPU, 1930.
<i>Vitis vinifera</i>				
French varieties:				
	<i>Chasselas rose</i>	19	38	NEGRUL, 1930.
	<i>Grand Noir d. C.</i>		38	" "
	<i>Malaga bleu</i>	19		" "
English variety:				
	var. <i>Muscat d'Hamburg</i> . .	19		" "
Caucasian varieties:				
	var. <i>Otzhanure Sapere</i> . . .	19		" "
"	<i>Rka tzeitel</i> (Kahetia) . . .	19		" "
"	<i>Rka tzeitel</i> (Kutais). . .	19		" "
Bessarabian varieties:				
	var. <i>Alemichak</i>	19		" "

¹⁾ Classification is according to ENGLER & PRANTL.

²⁾ Some tetraploid cells were found scattered singly amongst diploid cells of both perilem and plerome.

³⁾ The tetraploid cells were found in rows of 10 or 12 in the outermost layers of the perilem.

VITACEAE (continued)	n	2n	
Bessarabian varieties (continued)			
var. <i>Plavai</i>	19	38	NEGRUL, 1930.
„ <i>Srectia</i>	19		„ „
Hybrids of American Species:			
<i>Vitis Berlandieri</i> × <i>V. Riparia</i>			
161—46	19		„ „
„ <i>Riparia</i> × <i>V. Rupestris</i>			
3309	19	38	„ „
„ <i>Riparia</i> × <i>V. Rupestris</i>			
COUD. 3310	19		„ „
European-American hybrids:			
<i>Vitis vinifera</i> Chasselas ×			
<i>Berlandieri</i> 41-B		38	„ „
<i>Vitis vinifera</i> Chasselas Rose ×			
<i>V. rupestris</i> (4401 COUDERC)	19		„ „
<i>Vitis riparia</i> × <i>Gamay</i> (<i>V.</i>			
<i>vinifera</i>) Oberlin 595. . .		38	„ „
Complex hybrids:			
Couderc 12	19		„ „
„ 7120 (<i>Lincecumii</i> ×			
<i>rupestris</i> × <i>vinifera</i>) . . .		38	„ „
Seibel I	19		„ „
Seibel 128 (<i>rupestris</i> × <i>Lince-</i>			
<i>cumii</i> × <i>vinifera</i>).	19		„ „
<i>Vitis</i> sp.	19, 38		LAWRENCE, 1930.
MALVALES			
TILIACEAE			
<i>Tilia argentea</i>	ca. 40		WALLISCH, 1930.
„ <i>cordata</i>	ca. 36		„ „
„ <i>platyphyllos</i>	ca. 40		„ „
PARIETALES			
OCHNACEAE			
<i>Ochna serrulata</i> WALP.		35	CHIARUGI, 1930c; CHIARUGI & FRANCINI, 1930.
CISTACEAE			
<i>Cistus</i> sp.	8		LAWRENCE, 1930.
VIOLACEAE			
VIOLA			
<i>Viola Riviniana</i> REICH. ¹⁾ . . .	20		WEST, 1930.
Section <i>N o m i n i u m</i>			
<i>Viola cucullata</i> AIT.	27	54	BAMFORD & GERSHOY, 1930.

¹⁾ Two patches of wild plants were investigated, one being a patch of *Viola Riviniana* var. *nemorosa* (N. W. and H.).

VIOLACEAE (continued)		n	2n	
VIOLA (continued)				
Section <i>Nominium</i> (continued)				
<i>Viola elatior</i> FRIES.	20	40	BAMFORD & GERSHOY, 1930.	
" <i>incognita</i> BRAINERD	22	44	"	" " " "
" <i>lanceolata</i> L.	12	24	"	" " " "
" <i>pallens</i> (BANKS) BRAINERD	12	24	"	" " " "
" <i>silvatica</i> FRIES. (= <i>sylvestris</i>)	20	40	"	" " " "
" <i>striata</i> AIT.	10	20	"	" " " "
Subgroup <i>Curvopedunculatae</i>				
<i>Viola collina</i> BESSER.		20	MIYAJI, 1930a.	
" <i>grypoceras</i> A. GRAY var. <i>exilis</i> NAKAI		20	"	"
" <i>grypoceras</i> A. GRAY var. <i>purpurello-calcarata</i> MAKINO		20	"	"
" <i>Hideoi</i> NAKAI		20	"	"
" <i>odorata</i> L.	10	20	"	"
Subgroup <i>Plagiostigma</i>				
<i>Viola mandshurica</i> W. BCKR.				
var. <i>plena</i>		48	"	"
" <i>Savatieri</i> MAKINO		36	"	"
" <i>soeulensis</i> NAKAI		48	"	"
" <i>eizanensis</i> × <i>V. mandshurica</i>		36	"	"
" <i>mandshurica</i> × <i>V. chaerophylloides</i>		36	"	"
Subgroup <i>Stolonosae</i>				
<i>Viola repens</i> TURCZ.		24	"	"
Section <i>Melanium</i>				
<i>Viola orphanidis</i> BOISS. (from Lausanne)	10	20	CLAUSEN, J., 1930.	
" <i>orphanidis</i> (from Edinburgh Bot. Gard.)	10+1 ₁	21	"	" "
" <i>orphanidis</i> (2n = 21) offspring		20, 21, 22	"	" "
" <i>Wittrockiana</i> GAMS. (= <i>Pensée</i>) ¹⁾		24 ²⁾	MIYAJI, 1930a.	

¹⁾ Seven varieties were studied: *Himmelskönigin*, *Kaiser Wilhelm*, *Prinz Heinrich*, *Märzrauber*, *Goldelse*, *Nordpol*, *Eiskönig*.

²⁾ In the pollen mother cells of *Märzrauber* 25 was once found as the haploid number.

VIOLACEAE (continued)	n	2n
<i>Viola</i> hybrids:		
<i>Viola elatior</i> FRIES. × <i>V. striata</i> AIT.		30 BAMFORD & GERSHOY, 1930.
„ <i>incognita</i> BRAIN. × <i>V. lanceolata</i> L.		34 „ „ „ „
„ <i>pallens</i> (BANKS) BRAIN. × <i>V. cucullata</i> AIT.		39 „ „ „ „
„ <i>silvatica</i> FRIES. × <i>V. striata</i> AIT.		30 „ „ „ „
CARICACEAE		
<i>Carica papaya</i>	9	LINDSAY, 1930.
MYRTIFLORAE		
MYRTACEAE		
<i>Myrtus communis</i> L.	11 ¹⁾	GRECO, 1930.
OENOTHERACEAE		
<i>Oenothera biennis</i> München, <i>albicans, rubens</i>	$\frac{14^2)}{2}$	CLELAND & OEHLKERS, 1930.
„ <i>biennis sulfurca</i> Han- nover	$\frac{14^2)}{2}$	„ „ „ „
„ <i>cana</i> DE VRIES (se- condary form).	$\frac{14+1^2)}{2}$	14 + $\frac{1}{2}$ HÅKANSSON, 1930c.
	small one	
„ <i>cana</i> DE VRIES (se- condary form) one plant	$\frac{14^4)}{2}$	HÅKANSSON, 1930c.
„ <i>Cockerelli, curtans.</i> <i>elongans</i>	$\frac{14^5)}{2}$	CLELAND & OEHLKERS, 1930.
„ <i>compressa</i>		28 A. HEYN (given by DE VRIES), 1930.
„ <i>curta</i> HERIBERT NILSSON	$\frac{15^6)}{2}$	HÅKANSSON, 1930c.

1) In the endosperm the triploid number 33 was found.
 2) Arranged as a ring of 6 + a ring of 8.
 3) Arranged as an open chain of 11 with the small chromosome (a half) at one end of it + 2 pairs of chromosomes.
 4) Arranged as a chain of 10 + 2 pairs of chromosomes.
 5) Arranged as a ring of 14.
 6) Arranged as an open chain of 11 + 2 pairs of chromosomes.

OENOTHERACEAE (continued)	n	2n	
<i>Oenothera</i> (continued)			
<i>Oenothera dependens</i> DE VRIES.	15 ¹⁾ $\frac{2}{2}$		HÅKANSSON, 1930c.
„ <i>deserens</i>	7 ²⁾		„ 1930b.
„ <i>distans</i>	14 ³⁾ $\frac{2}{2}$	14	„ „
„ <i>eriensis</i>		14	GATES & GOODWIN, 1930.
„ <i>franciscana</i> BARTLETT (pointed tips)	7 $\frac{2}{2}$		DAVIS & KULKARNI, 1930.
„ <i>grandiflora</i> (DE VRIES) <i>acuens. truncans</i>	14 ⁴⁾ $\frac{2}{2}$		CLELAND & OEHLKERS, 1930.
„ <i>Hookeri</i>	7		WEIER, 1930.
„ <i>Hookeri</i> , ^h <i>Hookeri</i> . ^h <i>Hookeri</i>	7 ⁵⁾		CLELAND & OEHLKERS, 1930.
„ <i>Lamarckiana</i>		14	LEVITSKY, 1930.
„ <i>Lamarckiana</i> (DE VRIES) <i>velans. gaudens</i>	14 ⁶⁾ $\frac{2}{2}$		CAPINFIN, 1930b, WEIER, 1930.
„ <i>Lamarckiana</i> (DE VRIES) <i>velans. gaudens</i>	14 ⁶⁾ $\frac{2}{2}$		CLELAND & OEHLKERS, 1930.
„ <i>Lamarckiana cruciata</i> (OEHLKERS) <i>velans. gaudens</i>	14 ⁷⁾ $\frac{2}{2}$		„ „ „ „
„ <i>Lamarckiana mut.</i> <i>cucumis</i>		15	DE VRIES, 1930.
„ <i>Lamarckiana mut.</i> <i>latifrons</i>	7		EMERSON, 1930.
„ <i>Lamarckiana mut.</i> <i>nidiiformis</i>	14 ⁷⁾ $\frac{2}{2}$		HÅKANSSON, 1930b.

¹⁾ Arranged as a chain of 13 + 1 pair of chromosomes.

²⁾ Generally arranged as 7 pairs. Often members of a pair were open and even separated as univalents.

³⁾ Arranged as a ring of 8 + 3 pairs of chromosomes.

⁴⁾ Arranged as a ring of 14.

⁵⁾ Arranged as 7 pairs of chromosomes.

⁶⁾ WEIER (1930), CLELAND & OEHLKERS (1930) found the chromosomes arranged as a chain of 12 plus one pair. CAPINFIN (1930a, b) found the chromosomes in two or more circles, never in a single one.

⁷⁾ Arranged as a chain of 12 plus 1 pair of chromosomes.

OENOTHERACEAE (continued)	n	2n
<i>Oenothera</i> (continued)		
<i>Oenothera Lamarckiana</i> mut.		
<i>rubrisejala</i> α. . .	$\frac{14^1)}{2}$	HÅKANSSON, 1930b.
„ <i>lata</i> DE VRIES (from <i>flavescens</i>)	$\frac{15^2)}{2}$	„ 1930c.
„ <i>lata</i> HERIBERT NILS- SON (from <i>liquida</i> and from <i>lata</i> × <i>La-</i> <i>marckiana</i>	$\frac{15^3)}{2}$	„ „
„ <i>liquida</i> DE VRIES . .	$\frac{15^3)}{2}$	„ „
„ <i>longipetiolata</i> HERI- BERT NILSSON . .	$\frac{15^3)}{2}$	„ „
„ <i>nitens</i> DE VRIES . .	$\frac{15^3)}{2}$	„ „
„ <i>nutans</i> ATK. & BARTL.	$\frac{14^4)}{2}$	CATCHESIDE, 1930a.
„ <i>pachycarpa</i>	$\frac{14^4)}{2}$	RUDLOFF, 1930b.
„ <i>pulla</i> DE VRIES (se- condary form). . .	$\frac{15^5)}{2}$	HÅKANSSON, 1930c.
„ <i>pyncocarpa</i> ATK. & BARTL.	$\frac{14^4)}{2}$	CATCHESIDE, 1930a.
„ <i>rubricalyx</i>	$\frac{21^6)}{2}$	„ 1930a, b.
„ <i>rubricalyx</i>	$\frac{14^7)}{2}$	EMERSON, 1930.
„ <i>simplex elongata</i> . .	$\frac{14^7)}{2}$	14 GATES & GOODWIN, 1930. HÅKANSSON, 1930b.

¹⁾ Generally arranged as a ring of 4 plus 5 free pairs of chromosomes but many variations of arrangement of the 5 pairs occurred.

²⁾ Arranged as a chain of 13 plus 1 pair of chromosomes.

³⁾ Arranged as an open chain of 11 plus 2 pairs of chromosomes.

⁴⁾ Arranged as a ring of 14.

⁵⁾ Arranged as a ring of 6, 1 trivalent plus 3 pairs of chromosomes.

⁶⁾ CATCHESIDE (1930a) found one plant to be triploid with a ring of 21 chromosomes. Usually 10 and 11 chromosomes passed to either pole but occasionally non-disjunction resulted in a 9—12 division. CATCHESIDE (1930b) having reinvestigated found various combinations of univalents; ring-and-rod pairs; chain, Y-shaped, and ring-and-rod trivalents; various quadrivalents and quinquivalents.

⁷⁾ Arranged as a ring of 8 plus 3 pairs of chromosomes.

OENOTHERACEAE (continued)	n	2n
<i>Oenothera</i> (continued)		
<i>Oenothera stricta</i> HERIBERT		
NILSSON (= <i>O. pul-</i> <i>la</i> DE VRIES) . . .	$\frac{15^1)}{2}$	HÅKANSSON, 1930c.
„ <i>strigosa, deprimens.</i> <i>stringens</i>	$\frac{14^2)}{2}$	CLELAND & OEHLKERS, 1930.
„ <i>suaveolens, albicans.</i> <i>flavens</i>	$\frac{14^3)}{2}$	„ „ „ „
„ <i>suaveolens sulfurca</i> <i>albicans, flavens</i> . .	$\frac{14^3)}{2}$	„ „ „ „
„ mutant <i>quadrata</i> (from <i>O. Lamarcki-</i> <i>ana ingeminans</i> . .		21 DE VRIES, 1930.
„ mutant <i>quadrata</i> × <i>O. (biennis × La-</i> <i>marckiana) laeta</i> = <i>O. Lamarckiana in-</i> <i>geminans</i>	14, 28 ⁴⁾	„ „
Primary mutants:		
<i>cana</i>	15	„ „
<i>lata</i>	15	„ „
<i>liquida</i>	15	„ „
<i>pallescens</i>	15, 17	„ „
<i>pulla</i>	15, 16, 19	„ „
<i>scintillans</i>	15	„ „
<i>spathulata</i>	15, 16, 17	„ „
Secondary mutants:		
<i>acuminata</i>	19	„ „
<i>hamata</i>	16	„ „
<i>lata minor</i>	15, 16, 17	„ „
<i>latifolia</i>	16	„ „
<i>lingua</i>	15	„ „
<i>militaris</i>	16, 17	„ „
<i>planifolia</i>	15	„ „
<i>rotunda</i>	16	„ „
<i>synedra</i>	17	„ „

¹⁾ Generally arranged as a chain of 13 plus 1 pair of chromosomes. Frequently variations in arrangement were observed due to the breaking of the chain into shorter lengths of 9, 7, 5, 4, and 3 chromosomes.

²⁾ Arranged as a ring of 14.

³⁾ Arranged as a chain of 12 plus 1 pair of chromosomes.

⁴⁾ One plant had 28 chromosomes.

OENOTHERACEAE (continued)	n	2n
<i>Oenothera</i> hybrids:		
<i>Oenothera ammophila</i> × (<i>O. biennis</i> × <i>O. rubricalyx</i>) . .	$\frac{14^1)}{2}$	GATES & SHEFFIELD, 1930.
(<i>Oenothera biennis</i> × <i>O. rubricalyx</i>) × <i>O. ammophila</i> . .	7 ²⁾	" " " "
(<i>Oenothera biennis</i> × <i>O. Lamarckiana</i>) F ₁ <i>laeta</i> × (<i>O. biennis</i> × <i>O. Lamarckiana</i>) F ₁ <i>velutina</i> =		
<i>O. ambigua</i>	$\frac{14^3)}{2}$	HÅKANSSON, 1930b.
<i>O. laeta</i>	$\frac{14^4)}{2}$	" "
<i>O. velutina</i>	$\frac{14^5)}{2}$	" "
<i>Oenothera rubricalyx</i> × <i>O. eriensis</i> F ₁		7 GATES & GOODWIN, 1930.
<i>Oenothera grandiflora</i> × <i>O. Hookeri</i>		
<i>acuens.</i> ^h <i>Hookeri</i>	$\frac{14^6)}{2}$	CLELAND & OEHLKERS, 1930.
<i>truncans.</i> ^h <i>Hookeri</i>	$\frac{14^7)}{2}$	" " " "
<i>Oenothera Hookeri</i> × <i>O. grandiflora</i>		
^h <i>Hookeri. acuens</i>	$\frac{14^8)}{2}$	" " " "
<i>Oenothera grandiflora</i> × <i>O. Lamarckiana</i>		
<i>acuens. gaudens</i>	$\frac{14^9)}{2}$	" " " "
<i>truncans. gaudens</i>	$\frac{14^{10)}}{2}$	" " " "
<i>acuens. velans</i>	$\frac{14^{11)}}{2}$	" " " "

¹⁾ Arranged as a ring of 8 plus 3 pairs of chromosomes. Ten plants belonging to F₂ and F₃ families showed identical conditions.

²⁾ The 7-ring pairs were frequently interlocked and irregularities in division were frequent.

³⁾ Arranged as a chain of 12 plus 1 pair of chromosomes.

⁴⁾ Arranged as a ring of 6 plus a ring of 8.

⁵⁾ All of the 14 chromosomes were joined but sometimes the chain was open or even broken into shorter pieces.

⁶⁾ Arranged as 2 rings of 4 plus 3 pairs of chromosomes.

⁷⁾ Arranged as a ring of 14.

⁸⁾ Arranged as a ring of 10 and a ring of 4.

⁹⁾ Arranged as a ring of 6 and a ring of 4 plus 2 pairs of chromosomes.

OENOTHERACEAE (continued)	n	2n	
<i>Oenothera</i> hybrids (continued)			
<i>truncans. velans</i>	$\frac{14^1)}{2}$		CLELAND & OEHLKERS, 1930.
<i>Oenothera Lamarckiana</i> × <i>O.</i>			
<i>grandiflora</i>			
<i>gaudens. acuens</i>	$\frac{14^2)}{2}$		" " " "
<i>gaudens. truncans</i>	$\frac{15^3)}{2}$		" " " "
<i>velans. acuens</i>	$\frac{14^4)}{2}$		" " " "
<i>velans. truncans</i>	$\frac{14^1)}{2}$		" " " "
<i>Oenothera Lamarckiana crucia-</i>			
<i>ta</i> × <i>O. strigosa</i>			
<i>gaudens. stringens</i>	$\frac{14^2)}{2}$		" " " "
<i>velans. stringens</i>	$\frac{14^4)}{2}$		" " " "
<i>Oenothera grandiflora</i> × <i>O. strigosa</i>			
<i>acuens. stringens</i>	$\frac{14^5)}{2}$		" " " "
<i>truncans. stringens</i>	$\frac{14^1)}{2}$		" " " "
<i>Oenothera strigosa</i> × <i>O. Lamar-</i>			
<i>ckiana cruciata</i>			
<i>deprimens. gaudens</i>	$\frac{14^6)}{2}$		" " " "
<i>deprimens. velans</i>	$\frac{14^6)}{2}$		" " " "
<i>Oenothera suaveolens sulfurea</i> ×			
<i>O. Lamarckiana</i>			
<i>flavens. gaudens</i>	$\frac{14^7)}{2}$		" " " "
<i>flavens. velans</i>	$\frac{14^8)}{2}$		" " " "

¹⁾ Arranged as a ring of 10 and a ring of 4.

²⁾ Arranged as a ring of 14.

³⁾ Only one plant resulted from this cross showing $2n = 15$, arranged in an open chain of 5 and one of 10.

⁴⁾ Arranged as a ring of 6 and a ring of 4 plus 2 pairs of chromosomes.

⁵⁾ Arranged as 2 rings of 4 plus 3 pairs of chromosomes.

⁶⁾ Arranged as a chain of 10 plus 2 pairs of chromosomes.

⁷⁾ Arranged as a chain of 12 plus 1 pair of chromosomes.

OENOTHERACEAE (continued)	n	2n
<i>Oenothera</i> hybrids (continued)		
<i>albicans. gaudens</i>	14 ¹⁾ $\frac{2}{2}$	CLELAND & OEHLKERS, 1930.
<i>albicans. velans</i>	14 ²⁾ $\frac{2}{2}$	" " " "
<i>Oenothera Lamarckiana</i> × <i>O. suaveolens sulfurea</i>		
<i>gaudens. flavens</i>	14 ³⁾ $\frac{2}{2}$	" " " "
<i>velans. flavens</i>	14 ⁴⁾ $\frac{2}{2}$	" " " "
<i>Oenothera suaveolens</i> × <i>O. Cockerelli</i>		
<i>flavens. elongans</i>	14 ⁵⁾ $\frac{2}{2}$	" " " "
<i>albicans. elongans</i>	14 ³⁾ $\frac{2}{2}$	" " " "
<i>Oenothera Cockerelli</i> × <i>O. suaveolens</i>		
<i>curtans. flavens</i>	14 ³⁾ $\frac{2}{2}$	" " " "
<i>Oenothera suaveolens sulfurea</i> × <i>O. strigosa</i>		
<i>flavens. stringens</i>	14 ⁶⁾ $\frac{2}{2}$	" " " "
<i>albicans. stringens</i>	14 ³⁾ $\frac{2}{2}$	" " " "
<i>Oenothera strigosa</i> × <i>O. suaveolens sulfurea</i>		
<i>deprimens. flavens</i>	14 ³⁾ $\frac{2}{2}$	" " " "
<i>Oenothera</i> (r — <i>biennis</i> × <i>pachycarpa</i>)		
¹⁾ <i>albisubcurva</i>	14 ⁷⁾ $\frac{2}{2}$	RUDLOFF, 1930b.
<i>Oenothera</i> (<i>suaveolens</i> × <i>pachycarpa</i>)		
²⁾ <i>albisubcurva</i>	14 ⁷⁾ $\frac{2}{2}$	" "

¹⁾ Arranged as a ring of 6 plus a ring of 8 chromosomes.

²⁾ Arranged as a ring of 14.

³⁾ Arranged as a chain of 12 plus 1 pair of chromosomes.

⁴⁾ Arranged as 2 rings of 4 plus 3 pairs of chromosomes.

⁵⁾ Arranged as a ring of 8 plus 3 pairs of chromosomes.

⁶⁾ Arranged as a ring of 4 plus 5 pairs of chromosomes.

⁷⁾ Arranged as a ring of 14 chromosomes.

OENOTHERACEAE (continued)	n	2n
<i>Oenothera</i> hybrids (continued)		
<i>Oenothera</i> (<i>pachycarpa</i> × <i>r-Lamarckiana</i>) .		
<i>auctivelutina</i>	$\frac{14^1)}{2}$	RUDLOFF, 1930b
<i>Oenothera</i> (<i>r — muricata</i> × <i>pachycarpa</i>)		
<i>rigidisubcurva</i>	$\frac{14^1)}{2}$	„ „
<i>Oenothera</i> (<i>r — Lamarckiana</i> × <i>pachycarpa</i>)		
<i>subcurvicutina</i>	$\frac{14^1)}{2}$	„ „
<i>Oenothera</i> [(<i>r — biennis</i> × <i>pachycarpa</i>) ¹⁾ <i>albisubcurva</i> × <i>suaveolens</i>]		
<i>L. albiflava</i>	$\frac{14^2)}{2}$	„ „
<i>Oenothera</i> (<i>pachycarpa</i> × <i>Hookeri</i>)		
<i>Hookeriaucta</i>	$\frac{14^3)}{2}$	„ „
<i>Oenothera</i> (<i>suaveolens</i> × <i>pachycarpa</i>)		
<i>flavisubcurva</i> × <i>R-biennis</i>	$\frac{14^3)}{2}$	„ „
<i>Oenothera</i> (<i>suaveolens</i> × <i>pachycarpa</i>)		
<i>flavisubcurva</i> × <i>R-biennis</i> = MB, mB, Mb, and mb <i>rubiflava</i>	$\frac{14^4)}{2}$	„ „
<i>Oenothera</i> (<i>suaveolens</i> × <i>pachycarpa</i>)		
MmBb <i>flavisubcurva</i>	$\frac{14^5)}{2}$	„ „
<i>Oenothera</i> (<i>suaveolens</i> × <i>pachycarpa</i>)		
MmBb <i>flavisubcurva</i> (selfpollinated)	$\frac{14^5)}{2}$	„ „
<i>Oenothera</i> (<i>suaveolens</i> × <i>pachycarpa</i>)		
MmBb <i>flavisubcurva</i> × <i>pachycarpa</i>	$\frac{14^5)}{2}$	„ „

¹⁾ Arranged as a ring of 14 chromosomes.

²⁾ Arranged as a chain of 12 plus 1 pair of chromosomes.

³⁾ Arranged as a chain of 10 plus 2 pairs of chromosomes.

⁴⁾ Arranged as a ring of 8, a ring of 4 plus 1 pair of chromosomes.

⁵⁾ Arranged as two rings of 4 plus a ring of 6 chromosomes.

OENOTHERACEAE (continued)	n	2n
<i>Oenothera</i> hybrids (continued)		
MMBb <i>flavisubcurva</i> × <i>pachycarpa</i> . . .	$\frac{14^1}{2}$	RUDLOFF, 1930b.
mmBb <i>flavisubcurva</i> × <i>pachycarpa</i> . . .	$\frac{14^1}{2}$	" "
bbMm <i>flavisubcurva</i> × <i>pachycarpa</i> . . .	$\frac{14^1}{2}$	" "
BBMm <i>flavisubcurva</i> × <i>pachycarpa</i> . . .	$\frac{14^1}{2}$	" "
BBMm <i>flavisubcurva</i> × <i>pachycarpa</i> . . .	$\frac{14^2}{2}$	" "
" <i>Lamarckiana</i> × <i>O.</i> <i>rubricalyx</i> (<i>velans.</i> <i>latifrons</i>) F ₁ . . .	$\frac{14^3}{2}$	EMERSON, 1930.
" <i>Lamarckiana</i> × <i>O. ru-</i> <i>bricalyx</i> (<i>velans.</i> <i>latifrons</i>) F ₂ (2 types)	$\frac{14^3}{2}, 7$	" "
" <i>Lamarckiana</i> × <i>O.</i> <i>rubricalyx</i> (^h <i>lati-</i> <i>frons.</i> ^h <i>latifrons</i>) F ₂	7	" "
" <i>Lamarckiana</i> × <i>O.</i> <i>latifrons</i> F ₂ (<i>gaudens.</i> <i>latifrons</i>) (2 types)	$\frac{14^3}{2}, 7$	EMERSON, 1930.
" <i>rubricalyx</i> (modified <i>velans</i>) × <i>O. La-</i> <i>marckiana</i> F ₁ <i>gaudens</i>	$\frac{14^4}{2}$	" "

UMBELLIFLORAE

UMBELLIFERAE

SCANDICEAE *)

(a) *Scandicinae*

Myrrhis odorata var. *aurea* . . . 11 SCHULZ-GAEBEL, 1930.

¹) Arranged as a ring of 6 and a ring of 4 plus 2 pairs of chromosomes.

²) Arranged as a ring of 6 plus 4 pairs of chromosomes.

³) Arranged as a ring of 8 plus 3 pairs of chromosomes.

⁴) Arranged as a chain of 12 plus 1 pair of chromosomes.

⁵) Classification is according to DRUDE (1897).

UMBELLIFERAE (continued)	n	2n
SCANDICEAE (continued)		
(a) <i>Scandicinae</i> (continued)		
<i>Chaerophyllum aureum</i> L. . .	11	SCHULZ-GAEBEL, 1930.
" <i>bulbosum</i> L. . .	11	" " "
<i>Anthriscus cerefolium</i> HOFFM. .	9	" " "
" <i>fumarioides</i>	9	" " "
" <i>silvestris</i> (L.) HOFFM.	16	MELDERIS, 1930.
<i>Scandix Pecten Veneris</i> L. . .	16	" " "
	8	SCHULZ-GAEBEL, 1930.
(b) <i>Caucalinae</i>		
<i>Torilis anthriscus</i> (L.) GMEL. .	8	MELDERIS, 1930.
" <i>heterophylla</i> GUSS. . . .	16	" " "
SMYRNIEAE		
<i>Comum maculatum</i> L.	8	NORDHEIM, 1930.
AMMINEAE		
(a) <i>Carinae</i>		
<i>Bupleurum longifolium</i> L. . .	8	SCHULZ-GAEBEL, 1930.
" <i>rotundifolium</i> L. . .	8	" " "
	11	MELDERIS, 1930.
<i>Petroselinum sativum</i> HOFFM. .	11	SCHULZ-GAEBEL, 1930.
<i>Cicuta virosa</i> L. var. <i>univalens</i> m.	22	MELDERIS, 1930.
" <i>virosa</i> L. var. <i>bivalens</i> m.	22	" " "
<i>Ammi majus</i> L.	11	SCHULZ-GAEBEL, 1930.
" <i>visnaga</i> LAM.	11	" " "
<i>Carum Bulbocastanum</i> KOCH. .	11	" " "
" <i>Carvi</i> L.	11	" " " ;
		MELDERIS, 1930.
" <i>rigidulum</i> KOCH	11	SCHULZ-GAEBEL, 1930.
<i>Aegopodium Podagraria</i> L. . .	22	MELDERIS, 1930.
<i>Pimpinella anisum</i> L.	9	SCHULZ-GAEBEL, 1930.
" <i>magna</i> L.	9	" " "
" <i>peregrina</i> L.	9	" " "
" <i>saxifraga</i> L.	9	" " "
<i>Sium Sisarum</i> L.	10	" " "
(b) <i>Seselinæ</i>		
<i>Seseli tenuifolium</i> LED.	11	" " "
<i>Foeniculum vulgare</i> MILL. . .	22	MELDERIS, 1930.
<i>Anethum graveolens</i> L.	11	" " "
<i>Oenanthe pimpinelloides</i> L. . .	11	SCHULZ-GAEBEL, 1930.
<i>Aethusa cynapium</i> L.	11	" " "
<i>Meum anthamanticum</i> JACQ. .	11	" " "
<i>Selinum carvifolia</i> L.	11	" " "
PEUCEDANEAE		
(a) <i>Angelicinae</i>		
<i>Levisticum officinale</i> KOCH. . .	11	MELDERIS, 1930.

UMBELLIFERAE (continued)	n	2n	
PEUCEDANEAE (continued)			
(a) <i>Angelicinae</i> (continued)			
<i>Angelica Archangelica</i> L. subsp.			
<i>littoralis</i> (FRIES.) THELLUNG	11		SCHULZ-GAEBEL, 1930.
<i>Angelica silvestris</i> L.		22	MELDERIS, 1930.
(b) <i>Ferulinae</i>			
<i>Dorema Aucheri</i> BOISS.	11		SCHULZ-GAEBEL, 1930.
<i>Peucedanum graveolens</i> KOCH.	11		" " "
" <i>Oreoselinum</i>			
MÖNCH.	11		" " "
" <i>palustre</i> (L.) MÖNCH.	11		" " " ;
			MELDERIS, 1930.
" <i>sativum</i> HOFFM.	11		SCHULZ-GAEBEL, 1930.
" <i>verticillare</i> KOCH.	11		" " "
<i>Pastinaca sativa</i> L.		22	MELDERIS, 1930.
DAUCEAE			
<i>Daucus carota</i> L.	11		" "
CORNACEAE			
<i>Cornus alba</i>	11		MEURMAN, 1930.
<i>Aucuba chinensis</i>	8		" " "
ERICALES			
ERICACEAE			
RHODODENDRON ¹⁾			
Subgenus I. <i>Eurhododendron</i>			
Section I. <i>Leiorhodium</i>			
<i>Rhododendron catawbiense</i>	13		SAX, K., 1930b.
" <i>catawbiense</i> MICH- CHAUX	12		BOWERS, 1930.
" <i>maximum</i>	13		SAX, K., 1930b.
Section II. <i>Lepiperum</i>			
<i>Rhododendron carolinianum</i>	13		" " "
Section IV. <i>Rhodorastrum</i>			
<i>Rhododendron dauricum</i>	13		" " "
Subgenus III. <i>Anthodendron</i>			
Section I. <i>Tsutsutsi</i>			
<i>Rhododendron obtusum japoni-</i> <i>cum</i>	13		" " "
" <i>obtusum Kaemp-</i> <i>feri</i>	13		" " "
" <i>yedoense pouk-</i> <i>hanense</i>	13		" " "
Section II. <i>Sciadorhodium</i>			
<i>Rhododendron reticulatum</i>	13		" " "
" <i>Schlippenbachii</i>	13		" " "

¹⁾ Classification is according to REHDER (1927).

ERICACEAE (continued)

RHODODENDRON (continued)

Subgenus III. Anthodendron (continued)

Section III. Rhodora

<i>Rhododendron canadense</i> . . .	26	Sax, K., 1930b
" <i>Vascyi</i> . . .	13	" " "

Section IV. Pentanthera

<i>Rhododendron arborescens</i> . . .	13	" " "
" <i>calendulacum</i> . . .	26	" " "
" <i>japonicum</i> . . .	13	" " "
" <i>roseum</i> . . .	13	" " "
" <i>viscosum</i> . . .	13	" " "

Rhododendron hybrids:

<i>Rhododendron albicans</i> (<i>R. molle</i> × <i>R. occidentale</i>)	13	" " "
" <i>gandavense</i> of Arnold Arboretum (American <i>azalea</i> × <i>R. luteum</i>)	13	" " "
" <i>laetevirens</i> (<i>R. carolinianum</i> × <i>R. ferrugineum</i>)	12+2 ₁	" " "
" <i>perspicum</i> (<i>R. catawbiense</i> × <i>R. maximum</i> or <i>R. ponticum</i>)	13 or 12+2 ₁	" " "
" <i>praecox</i> var. <i>Early Gem</i> (<i>R. dauricum</i> × <i>R. ciliatum</i>)	13	" " "
" <i>purpureum</i> (<i>R. catawbiense</i> × <i>R. maximum</i> or <i>R. ponticum</i>)	13	" " "
" <i>Smirnovii</i> hybrid of Arnold Arboretum (<i>R. Smirnovii</i> × <i>Catawbiense</i> hybrid)	12+2 ₁	" " "

ERICACEAE (continued)	n	2n	
<i>Rhododendron</i> hybrids (continued)			
Subgenus III. <i>Anthodendron</i>			
(continued)			
Section IV. <i>Pentanthera</i>			
(continued)			
<i>Rhododendron viscosepalum</i> (<i>R.</i>			
<i>molle</i> × <i>R. vis-</i>			
<i>cosum</i>)	12+2 ₁		SAX, K., 1930b.
<i>occidentale</i> × <i>R.</i>			
<i>calendulaceum</i>	ca.13+13 ₁		" " "
<i>occidentale</i> × <i>R.</i>			
<i>japonicum</i>	13		" " "

PRIMULALES

PRIMULACEAE

PRIMULA ¹⁾

Subgenus I.

Section *Grandis*

<i>Primula grandis</i>	44	BRUUN, 1930.
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Subgenus II.

Section *Auricula*

<i>Primula auricula</i>	56(?)	" "
<i>glaucescens</i>	56(?)	" "
<i>hirsuta</i>	64(?)	" "
<i>marginata</i>	90(?)	" "
<i>minima</i>	64(?)	" "

Subgenus III.

Section *Verticillata*

<i>Primula floribunda</i>	18	" "
" „ <i>Kewensis</i> ”	36	" "
<i>verticillata</i>	18	" "

Subgenus IV.

Section *Vernales*

<i>Primula elatior</i>	22	" "
<i>heterochroma</i>	22	" "
<i>Juliae</i>	22	" "
<i>leucophylla</i>	22	" "
<i>macrocalyx</i>	22	" "
<i>pseudoelatior</i>	22	" "
<i>veris</i>	22	" "
<i>vulgaris</i>	22	" "

Section *Megaseaetolia*

<i>Primula megaseaefolia</i>	22	" "
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¹⁾ Classification is according to SMITH & FORREST (1929).

PRIMULACEAE (continued)	n	2n	
PRIMULA (continued)			
Subgenus V.			
Section Cortusoides			
Subsection Geranioides			
<i>Primula geraniifolia</i>		22	BRUUN, 1930.
„ <i>heucherifolia</i>		22	„ „
„ <i>latisecta</i>		22	„ „
Subsection Septemlobae			
<i>Primula Maclarenii</i>		24	„ „
„ <i>mollis</i>		24	„ „
„ <i>seclusa</i>		24	„ „
„ <i>septemloba</i>		24	„ „
Subsection Paulianae			
<i>Primula Pauliana</i>		24	„ „
Subsection Eucortusoides			
<i>Primula cortusoides</i>		24	„ „
„ <i>lichiangensis</i>		24	„ „
„ <i>polyneura</i>		24	„ „
„ <i>saxatilis</i>		24	„ „
„ <i>Sieboldii</i>		24	„ „
„ <i>Veitchii</i>		24	„ „
Section Reimii			
<i>Primula Reimii</i>		24	„ „
Section Pycnoloba			
<i>Primula pycnoloba</i>		24	„ „
Section Obconica			
<i>Primula obconica</i>	12	24	„ „
„ <i>sinolisteri</i>		24	„ „
„ <i>Werringtonensis</i>		24	„ „
Section Malacoides			
<i>Primula effusa</i>		18	„ „
„ <i>Forbesii</i>		18	„ „
„ <i>malacoides</i>	9	18	„ „
Section Sinensis			
<i>Primula calciphila</i>		24	„ „
„ <i>sinensis</i>		24	„ „
	12		SÖMME, 1930.
„ <i>sinensis</i> var. <i>gigas</i>		48(?)	BRUUN, 1930
„ <i>sinensis</i> (tetraploid)	14-24 + 22-20 ¹⁾		SÖMME, 1930.

¹⁾ Quadrivalents were found in most cells but as a rule not more than 1 or 2. The majority of the chromosomes were arranged as bivalents.

PRIMULACEAE (continued)

PRIMULA (continued)

Subgenus VI.

Section Bullatae

<i>Primula Forrestii</i>	24	BRUUN, 1930.
" <i>redolens</i>	24	" "
" <i>rufo</i>	24	" "

Subgenus VII.

Section Petiolares

<i>Primula Winteri</i>	22	" "
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Subgenus VIII.

Section Nivales

A. <i>Primula Ellisiae</i>	44	" "
" <i>leucops</i>	44	" "
" <i>Parryi</i>	44	" "
" <i>Rusbyi</i>	44	" "
B. " <i>Maximowiczii</i>	22	" "
" <i>obliqua</i>	22	" "
" <i>szechuanica</i>	22	" "
" <i>tangutica</i>	22	" "
C. " <i>macrophylla</i>	22	" "
D. " <i>chionantha</i>	22	" "
" <i>melanops</i>	22	" "
" <i>Purdomii</i>	22	" "
" <i>russeola</i>	22	" "
" <i>sinoplantaginea</i>	22	" "

Section Rotundifolia

<i>Primula Gambeliana</i>	22	" "
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Section Candelabra

A. <i>Primula ianthina</i>	22	" "
B. " <i>anisodora</i>	22	" "
" <i>aurantiaca</i>	22	" "
" <i>Beesiana</i>	11	22 " "
" <i>Bulleyana</i>	11	22 RICHARDSON, 1930.
" <i>Bulleyana</i>	11	22 BRUUN, 1930.
" <i>Bulleyana</i>	11	22 RICHARDSON, 1930.
" <i>burmanica</i>	11	22 BRUUN, 1930.
" <i>chungensis</i>	22	" "
" <i>Cockburniana</i>	22	BRUUN, 1930; RICHARDSON, 1930.
" <i>helodoxa</i>	22	BRUUN, 1930.
" <i>imperialis</i>	22	" "
" <i>japonica</i>	44	BRUUN, 1930; RICHARDSON, 1930.
" <i>melanodonta</i> (?)	22	BRUUN, 1930.

PRIMULACEAE (continued)	n	2n	
PRIMULA (continued)			
Subgenus VIII. Section <i>Candra-labra</i> (continued)			
B. <i>Primula Miyabeana</i>		22	BRUUN, 1930.
" <i>Moorsheadiana</i>		22	" "
" <i>Poissonii</i>		22	" "
" <i>pulverulenta</i>		22	" " ; RICHARDSON, 1930.
" <i>serratifolia</i>		22	BRUUN, 1930.
" <i>Smithiana</i>	11	22	" "
" <i>Wilsonii</i>		22	" "
" „ <i>Aileen Aroon</i> " (<i>P. Bulleyana</i> × <i>P. Beesiana</i>)		44	RICHARDSON, 1930.
" „ <i>Red Hugh</i> " (<i>P. pulverulenta</i> × <i>P. Cockburniana</i> F ₁).		22	" "
Section <i>Sikkimensis</i>			
A. <i>Primula secundiflora</i>		22	BRUUN, 1930.
" <i>vittata</i>		22	" "
B. <i>Primula firmipes</i>		22	" "
" <i>flexilipes</i>		22	" "
" <i>Florindae</i>		22	" "
" <i>microdonta alpicola</i>		22	" "
" <i>microdonta violacea</i>		22	" "
" <i>prionotes</i>		22	" "
" <i>pseudosikkimensis</i>	11	22	" "
" <i>pudibunda</i>		22	" "
" <i>sikkimensis</i>		22	" "
" <i>Waltonii</i>		22	" "
Subgenus IX.			
Section <i>Capitatae</i>			
<i>Primula capitata</i>		18	" "
" <i>crispata</i>		18	" "
" <i>lacteocapitata</i>		18	" "
" <i>Mooreana</i>		18	" "
" <i>sphaerocephala</i>	9	18	" "
Section <i>Denticulata</i>			
<i>Primula crispa</i>		44	" "
" <i>denticulata</i>	11	22	" "
" <i>erythrocarpa</i>		22	" "
Section <i>Muscarioides</i>			
<i>Primula apoclita</i>		40	" "
" <i>atricapilla</i>		20	" "

PRIMULACEAE (continued)	n	2n	
PRIMULA (continued)			
Subgenus IX. Section <i>Muscarioides</i> (continued)			
<i>Primula bellidifolia</i>		20	BRUUN, 1930.
" <i>cernua</i>		20	" "
" <i>cyanantha</i>		40	" "
" <i>deflexa</i> (?)		40	" "
" <i>lepta</i>		40	" "
" <i>Littoniana</i>	10	20	" "
" <i>Menziesiana</i>		40	" "
" <i>muscaroides</i>		40	" "
" <i>pinnatifida</i>		20	" "
Section <i>Soldanelloideae</i>			
<i>Primula nutans</i>		20	" "
" <i>Reidii</i>		20	" "
Subgenus X.			
Section <i>Cuneifolia</i>			
<i>Primula suffrutescens</i>		44	" "
Section <i>Inayatii</i>			
<i>Primula Inayatii</i>		16	" "
Section <i>Auriculata</i>			
A. <i>Primula algida</i>		44	" "
" <i>luteola</i>		44	" "
B. <i>Primula elliptica</i>		22	" "
" <i>rosea</i>		22	" "
Section <i>Minutissimae</i>			
<i>Primula reptans</i>		22	" "
Subgenus XI.			
Section <i>Soulieii</i>			
<i>Primula rupicola</i>		16	" "
Section <i>Farinosae</i>			
Subsection <i>Stenocalyces</i>			
<i>Primula blandula</i>		16	" "
" <i>caldaria</i>		16	" "
" <i>Knuthiana</i>		16	" "
" <i>stenocalyx</i>		16	" "
Subsection <i>Eufarinosae</i>			
<i>Primula capitellata</i>		72	" "
" <i>exigua</i>		18	" "
" <i>farinifolia</i>		18	" "
" <i>farinosa</i>	9	18	" "
" <i>farinosa Warei</i>		72	" "
" <i>Fauricii</i>		18	" "
" <i>frondosa</i>		18	" "

PRIMULACEAE (continued)	n	2n	
PRIMULA (continued)			
Subgenus XI. Section Farinosae (continued)			
Subsection Eufarinosae (continued)			
<i>Primula longiflora</i>		36	BRUUN, 1930
" <i>magellanica</i>		72	" "
" <i>scotica</i>		54	" "
" <i>scotica scandinavica</i>		72	" "
" <i>strickii</i>		126	" "
Subsection Sibiricae			
<i>Primula chrysopa</i>		20	" "
" <i>fasciculata</i>		18	" "
" <i>involuta</i>		44	" "
" <i>sibirica</i>		22	" "
" <i>tibetica</i>		20	" "
" <i>yargongensis</i>		20	" "
Subsection Glabrae			
<i>Primula Genestieriana</i>		16	" "
" <i>glabra</i>		16	" "
Section Yunnanensis			
<i>Primula Yunnanensis</i>		22	" "
<i>Aretia alpina</i> L.		36	CHIARUGI, 1930a, d.
<i>Vitaliana primulaeflora</i> BERTOL.		32	" " "
CONTORTAE			
OLEACEAE			
<i>Forsythia europaea</i>	14		O'MARA, 1930.
" <i>intermedia</i>	14		" "
" <i>intermedia</i> var. <i>densiflora</i>	14		" "
" <i>intermedia</i> var. <i>primulina</i>	14		" "
" <i>intermedia</i> var. <i>spectabilis</i>	14		" "
" <i>intermedia</i> var. <i>vitellina</i>	14		" "
" <i>ovata</i>	14		" "
" <i>suspensa</i>	14		" "
" <i>suspensa</i> var. <i>atrocaulis</i>	14		" "
" <i>suspensa</i> var. <i>decepiens</i>	14		" "
" <i>suspensa</i> var. <i>Fortunei</i>	14		" "

	n	2n
OLEACEAE (continued)		
<i>Forsythia</i> (continued)		
<i>Forsythia suspensa</i> var. <i>pallida</i>	14	O'MARA, 1930.
" <i>suspensa</i> var. <i>pubescens</i>	14	" "
" <i>suspensa</i> var. <i>Sieboldii</i>	14	" "
" <i>suspensa</i> var. <i>suspensa</i>	14	" "
" <i>viridissima</i>	14	" "
" <i>viridissima</i> var. <i>ko-reana</i>	14	" "
SYRINGA ¹⁾		
Subgenus <i>Eusyringa</i>		
(K. KOCH)		
Group <i>Villosae</i> (SCHNEID.)		
<i>Syringa Henryi</i> (LUTÈCE) (S.		
<i>villosa</i> × <i>S. Josikaea</i>)	23	SAX, K., 1930a.
" <i>Josikaea</i>	46	" " "
" <i>Komarowi</i>	22	TISCHLER, 1930.
" <i>Sweginzowii</i>	23	SAX, K., 1930a.
" <i>tomentella</i>	23 or 24	" " "
" <i>villosa</i>	23 or 24	" " "
" <i>Wolfii</i>	46	" " "
" <i>yunnanensis</i>	24 ²⁾	68 ³⁾ " " "
Group <i>Vulgares</i> (SCHNEID.)		
<i>Syringa chinensis</i> (S. <i>rothomagensis</i>) = (S. <i>persicalaciniata</i> × S. <i>vulgaris</i>)		
	ca. $12 + \frac{12_1}{2}$	" " "
" <i>chinensis</i> var. <i>cucullata</i>	ca. $12 + \frac{12_1}{2}$	" " "
" <i>chinensis</i> var. <i>Saugana</i>	ca. $12 + \frac{12_1^3}{2}$	" " "
" <i>Meyeri</i>	23	" " "
" <i>microphylla</i>	23 or 24(?)	" " "

¹⁾ Classification is according to REHDER (1927).

²⁾ In one plant there were 24 chromosomes at metaphase and in another plant there were 68 chromosomes in the root-tips.

³⁾ At diakinesis there were about 39 chromosomes but at metaphase usually 24 to 26, half of which were bivalents and half univalents.

OLEACEAE (continued)	n	2n
SYRINGA (continued)		
Subgenus <i>Eusyringa</i> (K. KOCH) (continued)		
Group <i>Vulgares</i> (continued)		
<i>Syringa oblata Giraldui</i>	23, 24 ¹⁾	SAX, K., 1930a.
„ <i>Palibiniana</i>	24	„ „ „
„ <i>persica</i>	44 ₁	TISCHLER, 1930.
	$\frac{2}{2}$	
	36 ₁ ²⁾	SAX, K., 1930a.
	$\frac{2}{2}$	
„ <i>persica</i> var. <i>alba</i>	36 ₁ ²⁾	
	$\frac{2}{2}$	„ „ „
„ <i>persica</i> var. <i>laciniata</i>	36 ₁ ²⁾	„ „ „
	$\frac{2}{2}$	
„ <i>pinnatifolia</i>	24	„ „ „
„ <i>pubescens</i>	24	„ „ „
„ <i>velutina</i>	23	„ „ „
„ (<i>velutina</i>) <i>Koehneana</i>	23	„ „ „
„ <i>vulgaris</i>	22	TISCHLER, 1930.
„ <i>vulgaris</i> var. <i>Berangeri</i>	24	SAX, K., 1930a.
„ <i>vulgaris</i> var. <i>Dr. Nobbe</i>	23+1 ₁	„ „ „
„ <i>vulgaris</i> var. <i>Princess Marie</i>	23+1 ₁	„ „ „
Subgenus <i>Ligustrina</i> (RUPR.)		
<i>Syringa amurensis</i>	22	TISCHLER, 1930.
	23 or 24	SAX, K., 1930a.
„ <i>japonica</i>	23 or 24	„ „ „
<i>Syringa</i> (not classified in groups)		
<i>Syringa Emodi</i>	22	TISCHLER, 1930.
<i>Ligustrum</i> sp.	24	O'MARA, 1930.
TUBIFLORAE		
LABIATAE		
GALEOPSIS		
Subgenus <i>Ladanum</i> REICHB.		
<i>Galeopsis angustifolia</i> GAUDIN	8	MÜNTZING, 1930a.
„ <i>Ladanum</i> L.	8	„ „
„ <i>ochroleuca</i> LAMARCK	8	„ „
„ <i>pyrenaica</i> BARTL.	8	„ „

¹⁾ There were apparently 24 paired chromosomes at diakinesis but only 23 could be counted at the heterotypic metaphase.

²⁾ The 36 single chromosomes behaved irregularly at reduction and the pollen was sterile. It was therefore thought to be a hybrid.

³⁾ In one cell about 44 chromosomes were counted.

LABIATAE (continued)	n	2n		
GALEOPSIS (continued)				
Subgenus <i>Tetrahit</i> REICHB.				
<i>Galeopsis bifida</i> BOENN. ¹⁾ . . .	8		MÜNTZING, 1930b.	
" <i>pubescens</i> BESS . . .	8		" "	
" <i>pubescens</i> (2 biotypes)		16	" "	
" <i>Reuteri</i> REICHB. F. . .		16	" "	
" <i>speciosa</i> MILL. ¹⁾ . . .	8		" 1930a.	
" <i>speciosa</i> (3 biotypes).		16	" 1930b.	
" <i>Tetrahit</i> L.	8		" 1930a.	
<i>Galeopsis</i> hybrids:				
<i>Galeopsis angustifolia</i> × <i>G.</i>				
" <i>ochroleuca</i> F ₁ ²⁾ . . .	8 ³⁾		" "	
" <i>Ladanum</i> × <i>G. angustifolia</i> F ₁ ³⁾ . . .	8		" "	
" <i>Ladanum</i> × <i>G. ochroleuca</i> F ₁ F ₂ ²⁾ . . .	8		" "	
" <i>Ladanum</i> × <i>G. pyrenaica</i> F ₁ F ₂ ²⁾ . . .	8	16 ⁴⁾	" "	
" <i>ochroleuca</i> × <i>G. pyrenaica</i> F ₁ ³⁾	8	16	" "	
" <i>pubescens</i> × <i>G. speciosa</i> F ₁	$8, 7 + \frac{2_1}{2}$			
	$6 + \frac{4_1}{2}$	$5 + \frac{6_1}{2}$	" "	
" <i>pubescens</i> × <i>G. speciosa</i> spont. (offspring)		16	" "	
" <i>pubescens</i> × <i>G. speciosa</i> F ₂ ⁵⁾	8		" "	
" <i>pubescens</i> × <i>G. speciosa</i> F ₂ ⁵⁾ (one plant)	$4_3 + 4 + \frac{4_1}{2}$			
	$2_3 + 6 + \frac{6_2}{2}$	24	" "	
" <i>pubescens</i> × <i>G. speciosa</i> F ₂ F ₃	$9 + \frac{6_1}{2}$	16	" 1930b.	
" <i>Tetrahit</i> × <i>G. bifida</i> F ₁ ⁶⁾	16		" 1930a.	

¹⁾ The haploid number was determined in several types of the species.

²⁾ Chromosome affinity and reduction division was quite normal.

³⁾ This number was found in the spontaneous hybrid also.

⁴⁾ This number was found also in one extreme dwarf plant of the cross.

⁵⁾ Of 6 F₂ plants 5 were diploid and one was triploid.

⁶⁾ The reduction division was quite normal, though it showed some minor irregularities.

LABIATAE	n	2n	
<i>Galeopsis</i> hybrids (continued)			
<i>Galeopsis</i> <i>Tetrahit</i> × <i>G. bifida</i>			
F ₂ F ₃ ¹⁾	16		
	15 + $\frac{21}{2}$,		
	13 + $\frac{61}{2}$		MÜNTZING, 1930a.
„ A.T. (<i>artificielle Tetrahit</i>) = (<i>G. pubescens</i> × <i>G. speciosa</i>) × <i>G. pubescens</i> . .	16	32	„ 1930b.
<i>Mentha aquatica</i> L. (= <i>M. hirsuta</i> L.)	18		LIETZ, 1930.
„ <i>arvensis</i> L.	36(?)		„ „
„ <i>longifolia</i> L. HUDSON .	9		„ „
„ <i>verticillata</i> L. [= <i>M. aquatica</i> × <i>M. arvensis</i> (<i>M. sativa</i> L.)]. .	27		„ „
SOLANACEAE			
<i>Saracha umbellata</i>		48	KRENKE, 1930.
<i>Capsicum annuum</i> ²⁾	12		HUSKINS & LA COUR, 1930.
<i>Capsicum annuum</i> var. <i>Dolma</i> ³⁾	12	24	KOSTOFF, 1930c.
„ <i>annuum</i> var. <i>Kamby</i> ³⁾	12	24	„ „
„ <i>annuum</i> (<i>Dolma</i> × <i>Kamby</i>) F ₁	12	24	„ „
„ <i>annuum</i> (<i>Dolma</i> × <i>Kamby</i>) F ₂ „orange mutant”	12	24	„ „
„ <i>annuum</i> (buds with abnormal pollen selfed)			
Plant I	12	25	„ „
Plant II	11	25	„ „

¹⁾ Some of the extremely narrow-leaved and broad-leaved F₂ and large-flowered F₃ plants showed the same number (n = 16).

²⁾ Four varieties described as: long red, large red, long yellow and large yellow from Messrs. Sutton & Sons were used. Also four varieties described as: pigment gros long changeant, pigment jaune demi-long d'Antibes, pigment jaune long, pigment cerise from Messrs. Vilmorin et Cie.

³⁾ Plants exposed to change of temperature showed irregular meiosis with varying numbers of chromosomes in the gametes as n, n-a, n+a, 2n, 2n+a, 3n, 3n+a and 4n, where n is any number smaller than 12.

SOLANACEAE (continued)	n	2n	
<i>Capsicum</i> (continued)			
<i>Capsicum baccatum</i> ¹⁾	12		HUSKINS & LA COUR, 1930.
SOLANUM ²⁾			
Section <i>Tuberarium</i>			
Subsection <i>Basarthrum</i> BITT.			
<i>Solanum muricatum</i> AIT. . . .		24	RYBIN, 1930a.
Subsection <i>Hyperbasarthrum</i> BITT.			
<i>Conicibaccata</i> BITT. (Colombia forms)			
<i>Solanum colombianum</i> DUN. var. <i>Trianae</i> BITT. n. f. . . .		48	RYBIN, 1930.
<i>Pinnatisecta</i> RYDB. Group 2			
<i>Solanum chacoense</i> BITT. . . .	12		LONGLEY & CLARK, 1930.
		24	RYBIN, 1930a.
" <i>Commersonii</i> DUN. . . .	18 ³⁾		LONGLEY & CLARK, 1930.
		36	RYBIN, 1930a.
" <i>coyoacanum</i> BUKASOV		36	" "
" <i>Jamesii</i> TORR. . . .	12		LONGLEY & CLARK, 1930.
		24	RYBIN, 1930a.
Group 3			
a) Subgroup from Chile and Peru lowlands			
<i>Solanum medians</i> BITT. (Of <i>Solanum Maglia</i> SCHLECHT)		36	RYBIN, 1930a.
<i>Solanum palustre</i> POEPP.? . . .		48	" "
b) Subgroup from Peru and Bolivia Andes			
<i>Solanum acaule</i> BITT. var. <i>suberinterruptum</i> BITT. . . .		48	" "
<i>Solanum aracc-papa</i> JUZ. n. s. . . .		24	" "
" <i>Bukasovii</i> JUZ. n. s. . . .		24	" "
" sp. <i>Curao</i> 150. . . .		36	" "
" sp. <i>Curao</i> 151. . . .		48	" "
c) Subgroup of Mexican species			
<i>Solanum ajuscoense</i> BUKASOV	24		LONGLEY & CLARK, 1930.
		48	RYBIN, 1930a.
" <i>Antipovichi</i> BUKASOV	24		LONGLEY & CLARK, 1930.
		48	RYBIN, 1930a.
" <i>demissum</i> LINDL. . . .	36		LONGLEY & CLARK, 1930.

¹⁾ Two varieties described as long red and long yellow.

²⁾ Classification is according to BITTER 1912—13.

³⁾ Irregular distribution of the chromosomes was observed.

SOLANACEAE (continued)		n	2n
SOLANUM (continued)			
<i>Solanum demissum</i> s. <i>adpresso-acuminatum</i> BUKASOV			
			72 RYBIN, 1930a.
"	<i>demissum</i> f. <i>longibaccatum</i> BUKASOV . .		72 " "
"	<i>demissum</i> f. <i>recurvo-acuminatum</i> BUKASOV		72 " "
"	<i>demissum</i> f. <i>flaxpheelcoense</i> BUKASOV . .		72 " "
"	<i>demissum</i> f. <i>xillense</i> BUKASOV		72 " "
"	<i>Fendleri</i> GRAY . . .	24	LONGLEY & CLARK, 1930.
			48 RYBIN, 1930a.
Section?			
<i>Solanum caldasii glabrescens</i>			
	DUNAL	12	LONGLEY & CLARK, 1930.
"	<i>capsicastrum</i> ¹⁾ . . .	12	HUSKINS & LA COUR, 1930.
"	<i>cardiophyllum</i> f.		
"	<i>coyoacanum</i> BUKASOV	18 ¹⁾	LONGLEY & CLARK, 1930.
"	<i>lycopersicum</i>		24 KRENKE, 1930.
			48 ²⁾ KOSTOFF, 1930b.
"	<i>polyadimum</i> GREENM.	12	LONGLEY & CLARK, 1930.
"	<i>tuberosum</i> L.		
(commercial American varieties):			
	Adirondack	24	LONGLEY & CLARK, 1930.
	American giant	24	" " " "
	Beauty of Hebron	24	" " " "
	Blue Victor	24	" " " "
	Carman No. I	24	" " " "
	Charles Downing . .	24	" " " "
	Cowhorn	24	" " " "
	Dakota red	24	" " " "
	Early Manistee . . .	24	" " " "
"	Ohio	24	" " " "
"	Rose	24	" " " "
"	Sunrise, Buist's	24	" " " "
	Garnet Chili	24	" " " "
	Green Mountain . .	24	" " " "
	Irish Cobbler	24	" " " "
	Jersey Red Skin	24	" " " "

¹⁾ The variety is described as large berried and of unknown origin.

²⁾ Irregular distribution of the chromosomes was observed.

³⁾ In the callus tissue of a scion of *Solanum lycopersicum* growing on *Nicotiana Tabacum* a tetraploid cell was found.

SOLANACEAE (continued)	n	2n	
<i>Solanum tuberosum</i> L. (commercial American varieties) (continued)			LONGLEY & CLARK, 1930.
Keeper	24		" " " "
King of the Roses	24		" " " "
Maggie Murphy	24		" " " "
McCormick	24		" " " "
McCulloch	24		" " " "
Never Rot	24		" " " "
Noroton Beauty	24		" " " "
Peachblow	24		" " " "
Peerless	24		" " " "
Peerless (Pearl)	24		" " " "
Peoples	24		" " " "
Perfect Peachblow	24		" " " "
Pride of Multnomah	24		" " " "
Prince Albert	24		" " " "
Prolific	24		" " " "
Queen of the valley	24		" " " "
Russet Rural	24		" " " "
Scotch Rose	24		" " " "
Triumph	24		" " " "
White Albino	24		" " " "
S. A. Yellow Flesh	12		" " " "
Seedling No. 43225	24		" " " "
" No. 43986	24		" " " "
<i>Solanum tuberosum</i> L. (German varieties):			HEYN, 1930.
Ackersegen	24		" "
Albora		48	" "
Alma	24		" "
Allerfrüheste Gelbe	24		" "
Beseler	24		" "
Centifolia	24		" "
Deodara	24	48	" "
Derfflinger	24		" "
Dicke Muis		48	" "
Eigenheimer	24		" "
Erdgold	24	48	" "
Erstling Duke of York	ca. 24		" "
Frühe Rose	24		" "
Früheste	ca. 24		" "
Fürstenperle		48	" "
Gelbe Rosen	ca. 24		" "
Gelkaragis		48	" "

SOLANACEAE (continued)	n	2n	
<i>Solanum tuberosum</i> L. (German varieties) (continued)			
Gisevius (Prof.)		48	HEYN, 1930.
Herbstrote		48	" "
Hutten	24	48	" "
Ideaal		48	" "
Imperator	24		" "
Industrie	24	48	" "
Johannsen (Dir.)	24		" "
Jubel	24		" "
Juli	24		" "
Kartz v. Kameke	24		" "
Königsniere ca. 24			" "
Krüger (Praes.)	24		" "
Laurus.	24		" "
Malta	24		" "
Model	24		" "
Odenwälder Blaue ca. 24			" "
Parnassia	24		" "
Pepo	24	48	" "
Pruessen	24		" "
Prozentragis		48	" "
Ragiszehn		48	" "
Rosafolia.	24		" "
Rotkaragis	24	48	" "
Schenkendorf		48	" "
Sickingen		48	" "
Silberperle	24 probably		" "
Sonnenragis	24	48	" "
Tafelperle		48	" "
Up to Date		48	" "
Vesta	24		" "
Wekaragis ca. 24			" "
Welkersdorfer	24		" "
Wohltmann (Prof.)		48	" "
<i>Solanum tuberosum</i> L. native varieties:			
<i>from Mexico</i>			
one from villa Hermosa		48	RYBIN, 1930a.
<i>from Guatemala</i>			
one from Guatemala city		48	" "
<i>from Colombia</i>			
Caiceda		48	" "
De afro.		48	" "
Lisarasa		48	" "

SOLANACEAE (continued)	n	2n		
<i>Solanum tuberosum</i> L. native varieties				
<i>from Colombia</i> (continued)				
Pana		48	RYBIN, 1930a.	
Tuquereña		48	"	"
18 unnamed collections.		48	"	"
1 unnamed collection		24	"	"
<i>from central Peru</i>				
Chusca.		24	"	"
Cota Cuya		48	"	"
Curao blanco		48	"	"
Huairuru.		48	"	"
Milagro		48	"	"
Naranjito		48	"	"
Pampino		48	"	"
Papa amarilla.		24, 48 ¹⁾	"	"
Papa blanca		24, 48 ²⁾	"	"
Pepinilla.		48	"	"
Pina		48	"	"
Puca papa		36	"	"
Runtu papa		24	"	"
Yana mata.		48	"	"
Yana papa.		36, 48 ³⁾	"	"
14 unnamed collections.		48	"	"
1 unnamed collection		24	"	"
<i>from south Peru</i>				
Alalaiso		48	"	"
Alcca-huarmi		48	"	"
Anaibamba		48	"	"
Ancacc-maquín		48	"	"
Ancacc-sillon		48	"	"
Ccoec-compadre		48	"	"
Ccohuaisure		48	"	"
Ccompetillo		48	"	"
Ccompis		48	"	"
Ccosilinll		24	"	"
Ceusi		48	"	"
Cchecche-pfuru		36	"	"
Chicchina		36	"	"
Chimo-lomo		36	"	"
Choclo		48	"	"
Ckeccorani		24	"	"

¹⁾ Two forms showed 48 while ten showed 24 chromosomes.

²⁾ Three forms showed 48 while one showed 24 chromosomes.

³⁾ Three forms showed 48 while one showed 36 chromosomes.

SOLANACEAE (continued)	n	2n	
<i>Solanum tuberosum</i> L. native varieties			
<i>from south Peru</i> (continued)			
Ckello-huaccotto		48	RYBIN, 1930n.
Cuculi-cintura		48	" "
Cuchillo ppaqui		48	" "
Garmendia		48	" "
Huairuru		48	" "
Huallata		48	" "
Huaman-uma		48	" "
Huana		48	" "
Jacco ekehuillo		36	" "
Lecke uma		48	" "
Macctacha		48	" "
Mayo-mostasillo		48	" "
Mocco sencco		48	" "
Mocketa		48	" "
Muru-chire		24	" "
Muru-ccompis		48	" "
Muru-leckecho		36	" "
Ocke-lomo		48	" "
Ocke-sale		48	" "
Ocke-suittu		48	" "
Ocke-sunchchu		48	" "
Ocke tecomera		48	" "
Ocke trompos		48	" "
Orcco malcco		36	" "
Paspa-sunchchu		48	" "
Pispinco		36	" "
Ppaspasunchchu		48	" "
Puca ccompis		48	" "
Puca licella		48	" "
Puca mama	36(48)	" "	" "
Puca ñahui		48	" "
Puca ppitiquifa		24	" "
Puca pullon		36	" "
Puca-socco-huaccotto		36	" "
Puca sunchchu		48	" "
Socco huaccotto		36	" "
Socco mama		48	" "
Suittu		36	" "
Sunchchu tacella		48	" "
Tecomima		48	" "
Trompos		48	" "
Ttata		48	" "

SOLANACEAE (continued)	n	2n	
<i>Solanum tuberosum</i> L. native varieties			
<i>from south Peru</i> (continued)			
Tumbos		48	RYBIN, 1930a.
Una-ccompis		48	„ „
Yana ama		48	„ „
Yana-ckecco		48	„ „
Yana-huana		48	„ „
Yana-lomo		48	„ „
Yana-suittu		48	„ „
Yurac-hualtca		48	„ „
Yurac-lomo		36	„ „
Yurac-mama		48	„ „
Yurac-suittu		48	„ „
Yurac-ssunchchu		48	„ „
<i>from Bolivia</i>			
Aja huiiri (Ajanhuiiri)		24	„ „
Chiar imilla.		48	„ „
Cjati	24, 36 ¹⁾		„ „
Jancko immilla		48	„ „
Kaisalla		36	„ „
Monda		48	„ „
Phitikalla		48	„ „
Phureja	24, 48 ²⁾		„ „
Phiñu		24	„ „
Surimana		36	„ „
two unnamed forms		24	„ „
one unnamed form		48	„ „
<i>from Chile</i>			
Araucana blanca		48	„ „
Caballera.		48	„ „
Cabra		48	„ „
Francesca blanca		48	„ „
Guapa		48	„ „
Guapa chilena		48	„ „
„Huacha”		48	„ „
Mahuihue		48	„ „
Mantequilla		48	„ „
„Mantequilla rosada”		48	„ „
Nalca		48	„ „
Papa america		48	„ „
„ azul		48	„ „
„ bolera		48	„ „

¹⁾ One form showed 36 and two forms showed 24 chromosomes.

²⁾ One form showed 48 and seven forms showed 24 chromosomes.

SOLANACEAE (continued)	n	2n	
<i>Solanum tuberosum</i> L. native varieties			
from Chile (continued)			
Papa cabra		48	RYBIN, 1930a.
„ cauchao		48	„ „
„ cebolla		48	„ „
„ guapa		48	„ „
„ lline		48	„ „
„ palmata.		48	„ „
„ pichufla		48	„ „
„ pirihuana		48	„ „
„ rosada		48	„ „
„ temprana		48	„ „
„ villarroela		48	„ „
Rinones		48	„ „
„Siete semanas“.		48	„ „
Villarroela		48	„ „
so-called „wild potato“		48	„ „
9 unnamed forms		48	„ „
<i>Solanum</i> hybrids:			
<i>Solanum caldasii glabrescens</i> × <i>S. chacoense</i>	12		LONGLEY & CLARK, 1930.
<i>Solanum demissum</i> ? (from KNAPPE — probably hybrid)		60	RYBIN, 1930a.
<i>Solanum demissum</i> × Majestic („Caliban“ KNAPPE)		60	„ „
<i>Solanum</i> — „Caliban“ × Mirdza		48	„ „
<i>Solanum edinense</i> BERTH. (= <i>etuberosum</i> SUTTON)		60	„ „
<i>Solanum fendleri</i> × <i>S. chacoense</i>	18 ¹⁾		LONGLEY & CLARK, 1930.
<i>Solanum Lycopersicum</i> var. Dwarf Aristocrat F ₁ (2n = 24 × 2n = 26)		74—124 + 10—0 ²⁾ 2	LESLEY & LESLEY, 1930.
<i>Solanum tuberosum</i> L. × <i>S. utile</i> KLOTZSCH (= <i>demissum</i> LINDL. var. <i>Klotzschii</i> BITT.) from VILMORIN		48	RYBIN, 1930.
<i>Datura Stramonium</i> L.		24	LEVITSKY, 1930.
<i>Nicotiana glauca</i>	9		LAWRENCE, 1930; KOSTOFF, 1930d.

¹⁾ Irregular distribution of the chromosomes was observed.

²⁾ In no case were 24 pairs of chromosomes seen at first metaphase and no first metaphase was seen with less than 7 quadrivalents. 12 quadrivalents were rarely observed.

SOLANACEAE (continued)	n	2n	
<i>Nicotiana</i> (continued)			
<i>Nicotiana attenuata</i>	12		KOSTOFF, 1930 <i>d</i> .
" <i>glauca</i>	12		" "
" <i>glutinosa</i>	12		" "
" <i>glutinosa</i> (crown gall tissue)	12	24	LEVINE, 1930.
" <i>Langsdorfii</i>		24, 48,	
" <i>Langsdorfii</i> (scion on <i>Solanum nigrum</i>)	9	96 ¹⁾	LEVINE, 1930.
" <i>Langsdorfii</i> (scion on <i>Solanum nigrum</i> selfed) plants 1002, 1003, 913			KOSTOFF, 1930 <i>d</i> .
plant 1003		18 ²⁾	KOSTOFF, 1930 <i>a</i> .
plant 962.		19 ²⁾	" "
plant 1004		25 ²⁾	" "
plant 1003 (selfed) 1003/22		21 ²⁾	" "
1003/30	9	17 ²⁾	" "
<i>Nicotiana longiflora</i>	10	18	" "
" <i>Palmeri</i>	12		KOSTOFF, 1930 <i>d</i> .
" <i>paniculata</i>	12		" "
" <i>Rusbyi</i>	12		" "
" <i>rustica</i>	24		" "
" <i>Sanderae</i>	9		LAWRENCE, 1930; KOSTOFF, 1930 <i>d</i> .
" <i>suaveolens</i>	16		KOSTOFF, 1930 <i>d</i> .
" <i>sylvestris</i>	12		" "
" <i>Tabacum</i>	24	24 ²⁾	WEBBER, 1930 <i>b</i> .
" <i>Tabacum</i> (haploid) ⁴⁾	$\frac{24}{2}$	24	KOSTOFF, 1930 <i>d</i> .
" <i>Tabacum</i> (aberrant).	72		CHRISTOFF, 1930 <i>d</i> .
" <i>Tabacum</i> normal carmine	24		KOSTOFF, 1930 <i>d</i> .
" <i>Tabacum</i> normal coral	24		CLAUSEN, R., 1930.
" <i>Tabacum</i> fluted carmine	$23 + 1_1$ ⁵⁾		" " "

¹⁾ The majority of cells had 24 (the diploid number) of chromosomes.
²⁾ Irregularities in meiosis were found.
³⁾ Certain areas in root-tips showed 48 chromosomes.
⁴⁾ One plant among 1470 was isolated because of a dwarf habit and was found to be a haploid plant.
⁵⁾ The univalent chromosome is designated an F. chromosome

SOLANACEAE (continued)	n	2n
<i>Nicotiana</i> (continued)		
<i>Nicotiana Tabacum</i> fluted coral	23 + 1 ₁ ¹⁾	CLAUSEN, R., 1930.
" <i>Tabacum</i> normal carmine-coral	24 + frag.	" " "
" <i>Tabacum</i> fluted carmine-coral	23 + 1 ₁ ¹⁾ , + frag.	" " "
" <i>Tabacum</i> carmine-coral variegated .	24 + frag.	" " "
" <i>Tabacum sanguinea</i> .	24	KOSTOFF, 1930d.
" <i>Tabacum wigand</i> . .	24	" "
" <i>Tabacum</i> var. <i>purpurca</i>	24	GOODSPEED, 1930a, b.
" <i>Tabacum</i> var. <i>purpurca</i> (X-rayed progeny)		
one haploid plant	12	GOODSPEED, 1930a.
plants showing pistillody . .	24	" "
plants showing chlorophyll deficiency	22 + 1 ₃ + 1 ₁	" "
plants showing pink flowered variants . .	24, 24 + frag.	" "
one triploid plant	ca. 36	" 1930b.
other progeny.	24 + 1 ₁ 23 + 1 ₁	" "
<i>Nicotiana Tabacum</i> var. „Maryland” Mammoth (X-rayed progeny) one tetraploid shoot	ca. 48	" "
<i>Nicotiana Tabacum</i> (progenies of tissues treated by X-ray and radium)	24, 25, 28 ²⁾ units	GOODSPEED & AVERY, 1930.
<i>Nicotiana Tabacum</i> (progeny of X-rayed plants)	23 + 1 ₁ , 24 + 1 ₁ ³⁾	GOODSPEED, 1930c.
<i>Nicotiana Tabacum</i> (scion on <i>Datura Wrightii</i> . .	24 ⁴⁾	KOSTOFF, 1930a.

¹⁾ The modified univalent chromosome is designated F-co.

²⁾ The number of units is the result of attachment, translocation, deletion, fragmentation and altered valency of the chromosomes.

³⁾ At meiosis of first generation progenies from X-rayed plants, fragmentation, non-conjunction and conditions of unpaired and additions of fusions of chromosomes occurred. The result most frequently gave monosomics.

⁴⁾ Irregularities in meiosis were found.

SOLANACEAE (continued)	n	2n	
<i>Nicotiana</i> (continued)			
<i>Nicotiana Tabacum</i> (scion on <i>Datura Wrightii</i>) .			
selfed plant G	36 ¹⁾	72	KOSTOFF, 1930a.
plant D	35-40 ¹⁾	59	" "
plant G (selfed)	24-27 ¹⁾		" "
	32, 34-36,		" "
	38, 40-42		" "
<i>Nicotiana tomentosa</i>	12		" 1930d.
<i>Nicotiana</i> hybrids: ²⁾			
<i>Nicotiana glauca</i> × <i>N. alata</i> .	$\frac{21_1}{2}$		" "
" <i>glauca</i> × <i>N. Langsdorfii</i>	$\frac{21_1}{2}$		" "
" <i>glauca</i> × <i>N. longiflora</i>	$\frac{22_1}{2}$		" "
" <i>glauca</i> × <i>N. Rusbyi</i>	12		" "
" <i>glauca</i> × <i>N. Sanderae</i>	$\frac{21_1}{2}$		" "
" <i>glauca</i> × <i>N. Tabacum</i>	$\frac{36_1-(38)_1}{2}$		" "
" <i>glauca</i> × <i>N. tomentosa</i>	$\frac{24_1}{2}$		" "
" <i>glutinosa</i> × <i>N. glauca</i>	$\frac{24_1}{2}$		" "
" <i>Langsdorfii</i> × <i>N. alata</i>	9		" "
" <i>Langsdorfii</i> × <i>N. glauca</i>	$\frac{21_1}{2}$		" "
" <i>Langsdorfii</i> × <i>N. Sanderae</i>	9		" "
" <i>paniculata</i> × <i>N. glauca</i>	$\frac{24_1}{2}$		" "

¹⁾ Irregularities in meiosis were found.

²⁾ Where a fractional number with denominator = 2 is used from KOSTOFF, 1930d the numerator used is the sum of the chromosomes in late heterotypic metaphase. This plan was adopted since the valency of numbers in early heterotypic metaphase was not designated.

SOLANACEAE (continued)	n	2n
<i>Nicotiana</i> hybrids (continued)		
<i>Nicotiana paniculata</i> × <i>N. Langsdorffii</i>	$\frac{21_1}{2}$	KOSTOFF, 1930d.
" <i>paniculata</i> × <i>N. rustica</i>	$\frac{36_1}{2}$	" "
" <i>paniculata</i> × <i>N. Tabacum</i>	$\frac{36_1}{2}$	" "
" <i>Rusbyi</i> × <i>N. glauca</i>	12	" "
" <i>Rusbyi</i> × <i>N. sylvestris</i>	$\frac{24_1}{2}$	" "
	$\frac{24_1}{2}$	24 BRIEGER, 1930.
" <i>Rusbyi</i> × <i>N. tomentosa</i>	12	KOSTOFF, 1930d.
	12	24 BRIEGER, 1930.
" <i>rustica</i> × <i>N. alata</i>	$\frac{33_1}{2}$	KOSTOFF, 1930d.
" <i>rustica</i> × <i>N. attenuata</i>	$\frac{36_1}{2}$	" "
" <i>rustica</i> × <i>N. Langsdorffii</i>	$\frac{33_1}{2}$	" "
" <i>rustica</i> × <i>N. Palmeri</i>	$\frac{36_1}{2}$	" "
" <i>rustica</i> × <i>N. paniculata</i>	$\frac{36_1}{2}$	" "
" <i>rustica</i> × <i>N. Sanderae</i>	$\frac{33_1}{2}$	" "
" <i>rustica</i> × <i>N. Tabacum</i>	24	" "
" <i>sylvestris</i> × <i>N. Rusbyi</i>	$\frac{24_1}{2}$	" "
" <i>Tabacum</i> × <i>N. alata</i>	$\frac{33_1}{2}$	" "
" <i>Tabacum</i> × <i>N. glauca</i>	$\frac{36_1-(38_1)}{2}$	" "

SOLANACEAE (continued)	n	2n	
<i>Nicotiana</i> hybrids (continued)			
<i>Nicotiana Tabacum</i> × <i>N. Rusbyi</i>	$\frac{36_1}{2}$		KOSTOFF, 1930d.
	$12+12_1$	36	BRIEGER, 1930.
	$\frac{\quad}{2}$		
„ <i>Tabacum</i> (n = 72)			
× <i>N. rustica</i> . . .	various		KOSTOFF, 1930d.
„ <i>Tabacum</i> × <i>N. syl-</i>			
<i>vestris</i>	$12+12_1$	36	BRIEGER, 1930.
	$\frac{\quad}{2}$		
	$\frac{36_1}{2}$		KOSTOFF, 1930d.
		36, 72 ¹⁾	RYBIN, 1930b.
„ <i>Tabacum</i> × <i>N. syl-</i>			
<i>vestris</i> F ₂		48	RYBIN, given by EGHIS, 1930.
„ <i>Tabacum</i> × <i>N. syl-</i>			
<i>vestris</i> (n426/16c)		60	RYBIN, given by EGHIS, 1930.
„ <i>Tabacum</i> × <i>N. syl-</i>			
<i>vestris</i> (n426/36c)		48	RYBIN, given by EGHIS, 1930.
„ <i>Tabacum sanguinea</i>			
× <i>N. Sanderae</i>	$\frac{33_1}{2}$		KOSTOFF, 1930d.
„ <i>Tabacum wigand</i> ×			
<i>N. Sanderae</i>	$\frac{33_1}{2}$		„ „
„ <i>Tabacum var. purpu-</i>			
<i>rca</i> × (<i>N. Tabacum</i>			
× <i>N. sylvestris</i> F ₁			
n = 12) „sesquidi-			
ploid hybrid”	$\frac{24+12_1}{2}$		
	$33+21+9_1$	60	WEBBER, 1930a.
	$\frac{\quad}{2}$		
„ — „sesquidiploid hy-			
brid” × <i>N. Tabacum</i>			
.	$\frac{2-4+1_1-9_1}{2}$		„ „
„ — „sesquidiploid hy-			
brid” × <i>N. sylves-</i>			
<tris .="" .<="" td=""> <td>$13-7_3+11-5+\frac{12_1}{2}$</td> <td></td> <td>„ „</td> </tris>	$13-7_3+11-5+\frac{12_1}{2}$		„ „

¹⁾ The hybrid with 2n = 36 generally showed an extremely irregular meiosis while the tetraploid form with 2n = 72 showed an almost regular meiosis. 28 to 36 units were seen at metaphase of the latter due to the presence of polyvalent chromosomes.

SOLANACEAE (continued)		n	2n	
<i>Nicotiana</i> hybrids (continued)				
<i>Nicotiana</i> — „sesquidiploid hybrid” selfed progenies	$24-29 + \frac{8_1-1_1}{2}$			WEBBER, 1930a.
„ <i>Tabacum</i> × <i>N. tomentosa</i>	$\frac{36_1}{2}$			KOSTOFF, 1930d.
	$12 + \frac{12_1}{2}$	36		BRIEGER, 1930.
(„ <i>Tabacum</i> × <i>N. Rusbnyi</i>) × <i>N. sylvestris</i>	24	48		„ „
„ <i>tomentosa</i> × <i>N. glauca</i>	$\frac{24_1}{2}$			KOSTOFF, 1930d.
„ <i>tomentosa</i> × <i>N. Rusbnyi</i>	12			„ „
„ <i>tomentosa</i> × <i>N. sylvestris</i>	$\frac{24_1}{2}$			„ „
	$\frac{24_1}{2}$	24		BRIEGER, 1930.
„ <i>glauca</i> × <i>Petunia violacea</i>	$\frac{36_1^1}{3}$			KOSTOFF, 1930d.
„ <i>rustica brasilia</i> × <i>Petunia violacea</i> . .		48		„ „
„ <i>rustica humilis</i> × <i>Petunia violacea</i> . .		48		„ „
„ <i>rustica texana</i> × <i>Petunia violacea</i> . . .		48		„ „
(„ <i>rustica brasilia</i> × <i>N. rustica texana</i>) × <i>Petunia violacea</i> .		48		„ „
(„ <i>rustica humilis</i> × <i>N. rustica brasilia</i>) × <i>Petunia violacea</i> . .		48		„ „
(„ <i>rustica texana</i> × <i>N. rustica humilis</i>) × <i>Petunia violacea</i> . .	48			„ „

1) Triploid endosperm was developed when fertilization occurred but only diploid endosperm when the pollen tube induced parthenocarpic development of the endosperm.

SOLANACEAE (continued)	n	2n
<i>Nicotiana</i> hybrids (continued)		
<i>Nicotiana Tabacum</i> (2n = 72)		
× <i>Petunia violacea</i>	40 ¹⁾	KOSTOFF, 1930d.
<i>Petunia violacea</i> (diploid race).	7	LAWRENCE, 1930; RIEDE, 1930.
„	7	14 KOSTOFF, 1930c, d.
„ <i>violacea</i> (tetraploid race)	14	LAWRENCE, 1930; RIEDE, 1930.
„	14	28 KOSTOFF, 1930c.
„ <i>violacea</i> „Sutton's New Blue Bedding”		14 MATSUDA, 1930.
„ <i>violacea</i> „Sutton's Leviathan”		28 „ „
„ <i>violacea</i> (scion on <i>Solanum nigrum</i>)		14 ²⁾ KOSTOFF, 1930a.
„ <i>violacea</i> (diploid × tetraploid)	7-21	RIEDE, 1930.
	units	
SCROPHULARIACEAE		
<i>Verbascum phoeniceum</i>	16	LAWRENCE, 1930.
<i>Linaria vulgaris</i>	6	„ „
<i>Antirrhinum hispanicum</i>	8	„ „
„ <i>molle</i>	8	„ „
<i>Torenia asiatica</i> L.	8	16 SIMON & LEWIG, 1930.
„ <i>Baillonii</i>	8	16 „ „ „ „
„ <i>edentula</i>	9	18 „ „ „ „
„ <i>Fournieri</i> (type-violet)	9	18 „ „ „ „
„ <i>Fournieri</i> var. <i>alba</i>	9	18 „ „ „ „
„ <i>Fournieri</i> var. <i>alba</i> mut. <i>compacta</i>	9	18 „ „ „ „
„ <i>Fournieri</i> var. <i>alba</i> mut. <i>gracilis</i>	9	„ „ „ „
„ <i>Fournieri</i> (type-violet) × <i>T. Fournieri</i> var. <i>alba</i> mut. <i>compacta</i>	9	18 „ „ „ „
<i>Alectorolophus hirsutus</i>	7	14 WILCKE, 1930.
<i>Lathraea squamaria</i> L.	16	RUDENKO, 1930.
PLANTAGINALES		
PLANTAGINACEAE		
<i>Plantago lanceolata</i> L.	12	NAKAJIMA, 1930.
„ <i>major</i> L.	12	„ „

¹⁾ Gametes with various chromosome numbers were found. Occasionally those with 3, 4 and 6 and with 80 (dyads) or 160 (nomads) chromosomes were found.

²⁾ Irregularities in meiosis were found.

RUBIALES	n	2n	
CAPRIFOLIACEAE			
SAMBUCUS ¹⁾			
Section <i>Eusambucus</i>			
<i>Sambucus canadensis</i>	18		SAX & KRIBS, 1930.
„ <i>nigra</i>	18		„ „ „ „
Section <i>Botryosambucus</i>			
<i>Sambucus racemosa</i>	18	36	„ „ „ „
VIBURNUM ¹⁾			
Section <i>Lantana</i>			
<i>Viburnum Lantana</i>	9		„ „ „ „
Section <i>Pseudotinus</i>			
<i>Viburnum alnifolium</i>	9		„ „ „ „
Section <i>Pseudopulus</i>			
<i>Viburnum tomentosum</i>	9		„ „ „ „
Section <i>Lentago</i>			
<i>Viburnum Lentago</i>	9		„ „ „ „
„ <i>prunifolium</i>	9		„ „ „ „
Section <i>Odontotinus</i>			
<i>Viburnum acerifolium</i>	9		„ „ „ „
„ <i>huphense</i>	9		„ „ „ „
„ <i>lobophyllum</i>	9		„ „ „ „
Section <i>Opulus</i>			
<i>Viburnum opulus</i>	9	18	„ „ „ „
„ <i>Sargenti</i>	9		„ „ „ „
„ <i>trilobum</i>	9		„ „ „ „
<i>Symphoricarpus orbiculatus</i>		18	„ „ „ „
<i>Abelia Engleriana</i>	16		„ „ „ „
„ <i>Schumannii</i>		ca. 32	„ „ „ „
<i>Kolkwitzia amabilis</i>	16	32	„ „ „ „
LONICERA ¹⁾			
Subgenus I, <i>Chamaecerasus</i>			
Section <i>Isoxylosteum</i>			
<i>Lonicera Thibetica</i>	9-18		„ „ „ „
Section <i>Isika</i>			
<i>Lonicera Altmannii</i>	9		„ „ „ „
„ <i>coerulea</i>	9-18		„ „ „ „
„ <i>Ferdinandi</i>	9		„ „ „ „
„ <i>fragrantissima</i>	9		„ „ „ „
„ <i>microphylla</i>	18		„ „ „ „
„ <i>orientalis</i>	9		„ „ „ „
„ <i>tenuipes</i>	18		„ „ „ „
Section <i>Coeloxylosteum</i>			
<i>Lonicera chrysantha</i>	9	18	„ „ „ „

¹⁾ Classification is according to REHDER (1927).

CAPRIFOLIACEAE (continued)	n	2n	
LONICERA (continued)			
Section <i>Coeloxylum</i>			
(continued)			
<i>Lonicera demissa</i>	9		SAX & KRIBS, 1930.
„ <i>Korolkowii</i>	9		„ „ „ „
„ <i>Maackii</i>	9		„ „ „ „
„ <i>prostrata</i>	9		„ „ „ „
„ <i>quinquelocularis</i>	9		„ „ „ „
„ <i>tatarica</i>	9		„ „ „ „
Section <i>Nintooa</i> .			
<i>Lonicera alseuosmoides</i>	18		„ „ „ „
„ <i>Henryi</i>	27	54	„ „ „ „
„ <i>japonica</i>	9		„ „ „ „
Subgenus II. <i>Perichymentum</i>			
<i>Lonicera dioica</i>	9		„ „ „ „
„ <i>prolifera</i>	9		„ „ „ „
DIERVILLA ¹⁾			
Section <i>Weigela</i>			
<i>Dicrvillea florida</i>	18		„ „ „ „
„ <i>hortensis</i>	18	36	„ „ „ „
„ <i>praecox</i>	18		„ „ „ „
Section <i>Eudiervilla</i>			
<i>Dicrvillea rivularis</i>	18		„ „ „ „
„ <i>sessilifolia</i>	18		„ „ „ „
CUCURBITALES			
CUCURBITACEAE			
<i>Melothria punctata</i>		24	McKAY, 1930.
<i>Sicyos angulata</i>		24	„ „
<i>Momordica charantia</i>		22	„ „
<i>Ecballium elaterium</i>		24	„ „
<i>Luffa acutangula</i>		26	„ „
„ <i>cylindrica</i> var. <i>Luffa</i>			
<i>gourd</i>	11		PASSMORE, 1930.
„ <i>Marylandica</i>		26	McKAY, 1930.
<i>Bryonia dioica</i>	10		LINDSAY, 1930.
<i>Citrullus vulgaris</i>	11		McKAY, 1930.
„ <i>vulgaris</i> var. <i>Kleckley</i>			
<i>Sweets watermelon</i>	11	22	PASSMORE, 1930.
„ <i>vulgaris</i> var. <i>Radio</i>	11	22	WHITAKER, 1930.
„ <i>vulgaris</i> var. <i>Tom</i>			
<i>Watson</i>	11	22	„ „
<i>Cucumis anguria</i> L. (?)		24	KOZHUKHOW, 1930.

¹⁾ Classification is according to REHDER (1927).

CUCURBITACEAE (continued)	n	2n	
<i>Cucumis</i> (continued)			
<i>Cucumis angurica</i> var. <i>West India Gherkin</i>	11	22	WHITAKER, 1930.
„ <i>dipsaceus</i> EHRENB.		24	KOZHUKHOW, 1930.
„ <i>dipsaceus</i>		24	McKAY, 1930.
„ <i>erinaceus</i> (?)		24	KOZHUKHOW, 1930.
„ <i>flexuosus</i> (?)		24	„ „
„ <i>grossularia</i>		24	„ „
„ <i>lyratus</i> ZIM.		24	„ „
„ <i>melo</i>	12		McKAY, 1930.
„ <i>melo</i> var. <i>chinensis</i> PANG.		24	KOZHUKHOW, 1930.
„ <i>melo</i> var. <i>flexuosus</i> NAUD. ¹⁾		24	„ „
„ <i>melo</i> var. <i>Lake Champlain</i>	12	24	WHITAKER, 1930.
„ <i>melo</i> var. <i>microcarpus</i> PANG. ¹⁾		24	KOZHUKHOW, 1930.
„ <i>melo</i> var. <i>Rocky Ford cantaloupe</i>	12		PASSMORE, 1930.
„ <i>melo</i> var. <i>vulgaris agrestis</i> NAUD. ¹⁾		24	KOZHUKHOW, 1930.
„ <i>melo</i> var. <i>vulgaris cultus</i> PANG. ¹⁾		24	„ „
„ <i>metuliferus</i> F. MEYER		24	„ „
„ <i>metuliferus</i>		24	McKAY, 1930.
„ <i>myriocarpus</i> NAUD.		24	KOZHUKHOW, 1930.
„ <i>myriocarpus</i>		24	McKAY, 1930.
„ <i>odoratissimus</i> (?)		24	KOZHUKHOW, 1930.
„ <i>prophetarum</i> L.		24	„ „
„ <i>sativus</i> L.		14	„ „
„ <i>sativus</i> var. <i>Everbearing</i>	7		WHITAKER, 1930.
„ <i>sativus</i> var. <i>Henderson</i>	7		„ „
„ <i>sativus</i> var. <i>Short Green Gherkin</i>	7	14	„ „
„ <i>sativus</i> var. <i>usambarensis</i> ZIM.		24	KOZHUKHOW, 1930.
„ <i>sativus</i> var. <i>White Spine Cucumber</i>		14 ²⁾	PASSMORE, 1930.
<i>Bryonopsis laciniosa</i>		24	McKAY, 1930.
<i>Benincasa hispida</i>		24	„ „

¹⁾ Several forms of this variety were examined.

²⁾ Root-tip cells showed 14 chromosomes. Certain cells in the periblem showed 28. The chromosome count could not be ascertained definitely in the pollen mother-cells.

CUCURBITACEAE (continued)		n	2n	
<i>Lagenaria vulgaris</i>			24	McKAY, 1930.
" <i>vulgaris</i> var. <i>African</i>				
<i>Pipe</i>		11	22	WHITAKER, 1930.
<i>Cucurbita ficifolia</i>			42	McKAY, 1930.
" <i>foetidissima</i>			42	" "
" <i>maxima</i> DUCHESNE (Hubbard Squash)		20	40	CASTETTER, 1930.
" <i>maxima</i> var. <i>Mammoth Chili</i>			40	WHITAKER, 1930.
" <i>maxima</i> var. <i>Warted Hubbard Squash</i>		20		PASSMORE, 1930.
" <i>moschata</i> DUCHESNE (line # 5) var. <i>Large Cheese</i>		24	48	CASTETTER, 1930.
" <i>moschata</i> var. <i>Calhoun</i>			48	WHITAKER, 1930.
" <i>palmata</i>			42	McKAY, 1930.
" <i>pepo</i> var. <i>English vegetable marrow</i>		20		PASSMORE, 1930.
" <i>pepo</i> var. <i>Jersey White Bush Squash</i>		20		" "
" <i>pepo</i> var. <i>Winter Luxury</i>		20	40	WHITAKER, 1930.
" <i>pepo</i> L. (Connecticut Field line #175)		20	40	CASTETTER, 1930.
<i>Coccinia hirtella</i>			24	McKAY, 1930.
<i>Cyclanthra pedata</i>			32	" "

CAMPANULATAE

CAMPANULACEAE

<i>Campanula persicifolia</i>		8		GAIRDNER & DARLINGTON, 1930.
" <i>persicifolia</i> (white double variety)		8 ¹⁾		" " " "
" <i>persicifolia</i> (form from Gmunden, Austria)		8 ¹⁾	16	" " " "
" <i>persicifolia</i> (Murols)			16	" " " "
" <i>persicifolia</i> (white double variety × seedling from Murols, Prey de Pome)		8 ²⁾		" " " "

¹⁾ This type had 6 rings of 2, and one group of 4 chromosomes instead of the 8 bivalents at metaphase.

²⁾ Of 4 plants of this cross, 1 had 8 bivalents and 3 had 6 bivalents and the ring of 4 chromosomes.

COMPOSITAE	n	2n	
CREPIS			
<i>Crepis aculeata</i> (D.C.) Boiss. . .		8	HOLLINGSHEAD & BABCOCK, 1930.
„ <i>alpina</i> L.		10	„ „ „ „
„ <i>alpina</i> var. <i>syriaca</i> BORNH.		10, 11, 12, 13	„ „ „ „
„ <i>amplexifolia</i> (GODR.) WILLK.		8	„ „ „ „
„ <i>aspera</i> L.		8	„ „ „ „
„ <i>asturica</i> Lacaita		10	„ „ „ „
„ <i>aurea</i> (L.) CASS. . . .		10	„ „ „ „
„ <i>aurea</i>		10	AVERY, 1930.
„ <i>biennis</i> L.		39, 41	HOLLINGSHEAD & BABCOCK, 1930.
„ <i>blattaroides</i> (L.) VILL. . .		8	„ „ „ „
„ <i>bulbosa</i> (L.) TAUSCH. . .		18	„ „ „ „
„ <i>bungei</i> LEDEB.		8, 16	„ „ „ „
„ <i>burejensis</i> F. SCHMIDT . .		8	„ „ „ „
„ <i>bureniana</i> BOISS.		8	„ „ „ „
„ <i>bursifolia</i> L.		8	„ „ „ „
„ <i>capillaris</i> (L.) WALLR. . .		6	„ „ „ „
„ <i>capillaris</i>		6	AVERY, 1930.
	$3, 2+2_1$ $\frac{2}{2}$		
	$1+4_1$ $\frac{2}{2}$	6	HOLLINGSHEAD, 1930a, b.
„ <i>capillaris</i> (haploid) ¹⁾ . .	3^2 $\frac{2}{2}$	3	HOLLINGSHEAD, 1930b.
„ <i>chondrilloides</i> JACQ. . . .		8	HOLLINGSHEAD & BABCOCK, 1930.
„ <i>chrysantha</i> FROEL.		8	„ „ „ „
„ <i>ciliata</i> C. KOCH.		40, 42(?)	„ „ „ „
„ <i>conyzaeifolia</i> (GOUAN) D.T.		8	„ „ „ „
„ <i>dioscoridis</i> L.		8	„ „ „ „
„ <i>foetida</i> L.		10	„ „ „ „
„ <i>gymnopus</i> KOIDZ.		8	„ „ „ „
„ <i>hackeli</i> LANGE		16	„ „ „ „

¹⁾ Five haploid *Crepis capillaris* plants were found among *C. capillaris* × *C. tectorum* F₁ hybrids and one came from a *C. capillaris* × *C. setosa* cross. Parts of some root-tips in each haploid plant were diploid.

²⁾ Meiosis was very irregular, univalents segregating at random or rarely dividing and the daughter halves going to different poles.

COMPOSITAE (continued)	n	2n	
CREPIS (continued)			
<i>Crepis hierosolymitana</i> BOISS. . .		12	HOLLINGSHEAD & BABCOCK, 1930.
„ <i>hookeriana</i> BALL.		8	„ „ „ „
„ <i>incana</i> SIBTH. et SM. . .		16	„ „ „ „
„ <i>incarnata</i> TAUSCH. . . .		8	„ „ „ „
„ <i>japonica</i> (L.) BENTH. . .		16	„ „ „ „
„ <i>lacera</i> TENORE		8	„ „ „ „
„ <i>leontodontoides</i> ALL. . . .		10	„ „ „ „
„ <i>leontodontoides</i>		10	AVERY, 1930.
„ <i>lybica</i> PAMP.		8	HOLLINGSHEAD & BABCOCK, 1930.
„ <i>lyrata</i> FROEL.		12	„ „ „ „
„ <i>marschalli</i> C. A. MEY. . .		8	„ „ „ „
„ <i>marschalli</i>		8	AVERY, 1930.
„ <i>mollis</i> (JACQ.) ASCH. . . .		12	HOLLINGSHEAD & BABCOCK, 1930.
„ <i>montana</i> URV.		12	„ „ „ „
„ <i>multicaulis</i> LEDFB.		10	„ „ „ „
„ <i>myriocephala</i> COSS. et D. R.		8	„ „ „ „
„ <i>nana</i> RICHARDS		14	„ „ „ „
„ <i>neglecta</i> L.		8	„ „ „ „
„ <i>nicaensis</i> BALB.		8	„ „ „ „
„ <i>palaestina</i> (BOISS.) BORNM.		8	„ „ „ „
„ <i>paludosa</i> (L.) MOENCH. . .		12	„ „ „ „
„ <i>pannonica</i> (JACQ.) C. KOCH.		8	„ „ „ „
„ <i>parviflora</i> DESF.		8	„ „ „ „
„ <i>parviflora</i>		8	AVERY, 1930.
„ <i>polytricha</i> TURCZ.	16(?)		BABCOCK & NAVASHIN, 1930.
„ <i>pontana</i> (L.) D. T.		10	HOLLINGSHEAD & BABCOCK, 1930.
„ <i>praemorsa</i> (L.) TAUSCH. . .		8	„ „ „ „
„ <i>pulchra</i> (L.).		8	„ „ „ „
„ <i>rcuteriana</i> BOISS.		8	„ „ „ „
„ <i>rubra</i> L.		10	„ „ „ „
„ <i>senecioides</i> DELILE.		8	„ „ „ „
„ <i>setosa</i> HALL. f.		8	„ „ „ „
„ <i>sibirica</i> L.		10	„ „ „ „
„ <i>taraxacifolia</i> THUILE. . . .		8	„ „ „ „
„ <i>tectorum</i> L.		8	„ „ „ „
„ <i>tectorum</i>		8	AVERY, 1930.

COMPOSITAE (continued)	n	2n	
CREPIS (American species):			
<i>Crepis tectorum</i>	4	8	HOLLINGSHEAD, 1930a.
„ <i>tectorum</i> „chimera” (tri- ploid progeny) ¹⁾		8, 9	NAVASHIN, 1930.
„ <i>tectorum</i> seedling		7+, 8+ ²⁾	„ „
„ <i>tenuifolia</i> WILLD.		15	HOLLINGSHEAD & BABCOCK, 1930.
„ <i>tingitana</i> SALZ.		10	„ „ „ „
„ <i>tingitana</i>		10	AVERY, 1930.
„ <i>vesicaria</i> L.		8	HOLLINGSHEAD & BABCOCK, 1930.
„ <i>acuminata</i> NUTT.		33, 44, 55(?)	„ „ „ „
„ <i>andersoni</i> GRAY		22	„ „ „ „
„ <i>barbigera</i> LEIB.		44, 88(?)	„ „ „ „
„ <i>elegans</i> HOOK.		14	„ „ „ „
„ <i>glauca</i> (NUTT.) T. and G. „ <i>gracilis</i> (EAT.) RYDB.		22 22, 55(?)	„ „ „ „
„ <i>monticola</i> COVILLE		55(?)	„ „ „ „
„ <i>nana</i>		14	„ „ „ „
„ <i>occidentalis</i> NUTT.		22, 44	„ „ „ „
„ <i>runcinata</i> (JAMES) T. and G.		22	„ „ „ „
„ <i>scopulorum</i> COV.		44(?)	„ „ „ „
Crepis hybrids:			
<i>Crepis capillaris</i> × <i>C. leontodontooides</i>	$\frac{8^3}{2}$	8	AVERY, 1930.
„ <i>capillaris</i> × <i>C. tectorum</i> F ₁	$3+1_1, 2+\frac{3_1}{2}$	7	HOLLINGSHEAD, 1930a.
	$\frac{1+5_1, 7_1}{2}$		
„ <i>capillaris</i> × <i>C. tectorum</i> F ₁ (triploid hybrids)	$3+\frac{4_1}{2}$ ⁴⁾	10	„ „
„ <i>capillaris</i> × <i>C. tectorum</i>			

¹⁾ This plant consisted of three shoots, two of which were triple B trisomic (2n = 9) and the third was normal diploid (2n = 8).

²⁾ This plant showed varying numbers of chromosomes in different cells of the root-tip and along with the normal chromosomes were from 1 to 4 atypical chromatin rings or discs.

³⁾ Only rarely was there any association of chromosomes as pairs.

⁴⁾ Rarely 2 bivalents and 6 univalents were found and rarely a trivalent, 2 bivalents and 3 univalents.

COMPOSITAE (continued)	n	2n	
<i>Crepis</i> hybrids (continued)			
(progeny of triploid hybrids)7, 8, 9, 10,		
	11		HOLLINGSHEAD, 1930a.
<i>Crepis capillaris</i> × <i>C. tectorum</i>			
(progeny of triploid hybrids) amphidiploid .7, 6+2 ₁ ,		14	" "
	$\frac{2}{2}$		
	$5+4\frac{1}{2}, 4+\frac{6_1}{2}$		
" <i>leontodontoides</i> × <i>C. aurea</i>	5, 4+2 ₁	10	AVERY, 1930.
	$\frac{2}{2}$		
" <i>leontodontoides</i> × <i>C. Marschalli</i>	9 ¹⁾	9	" "
	$\frac{2}{2}$		
" <i>leontodontoides</i> × <i>C. parviflora</i>	9 ²⁾	9	" "
	$\frac{2}{2}$		
" <i>leontodontoides</i> × <i>C. tectorum</i>	9 ²⁾	9	" "
	$\frac{2}{2}$		
<i>Rodigia commutata</i> SPR.		10	HOLLINGSHEAD & BABCOCK, 1930.
<i>Ixeris graminea</i> NAKAI		16	" " " "
<i>Pterotheca sancta</i> (L.) K. KOCH.		10	" " " "
<i>Dahlia coccinea</i>	16		LAWRENCE, 1930.
" <i>coronata</i>	16		" "
" <i>variabilis</i>	32		" "
<i>Chrysanthemum Decaisneanum</i>		36	SHIMOTOMAI, 1930c.
" <i>indicum</i>		18	" "
" <i>Decaisneanum</i>			
× <i>C. indicum</i>	27	54	" "
<i>Bupthalmum salicifolium</i> L.	10		RODOLICO, 1930.

MONOCOTYLEDONEAE

GRAMINEAE

Section M a y d e a e

<i>Zea Mays</i>		10	BEADLE, 1930; BURNHAM, 1930.
" " (semi-sterile)	$8+14$		BURNHAM, 1930.
	$\frac{2}{2}$		

¹⁾ Most frequently there was no pairing of chromosomes but the complete range of associations from 9 univalents to 4 bivalents plus one univalent was found.

²⁾ All degrees of association from 1 + 7₁, to 4 + 1₁ were found.

GRAMINEAE (continued)	n	2n	
Section M a y d e a e (continued)			
<i>Zea Mays</i> (75 + % sterile) . . .	$6 + \frac{24}{2}$		BURNHAM, 1930.
„ „ (2 plants of intermediate sterility) . . .	$8 + \frac{15}{2}$		„ „
„ „ (asynaptic plants) . . .	$\frac{20_1}{2}$		BEADLE, 1930.
„ „ (asynaptic × normal) progenies		20-36	„ „
Section A n d r o p o g o n e a e			
<i>Andropogon halepensis</i>	10		KATTERMANN, 1930
„ <i>halepensis</i> BROU.	20	40	NAKAJIMA, 1930.
„ <i>sorghum</i> BROU. var. <i>cernuus</i> KOERN.	10	20	„ „
„ <i>sorghum</i> BROU. var. <i>sudanensis</i> PIPER	10	20	„ „
„ <i>sorghum</i> BROU. var. <i>vulgaris</i> HACK.	10	20	„ „
<i>Saccharum</i> -- Fijian Native Cane	50-60		BREMER, 1930.
<i>Saccharum</i> -- Fiji Karawai	50-60		„ „
Section P a n i c e a e			
<i>Setaria italica</i> BEAUV.		18	NAKAJIMA, 1930.
Section O r y z e a e			
<i>Oryza sativa</i> (Japonica type)			
var. Nakate-Shinriki	12	24	KATO, S., 1930.
„ Okute-Shinriki	12	24	„ „ „
„ Salpei	12	24	„ „ „
„ scented rice.	12	24	„ „ „
<i>Oryza sativa</i> (Indica type)			
var. Fung-hsueh-nuo.	12	24	„ „ „
„ Hunan-sien	12	24	„ „ „
„ Tan-ko-fo-ira	12	24	„ „ „
<i>Oryza sativa</i> (F ₁ hybrids between different types) ¹⁾			
Aikoku × Tsao-sien-tao.	12	24	„ „ „
Fung-hsueh-nuo × Nakate			
Shinriki	12	24	„ „ „
Hinode × Basmati	12	24	„ „ „

¹⁾ In these hybrids, there were a great many abnormalities in the development of the pollen after tetrad formation but „the number and shape of the chromosomes was almost the same as in the hybrids within the same type”.

GRAMINEAE (continued)	n	2n	
Section <i>Oryzaceae</i> (continued)			
Hinode × Fung-tsu-yu-keng-tao	12	24	KATO, S., 1930.
Hinode × Hatadavi	12	24	" " "
Hinomoto × Huo-pe-keng-tao	12	24	" " "
Hinomoto × Pu-chiang-sang-pe-li-ken-tao	12	24	" " "
Hunan-sien × Nakate Shinkiriki	12	24	" " "
Kameyi × Black Seenaddy	12	24	" " "
Sei-yu × Fung-hsüeh-nuo	12	24	" " "
<i>Oryza sativa</i> (F ₁ hybrids within the same types) ¹⁾	12	24	" " "
<i>Oryza sativa</i> L. var. Kochivittu (from India)	12		SELIM, 1930.
" <i>sativa</i> L. var. Nabatat I (from Egypt) probably introduced from Persia.	12		" "
" <i>sativa</i> L. var. New Japanese 6 (from Egypt) (earlier from Japan under name Ashigara Shinkiriki)	12		" "
" <i>sativa</i> L. var. Temas (from Java)	12		" "
" <i>sativa</i> L. (an unnamed race of Regents Park from Egypt)	12		" "
Section <i>Phalarideae</i>			
<i>Phalaris arundinacea</i> L.		28	NAKAJIMA, 1930.
" <i>canariensis</i>	6 ²⁾		KATTERMANN, 1930.
Section <i>Agrosteae</i>			
Subtribe <i>Pleinae</i>			
<i>Alopecurus fulvus</i>	7		" "
" <i>geniculatus</i>	14		" "
" <i>myosuroides</i>	7		" "
" <i>pratensis</i>	14		" "
<i>Phleum alpinum</i> (Sweden)		14	GREGOR & SANSOME, 1930.
" <i>alpinum</i> (Scotland)		28	" " " "

¹⁾ In these hybrids, conditions of chromosome number shape and behavior were essentially the same as in the varieties.

²⁾ One pair of chromosomes always remained attached end-to-end on the equatorial plate.

GRAMINEAE (continued)	n	2n	
Section <i>Agrostaceae</i> (continued)			
<i>Phleum Michclii</i>	7 ¹⁾		KATTERMANN, 1930.
„ <i>pratense</i>	21		„ „
„ <i>pratense</i> (Group 1) . .		42	GREGOR & SANSOME, 1930.
„ <i>pratense</i> (Group 2) . .		14	„ „ „ „
„ <i>pratense</i> (2n = 14) × <i>Phleum alpinum</i> (2n = 28) F ₁		21	„ „ „ „
„ <i>pratense</i> (2n = 14) × <i>Phleum alpinum</i> (2n = 28) F ₂		42	„ „ „ „
„ <i>alpinum</i> (2n = 28) × [<i>Phleum pratense</i> (2n = 14) <i>Phleum alpi-</i> <i>num</i> (2n = 28) F ₁].		26, 27, 30	„ „ „ „
„ <i>pratense</i> (2n = 42) × <i>Phleum alpinum</i> (2n = 28)		35	„ „ „ „
Section <i>Aveneae</i>			
<i>Avena abyssinica</i> HOCHST. . .		28	NIKOLAËWA, given by IVANOV, 1930.
„ <i>abyssinica</i> HOCHST. var. <i>glaberrima</i> CHIOVENDE	14	28	EMME, 1930b.
„ <i>barbata</i> POTT. var. <i>ty-</i> <i>pica</i> MALZ.	14	28	„ „
„ <i>Brauni</i> KÖRN.		28	NIKOLAËWA, given by IVANOV, 1930.
„ <i>brevis</i> ROTH.		14	EMME, 1930b.
„ <i>Bruhnsiana</i> GRUNER . .		14	„ 1930a, b.
„ <i>clauda</i> DUR.		14	„ 1930a.
„ <i>fatua</i> L.	21	42	„ 1930b.
„ <i>fatua</i> L. ssp. <i>fatua</i> L. THELL.		42	EMME, 1930a.
„ <i>fatua</i> L. ssp. <i>sativa</i> L. THELL.		42	„ „
„ <i>fatua</i> L. ssp. <i>sativa</i> prol. <i>chinensis</i> (FISCH.) . .		42	„ „
„ <i>flavescens</i> L.	14	28	NAKAJIMA, 1930.
„ <i>Hildebrandti</i> KÖRN. . .		28	NIKOLAËWA, given by IVANOV, 1930.
„ <i>hirtula</i> LAG.		14	EMME, 1930b.
„ <i>Ludoviciana</i> DUR. . . .	21	42	„ „

¹⁾ The 7 chromosome pairs were found as 7 rings or as 5 rings + 2 chromosomes attached end-to-end.

GRAMINEAE (continued)	n	2n	
Section <i>Avenaeae</i> (continued)			
<i>Avena nudibrevis</i> VAV.		14	EMME, 1930b.
„ <i>sativa</i> L.	21	42	„ „
„ <i>Schimperi</i> KÖRN.		28	NIKOLAEWA, given by IVANOV, 1930.
„ <i>sterilis</i> L.	21	42	EMME, 1930b.
„ <i>sterilis</i> L. ssp. <i>byzantina</i> (C. KOCH).		42	EMME, 1930b.
„ <i>sterilis</i> L. ssp. <i>Ludoviciana</i> (DUR.) GILLET et MAGNE		42	„ „
„ <i>sterilis</i> L. ssp. <i>macrocarpa</i> (MÖNCH.) BRIQ.		42	„ 1930a.
„ <i>strigosa</i> SCHREB. ssp. <i>abyssinica</i> (HOCHST.) THELL.		28	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>barbata</i> (POTT.) THELL.		28	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>barbata</i> subvar. <i>atheranta</i> .		28	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>barbata</i> subvar. <i>genuina</i>		28	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>barbata</i> subvar. <i>triflora</i>		28	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>hirtula</i> (LAG.)		14	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>strigosa</i> (SCHREB.) THELL.		14	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>strigosa</i> prol. <i>brevis</i> (ROTH.) THELL.		14	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>strigosa</i> prol. <i>nuda</i> (L.) HAUSSKN. = <i>nudibrevis</i> VAV.		14	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>Vaviloviana</i> MALZ.		28	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>Vaviloviana</i> MALZ. var. <i>intercedens</i> THELL. (= <i>A. Wiestii</i> THELLUNG)		28	„ „
„ <i>strigosa</i> SCHREB. ssp. <i>Vaviloviana</i> MALZ. var.			

GRAMINEAE (continued)	n	2n	
Section <i>Avenae</i> (continued)			
<i>pilosiuscula</i> THELL. (= <i>A. Wiestii</i> THELLUNG)		28	EMME, 1930b.
<i>Avena strigosa</i> SCHREB. ssp. <i>Vaviloviana</i> MALZ. var. <i>pseudoabyssinica</i> (= <i>A. Wiestii</i> THELLUNG) . .		28	" "
" <i>strigosa</i> SCHREB. ssp. <i>Wiestii</i> prol. <i>Vaviloviana</i> MALZ. var. <i>pseudoabyssinica</i> THELL. .	14	28	" "
" <i>strigosa</i> SCHREB. ssp. <i>Wiestii</i> prol. <i>Vaviloviana</i> MALZ. var. <i>intercedens</i> THELL.	14	28	" "
" <i>ventricosa</i> BALANSA.		14	" 1930a.
" <i>Wiestii</i> STEUD. (according to VAVILOV)		14	" "
" <i>Wiestii</i> (STEUDEL) THELL. var. <i>intercedens</i> THELL.		28	THELLUNG, given by EMME, 1930b.
" <i>Wiestii</i> (STEUDEL) THELL. var. <i>pseudoabyssinica</i> THELL.		28	THELLUNG, given by EMME, 1930b.
PAPPOPHOREAE			
<i>Sesleria coerulea</i> var. <i>uliginosa</i>	14		KATTERMANN, 1930.
Section FESTUCEAE			
Subtribe <i>Melicinae</i>			
<i>Melica altissima</i>	9		KATTERMANN, 1930.
" <i>nulans</i>	9		" "
Subtribe <i>Poinae</i>			
<i>Dactylis Aschersoniana</i>	7		" "
" <i>Aschersoniana</i> GRAEBN. ¹⁾		14	LEVAN, 1930.
" <i>glomerata</i> L. ²⁾		28	" "
" <i>glomerata</i>	14 ³⁾		KATTERMANN, 1930.
" <i>Aschersoniana</i> GRAEBN. × <i>D. glomerata</i> L. ⁴⁾		21	LEVAN, 1930.

¹⁾ Seven forms were investigated. Svalöf nos. 943; 973; 1104; 027 Plant 1; 028 Plant 4; 030 Plant 16; and one from Dr. TURESSON at Akarp.

²⁾ Five forms were investigated; TURESSON Akarp nos. 104 and 105; Weibullsholm nos. 5051 and 5057; and one wild growing form.

³⁾ In one plant 15 chromosomes were found at each pole of the cells during anaphase.

⁴⁾ The hybrid was Svalöf no. 028 Plant 30.

GRAMINEAE (continued)	n	2n	
FESTUCEAE (continued)			
Subtribe Poinae (continued)			
<i>Poa annua</i>	14		KATTERMANN, 1930.
„ <i>caesia</i>	$20 + 5 \frac{1}{2}$ ¹⁾		„ „
Subtribe Festucinae			
<i>Festuca arenaria</i> L.	21	42	NAKAJIMA, 1930.
„ <i>duriuscula</i> L.		42	„ „
„ <i>ovina</i> var. <i>curvula</i> WAHLENBERG (from VICKLEBY)	7	14	TURESSON, 1930.
„ <i>ovina</i> var. <i>vulgaris</i> (from OTTENBY).	7		„ „
„ <i>ovina</i> (high alpine form from FINSE)	7		„ „
„ <i>ovina</i> aapm. <i>rogalandica</i>		21	„ „
„ <i>ovina</i> aapm. <i>svolvae- riensis</i>		28	„ „
„ <i>ovina</i> aapm. <i>tennforsien- sis</i>		42	„ „
„ <i>pratensis</i>	7		KATTERMANN, 1930.
„ <i>pratensis</i> GRAY	7	14	NAKAJIMA, 1930.
„ <i>tenuifolia</i> HORT.	7	14	„ „
<i>Briza media</i>	7		KATTERMANN, 1930.
Subtribe Brominae			
<i>Bromus erectus</i> var. <i>euerectus</i> .	28		KATTERMANN, 1930.
Section Hordeae			
<i>Agropyron caninum</i> (L.) R. & S. ²⁾		28	PETO, 1930.
„ <i>cristatum</i> J. GAERTN. ³⁾ 14		28	„ „
		14	„ „
		29	„ „
„ <i>dagnac</i> GROSSH. ⁴⁾ .		14	„ „
„ <i>descrtorum</i> ⁴⁾		28	„ „

¹⁾ This plant was thought to be a hybrid because of the lagging chromosomes on the spindle.

²⁾ This species was introduced from Denmark.

³⁾ Introductions from Caucase, Georgie, Univ. of California, Montana Agr. Exp. Sta. and those of Univ. of Alberta showed root-tips with 28 chromosomes.

Introductions from Omsk Exp. Sta., Siberia had 14 chromosomes.

Of introductions from Krasnyi Kut Exp. Sta., U. S. S. R. three strains had 14 and one had 28 chromosomes.

One strain from Dom. Range Exp. Sta. at Manyberries had 29 chromosomes.

⁴⁾ This species was introduced from Russia.

GRAMINEAE (continued)	n	2n	
Section <i>Hordeae</i> (continued)			
<i>Agropyron</i> (continued)			
<i>Agropyron dasystachyum</i>			
(HOOK.) SCRIBN. ¹⁾	14	28	PETO, 1930.
" <i>elongatum</i> ²⁾		70	" "
" <i>glaucum</i> R. & S. ³⁾		42	" "
" <i>griffithsii</i> SCRIBN. & SMITH ¹⁾	14	28	" "
" <i>junceum</i> (L.) BEAUV. ³⁾		28	" "
" <i>obtusiusculum</i> LAN- GE ³⁾		42	" "
" <i>pugens</i> (PERS.) R. & S. ⁴⁾	21		" "
" <i>repens</i> (L.) BEAUV. ⁵⁾	21	42	" "
		35, 34-35	" "
		42	" "
" <i>repens</i> (L.) var. <i>glaucescens</i> ENGL. ²⁾		42	" "
" <i>richardsonii</i> SCHRAD. ¹⁾	14	28	" "
" <i>sibiricum</i> (W.) EICHW. ²⁾		28	" "
" <i>sibiricum</i> var. <i>deser-</i> <i>torum</i> ³⁾		28	" "
" <i>smithii</i> RYDB. ⁶⁾ . .		56	" "
" <i>smithii molle</i> (S. & S.) JONES ⁷⁾ . . .		28	" "
		56	" "
" <i>spicatum</i> (PURSH) SCRIBN. & SMITH ⁸⁾	7	14	" "

¹⁾ This species was introduced from western Canada.

²⁾ This species was introduced from Russia.

³⁾ This species was introduced from Denmark.

⁴⁾ This species was collected in England.

⁵⁾ Nine forms from Western Canada had 42 somatic chromosomes and 21 bivalents. Of five plants obtained from Russia, three gave counts of 42 somatic chromosomes, one counts of 35 and another either 34 or 35 chromosomes. A strain from Copenhagen had 42 somatic chromosomes.

⁶⁾ Ten strains from Western Canada showed 56 somatic chromosomes.

⁷⁾ Of four plants from Western Canada studied, two had 28 and two had 56 somatic chromosomes.

⁸⁾ Of five plants from Western Canada that were examined two had 14 somatic chromosomes whereas in the three other plants a high percentage of cells showed 1-3 extra chromosomes.

GRAMINEAE (continued)	n	2n	
Section <i>H o r d e e a e</i> (continued)			
<i>Agropyron</i> (continued)			
<i>Agropyron tenerum</i> VASEY ¹⁾	14	28	„ „
„ <i>tenerum</i> VASEY (one plant)	2-4 + $\frac{13_1-17_1}{2}$	21	PETO, 1930.
„ <i>villosum</i> LINK. ²⁾	7		„ „
„ <i>richardsonii</i> × <i>A. tenerum</i>	14		„ „
Subtribe <i>H o r d e i n a e</i>			
<i>Brachypodium pinnatum</i>		14 ³⁾	KATTERMANN, 1930.
Subtribe <i>L o l i i n a e</i>			
<i>Lolium perenne</i> ⁴⁾	7		KATTERMANN, 1930; NAKAJIMA, 1930.
<i>Secale cereale</i>	7		SAX, K., 1930c; BLEIER, 1930a.
„ <i>cereale</i> var. <i>Abruzzes</i>	7		LONGLEY & SANDO, 1930.
„ <i>cereale</i> L. var. <i>afghanicum</i>		14 & 16	LEVITSKY, 1930.
„ <i>cereale</i> (ROSEN)	5-7 ⁵⁾ + $\frac{4_1-0}{2}$	14	AASE, 1930.
„ <i>cereale</i> var. <i>Abruzzes</i> × <i>S. montanum</i>	7, 6 + $\frac{2_1}{2}$		LONGLEY & SANDO, 1930.
AEGILOPS ⁶⁾			
Section <i>P o l y e i d e s</i> (ZHUK.) SENJAN.			
<i>Aegilops biuncialis</i> VIS	14		SENJANINOVA-KORCZAGINA, 1930.
„ <i>columnaris</i> ZHUK.	14		„ „ „
„ <i>ovata</i> L.	14		„ „ „; PERCIVAL, 1930.
„ <i>ovata</i>	14		LONGLEY & SANDO, 1930.
		28	AASE, 1930.
„ <i>triaristata</i>	14		LONGLEY & SANDO, 1930.
	21		BLEIER, 1930a.

¹⁾ Of thirty seven plants from Western Canada, representing a wide range of variable forms, all but one showed 28 somatic chromosomes and in seven of them the 14 bivalents were seen at heterotypic metaphase. In one plant 21 somatic chromosomes and in meiotic figures 13 to 17 univalent chromosomes were found.

²⁾ This species was introduced from Denmark.

³⁾ The chromosomes were associated as 14 bivalents or 12 bivalents + 1 quadri-valent or 12 bivalents + 1 trivalent + 1 univalent but at the poles of the spindle 14 chromosomes were always counted.

⁴⁾ The plant material studied showed such „monstrosities” as unusual branching. KATTERMANN (1930).

⁵⁾ There was some trace of trivalents.

⁶⁾ Classification of species used by SENJANINOVA-KORCZAGINA was determined by ZHUKOVSKY.

GRAMINEAE (continued)	n	2n
AEGILOPS (continued)		
<i>Aegilops triaristata</i> ssp. <i>contorta</i>		
ZHUK.	21	SENJANINOVA-KORCZAGINA, 1930.
.. <i>triaristata</i> ssp. <i>recta</i>		" " "
ZHUK.	14	" " "
.. <i>triuncialis</i>	14	LONGLEY & SANDO, 1930.
.. <i>triuncialis</i> L.	14	14 PERCIVAL, 1930.
		SENJANINOVA-KORCZAGINA, 1930.
.. <i>triuncialis</i> ssp. <i>KOTSCHYI</i> BOISS.	14	" " "
.. <i>turcomanica</i> ROSHEV.	21	" " "
.. <i>umbellulata</i> ZHUK.	14	" " "
.. <i>variabilis</i> EIG.	14	" " "
Section <i>Cylindropyrum</i>		
(JAUB. et SP.) SENJAN.		
<i>Aegilops caudata</i> L.	7	" " "
.. <i>comosa</i> SIBTH. et SM.	7	" " "
.. <i>cylindrica</i>	14	LONGLEY & SANDO, 1930; BLEIER, 1930a.
	14	28 AASE, 1930.
.. <i>cylindrica</i> HOST.	14	PERCIVAL, 1930. SENJANINOVA-KORCZAGINA, 1930.
.. <i>Heldreichii</i> HOLZM.	7	" " "
.. <i>persica</i> BOISS.	14	" " "
Section <i>Amblyopyrum</i>		
(JAUB. et SP.) ZHUK.		
<i>Aegilops mutica</i> BOISS.	7	SENJANINOVA-KORCZAGINA, 1930.
Section <i>Sitopsis</i> (JAUB. et SP.) ZHUK.		
<i>Aegilops Aucheri</i> ssp. <i>virgata</i>		
ZHUK.	7	" " "
.. <i>bicornis</i> JAUB. et SP.	7	" " "
.. <i>longissima</i> (SCHW. et MUSCH.) EIG.	7	" " "
.. <i>speltoides</i>	7	LONGLEY & SANDO, 1930a.
.. <i>speltoides</i> TAUSCH.	7	SENJANINOVA-KORCZAGINA, 1930.
Section <i>Vertebrata</i> (ZHUK.) SENJAN.		
<i>Aegilops crassa</i>	21	LONGLEY & SANDO, 1930.

GRAMINEAE (continued)	n	2n	
<i>Aegilops</i> (continued)			
<i>Aegilops crassa</i> Boiss.	21		SENJANINOVA-KORCZAGINA, 1930.
„ <i>squarrosa</i>	7		LONGLEY & SANDO, 1930.
„ <i>squarrosa</i> L.	7		SENJANINOVA-KORCZAGINA, 1930.
Section <i>Gastropyrum</i>			
(JAUB. et SP.) ZHUK. SEJAN.			
<i>Aegilops ventricosa</i>	14		LONGLEY & SANDO, 1930. BLEIER, 1930c.
„ <i>ventricosa</i> TAUSCH.	14		PERCIVAL, 1930. SENJANINOVA-KORCZAGINA, 1930.
<i>Aegilops</i> hybrids:			
<i>Aegilops cylindrica</i> × <i>A. ovata</i>	$23^1) + 3-8$	28	AASE, 1930.
	$+ \frac{10_1-3_1}{2}$		
„ <i>cylindrica</i> HOST. × <i>A.</i>			
<i>ovata</i> L.	$7-13 + \frac{14_1-2_1}{2}$		PERCIVAL, 1930.
„ <i>cylindrica</i> HOST. × <i>A.</i>			
<i>ventricosa</i> TAUSCH.	$6-7 + \frac{16_1-14_1}{2}$		„ „
„ <i>ovata</i> L. × <i>A. cylin-</i>			
<i>drica</i> HOST.	$7-13 + \frac{14_1-2_1}{2}$		„ „
„ <i>ovata</i> × <i>A. triuncialis</i>	$0-7 + \frac{28_1-14_1}{2}$		LONGLEY & SANDO, 1930.
„ <i>ovata</i> × <i>A. ventricosa</i>			
TAUSCH.	$3-7 + \frac{22_1-14_1}{2}$		PERCIVAL, 1930.
„ <i>triuncialis</i> L. × <i>A.</i>			
<i>cylindrica</i> HOST.	$3-12 + \frac{22_1-4_1}{2}$		„ „
„ <i>crassa</i> × <i>Triticum</i>			
<i>compactum</i>	$0-7 + \frac{42_1-28_1}{2}$		LONGLEY & SANDO, 1930.
„ <i>crassa</i> × <i>Triticum di-</i>			
<i>coccoides</i>	$0-5 + \frac{35_1-25_1}{2}$		„ „ „ „
„ <i>crassa</i> × <i>Triticum di-</i>			
<i>coccum</i>	$0-6 + \frac{35_1-23_1}{2}$		„ „ „ „

1) There was some evidence of tetravalents also.

GRAMINEAE (continued)	n	2n
<i>Aegilops</i> hybrids (continued)		
<i>Aegilops crassa</i> × <i>Triticum durum</i>	$0-3 + \frac{35_1-29_1}{2}$	LONGLEY & SANDO, 1930.
" <i>crassa</i> × <i>Triticum polonicum</i>	$0-4 + \frac{35_1-27_1}{2}$	" " " "
" <i>crassa</i> × <i>Triticum spelta</i>	$0-6 + \frac{42_1-30_1}{2}$	" " " "
" <i>crassa</i> × <i>Triticum turgidum</i>	$0-4 + \frac{35_1-27_1}{2}$	" " " "
" <i>crassa</i> × <i>Triticum vulgare</i>	$0-7 + \frac{42_1-28_1}{2}$	" " " "
" <i>cylindrica</i> HOST. × <i>Triticum compactum</i> HOST. var. <i>rubriceps</i> .	$7 + \frac{21_1}{2}$	PERCIVAL, 1930.
" <i>cylindrica</i> HOST. × <i>Triticum dicoccoides</i> KÖRN. var. <i>rubrivillosum</i>	$1-4 + \frac{26_1-20_1}{2}$ $\frac{28_1}{2}$	" "
" <i>cylindrica</i> HOST. × <i>Triticum dicoccum</i> SCHÜB. var. <i>farrum</i> .	$1-4 + \frac{26_1 \cdot 20_1}{2}$ $\frac{28_1}{2}$	" "
" <i>cylindrica</i> × <i>Triticum durum</i>	28_1 2	BLEIER, 1930a, c.
" <i>cylindrica</i> × <i>Triticum durum</i> (KUBANKA) .	$0-5^1) + \frac{28_1-18_1}{2}$	28 AASE, 1930.
" <i>cylindrica</i> HOST. × <i>Triticum polonicum</i> L.	$1-4 + \frac{26_1-20_1}{2}$ $\frac{28_1}{2}$	PERCIVAL, 1930.

1) There was some trace of trivalents.

GRAMINEAE (continued)	n	2n	
<i>Aegilops</i> hybrids (continued)			
<i>Aegilops cylindrica</i> × <i>Triticum</i>			
<i>polonicum</i>	$0-3 + \frac{28_1-22_1}{2}$		LONGLEY & SANDO, 1930.
„ <i>cylindrica</i> Host. × <i>Triticum Spelta</i> L. var. <i>Duhamelianum</i>	$\frac{7+21_1}{2}$		PERCIVAL, 1930.
„ <i>cylindrica</i> × <i>Triticum</i> <i>Spelta</i>	$\frac{7+21_1}{2}$		BLEIER, 1930a.
„ <i>cylindrica</i> × <i>Triticum</i> <i>turgidum</i>	$0-3 + \frac{28_1-22_1}{2}$		LONGLEY & SANDO, 1930
„ <i>cylindrica</i> × <i>Triticum</i> <i>turgidum</i> (Alaska)	$0-4^1 + \frac{28_1-20_1}{2}$	28	AASE, 1930.
„ <i>cylindrica</i> Host. × <i>Triticum turgidum</i> L. var. <i>iodurum</i> (Petia- nelli voire de Nice)	$1-4 + \frac{26_1-20_1}{2}$		
	$\frac{28_1}{2}$		PERCIVAL, 1930.
„ <i>cylindrica</i> Host. × <i>Triticum vulgare</i> Host. var. <i>erythro-</i> <i>spermum</i>	$\frac{7+21_1}{2}$		„ „
„ <i>cylindrica</i> Host. × <i>Triticum vulgare</i> Host. var. <i>militurum</i>	$\frac{7+21_1}{2}$		„ „
„ <i>cylindrica</i> × <i>Triticum</i> <i>vulgare</i>	$\frac{7+21_1}{2}$		BLEIER, 1930a.
„ <i>cylindrica</i> × <i>Triticum</i> <i>vulgare</i> (HUSSAR)	$6-9^1 + \frac{23_1-17_1}{2}$	35	AASE, 1930.
„ <i>ovata</i> × <i>Triticum</i> <i>compactum</i> (hybrid 128)	$0-3^1 + \frac{35_1-29_1}{2}$	35	„ „

¹⁾ There was some trace of trivalents.

GRAMINEAE (continued)	n	2n	
<i>Aegilops</i> hybrids (continued)			
<i>Aegilops ovata</i> L. × <i>Triticum compactum</i> HOST.			
var. <i>creticum</i>	$\frac{35_1}{2}$		
	$2-3 + \frac{31_1-29_1}{2}$		PERCIVAL, 1930.
" <i>ovata</i> L. × <i>Triticum dicoccoides</i> KÖRN.			
var. <i>Kotschyannum</i>	$\frac{28_1}{2}$		
	$1-3 + \frac{26_1-22_1}{2}$	28	" "
" <i>ovata</i> L. × <i>Triticum dicoccoides</i> KÖRN.			
var. <i>spontanconigrum</i>	$\frac{28_1}{2}$		
	$1-3 + \frac{26_1-22_1}{2}$	28	" "
" <i>ovata</i> L. × <i>Triticum dicoccum</i> SCHÜB. var.			
<i>Ajar</i>	$\frac{28_1}{2}, 1 + \frac{26_1}{2}$	28	" "
" <i>ovata</i> L. × <i>Triticum dicoccum</i> SCHÜB. var.			
<i>ethiopicum</i>	$\frac{28_1}{2}, 1 + \frac{26_1}{2}$	28	" "
" <i>ovata</i> L. × <i>Triticum dicoccum</i> SCHÜB. var.			
<i>persicum</i> PERCIV. (= <i>T. persicum</i> VAV.)	$0-1 + \frac{28_1-26_1}{2}$		" "
" <i>ovata</i> × <i>Triticum durum</i>	$\frac{28_1}{2}$		BLEIER, 1930a, c.
" <i>ovata</i> × <i>Triticum durum</i> (KUBANKA)	$0-3 + \frac{28_1-22_1}{2}$	28	AASE, 1930.
" <i>ovata</i> L. × <i>Triticum durum</i> DESF. var. <i>af- fine</i>	$\frac{28_1}{2}$		
	$1-2 + \frac{26_1-24_1}{2}$		PERCIVAL, 1930.

GRAMINEAE (continued)	n	2n	
<i>Aegilops</i> hybrids (continued)			
<i>Aegilops ovata</i> × <i>Triticum monococcum</i>	$0-7 + \frac{21_1-7_1}{2}$		BLEIER, 1930a, c.
	$0-6^1) + \frac{21_1-9_1}{2}$	21	AASE, 1930.
„ <i>ovata</i> L. × <i>Triticum monococcum</i> L.	$\frac{21_1^2)}{2}$		
	$1-5 + \frac{19_1-11_1}{2}$		PERCIVAL, 1930.
„ <i>ovata</i> L. × <i>Triticum polonicum</i> L.	$\frac{28_1}{2}$		
	$1-(2) + \frac{26_1-(24_1)}{2}$		„ „
„ <i>ovata</i> L. × <i>Triticum sphaerococcum</i> PERCIV. var. <i>tumidum</i>	$\frac{35_1}{2}$		
	$4 + \frac{27_1}{2}$		„ „
„ <i>ovata</i> L. × <i>Triticum Spelta</i> L. var. <i>coeruleum</i>	$\frac{35_1}{2}$		
	$1-3 + \frac{33_1-29_1}{2}$		„ „
„ <i>ovata</i> × <i>Triticum Spelta</i> (ALSTROUM)	$0-3 + \frac{35_1-28_1}{2}$		AASE, 1930.
„ <i>ovata</i> L. × <i>Triticum turgidum</i> L. var. <i>mirabile</i>	$\frac{28_1}{2}$		
	$1-2 + \frac{26_1-24_1}{2}$		PERCIVAL, 1930.
„ <i>ovata</i> × <i>Triticum villosum</i>	$\frac{21_1}{2}$		BLEIER, 1930c.

¹⁾ There was some trace of trivalents.

²⁾ In one loculus of an anther several cells were found to contain 35 univalent chromosomes.

GRAMINEAE (continued)	n	2n	
<i>Aegilops</i> hybrids (continued)			
<i>Aegilops ovata</i> L. × <i>Triticum</i>			
<i>vulgare</i> Host. var. <i>al-</i>			
<i>bidum</i>	$\frac{35_1}{2}$		
		$2-3 + \frac{31_1-29_1}{2}$	PERCIVAL, 1930.
„ <i>triuristata</i> × <i>Triticum</i>			
<i>vulgare</i>	$0-7 + \frac{42_1-28_1}{2}$		BLEIER, 1930a.
„ <i>triuncialis</i> L. × <i>Triti-</i>			
<i>cum dicoccoides</i> KÖRN.			
var. <i>Kotschyannum</i> .	$1-3 + \frac{26_1-22_1}{2}$		PERCIVAL, 1930
„ <i>triuncialis</i> L. × <i>Triti-</i>			
<i>cum dicoccoides</i> KÖRN.			
var. <i>rubrivillosum</i> .	$1-3 + \frac{26_1-22_1}{2}$		„ „
„ <i>triuncialis</i> L. × <i>Triti-</i>			
<i>cum durum</i> DESF.			
var. <i>affine</i>	$1-6 + \frac{26_1-16_1}{2}$		„ „
„ <i>triuncialis</i> L. × <i>Triti-</i>			
<i>cum Spelta</i> L. var.			
<i>album</i>	$0-3 + \frac{35_1-29_1}{2}$		„ „
„ <i>triuncialis</i> L. × <i>Triti-</i>			
<i>cum turgidum</i> var.			
<i>lusitanicum</i>	$1-3 + \frac{26_1-22_1}{2}$		„ „
„ <i>triuncialis</i> L. × <i>Triti-</i>			
<i>cum vulgare</i> Host.			
var. <i>militurum</i>	$1-5 + \frac{33_1-25_1}{2}$		„ „
„ <i>triuncialis</i> × <i>Triticum</i>			
<i>vulgare</i> (HUSSAR) . . .	$0-3 + \frac{35_1-28_1}{2}$	35	AASE, 1930.
„ <i>ventricosa</i> TAUSCH. ×			
<i>Triticum dicoccoides</i>			
KÖRN. var. <i>Kotschya-</i>			
<i>num</i>	$0-2 + \frac{28_1-26_1}{2}$		PERCIVAL, 1930.
„ <i>ventricosa</i> TAUSCH. ×			
<i>Triticum dicoccum</i>			

GRAMINEAE (continued)	n	2n	
<i>Aegilops</i> hybrids (continued)			
var. <i>farrum</i>	$0-(2) + \frac{28_1-(26_1)}{2}$		PERCIVAL, 1930.
<i>Aegilops ventricosa</i> TAUSCH. ×			
<i>Triticum monococ-</i>			
<i>cum</i> L.	$\frac{21_1}{2}$		
	$1-4 + \frac{19_1-13_1}{2}$		" "
<i>ventricosa</i> TAUSCH. ×			
<i>Triticum polonicum</i>			
L.	$0-2 + \frac{28_1-26_1}{2}$		" "
<i>ventricosa</i> TAUSCH. ×			
<i>Triticum turgidum</i> L.			
var. <i>lusitanicum</i>	$0-2 + \frac{28_1-26_1}{2}$		" "
<i>ventricosa</i> × <i>Triticum</i>			
<i>villosum</i>	$0-4 + \frac{21_1-13_1}{2}$		BLEIER, 1930c.
<i>ovata</i> L. × <i>Triticum</i>			
<i>turgidum</i> L. var. <i>mi-</i>			
<i>rabile</i> F ₁	$\frac{28_1}{2}$		
	$5-8 + \frac{18_1-12_1}{2}$	28	PERCIVAL, 1930.
<i>ovata</i> L. × <i>Triticum</i>			
<i>turgidum</i> L. var. <i>io-</i>			
<i>durum</i>	$\frac{28_1}{2}$		" "
<i>Triticum aegilopoides</i>		14	WAKAKUWA, 1930.
<i>compactum</i>		42	" "
<i>compactum</i> Host.	21		LONGLEY & SANDO, 1930.
<i>compactum</i> Host. var.			
<i>creticum</i>	21		PERCIVAL, 1930.
<i>compactum</i> Host. var.			
<i>rubriceps</i>	21		" "
<i>compactum</i> (hybrid			
128)	$0-1^1) + \frac{21_1}{2}$	21	AASE, 1930.
<i>compactum</i> „Jenkin's			
Club"	21 ²⁾		THOMPSON & ROBERTSON, 1930.

¹⁾ There was some trace of trivalents.

²⁾ A small proportion of pollen-mother-cells showed 1 or 2 univalent chromosomes.

GRAMINEAE (continued)	n	2n
<i>Triticum</i> (continued)		
<i>Triticum dicoccoides</i>	14	BLEIER, 1930a.
„ <i>dicoccoides</i> КСКК.	14	28 WAKAKUWA, 1930.
„ <i>dicoccoides</i> KÖRN. var. <i>Kotschyianum</i>	14	LONGLEY & SANDO, 1930.
„ <i>dicoccoides</i> KÖRN. var. <i>rubrivillosum</i>	14	PERCIVAL, 1930.
„ <i>dicoccoides</i> KÖRN. var. <i>spontaneonigrum</i>	14	„ „
„ <i>dicoccoides</i> „Wild Em- mer“	14 ¹⁾	„ „
„ <i>dicoccum</i>	14	28 THOMPSON & ROBERTSON, 1930.
„ <i>dicoccum</i> SCHRK.	14	28 WAKAKUWA, 1930.
„ <i>dicoccum</i> SCHÜB. var. <i>Ajar</i>	14	LONGLEY & SANDO, 1930.
„ <i>dicoccum</i> SCHÜB. var. <i>ethiopicum</i>	14	PERCIVAL, 1930.
„ <i>dicoccum</i> SCHÜB. var. <i>farrum</i>	14	„ „
„ <i>dicoccum</i> SCHÜB. var. <i>persicum</i>	14	„ „
„ <i>dicoccum</i> „Khapl“	14 ¹⁾	28 THOMPSON & ROBERTSON, 1930.
„ <i>dicoccum</i> „Spring Ein- mer“	14 ¹⁾	„ „ „ „
„ <i>dicoccum</i> „Vernal“	14 ¹⁾	„ „ „ „
„ <i>dicoccum</i> „White Spring Emmer“	14	28 JENKINS & THOMPSON, 1930.
„ <i>durum</i> „Iunillo“	14 ¹⁾	28 THOMPSON & ROBERTSON, 1930.
„ <i>durum</i> „Velvet Don“	14	28 JENKINS & THOMPSON, 1930.
„ <i>durum</i> DESF. var. <i>af- fine</i>	14	28 STEVENSON, 1930b.
„ <i>durum</i> (30)	7	PERCIVAL, 1930.
„ <i>monococcum</i>	7	28 WAKAKUWA, 1930.
„ <i>monococcum</i> L.	7	BLEIER, 1930a.
„ <i>persicum</i> „Black Per- sian“	14 ¹⁾	14 AASE, 1930.
„ <i>persicum</i> VAV.	14	14 WAKAKUWA, 1930.
		PERCIVAL, 1930; LONGLEY & SANDO, 1930.
		28 THOMPSON & ROBERTSON, 1930.
		28 NIKOLAEWA, given by VAKAR, 1930.

¹⁾ A small proportion of pollen-mother-cells showed 1 or 2 univalent chromosomes.

GRAMINEAE (continued)	n	2n
<i>Triticum</i> (continued)		
<i>Triticum polonicum</i> L.	14	PERCIVAL, 1930; LONGLEY & SANDO, 1930.
„ <i>polonicum</i> „Polish”	14 ¹⁾	28 THOMPSON & ROBERTSON, 1930.
„ <i>Spelta</i>	21	42 WAKAKUWA, 1930.
„ <i>Spelta</i> L. var. <i>album</i>	21	LONGLEY & SANDO, 1930.
„ <i>Spelta</i> L. var. <i>coeruleum</i>	21	42 WAKAKUWA, 1930.
„ <i>Spelta</i> L. var. <i>Duhamelianum</i>	21	PERCIVAL, 1930.
„ <i>Spelta</i> „Spring Spelt”.	21 ¹⁾	„ „
„ <i>sphaerococcum</i> PERCIV. var. <i>tumidum</i>	21	THOMPSON & ROBERTSON, 1930.
„ <i>turgidum</i>	14	PERCIVAL, 1930.
„ <i>turgidum</i> („Alaska”).	14	LONGLEY & SANDO, 1930.
„ <i>turgidum</i> L. var. <i>iodurum</i>	14	28 BERG, given by TSCHERMAK, 1933.
„ <i>turgidum</i> L. var. <i>Iusitanicum</i>	14	28 WAKAKUWA, 1930.
„ <i>turgidum</i> L. var. <i>mirabile</i>	14	28 AASE, 1930.
„ <i>turgidum</i> (Unnamed — from Tunis)	14 ¹⁾	PERCIVAL, 1930.
„ <i>villosum</i>	7	„ „
„ <i>vulgare</i>	7	14 THOMPSON & ROBERTSON, 1930.
„ <i>vulgare</i> VILL.	21	BLEIER, 1930c.
„ <i>vulgare</i> Host. var. <i>albidum</i>	21	14 BERG, given by TSCHERMAK, 1930.
„ <i>vulgare albidum</i> (progeny of X-rayed plants)		41, 42 BLEIER, 1930a; LONGLEY & SANDO, 1930.
		42 WAKAKUWA, 1930.
		42 VAKAR, 1930.
		PERCIVAL, 1930.
	41, 42	
	40+2frag.	
	41+1 frag.	
	43+2 frag.	DELAUNAY, 1930.

¹⁾ A small proportion of pollen-mother-cells showed 1 or 2 univalent chromosomes.

GRAMINEAE (continued)	n	2n	
<i>Triticum</i> (continued)			
<i>Triticum vulgare</i> Host. var.			
<i>erythrosperrum</i>	21		PERCIVAL, 1930.
" <i>vulgare</i> Host. var.			
<i>graecum</i>	21		" "
" <i>vulgare</i> Host. var.			
<i>militurum</i>	21		" "
" <i>vulgare</i> Host. var.			
Quality	21	42	STEVENSON, 1930b.
" <i>vulgare</i> „Marquis”	21 ¹⁾	42	THOMPSON & ROBERTSON, 1930.
		42	JENKINS & ROBERTSON, 1930.
" <i>vulgare</i> „Turkey Red”	20-21+ $\frac{2_1-0}{2}$	42	AASE, 1930.
" <i>vulgare</i> „Wilhelmina”	21		BLEIER, 1930b.
" <i>vulgare</i> normal spel-			
toids	21, 20+1 ₁		HÅKANSSON, 1930a.
" <i>vulgare</i> B. Heterozy-			
gotes (speltoids)	20+1 ₁ ²⁾		" "
	$\frac{41_1}{2}$ ³⁾		MÜNTZING, 1930c.
" <i>vulgare</i> C. Heterozy-			
gotes (speltoids)	$\frac{43_1}{2}$ ³⁾		MÜNTZING, 1930c.
	20+1 ₃		HÅKANSSON, 1930a.
" <i>vulgare</i> <i>Subcompactum</i>			
(speltoids)	$\frac{43_1}{2}$ ³⁾		MÜNTZING, 1930c.
	20+1 ₁ +1		
	frag.		HÅKANSSON, 1930a.
" — PH10		28	WAKAKUWA, 1930.
" — 30 × PH10		28	" "
<i>Triticum</i> hybrids:			
" <i>dicoccoides</i> × <i>Secale</i>			
<i>montanum</i>	$\frac{21_1}{2}$		LONGLEY & SANDO, 1930.
" <i>durum</i> (KUBANKA) ×			
<i>Secale cereale</i> (RO-			
SEN)	0-4+ $\frac{21_1-13_1}{2}$	21	AASE, 1930.
" <i>durum</i> var. <i>melano-</i>			

¹⁾ A small proportion of pollen-mother-cells showed 1 or 2 univalent chromosomes.

²⁾ HÅKANSSON, 1930a examined cultures from Å. ÅKERMAN and NILSSON EHLE.

³⁾ This was one of NILSSON EHLE's forms.

GRAMINEAE (continued)	n	2n	
<i>Triticum</i> hybrids (continued)			
pus No. 00122 × <i>Secale cereale</i>	$\frac{21_1}{2}$	21	PLOTNIKOWA, 1930.
<i>Triticum persicum</i> var. <i>fuliginosum</i> × <i>Secale cereale</i>	$\frac{21_1}{2}$	21	„ „
„ <i>spelta</i> × <i>Secale montanum</i>	$0-3 + \frac{28_1-22_1}{2}$		LONGLEY & SANDO, 1930.
„ <i>spelta</i> (ALSTROUM) × <i>Secale cereale</i> (ROSEN)	$0-4^1 + \frac{28_1-20_1}{2}$		AASE, 1930.
„ <i>secalotricum Sabatoviense</i> MEISTER (<i>Triticum vulgare</i> × <i>Secale cereale</i>) F ₄	$25 + \frac{6_1}{2}$	56	LEVITSKY & BENETZKAIA, 1930.
„ <i>vulgare</i> × <i>Secale cereale</i>	$\frac{28_1}{2}$		LONGLEY & SANDO, 1930.
	$0-4 + \frac{28_1-20_1}{2}$		BLEIER, 1930a.
„ <i>vulgare</i> (Triplet) × <i>Secale cereale</i> (ROSEN)	$0-3^1 + \frac{28_1-22_1}{2}$	28	AASE, 1930.
„ <i>vulgare</i> × <i>Secale montanum</i>	$0-1 + \frac{28_1-26_1}{2}$		LONGLEY & SANDO, 1930.
„ <i>aegilopoides</i> × <i>T. dicoccum</i>	$7 + \frac{7_1}{2}$		KIHARA & NISHIYAMA, 1930.
	$1_1 + 6 + \frac{6_1}{2}$		
	$1_1 + (1_2 + 1_2) + 4 + 6_1$		
	$2_3 + 4 + 7_1$		
	$3_3 + 3 + 6_1$		
„ <i>compactum</i> × <i>T. monococcum</i>	$0-7 + \frac{28_1-14_1}{2}$		LONGLEY & SANDO, 1930.

¹⁾ There was some trace of trivalents.

GRAMINEAE (continued)	n	2n
<i>Triticum</i> hybrids (continued)		
<i>Triticum dicoccoides</i> × <i>T. aegilopoides</i>	0-5 + $\frac{21_1-11_1}{2}$	BLEIER, 1930a.
.. <i>dicoccoides</i> × <i>T. monococcum</i>	0-6 + $\frac{21_1-9_1}{2}$	LONGLEY & SANDO, 1930.
.. <i>dicoccoides</i> (Wild Emmer) × <i>T. monococcum</i>	4-7 ¹⁾ + $\frac{11_1-7_1}{2}$	21 AASE, 1930.
.. <i>dicoccum</i> × <i>T. dicoccoides</i>	14 ²⁾	THOMPSON & ROBERTSON, 1930.
.. <i>dicoccum</i> (Vernal) × <i>T. dicoccum</i> (Khapli)	14 ²⁾	" " " "
.. <i>dicoccum</i> × <i>T. monococcum</i>	7 + $\frac{7_1}{2}$	KIHARA & NISHIYAMA, 1930.
.. <i>dicoccum</i> × <i>T. persicum</i> VAV.	14	VAKAR, 1930.
.. <i>dicoccum</i> × <i>T. polonicum</i>	14 ²⁾	THOMPSON & ROBERTSON, 1930.
.. <i>durum</i> × <i>T. dicoccoides</i>	14 ²⁾	" " " "
.. <i>durum</i> (Kubanka) × <i>T. dicoccoides</i> (Wild Emmer)	11-14 ⁴⁾ + $\frac{2_1-0_1}{2}$	28 AASE, 1930.
.. <i>durum</i> × <i>T. dicoccum</i>	14 ²⁾	THOMPSON & ROBERTSON, 1930.
.. <i>durum</i> × <i>T. dicoccum</i> (Khapli)	14 ²⁾	" " " "
.. <i>durum</i> (Kubanka) × <i>T. monococcum</i> (Einkorn).	4-7 ¹⁾ + $\frac{13_1-7_1}{2}$	21 AASE, 1930.
.. <i>durum</i> × <i>T. persicum</i>	14 ²⁾	THOMPSON & ROBERTSON, 1930.
.. <i>durum</i> × <i>T. polonicum</i>	14 ²⁾	" " " "
.. <i>durum</i> (Kubanka) ×		

1) There was some trace of trivalents.

2) This hybrid showed only a slightly greater amount of irregularity, in the presence of 1 or 2 univalents than the parental species.

3) A considerable percentage of the pollen mother cells showed 1 or 2 univalents much higher than found in the parental species.

4) There was some trace of tetravalents.

GRAMINEAE (continued)	2	2n	
<i>Triticum</i> hybrids (continued)			
<i>T. polonicum</i> (Polish)	13-14 + $\frac{2_1-0}{2}$	28	AASE, 1930.
<i>Triticum durum</i> (Kubanka) × <i>T. vulgare</i> (Marquis)	12-14 ¹⁾ + $\frac{11_1-7_1}{2}$	35	„ „
„ <i>durum</i> × <i>T. vulgare</i> .	14 + $\frac{7_1}{2}$,		
	13 + $\frac{9_1}{2}$.		
	1 ₁ + 13 + $\frac{6_1}{2}$,		
	2 ₃ + 12 + $\frac{5_1}{2}$.		KIHARA & NISHIYAMA, 1930.
(„ <i>durum</i> Line 00122 × <i>T. vulgare</i> Line 00274) F ₁	14 + $\frac{7_1}{2}$		SAPPHIN, L., 1930.
(„ <i>durum</i> Line 00122 × <i>T. vulgare</i> Line 00274) F ₂	14 + $\frac{7_1}{2}$		
	to 21 + 0 ₁		„ „ „
„ <i>durum</i> Line 00122 × <i>T. vulgare</i> Line 00274) F ₂ Plant # 135	16 + $\frac{4_1}{2}$		„ „ „
	F ₃ Plant 135	16 + $\frac{2_1}{2}$,	
	16 + $\frac{3_1}{2}$,		
	16 + $\frac{4_1}{2}$.		„ „ „
(„ <i>durum</i> Line 00122 × <i>T. vulgare</i> Line 00274) Plant 183	14 + $\frac{7_1}{2}$		„ „ „
(„ <i>durum</i> Line 00122 × <i>T. vulgare</i> Line 00274) F ₃ of Plant			

1) There was some trace of trivalents & tetravalents.

GRAMINEAE (continued)	n	2n	
<i>Triticum</i> hybrids (continued)			
183	$14, 14 + \frac{6_1}{2},$		
	$15 + \frac{4_1}{2},$		
	$16 + \frac{3_1}{2},$		
	$16 + \frac{5_1}{2},$		
	$17 + \frac{4_1}{2}$		SAPEHIN, L., 1930.
<i>Triticum durum</i> (Velvet Don)			
× <i>T. vulgare</i> (Quality) F ₁	$14 + \frac{7_1}{2}$	35	STEVENSON, 1930a, b.
„ <i>durum</i> (Velvet Don)			
× <i>T. vulgare</i> (Quality) F ₂ ¹⁾	14; $14 + 1_1$; 28, 29,		
	$14 + \frac{2_1}{2};$	30,	
	$15 + \frac{2_1}{2};$	32,	
	$14 + \frac{7_1}{2};$	35,	
	$17 + \frac{4_1}{2}; 21$	38, 42,	„ 1930b.
„ <i>durum</i> (Velvet Don)			
× <i>T. vulgare</i> (Quality) F ₃ ²⁾ from F ₂		42	„ „
(2n = 42)			
„ <i>durum</i> (Velvet Don)			
× <i>T. vulgare</i> (Quality) F ₃ ³⁾ from F ₂			
(2n = 38)	$15 + \frac{3_1}{2};$		
	$15 + \frac{4_1}{2};$	33, 34,	
	$16 + \frac{4_1}{2};$		
	$17 + \frac{4_1}{2};$	36, 38,	
	21.	42.	„ „

¹⁾ Of the 24 F₂ plants 11 had 28; 3, 29; 2, 30; 1, 32; 1, 35; 1, 38; and 5, 42 somatic chromosomes.

²⁾ Two F₃ lines of 13 and 11 plants respectively were grown with 42 chromosomes.

³⁾ Five F₃ plants were grown.

GRAMINEAE (continued)	n	2n	
<i>Triticum</i> hybrids (continued)			
<i>Triticum durum</i> (Velvet Don)			
× <i>T. vulgare</i> (Quality) F ₃ ¹⁾ from F ₂			
(2n unknown) . . .	14;	28,	
	14+1 ₁ ;	29,	
	14+2 ₁ ;	30,	
	$\frac{2}{2}$		
	14+7 ₁ ;	35,	
	$\frac{2}{2}$		
	18+3 ₁ ;	21, 39, 42.	STEVENSON, 1930b.
	$\frac{2}{2}$		
.. <i>durum</i> (Velvet Don)			
× <i>T. vulgare</i> (Quality) F ₃ ²⁾ from F ₂			
(2n = 30)		28	..
.. <i>durum</i> (Velvet Don)			
× <i>T. vulgare</i> (Quality) F ₃ ³⁾ from F ₂			
(2n = 29)		28	.. "
.. <i>durum</i> (Velvet Don)			
× <i>T. vulgare</i> (Quality) F ₃ ⁴⁾ from F ₂			
(2n = 28)		28	.. "
.. <i>vulgare</i> (Marquis) ×			
<i>T. durum</i> (Lunillo)			
= Marquillo.	21		.. 1930a.
.. <i>persicum</i> VAV. × <i>T.</i>			
<i>vulgare</i> VILL.	14+ $\frac{7_1}{2}$		VAKAR, 1930.
.. <i>polonicum</i> × <i>T. monococcum</i>	0-5+ $\frac{21_1-11_1}{2}$		LONGLEY & SANDO, 1930.
.. <i>Spelta</i> × <i>T. compactum</i>	21 ⁵⁾		THOMPSON & ROBERTSON, 1930.
.. <i>Spelta</i> × <i>T. monococcum</i>	0-7+ $\frac{21_1-7_1}{2}$		LONGLEY & SANDO, 1930.

¹⁾ Of the 8 plants 3 had 28; 1, 29; 1, 30; 1, 35; 1, 39; and 1, 42 somatic chromosomes.

²⁾ Ten F₃ plants were grown with 28 somatic chromosomes.

³⁾ Twelve F₃ plants were grown with 28 somatic chromosomes.

⁴⁾ Two F₃ lines of 3 and 6 plants respectively were grown with 28 somatic chromosomes.

⁵⁾ A considerable percentage of the pollen mother cells showed 1 or 2 univalents much higher than found in the parental species.

GRAMINEAE (continued)	n	2n	
<i>Triticum</i> hybrids (continued)			
<i>Triticum Spelta</i> × <i>T. persicum</i>			
VAV.	$14 + \frac{7_1}{2}$		VAKAR, 1930.
„ <i>Spelta</i> × <i>T. aegilopoides</i>	$7 + \frac{14_1}{2}$, $10 + \frac{8_1}{2}$, $(1_2 + 1_2) + 5 + \frac{14_1}{2}$, $1_3 + 5 + \frac{15_1}{2}$, $2_3 + 4 + \frac{14_1}{2}$, $1_3 + 7 + \frac{11_1}{2}$		KIHARA & NISHIYAMA, 1930.
„ <i>turgidum</i> × <i>T. dicoccoides</i>	14 ¹⁾		THOMPSON & ROBERTSON, 1930.
„ <i>turgidum</i> × <i>T. dicoccum</i>	14 ¹⁾		„ „ „ „
„ <i>turgidum</i> × <i>T. monococcum</i>	$0 - 7 + \frac{21_1 - 7_1}{2}$		LONGLEY & SANDO, 1930.
„ <i>turgidum</i> × <i>T. persicum</i>	14 ¹⁾		THOMPSON & ROBERTSON, 1930.
„ <i>turgidum</i> × <i>T. polonicum</i>	14 ¹⁾		„ „ „ „
„ <i>turgidum</i> × <i>T. villosum</i> F ₁ (<i>Turgidovillosum</i>)		21	BERG, given by TSCHERMAK, 1930.
„ <i>turgidum</i> × <i>T. villosum</i> F ₂ (<i>Turgidovillosum</i>)	21	42	BERG, given by TSCHERMAK, 1930.
„ <i>vulgare</i> × <i>T. compactum</i>	21 ²⁾		THOMPSON & ROBERTSON, 1930.

¹⁾ This hybrid showed only a slightly greater amount of irregularity, in the presence of 1 or 2 univalents than the parental species.

²⁾ A considerable percentage of the pollen mother cells showed 1 or 2 univalents much higher than found in the parental species.

GRAMINEAE (continued) . . . " 2n

Triticum hybrids (continued)

Triticum vulgare × *T. dicoc-*

- cum* F₂ 14,
- 14 + 1₁,
- 14 + 2₁,
- 14 + 3₁,
- 14 + 4₁,
- 14 + 7₁,
- 17 + 4₁

JENKINS & THOMPSON, 1930.

.. *vulgare* × *T. dicoc-*

- cum* F₂ 14,
- 14 + 1₁,
- 14 + 2₁,
- 14 + 3₁,
- 14 + 4₁,
- 14 + 6₁,
- 16 + 5₁,
- 17 + 4₁,
- 18 + 3₁,
- 19 + 2₁.

" " " "

.. *vulgare* × *T. durum*

- F₂ 14,
- 14 + 2₁,
- 14 + 4₁,
- 16 + 5₁,
- 17 + 4₁,
- 18 + 3₁,
- 19 + 2₁,
- 20 + 1₁.

" " " "

.. *vulgare* × *T. durum*

- F₂ 14,
- 14 + 1₁,
- 14 + 2₁,
- 14 + 4₁,
- 14 + 6₁,
- 14 + 7₁,
- 16 + 5₁,
- 17 + 4₁,
- 18 + 3₁,
- 19 + 2₁,
- 20 + 1₁,
- 21.

" " " "

.. *vulgare* × *T. mono-*

- coccum* 4-7 + 20₁-14₁

LONGLEY & SANDO, 1930.

GRAMINEAE (continued)	n	2n	
<i>Triticum</i> hybrids (continued)			
			$0-5 + \frac{28_1-18_1}{2}$
			BLEIER, 1930a.
<i>Triticum vulgare</i> × <i>T. spelta</i>	21 ¹⁾		THOMPSON & ROBERTSON, 1930.
„ <i>dicoccoides</i> × <i>Aegilops ovata</i>	$\frac{28_1}{2}$		BLEIER, 1930a.
„ <i>Spelta</i> (ALSTROUM) × <i>Aegilops cylindrica</i>	4-8 ²⁾ + $\frac{25_1-19_1}{2}$	35	AASE, 1930.
„ <i>vulgare</i> Host. var. <i>graecum</i> × <i>Aegilops ovata</i> L.	$\frac{35_1}{2}$		
			$2-3 + \frac{31_1-29_1}{2}$
			PERCIVAL, 1930.
<i>Hordeum bulbosum</i> LINN.	14		GHIMPU, 1930.
„ <i>cornutum</i> hort. VILMORIN	14		„ „
„ <i>distichum</i> hort. VILMORIN	14		„ „
„ <i>distichum nutans</i> α var. Princess of Svålof	14		„ „
„ <i>distichum nutans</i> β var. Issoudum	14		„ „
„ <i>distichum nutans spontaneum</i> hort. VILMORIN	14		„ „
„ <i>erectum</i> var. Goldthrope	14		„ „
„ <i>hexastichum</i>	14		„ „
„ <i>hexastichum trifurcatum album monstruosum</i> hort. VILMORIN	14		„ „
„ <i>maritimum</i> WITH.	14		„ „
„ <i>murinum</i> LINN.	14		„ „
„ <i>nigrum</i>	14		„ „
„ <i>nudiramulosum</i> hort. VILMORIN	14		„ „

¹⁾ A considerable percentage of the pollen mother cells showed 1 or 2 univalents much higher than found in the parental species.

²⁾ There was some trace of trivalents and tetravalents.

GRAMINEAE (continued)	n	2n	
<i>Hordeum</i> (continued)			
<i>Hordeum nudum</i>	14		GHIMPU, 1930.
„ <i>secalinum</i> SCHREB.	28		„ „
„ <i>tetrastichum</i>	14		„ „
„ <i>thyrsoides</i> hort. VIL- MORIN	14		„ „
„ <i>vulgare</i> Branching hort. VILMORIN	14		„ „
„ <i>vulgare</i> ESCOURGEON d'Algérie	14		„ „
„ <i>zeocritum</i>	14		„ „
„ <i>nigrescens</i> × <i>trifurca-</i> <i>tum</i> hort. VILMORIN	14		„ „
„ <i>nigrum</i> × <i>trifurcatum</i> hort. VILMORIN	14		„ „
„ <i>Stuedeli</i> × <i>trifurca-</i> <i>tum</i> hort. VILMORIN	14		„ „
SPATHIFLORAE			
ARACEAE			
<i>Arum cornutum</i>	16	32	HAASE-BESSELL, 1930.
FARINOSAE			
COMMELINACEAE			
<i>Cyanotis cristata</i>	12		RAU, 1930.
<i>Rhoco discolor</i> HANCE	12 ¹⁾		KATO, K., 1930a.
	$\frac{2}{}$		
	6 ²⁾		„ „ 1930b.
LILIIFLORAE			
LILIACEAE			
MELANTHIOIDEAE ³⁾			
I. Tofieldieae			
<i>A. Tofieldia calyculata</i>		28	MILLER, 1930.
„ <i>palustris</i>	15	30	„ „
<i>Nartheccium ossifragum</i>	13		„ „
II. Helonieae			
<i>Xerophyllum asphodeloides</i>		30	„ „
<i>Helonias bullata</i>		34	„ „
III. Veratrieae			
<i>Stenanthium robustum</i>		20	„ „

¹⁾ The chromosomes were arranged in diakinesis in a ring and there was no tendency to form pairs.

²⁾ Although the normal number of chromosomes in this plant was 6; 5 and 7 chromosomes were found as the result of unequal distribution towards the poles.

³⁾ Classification of the *Melanthioideae* as studied by MILLER is according to ENGLER & PRANTL.

	n	2n	
LILIACEAE (continued)			
<i>Zygadenus chloranthus</i>		32	MILLER, 1930.
„ <i>elegans</i>		32	„ „
„ <i>Fremonti</i>		22	„ „
<i>Veratrum nigrum</i>		32	„ „
„ <i>album</i>		16(?) ¹⁾	„ „
IV. Uvularieae			
<i>Gloriosa superba</i>		22	„ „
<i>Tricyrtus macropoda</i>		26	„ „
„ <i>filosa</i>		26	„ „
„ <i>stolonifera</i>		26	„ „
V. Anguillarieae			
<i>Baeometra columelloidea</i>		22	„ „
VI. Colchiceae			
<i>Bulbocodium vernum</i>		22	„ „
Asphodeloideae			
<i>Eremurus spectabilis</i> M. B.			
var. <i>Regeli</i>	7		PROSINA, 1930.
<i>Hemerocallis fulva</i>	6		LAWRENCE, 1930.
<i>Allium odorum</i>	12		MESSERI, 1930.
„ <i>roseum</i> v. <i>bulbilliferum</i> .	24		„ „
<i>Nothoscordum fragrans</i> KUNTH.		16	KOERPERICH, 1930.
<i>Lilium japonicum</i> THUNB.	12		NAGAO, 1930a.
„ <i>regale</i>	12		SAX, K., 1930c.
„ <i>tigrinum</i> KER GAWL . 12 ₃ , or 11 ₃ to 6 ₃ + biv. and univalents		36	TAKENAKA & NAGAMATSU, 1930.
<i>Fritillaria imperialis</i> Nos. 2, 3, 6		24	DARLINGTON, 1930b.
„ <i>imperialis</i> Nos. 4, 10 ²⁾		24 + 3 frag.	„ „
„ <i>imperialis</i> , No. 13 ³⁾		24 + 6 or 24 + 12 ³⁾ frag.	„ „
„ <i>imperialis</i> var. <i>Crown upon Crown</i> ³⁾		24 + 3 frag.	„ „
„ <i>imperialis</i> var. <i>maxi- ma Red</i>		24 + 1 frag.	„ „

¹⁾ Preliminary count.

²⁾ Pollen mother-cells of this variety were studied in detail.

³⁾ The 12 fragments appeared in the flower buds of a plant having 6 fragments in the root-tip.

LILIACEAE (continued)	n	2n	
<i>Fritillaria</i> (continued)			
<i>Fritillaria imperialis</i> var. <i>maxima</i> Yellow		24	DARLINGTON, 1930b.
" <i>imperialis</i> var. <i>Orange Brillant</i>		24 + 1 frag.	" "
" <i>imperialis</i> var. <i>Yellow</i> ¹⁾		24 + 6 frag.	" "
" <i>meleagris</i>		24	NEWTON & DARLINGTON, 1930.
<i>Tulipa Gesneriana</i> var. <i>Keizerskroon</i>		36	DE MOL, 1930.
" <i>Gesneriana</i> var. <i>Murillo</i>		23, 24	" " "
" <i>Gesneriana</i> var. <i>Pink Beauty</i>		36	" " "
<i>Eucomis undulata</i> L.' HÉR.		30	KOERPERICH, 1930.
<i>Hyacinthus orientalis</i> var. <i>La Victor</i>	8 ²⁾		STOW, 1930.
" <i>orientalis</i> var. <i>La Grandesse</i>		28	DARLINGTON, 1930c.
<i>Bellevalia azurea</i> FENZL.		18	LEWITSKY & TRON, 1930.
" <i>montana</i>		8	TRANKOWSKY ³⁾ , 1930b.
" <i>Wilhelmsii</i> (STEV.) G. WOR.		8	LEWITSKY & TRON, 1930.
<i>Muscari moschatum</i> WILLD.		18	" " " "
" <i>polyanthum</i> BOISS.		18	" " " "
" <i>pycnanthum</i> C. KOCH.		16	" " " "
<i>Ruscus aculeatus</i> L.		36	FERNANDES, 1930c.
<i>Convallaria majalis</i> L.	ca. 16		TRANKOWSKY, 1930a.
<i>Paris hexaphylla</i> CHAM. I & II.	5	10	GOTOH & STOW, 1930.
" <i>hexaphylla</i> CHAM. III	5 ₃	15	" " " "
" <i>tetraphylla</i> A. GRAY.	5	10	" " " "
<i>Trillium apetalon</i> MAKINO		20	" " " "
" <i>Kamtschaticum</i> PALL.	5	10	" " " "
" <i>Tschonoskii</i> MAXIM.		20	" " " "
" <i>T.</i> var. <i>rupho-purpureum</i> TATEWAKI		20	" " " "
" (Japanese variety)		10	" " " "
" (Japanese variety)		20	" " " "
<i>Smilax herbacea</i>	13		LINDSAY, 1930.

¹⁾ Pollen mother-cells of this variety were studied in detail.

²⁾ The observation was made in giant pollen grains.

For n preparations by DELAUNAY.

AMARYLLIDACEAE	n	2n	
<i>Galanthus nivalis</i> L.	10		TRANKOWSKY, 1930a.
<i>Amaryllis belladonna</i> L.		20	FERNANDES, 1930c.
<i>Narcissus bulbocodium</i> L. var.			
<i>genuinus</i>		14	„ 1930a.
<i>bulbocodium</i> L. var.			
<i>nivalis</i>		14	„ „
<i>calciola</i> MEND.		12	„ 1930b.
<i>gaditanus</i> Bss. et			
REUT. var. <i>minuti-</i>			
<i>florus</i> Wk.		12	„ „
<i>jonquilla</i> L. var. <i>jon-</i>			
<i>quilloides</i> Wk.		14	„ „
<i>minor</i> L.		14	„ „
<i>odorus</i> L.		10	„ „
<i>pseudo-narcissus</i> L.			
var. <i>bicolor</i> L.		28	„ „
<i>pseudonarcissus</i> var.			
<i>Grandee</i>	7 ₃ +1 ₁	22	NAGAO, 1930b.
<i>reflexus</i> BROT.		14	FERNANDES, 1930b.
<i>rupicola</i> DUF.		12	„ „
<i>scaberulus</i> HENRIQ.		12	„ „
<i>tazetta</i> L.		10	„ „
<i>tazetta</i> L. var. A ₂₂			
(„ <i>albae</i> “ type).	10, 11		NAGAO, 1930b.
<i>tazetta</i> L. var. of <i>al-</i>			
<i>bae</i> type	10, 11 ¹⁾		„ 1930a.
<i>tazetta</i> L. var. B ₁₀ (<i>bi-</i>			
<i>colores</i> type)	11		NAGAO, 1930b.
<i>tazetta</i> L. var. B ₂₁ (<i>bi-</i>			
<i>colores</i> type)		21	„ „
<i>tazetta</i> L. var. B ₃₁ (<i>bi-</i>			
<i>colores</i> type)		31	„ „
<i>tazetta</i> L. var. <i>Chinese</i>			
<i>Sacred Lily</i>	10 ₃	30	„ „
<i>tazetta</i> L. var. <i>Frank-</i>			
<i>lin</i>	10	20	„ „
	10		„ 1930a.
<i>tazetta</i> L. var. <i>Luna</i>		32	„ 1930b.
<i>tazetta</i> L. var. <i>Soleil</i>			
<i>d'Or</i>		30	„ „
<i>tazetta</i> L. var. <i>Yellow</i>			
<i>Prince</i>		30	„ „

¹⁾ In the heterotypic metaphase two kinds of pollen mother cells were found, one with 10 and the other with 11 chromosomes.

AMARYLLIDACEAE (continued)		n	2n	
	<i>Narcissus triandrus</i> L.		14	FERNANDES, 1930b.
	<i>Pancratium ceylanicum</i>	ca. 45		" 1930c.
	" <i>maritimum</i> L.		18 or 20	" "
	" <i>speciosum</i>	40-50		" "
	<i>Agave Sisalana</i> PERRINE	7	14	CATALANO, 1930.
	<i>Beschorneria Yuccoides</i> KUNTH.		60	KOERPERICH, 1930.
IRIDACEAE				
IRIS				
Section Juno				
	<i>Iris alata</i> POIR.		24	SIMONET, 1930c.
	" <i>bucharica</i> FOSTER	11		" 1930a.
	" <i>caucasica</i> HOFFM.		18	" 1930c.
		9		" 1930b.
	" <i>orchioides</i> CAR.		22	" 1930a.
	" <i>persica</i>	13		" 1930b.
	" <i>persica</i> L. var. <i>Heldreichii</i> hort. = <i>I. stenophylla</i> HAUSS.		26	" 1930c.
	" <i>sindjarensis</i> BOISS. et HAUSS.		22	" 1930a.
		11		" 1930b.
Section Evansia				
	<i>Iris milesii</i> BAKER.		26	" 1930a.
	" <i>tectorum</i> MAX.		28	" 1930c.
		14		" 1930b.
Section Reticulata				
	<i>Iris reticulata</i> BIEB.	10		" 1930c.
Section Xiphion				
	<i>Iris Tingitana</i> BOISS.	21		" 1930a.
	" <i>Tingitana</i> BOISS. et REUT.	14		" 1930b.
	" <i>Tingitana</i> var. <i>Fontanesii</i> BOISS.	14	28	" 1930a.
	" <i>Xiphium</i> L. var. <i>Battandieri</i> FOST.		36	" 1930c.
	" <i>Xiphium</i> L. var. <i>praecox</i> hort.	17		" 1930b.
Section Regelia				
	<i>Iris Korolkowi</i> REGEL var. <i>concolor</i> hort.		44	" 1930a.
	" <i>Korolkowi</i> REGEL var. <i>violetacea</i> hort.		22	" 1930a.
		11		" 1930b.
	" <i>Leichlini</i> REGEL		44	" 1930a.
		22		" 1930b.

IRIDACEAE (continued)	n	2n	
Iris (continued)			
Section Pogoniris			
<i>Iris Alberti</i> REGEL	12		SIMONET, 1930a.
.. <i>Alberti</i> REGEL var. <i>semper-</i> <i>florens</i> hort.	12		" "
.. <i>albicans</i> LANGE ¹⁾		44	" "
.. <i>Kashmiriana</i> BAKER ¹⁾		51	" "
.. <i>Kochii</i> A. KERNER ¹⁾		44	" "
.. <i>macrantha</i> hort.	24		" 1930b.
.. <i>mesopotamica</i> DYKES		48	" 1930c.
.. <i>olbiensis</i> HEN. var. <i>alba ma-</i> <i>yor</i> hort.	20		" 1930b.
.. <i>pallida</i> LAMK. var. <i>Edina</i> hort.	12		" "
.. <i>plicata</i> LAMK.	12		" "
.. <i>Ricardi</i> hort.		48	" 1930a.
.. <i>subbiflora</i> BROT.		40	" "
.. <i>subbiflora</i> BROT. var. <i>ma-</i> <i>yor</i> hort.		40	" "
.. <i>variiegata</i> L.	12		" 1930b.
Section Apogon			
<i>Iris Bulleyana</i> DYKES		40	" 1930c.
.. <i>chrysographes</i> DYKES		40	" "
.. <i>Forrestii</i> DYKES.		40	" "
.. <i>pabularia</i> NAUD. ²⁾		40	" "
.. <i>spuria</i> L. var. <i>maritima</i> LAM. .. <i>Wilsoni</i> WRIGHT.		38	" 1930a.
		40	" "
Section Onocyclus			
<i>Iris acutiloba</i> C. A. MEY		20	" 1930c.
.. <i>Ewbankiana</i> FOST.		20	" "
.. <i>iberica</i> HOFFM.		20	" 1930c.
	10		" 1930b.
.. <i>iberica</i> HOFFM. var. <i>ochra-</i> <i>cea</i> REG.		20	" 1930c.
.. <i>Mariae</i> BARBEY.		20	" 1930c.
	10		" 1930b.
.. <i>paradoxa</i> STEV.	10		" 1930b.
.. <i>susiana</i> L.	10		" 1930b.
.. <i>urmiensis</i> HOOG.		20	" 1930c.
	10		" 1930b.

¹⁾ This is a hybrid and there were a number of monovalents in the pollen mother-cells.

²⁾ This is a form of *Iris ensata* THUNB.

IRIDACEAE (continued)	n	2n	
Iris (continued)			
Iris hybrids:			
<i>Iris andromaque</i> hort. (<i>I. Korolkowi</i> REG. var. <i>violacea</i> hort. × <i>I. Mariae</i> BARB.)		21	SIMONET, 1930b.
„ <i>Béatrix</i> hort. (<i>I. Korolkowi</i> REG. var. <i>violacea</i> hort. × <i>I. susiana</i> L.)		21	„ „
„ <i>Orestes</i> hort. (<i>I. Korolkowi</i> REG. var. <i>violacea</i> hort. × <i>I. Leichtlini</i> REG.)		32	„ „
„ <i>Polymnie</i> hort. (<i>I. Korolkowi</i> REG. var. <i>violacea</i> hort. × <i>I. iberica</i> HOFFM.)		21	„ „
„ <i>caucasica</i> HOFFM. × <i>I. sindjarensis</i> BOISS. et HAUSS.		20	„ „
„ <i>iberica</i> HOFFM. × <i>I. pallida</i> LAMK.		22	„ „
„ <i>Leichtlini</i> REG. × <i>I. macrantha</i> hort.		46	„ „
„ <i>Leichtlini</i> REG. × (<i>I. paradoxa</i> STEV. × <i>I. iberica</i> HOFFM.)		32	„ „
„ <i>olbiensis</i> HEN. × <i>I. Korolkowi</i> hort.		31	„ „
„ <i>olbiensis</i> HEN. var. <i>alba major</i> hort. × <i>I. Korolkowi</i> REG.		42	„ „
„ <i>pallida</i> LAMK. var. <i>Edina</i> hort. × <i>I. tectorum</i> MAX.		26	„ „
„ <i>paradoxa</i> STEV. × <i>I. variegata</i> L.		22	„ „
„ <i>sindjarensis</i> BOISS. et HAUSS. × <i>I. persica</i> L.		24	„ „
„ <i>urmiensis</i> HOOG. × <i>I. plicata</i> LAMK.		22	„ „
„ <i>Xiphium</i> L. var. <i>praecox</i> hort. × <i>I. tingitana</i> Boiss. et REUT.		31	„ „
Bulbous Iris variety „David Bliss”		31	„ „
Bulbous Iris variety Wedgewood		31	„ „

MICROSPERMAE	n	2n		
ORCHIDACEAE				
Subfamily I. Diandrae				
Tribe I. Cypripedioideae				
<i>Cypripedium spectabile</i>	11		HOFFMANN, 1930.	
<i>Phragmopedilum caudatum</i> R.		32	" "	
" <i>Sedeni</i> PFITZ.			" "	
(<i>P. Schlimii</i> × <i>longifolium</i>).	12	24	" "	
" <i>Cypripedium Blenheimense</i> " ¹⁾		24	" "	
<i>Paphiopedilum Chamberlainia-</i>				
<i>num</i> PFITZ. .		32	" "	
" <i>insigne</i> PFITZ. .	ca. 16	ca. 32	" "	
" <i>Lecanum</i> (<i>P. in-</i>				
<i>signe</i> × <i>Spice-</i>				
<i>rianum</i>) . . .	ca. 12	24	" "	
" <i>purpuratum</i>				
PFITZ. . . .	ca. 24	ca. 48	" "	
Subfamily II. Monandrae				
Division II. Acrotonae				
Tribe III. Polychondreae				
Subtribe Listereae				
<i>Listera ovata</i> R. BR.	17		" "	
Subtribe Vanilleae				
<i>Vanilla planifolia</i> ANDR. . . .		32	" "	
Tribe IV. Kerosphaereae				
Series A. Acranthae				
Subtribe Pleurothallideae				
<i>Stelis atropurpurea</i> LDL. . . .	16		" "	
" <i>miersii</i> LDL.		32	" "	
<i>Phyosiphon carinatus</i> LDL. . .	ca. 16		" "	
" <i>Loddigesii</i> LDL.	ca. 16		" "	
Subtribe Liparideae				
<i>Microstylis</i> L. C. RICH. spec. .	ca. 20		" "	
Subtribe Coelogyneae				
<i>Coelogyne fimbriata</i> LDL. . . .	20		" "	
" <i>flexuosa</i> ROLFE (<i>Pty-</i>				
<i>chogyne flexuosa</i>				
PFITZ.).	20		" "	
" <i>fuliginosa</i> LDL.	20		" "	
<i>Dendrochilum glumaceum</i> LDL.				
(<i>Platyclinis glumacea</i> BTH.) .	20		" "	
<i>Pholidota conchoidea</i> LDL. . .	20		" "	

¹⁾ A hybrid of the genus *Phragmopedilum* or *Paphiopedilum* but still going under the name *Cypripedium*.

ORCHIDACEAE (continued)	n	2n	
Subtribe <i>Laeliieae</i>			
<i>Epidendrum Linkianum</i> . . .	ca. 20		HOFFMANN, 1930.
" <i>nocturnum</i> LDL. . .	20		" "
" <i>raniferum</i> LDL. . .	20		" "
<i>Cattleya Trianae</i> RCHB. . . .	20		" "
<i>Laeliocattleya Canhamiana</i> (<i>Laelia purpurata</i> LDL. × <i>Cattleya Mossiae</i> HOOK.) <i>Laelia tenebrosa</i> ROLFE <i>superba</i> . .	20		" "
Subtribe <i>Dendrobieae</i>			
<i>Dendrobium chrysotoxum</i> LDL.	20		" "
" <i>infundibulum</i> LDL.	20		" "
" <i>nobile</i> LDL. . . .		ca. 20	" "
" <i>thyrsiflorum</i> RCHB. f.	20		" "
" <i>Wardianum</i> WARN. var. <i>giganteum</i> WILLIAMS & MOORE.		40	" "
<i>Polystachya polychaete</i>	ca. 20		" "
Subtribe <i>Lycasteae</i>			
<i>Bifrenaria Harrisoniae</i> RCHB. f.		40	" "
<i>Lycaste aromatica</i> LDL. . . .	20		" "
Subtribe <i>Zygopetaleae</i>			
<i>Zygopetalum Mackayi</i> HOOK. .	24(?)		" "
Subtribe <i>Maxillarieae</i>			
<i>Ornithidium densum</i> RCHB. f. .	24		" "
Subtribe <i>Oncideae</i>			
<i>Odontoglossum citrosimum</i> LDL.		50-56	" "
" <i>crispum</i> LDL. . . .		56	" "
<i>Oncidium bicallosum</i> LDL. . .	14		" "
" <i>flexuosum</i>		56	" "
" <i>varicosum</i> LDL. . . .	28		" "
Series B. <i>Pleuranthae</i>			
Subseries a) <i>Sympodiales</i>			
Subtribe <i>Phajaeae</i>			
<i>Calanthe vestita</i> LDL. var. <i>Regneri</i> VEITCH. (<i>Calanthe Regneri</i> RCHB. f.)	20		" "
Subtribe <i>Bulbophylleae</i>			
<i>Bulbophyllum saurocephalum</i> .	20		" "
Subtribe <i>Cymbideae</i>			
<i>Cymbidium Lowianum</i> RCHB. f.	20		" "
Subtribe <i>Gongoreae</i>			
<i>Stanhopea insignis</i> FROST . .	20		" "
" <i>tigrina</i> BATEM.			" "

ORCHIDACEAE (continued)	n	2n	
Subtribe Gongoreae			
(continued)			
<i>Gongora galeata</i> RCHB. f. (<i>Acro-</i> <i>pera Loddigesii</i> LDL.) . . .	20		HOFFMANN, 1930.
Subseries b) Monopodiales			
Subtribe Sarcanthea			
2 <i>Grex Apodostele</i>			
<i>Vanda tricolor</i> LDL.		18	" "
" <i>tricolor</i> var. <i>suavis</i> . . .	ca. 18		" "
<i>Sarcanthus rostratus</i> LDL. . .		40	" "

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