ABSTRACTS FROM LITERATURE

Compiled by A. H. G. ALSTON.

Thanks are due to D. E. Allen, J. G. Dony, K. S. Hodges, W. R. Price, A. E. Wade, S. M. Walters and D. P. Young for their help.

SYSTEMATIC, ETC.

6/14. RANUNCULUS AURICOMUS L. Schwarz, O., 1949, Beiträge zur Kenntniss kritischer Formenkreise im Gebiete der Flora von Thüringen, *Mitt. Thüring. Bot. Ges.*, **1** (1), 120. *Ranunculus auricomus* L. has been shown to be a collective species, with several constant apomictic microspecies. Nine are recorded for Thuringia and separated by a key.—[A.H.G.A.]

39/1. CARDAMINE PRATENSIS L. Clausen, R. T., 1949, Checklist of the Vascular Plants of the Cayuga Quadrangle, 42°-43° N., 76°-77° W., *Cornell Univ. Agr. Exp. Sta.*, Mem. 291, 8-9. Two subspecies are distinguished: subsp. *typica* Clausen occurs in dry situations and subsp. *palustris* (Wimm. et Grab.) Clausen in moist, boggy places. Although they have geographical pattern of subspecies in North America, in Europe their relationships are more complex.—[D.E.A.]

39/1. CARDAMINE PRATENSIS L. Hussein, F., 1948, Chromosome number of Cardamine pratensis, *Nature*, **161**, 1015. The normal plant of damp meadows constantly has 2n = 56. Plants with semi-double flowers have been found in fifteen localities in wet places, chiefly in the North of England. They too have 2n = 56. Plants with 2n = 30 seem to be characteristically from southern England. An ecological difference found by Lövkvist holds good in most cases: the large plant (2n = 30) is characteristic of damp banks, whereas the smaller darker-leaved plant grows in wet meadows.—[D.E.A.]

44. EROPHILA. Matuszkiewicz, W., 1948, Taxonomic Researches on Erophila verna DC., *Ann. Univ. Mariae-Curie*, Lublin, **3**, 19-47. (Polish with English summary). The author concludes that there is little statistical correlation between the characters.—[A.H.G.A.]

61/3. LEPIDIUM DRABA L. Shove, R. F., 1948, Thanet Weed (Cardaria Draba), *School Nature Study*, **43**, 11-12. A short account of its history in Britain, morphology and biology.—[A.E.W.]

96. SILENE. Marsden-Jones, E. M., & Turrill, W. B., 1948-9, Researches on Silene maritima and S. vulgaris, XXVII, XXVIII, XXIX, XXX, *Kew Bull.*, **1948**, 29-33, 33-42, 253-263, 264-276; XXXI, **1949**, 319-339. The first paper deals with the examination of Swedish material of *S. maritima*. 429 plants were grown and scored and the authors conclude that they are all to be classified into *S. maritima*, resulting from the continued back-crossing of a *S. maritima* × *S. vul-*

garis F1 with *S. maritima*; this would result in " infiltration " of *S. vulgaris* genes into a *S. maritima* population. The second paper deals with *S. vulgaris* material from the Pyrenees. The genetic behaviour of populations derived from this material is described; of particular interest is the genetic behaviour of a short bristly type of indumentum, the very inflated calyx, certain capsule characters usually associated with *S. maritima* and a modification of the tubercled character of the coat. Paper XXIX gives the results of three crosses between a plant of *S. maritima*, peculiar in having long cylindrical calyces, and two plants of *S. vulgaris*. It is shown how very rarely either grandparental habit appears in the F2 generation. Paper XXX describes work on crosses between *S. vulgaris* plants from Loch Tay and both *S. maritima* and *S. vulgaris* plants of different origin. F2 families from interspecific crosses showed a high degree of sterility. Paper XXXI suggests that mutation and selection connected with the car-age and its oncoming led to the isolation of *S. maritima* in north Europe.—[K.S.H.]

112/16. HYPERICUM LINARIIFOLIUM Vahl. Sandwith, N. Y., 1947, *Trans. Radnor Soc.*, **17**, 13. Its occurrence in Radnorshire is discussed.—[A.E.W.]

117. MALVA. Hedlund, T., 1949, Notes on the Appearance of New Biotypes Closely Related to Malva parviflora L., *Hereditas*, **35**, 507-520.

123/1. TILIA PLATYPHYLLOS Scop. Burchell, J. P. T., & Erdtman, G., 1950, Indigenous T. platyphyllos in Britain, *Nature*, **165**, 411. Peat from Addington, Kent (v.-c. 16), contained pollen-grains of *Tilia cordata* and *platyphyllos* (frequency 10%, proportions 75: 5), besides alder, birch, hazel, oak, elm, and other trees and herbs in small amounts. The peat layer is assigned to the neolithic period.—[D.P.Y.]

127/3. GERANIUM SYLVATICUM L. Lundman, B., 1948, Some Notes on the Regional Variation of Flower Colour in Geranium silvaticum L., *Svensk Bot. Tidskr.*, **42**, 153-157 (in Swedish). Light-coloured flowers are common in the northern parts of Sweden, in Norway and in parts of Finland, but rather rare in southern and central Sweden, where they have been found only in mountain districts.—[A.H.G.A.]

185. RUBUS L. Bailey, L. H., 1949, Rubus Studies, *Gentes Herbarum*, **7**, 480-526. The author gives an account of the theory of species in *Rubus*. He places *R. Leesii* Bab. under *R. idaeus* var. *obtusifolius* Willd.—[A.H.G.A.]

186. DRYAS. Porsild, A. E., 1947, The Genus Dryas in North America, *Canad. Field-Nat.*, **61**, 175-192. The North American species are revised and compared with those of Eurasia.—[D.E.A.]

189/8. POTENTILLA PROCUMBENS Sibth. Dix, W. L., 1949, Potentilla procumbens in the United States, *Rhodora*, **57**, 390-391. *P. procumbens* Sibth. is recorded as an escape. The correct name is said to be *P. anglica* Laich.—[A.H.G.A.]

195. SORBUS. Hedlund, T., 1948, Om uppkomsten av nya livstyper inom släktet Sorbus (Concerning the Rise of new Biotypes within the genus Sorbus), *Bot. Not.*, **1948**, 381-391.

199/17. SAXIFRAGA GRANULATA L. Jones, E., & Turrill, W. B., A quantitative Study of Petal Size and Shape in Saxifraga granulata L., *J. Genetics*, **48**, 206-218. The paper deals with the Hog's Back population. Environmental conditions have little or no influence on the L/B ratio of the petals, but this varies with the age of the flowers. Female flowers, without viable pollen, were not frequent in the material studied.—[A.H.G.A.]

207. RIBES. Hedlund, T., 1948, Om Ribes vulgare och Ribes rubrum, *Bot. Not.*, **1948**, 39-48. The cultivated plants of *Ribes* called *R. rubrum* by Linnaeus and characterised by " floribus planiusculis " and by separate antheral spaces on the stamens were given the name *R. vulgare* by Lamarck in 1789. *R. rubrum* L. has been used to signify a collective species having campanulate flowers with wholly inferior ovaries and stamens with the antheral spaces close together. The subspecies of *R. rubrum* L. which differ mainly in degree of pilosity and are arranged in order of decreasing pilosity are *R. pubescens* (Sw.) Hedl., *R. scandicum* Hedl., *R. glabellum* (Trautv. et Mey.), and *R. glabrum* Hedl. They are found mainly in northern Europe and northern Asia. A key to some species of *Ribes*, 8 in number, is given.—[A.E.W.]

207/2. RIBES NIGRUM L. Vaarama, A., 1948, Cryptic Polyploidy and Variation of Chromosome number in Ribes nigrum, *Nature*, **162**, 782. *R. nigrum* has been found to have an oscillating chromosome number varying from 4 to 32. The most frequent number is diploid 2n = 16. All numbers divisible by four are more frequent than might be expected. If the basic number for the genus is x = 4, the recent species are presumably derived tetraploids. The meiosis of certain *Ribes* hybrids indicates that hybridization and amphidiploidy have played a part in the speciation of this genus.—[D.E.A.]

220/1. EPILOBIUM ANGUSTIFOLIUM L. Fernandes, R., Uma Espécie de Epilobium nova para a Flora de Portugal, *Bot. Soc. Brot.*, ser. 2, **22**, 5-14. *Epilobium angustifolium* L. var. *brachycarpum* (Leight.) is figured, described and recorded as new to the flora of Portugal. The Portuguese plant is said to agree with specimens from Colinton Woods, Edinburgh, collected by Syme.—[A.H.G.A.]

223. OENOTHERA. Parrot, A. G., 1948, Les Onagres (Oenothera L.) au Pays Basque français, *Bull. Soc. Hist. Nat. Toulouse*, **83**, 83-87.

247. APIUM; 253, SIUM. Berton, A., 1947, Sium et Helosciadium. Tussilago et Petasites. Structure des Petioles; determination par les feuilles, *La Feuille des Naturalistes*, N.S. **2**, 95. *Helosciadium* has fewer leaflets on the radical leaves (4-6 pairs). The leaflets of the first pair are at least as large as the others (the contour of the leaf is more or less triangular). No articulations on the petiole. No inverted (inversé) vascular bundles. Round cavity in transverse section. *Sium angustifolium* has 6-12 pairs of leaflets. The lowest pair smaller than the others (contour of leaf lanceolate). Rhachis articulate. Central cavity blocked at the articulation. *Petasites*: petiole angular with two

wings on ventral surface. Numerous vascular bundles in transverse section. *Tussilago*: petiole without angles or wings. Vascular bundles in a single arc. *Petasites fragrans* is similar to *Tussilago*, but there are vascular bundles within the main arc.—[A.H.G.A.]

258/1. CHAEROPHYLLUM AUREUM L. Håkansson, A., 1948, Syncytiebildning i anthererna av Chaerophyllum aureum, *Bot. Not.*, **1948**, 425-429. An unusual kind of pollen sterility is discussed. "Meiosis is as a rule regular with 11 II's at diakinesis, but at the end of the second division disturbances set in. In most cases no separate pollen cells are formed, the four 'tetrad' nuclei remaining together in the same cell. The nuclei increase in size and often a vacuole is found as in a normal pollen grain. Often larger syncytia are formed through fusion of a different number of 'tetrads.' Germinable fruits are found, and as agamospermy does not occur, they must be the result of pollination from pollen that must be formed rarely."—[A.E.W.]

277/2. HERACLEUM SPHONDYLIUM L. Duwen, J. M., 1949, De Bereklaun, *De Levende Natur*, **52**, 70-73. The paper illustrates and discusses the dissected forms.—[A.H.G.A.]

295/1. RUBIA PEREGRINA L. Guillaume, A., 1948, La limite de répartition du Rubia peregrina, *Bull. Soc. Bot. Franç.*, **95**, 265-272. The writer seeks to demonstrate that the areas occupied by *Rubia peregrina* and *Ruscus aculeatus*, which are south-west European species with a range from Southern England to Northern Italy, are mainly determined by their past history rather than by climatic factors. Salisbury's (1926, The Geographical distribution of plants in relation to climatic factors, *Geographical Journal*, **48**, 312) theories are criticised.—[A.H.G.A.]

296/5. GALIUM PUMILUM Murray. Ehrendorfer, F., Zur Phylogenie der Gattung Galium. I. Polyploidie und geographisch-ökologische Einheiten in der Gruppe des Galium pumilum Murray (Sekt. Leptogalium Lange sensu Rouy) im österreichischen Alpenraum, *Österr. Bot. Zeitschr.*, **96**, 109-138.

300. SHERARDIA. Garjeanne, A. J. M., 1948, Sherardia, *De Levende Natur*, **51**, 163-168.

301. VALERIANA. Walther, E., 1949, Zur Morphogie und Systematik des Arzneibaldrians in Mitteleuropa, *Mitt. Thüring. Bot. Ges.*, Beiheft, **1**, 7-105. A revision of the Genus *Valeriana* Section *Officinalis* based on cytology and herbarium specimens. Four species are recognised and their distribution shown on a map. A fifth, *V. pratensis* Dierb., is confined to the Rhine Valley. Three of these are reported from Britain, while the fourth, *V. sambucifolia*, has a more easterly range from Scandinavia to Jugo-Slavia. The species are separated as follows:—

A. Plants with stolons above ground ("flagellen") and subterranean ("stolonen"). Epidermal cells of the upper surface of the leaf with wavy walls ("stark gewellt"). Leaflets at right angles to the rhachis. Flowers 4-8.3 mm. long. Pollen grains 52-65μ. Fruit glabrous and 4-5 mm. long.
Series *Sambucifoliae*.

B. Plants early-flowering, small, 40-80 cm. Leaves in the middle of the stem with (2)3-4(5) pairs of leaflets. ..... 1. *V. sambucifolia.*

BB. Plants late-flowering, usually 80-150 cm. Leaves in the middle of the stem with (2)4-6(8) pairs of leaflets, under surface with long hairs. 2. *V. procurrens.*

AA. Plants with stolons subterranean or almost wanting. Epidermal cells of the upper surface of the leaf with almost straight walls ("wenig gebogen"). Leaflets making an acute angle with the rhachis. Flowers 2-5.7 mm. long. Pollen grains 37-50μ. Fruits 2-4.4 mm. long. Series *Collinae.*

B. Under surface of leaves with long hairs.

C. Plants early-flowering, with short stolons. Leaves in the middle of the stem short-stalked, with (6)7-12(14) pairs of leaflets. ..... 3. *V. collina.*

CC. Plants late-flowering, almost without stolons, 70-150 cm. Leaves in middle of stem long-stalked, with 6-9 pairs of leaflets. Fruit always glabrous. ..... 4. *V. exaltata.*

BB. Under surface of leaves glabrous or with short bristles. Plants early-flowering, usually without stolons, 50-100 cm. Leaves in middle of stem with 6-8 pairs of leaflets. ..... 5. *V. pratensis*

The British records and the chromosome numbers are :—

1. *V. sambucifolia* Mikan (non British). n=28.

2. *V. procurrens* Wallroth (*V. sambucifolia* auct.). n=28.
   - V.-c. 6. N. Som. : Cheddar Gorge, *Skalińska & Sandwith*; *Ross-Craig, Burtt & Sealy.*
   - 9. Dorset : Wareham, hedgebank, *Makins.*
   - 11. S. Hants. : S. of Minstead, New Forest, *Ross-Craig, Burtt & Sealy.*
   - 17. Surrey : towing-path above Kew, *Fraser.*
   - 22. Berks. : Kennington, near Oxford, wet places, *Hubbard.*
   - 23. Oxon. : near Shipton-on-Cherwell, *Turrill.*
   - 30. Beds. : King's Wood, Heath and Reach, *Milne-Redhead.*
   - 33. E. Glos. : Mercombe Wood; Perrott's Brook, by roadside at bottom of hill and by R. Churn, *Sprague*; Chescombe Wood, *Sprague & Skalińska.*
   - 76. Renfrew : Earn Water, between Mearns and Fenwick, *Mackechnie.*
   - 80. Roxburgh : Newcastleton, in state forest. *Summerhayes.*
   - 104. Skye : near Portree (Staffin Road). *N. & H. M. Montford.*
   - H.1. Kerry : between Ross Island and mouth of the R. Flesk, Killarney, *Ross-Craig, Burtt & Sealy.*

3. *V. collina* Wallroth (*V. officinalis* L. emend. Maillefer). n=14.
   - 6. N. Som. : Leigh Woods, *J. W. White.*
   - 17. Surrey : Hascombe, *E. S. Marshall*; chalkpit, south of West Clandon, *Britton*; Mickleham Downs, in open chalk pasture, *Sandwith.*
   - 25. E. Suffolk : Burgate, *E. S. Marshall.*
   - 29. Cambridge : Cherry Hinton, *Babington.*
   - 30. Beds. : Knotting, *Milne-Redhead.*
   - 39. Stafford : limestone, Manifold Valley, *Edees*; Biddulph, Hb. Haussknecht; "Kuypersly", Hb. Haussknecht.

4. *V. exaltata* Mikan. n=7.
   - 23. Oxon. : marsh near Slade's Bottom, Woodstock district, *Hubbard & Turrill.*

5. *V. pratensis* Dierbach (non British).

Hybrid *V. collina* × *V. procurrens.*
   - 6. N Som. : Avon Gorge under Leigh Woods, *Skalińska & Sandwith.*
   - 17. Surrey : Clandon Downs, *Wallace*; Sheerwater, Byfleet, *Fraser.*
   - 23. Oxon. : damp valley bottom near Kiddington, *Turrill.*
   - 24. Bucks. : chalk slopes above High Wycombe, *Sandwith.*
   - 33. E. Glos. : Lower Hilcot, *Sprague & Skalińska.* [A.H.G.A.]

[The spelling of the British localities has been checked by the specimens at Kew by Mr N. Y. Sandwith.—A.H.G.A.]

320. ERIGERON. Cronquist, A., 1947, A revision of the North American Species of Erigeron north of Mexico, *Brittonia*, **6**, 121-302. *E. canadensis* is placed in the genus *Conyza*, the chief generic difference being in the numbers of central hermaphrodite flowers, which are stated to be few in *Conyza* and many in *Erigeron*. Three North American varieties of *E. acris* are described.—[K.S.H.]

370/4. CHRYSANTHEMUM LEUCANTHEMUM L. Gombault, R., 1948, Notules sur la flore française de l'Ouest, *Bull. Mus. Paris*, **20**, 478-480. Describes *Chrysanthemum Leucanthemum* var. *odoratum* with a scented root and trimorphic leaves from Basses-Pyrénées.—[A.H.G.A.]

379. TUSSILAGO; 380, PETASITES. See 247; 253.

396/2. CIRSIUM VULGARE (Savi) Ten. Arènes, J., 1948, Les races françaisés du Cirsium vulgare (Sav.) Ten., *Bull. Soc. Franç. Ech. Pl. Vasc.*, **1947**, 42-45. The species is subdivided into three subspecies:—

Apex of median and outer bracts of capitulum 10-15 mm. long, erecto-patent, arcuate or recurved after flowering, tipped by a strong spine 3-7 mm. long ..... subsp. *crinitum* (Boiss.) Rouy

Apex of median and outer bracts of capitulum 5-10 mm. long, erect, erecto-patent or patent before flowering, sometimes afterwards, more or less arcuate:—

Leaves concolorous or subconcolorous, glabrous, glabrescent, pubescent or more or less arachnoid (?) beneath. Spines of involucral bracts 1-5 mm. ..... subsp. *Savianum* J.Ar.

Leaves not concolorous, strongly araneo-tomentose or woolly on the lower surface ..... subsp. *silvaticum* (Tausch.)

These subspecies are further subdivided into varieties.—[A.H.G.A.]

396/4. CIRSIUM ACAULON (L.) Weber. Arènes, J., 1948, Les races françaisés du Cirsium acaule (L.) Scop., *Bull. Soc. Franç. Ech. Pl. Vasc.*, **1947**, fasc. 1, pt. 2, 38. The species is subdivided as follows:—

Leaves with rather numerous more or less flat lobes which are patent or erecto-patent. Marginal spines whitish, medium, not erect. Rosettes solitary or united in small tussocks ..... var. *vulgare* Naeg.

Stem short or wanting (5 cm. or less)

Capitulum rounded and more or less truncate at base ..... subvar. *vulgare* J.Ar.

Capitulum attenuate at base ..... subvar. *araricum* (Gaud.) J.Ar.

Stem exceeding 5 cm.

Capitulum rounded and more or less truncate at base ..... subvar. *collivagum* (Gaud.) J.Ar.

Capitulum attenuate at base ..... subvar. *disjunctum* (Gaud.) J.Ar.

Leaves with many contiguous lobes separated by deep sinuses with thickened margins. Marginal spines erect, yellowish, long and numerous. Outer bracts of capitulum more cartilaginous and stiff. Rosettes numerous, united in large irregular tussocks ..... var. *gregarium* (Boiss:) Briq. & Cav.

[A.H.G.A.]

396/8. CIRSIUM ARVENSE (L.) Scop. Arènes, J., 1948, Les races françaises du Cirsium arvense (L.) Scop., *Bull. Soc. Franç. Ech. Pl. Vasc.*, **1947**, fasc. 1, pt. 2, 39-40. The species is subdivided into two subspecies:—*eu-arvense* J. Ar. (glabrescent) and *incanum* (Georgi) J. Ar. (leaves pubescent beneath). These are further subdivided into varieties and subvarieties.—[A.H.G.A.]

423. TARAXACUM. Tschermak-Woess, E., 1949, Diploides Taraxacum vulgare in Wien und Niederösterreich, *Österr. Bot. Zeitschr.*, **96**,

56-63. The *Taraxaca* found near Vienna include both triploid and diploid forms of the *T. vulgare* and *T. laevigatum* groups. The diploid form of *T. vulgare* is not apomictic. The pollen-grains and stomata are larger in the triploid forms than in the diploid.—[A.H.G.A.]

423. TARAXACUM. Chevalier, A., 1948, Essai élémentaire sur les Taraxacum de la flore de France, *Bull. Soc. Bot. France*, **95**, 257-259. The author states that the diploid chromosome numbers may be 16, 24, 32, 40 and 48. Nine sections are keyed out.—[A.H.G.A.]

445/1. CALLUNA VULGARIS Salisb. Poel, L. W., 1949, Germination and development of heather and the hydrogen ion concentration of the medium, *Nature*, **163**, 647-648. Germination and subsequent development of heather seeds on an artificial medium (agar) is optimum at pH 4.—[D.P.Y.]

458. ARMERIA. Lawrence, G. H. M., 1947, The Genus Armeria in North America, *Amer. Midl. Nat.*, **37**, 757-779. It is believed that the circumboreal thrifts of the Old and New Worlds represent a single polymorphic species, *A. maritima* (Mill.) Willd.; that a single element of this species, var. *sibirica* (Turcz.) Lawr., is essentially circumboreal, and that the plants of the southerly projecting ranges represent evolutionary developments of it. The author has been unable to treat *A. vulgaris* Willd. as specifically distinct from *A. maritima*. The genus does not afford an abundance of sharply differentiated morphological characters. Despite Druce's contention in 1901 that the vesture of the calyx-tube is a reliable character, it was found that, while it may be reliable in the separation of some of the more stable species, it is very variable in the more polymorphic units. Several geographical races of var. *typica* Lawr., which is limited in America to South Greenland, can be discerned in Old World populations; var. *purpurea* (Mert. et Koch) Lawr. is equivalent to *A. vulgaris* Willd. The differences between these two varieties may be tabulated as follows:—

Outer involucral bracts more than half as long as the inner ones, usually mucronate; inner bracts mucronate to mucronulate and occasionally obtuse; calyces with intercostal spaces glabrous or pubescent; leaves usually 1 mm. wide or less ..... var. *typica* Lawr.

Outer involucral bracts usually shorter than the inner ones, obtuse; inner bracts acute or obtuse; calyces with intercostal spaces glabrous; leaves usually 1.5 mm. wide or more ..... var. *purpurea* (Mert. et Koch) Lawr.

Other varieties occurring in America are described.—[D.E.A.]

460. PRIMULA. Smith, W. Wright, and Fletcher, H. R., 1948, An account of the genus *Primula*: Section *Vernales* Pax., *Trans. and Proc. Bot. Soc. Edin.*, **34**, 402-468. *P. elatior*, *P. veris*, and *P. vulgaris* are dealt with, their hybrids and described forms and varieties are enumerated, together with brief notes on their characteristics.—[A.E.W.]

476. MICROCALA. Garjeanne, A. J. M., 1949, Microcala, *De Levende Natur*, **52**, 104-110.

511/2. CALYSTEGIA SYLVESTRIS (Willd.) R. & S. Hylander, N., 1949, Calystegia silvestris, en förbisedd kulturflykting i Sveriges och Danmarks flora, *Bot. Not.*, **1949**, 148-156. The occurrence as a

naturalised garden escape of a pink-flowered form in Sweden and Denmark is discussed. This form had hitherto been confused with the corresponding pink-flowered form of *C. sepium* (L.) R. Br., var. *colorata* (Lge.) which the author finds indistinguishable from the var. *americana* (Sims) Kitag. This variety is considered to be only sub-spontaneous. The first record for Sweden of *C. sepium* var. *colorata* made in 1876 proves to be the pink-flowered form of *C. sylvestris*.—[A.E.W.]

515. CUSCUTA. Denffer, D. von, 1948, Über die Bedeutung des Blühtermins der Wirtspflanzen von Cuscuta Gronovii Willd. für die Blütenbildung des Schmarotzers, *Biol. Zentralbl.*, **67**, 175-189. On certain hosts the Cuscuta takes over the long or short day character of the stock.—[A.H.G.A.]

515/2. CUSCUTA EUROPAEA L. Verdcourt, B., 1948, Notes on the Scottish Records of Cuscuta europaea, *Trans. and Proc. Bot. Soc. Edin.*, **34**, 469-471. It is considered that the five certain occurrences of this species in Scotland, from the counties of South Aberdeen, Edinburgh, Roxburgh and Perth were all introductions.—[A.E.W.]

517. SOLANUM. Stebbins, G. L., & Paddode, E. F., 1949, The Solanum nigrum complex in Pacific North America, *Madroño*, **10**, 70-81. Several species have been included under *S. nigrum*. They have different chromosome numbers and often hybridise with difficulty. The true *S. nigrum* L. has a chromosome number 2n = 72, and, though widespread in Europe, is an uncommon introduction in America. It is replaced in N. America by *S. americanum* Mill., which has an umbelliferous (not subracemose) inflorescence and smaller seeds and stamens. *S. nodiflorum* Jacq. is the pantropic representative of *S. nigrum*, while *S. Douglasii* Dunal is common in western North America. *S. villosum* Mill. is a tetraploid (2n = 48) species found in Europe and sometimes introduced into the U.S.A. *S. furcatum* Dunal and *S. sarachoides* Sendt. are introduced species, and the latter has become widespread in U.S.A. It is distinguished by its green berry with large seeds and the swelling of the calyx after flowering. *S. furcatum* Dunal is a sparsely pubescent plant with bifurcate inflorescences, deflexed peduncles, large flowers and comparatively few seeds in the berries.—[A.H.G.A.]

543. VERONICA. Garjeanne, A. J. M., 1948, Veronica, *De Levende Natur*, **51**, 101-108.

569. GLECHOMA. Kuprianova, L., 1948, The genus Glechoma L. and its species, (Russian), *Bot. Zhurn. SSSR*, **33**, 230-238. Five species are included in the revision. *Glechoma hirsuta* W. & K. is maintained as a species, but is not recorded from Britain. The map shows it as confined to S.E. Europe, so presumably the British records are excluded.—[A.H.G.A.]

596. AMARANTHUS. Contré, E., 1947, Un nouvel hybride d'Amaranthus: ×Amaranthus Ralletii E. Contré (A. retroflexus L. × A. Boudronii Thell.), *La Feuille des Naturalistes*, N.S., **2**, 11. Found in a garden at Paizay-le-Tort (Deux-Sèvres) with the parents.—[A.H.G.A.]

596. AMARANTHUS. Kloos, A. W., 1949, Dix espèces d'Amaranthus nouvelles pour la flore belge, *Bull. Jard. Bot. Brux.*, **19**, 243-250. The author records and describes several species. England figures in the distribution for *A. quitensis* H.B.K. and *A. Dinteri* Schinz var. *uncinatus* Thell.—[A.H.G.A.]

600/4. CHENOPODIUM HYBRIDUM L. Fernald, M. L., 1949, Chenopodium hybridum L. var. Stanleyanum (Aellen) comb. nov., *Rhodora*, **51**, 92. The common American representative is *C. hybridum* L. var. *gigantospermum* (Aellen) Rouleau, with seeds 1.5-2 mm. Those of var. *Stanleyanum* are 2-3 mm.—[A.H.G.A.]

615. POLYGONUM. Garjeanne, A. J. M., 1948, Varkensgrasbloempfer, *De Levende Natur*, **51**, 17-22.

618. RUMEX. Rechinger, K. H., 1948, Beiträge zur Kenntnis von Rumex, IX, *Candollea*, **11**, 229-241. Describes ×*R. eriogenus* (*R. cristatus* DC. × *R. Patentia* L.) from near Vienna as new. Redescribes ×*R. Trimenii* Hausskn. (*R. pulcher* L. × *R. rupestris* Le Gall) from White Sand Bay, E. Cornwall. In notes on nomenclature, *R. longifolius* DC. is substituted for *R. domesticus* Hartm., and recorded from Scotland. *R. cristatus* DC. non Fries replaces *R. graecus* Boiss. & Heldr., and is recorded from Kew Bridge. *R. altissimus* Wood is recorded from Colchester and Middlesex, and *R. fueginus* Phil. from Galashiels and Glasgow.—[A.H.G.A.]

622. ARISTOLOCHIA. Prell, H. H., 1948, Uitbreiding van de Pijpbloem, *De Levende Natur*, **51**, 116-121 and 135-141.

625/1. HIPPOPHAE RHAMNOIDES L. Darmer, G., 1948, Neue Beiträge zur Oekologie von Hippophaë rhamnoides L., *Biol. Centralbl.*, **67**, 342-361. The map shows that this is a coastal species in northern Europe, but occurs inland in South Europe and Central Asia.—[A.H.G.A.]

633/6. ULMUS STRICTA Lindl. var. SARNIENSIS (Loud.) Lawrence, G. H. M., New Combinations and names of cultivated plants, *Gentes Herbarum*, **8**, 77. The names include *Ulmus carpinifolia* var. *sarniensis* (Loud.) Bailey, based on *U. campestris* β *sarniensis* Loud., and including *U. foliacea* var. *Wheatleyi* Rehd.—[A.H.G.A.]

641/1. MYRICA GALE L. Bond, G., 1949, Root nodules of Bog Myrtle or Sweet Gale, *Nature*, **163**, 730. Experiments in artificial growth media confirm that the root nodules are associated with nitrogen fixation.—[D.P.Y.]

646/2. QUERCUS PETRAEA (Matt.) Liebl. Weimarck, H., 1947, Bidrag till Skånes Flora, 37: Distribution and ecology of Quercus petraea, *Bot. Not.*, **1947**, 189-206. The sessile oak seldom forms pine woods in Scania, and as a rule is associated with other trees, especially *Q. Robur*. The distribution in the provinces is unequal and is restricted to acid soils in broken country, mountain precipices, hill tops and upper slopes. Analyses of a number of soil profiles in sessile-oak woods are given and cultural experiments to determine behaviour in different soils are described.—[A.E.W.]

650. SALIX. Harrison, J. Heslop, 1949, Intersexuality in Irish Willows, *Irish Nat. Journ.*, **11**, 269-272. Both " androgyna " and " metamorphosans " forms are found in Ireland. The former have perfect male and female florets in the same catkin, and the latter florets in various degrees of transition between male and female. The former were found in *S. Caprea* and *S. atrocinerea*, and the latter in *S. Caprea*, *S. aurita* and *S. atrocinerea*.—[A.H.G.A.]

669. ORCHIS. Harrison, J. Heslop, 1949, Orchis cruenta Müll.: a new Irish Marsh Orchid, *Irish Nat. Journ.*, **11**, 329-330. An orchid identified as *O. cruenta* was found around the shores of lakes overlying the limestone plain of E. Mayo and N.E. Galway. The species belongs to the *majalis* group, but is easily distinguished by anthocyanin pigmentation of the stem and leaves. Outside Ireland it occurs in Scandinavia, Russia, Siberia and the Alps.—[A.H.G.A.]

669. ORCHIS. d'Alleizette, C., 1948, Les Orchidées de Souppes (Seine et Marne), *Bull. Soc. Franç. Ech. Pl. Vasc.*, **1947**, fasc. 1, pt. 1, 14-18. The locality is remarkable for the large number of hybrids, which include ×*O. carnea* G. Cam. (*elodes* × *incarnata*), ×*O. Aschersoniana* Hausskn. (*incarnata* × *latifolia*), ×*O. ambigua* Verm. (*incarnata* × *maculata*), ×*O. Uechtritziana* Hausskn. (*incarnata* × *palustris*), ×*O. Braunii* Halacsy (*latifolia* × *maculata*), ×*Orchiplatanthera Chevallieriana* G. Camus (*O. elodes* × *Platanthera bifolia*) and ×*Orchigymnadenia souppensis* G. Camus (*O. elodes* × *Gymnadenia conopsea*).—[A.H.G.A.]

669. ORCHIS. Vermeulen, P., 1949, Varieties and forms of Dutch Orchids, *Ned. Kruidk. Arch.*, **56**, 204-242. *Dactylorchis* is maintained as a genus, several new varieties are described and a few British specimens are cited.—[A.H.G.A.]

706. SCILLA NON-SCRIPTA (L.) Hoffmansegg & Link. Peace, T. R., and Gilmour, J. S. L., 1949, The effect of picking on the flowering of Bluebell, Scilla non-scripta, *New Phyt.*, **48**, 115-117. It is concluded from experiments at Oxford and at Kew that no harm can be done by moderate picking or pulling, preferably spread over a wide area; trampling on leaves causes marked deterioration.—[K.S.H.]

719. LUZULA. Nordenskiöld, H., 1949, Somatic chromosomes of Luzula, *Bot. Not.*, **1949**, 81-92. The chromosome numbers of thirteen species are given of which the following occur in Britain. *L. campestris* (L.) DC., 2n = 12; *L. multiflora* (Retz.) Lej., 2n = 36; *L. pallescens* Sw., 2n = 12; *L. spicata* (L.) DC., 2n = 24; *L. arcuata* (Wahlenb.) Sw., 2n = 36; *L. pilosa* (L.) Willd., 2n = *c.* 70; *L. sylvatica* (Huds.) Gaud., 2n = 12; *L. luzuloides* (Lam.) Dandy & Wilm., 2n = 12. The material examined was collected in Sweden. Some of these numbers differ from those previously determined by other workers. It is suggested that the divergence may be due either to the existence of different chromosome races or to the use of wrongly named material. " The

chromosome numbers form a polyploid series with three as the basic number. In spite of this fact, some species have a chromosome size remarkably different from that of other closely-related species. The different chromosome lengths occurring among the species studied are found around the following magnitudes (expressed in μ): 1.9, 1.1, 0.7, 0.4, and the smallest about 0.3. The most common chromosome size is 1.1μ. This size throughout in the cells is found in *L. campestris*, *L. multiflora*, *L. frigida*, *L. arctica*, and *L. parviflora*. *L. sudetica* and *L. pilosa* have the smallest chromosomes, the former having 0.4μ and the latter about 0.3μ. *L. spicata* has a chromosome size of 0.7μ, *L. silvatica*, *L. luzuloides*, and *L. nivea*, on the other hand, have a chromosome size of about 1.9μ. *L. arcuata* seems to have three different chromosomes sizes in the cells of about 1.9μ; 1.1μ; 0.7μ. Probably there are 12 chromosomes of each size in the cell."—[A.E.W.]

723. ARUM MACULATUM L. Sowter, F. A., 1949, Arum maculatum L., *J. Ecol.*, **37**, 207-218 (Biological Flora).

740. ZOSTERA. Parish, E. L., 1949, Vanishing Eelgrass a problem affecting wild-fowler and fishermen, *Country Sportsman*, **26**, 221-222. The disappearance of large areas of eelgrass is a catastrophe, because it teemed with marine life and was valuable to fish and fowl. Prawns, widgeon and Brent geese are affected. A two-mile stretch from Selsey Bill to Pagham Harbour had disappeared by 1919. The chief cause of decrease seems to be the wasting disease caused by the fungus *Labyrinthula*. Oil pollution is also considered in this connection.—[A.H.G.A.]

740. ZOSTERA. Parish, E. L., The Eel-Grasses of Britain, *Shooting Times*, 28 Jan. 1950. The author illustrates the species of *Zostera* and describes their differences. He states that fishermen have seen plants 6 to 8 feet long and up to 12 mm. wide, and asks that any plants of this size found growing round the British coast should be sent to the Natural History Museum.—[A.H.G.A.]

745. ELEOCHARIS R. Br. Walters, S. M., 1949, Eleocharis R. Br. (Biological Flora), *J. Ecol.*, **37**, 192-206. The general account of the genus, defined as by Svenson to include *Eleocharis pauciflora* (Lightf.) Link and *E. parvula* (R. & S.) B., N. & S., includes information on the general morphology and cytology of the six species, and indicates differences in their habitat preferences. In the account of *E. palustris* (L.) R. Br. emend. R. & S., two new subspecies are published, viz., ssp. *vulgaris* and ssp. *microcarpa*. The former is the common plant throughout the British Isles, whilst ssp. *microcarpa* seems to be restricted to S. and S.E. England and the Midlands, being recorded for v.-c.s 7, 13, 15, 16, 17, 19, 21, 22, 23, 25, 28, 29, 33, 37. In Europe both subspecies occur, but ssp. *microcarpa* becomes commoner to the south and east. The differential characters of the two subspecies are quantitative, as follows:—

ssp. *vulgaris*	ssp. *microcarpa*
spikes usually 20-40 flowered.	spikes usually more crowded, 40-70 flowered.
glumes (from middle of spike) 3.5-4.5 mm. in length.	glumes 2.75-3.5 mm.
fruit, excluding style-base, usually 1.4-1.8 mm. long.	fruit usually 1.2-1.4 mm.
stomatal length 0.065-0.850 mm.	stomatal length 0.05-0.065 mm.
chromosomes 2n=38.	chromosomes 2n=16.

The account of *E. uniglumis* includes a differential description of this species, in which the following characters are mentioned as distinguishing it from *E. palustris*:—Haulms *slender*, even under favourable growth conditions; rhizomatous development *strong*. Basal leaf-sheaths *deeper reddish purple*. Spike *few (15-30) flowered; single sterile basal glume* surrounding base of spike. Style-base of fruit *often broader than long*; *bristles 4(5)*: fruit surface usually more *strongly and coarsely punctate* under lens.—[S.M.W.]

746/7. SCIRPUS CAESPITOSUS L. Duwen, J. M., 1948, De Veenbies. Trichophorum caespitosum Hartm., *De Levende Natur*, **52**, 168-171.

746. SCIRPUS. Beetle, A. A., 1949, Annotated List of Original Descriptions in Scirpus, *Amer. Midl. Nat.*, **41**, (2), 453-493. 1,550 specific and 322 subspecific names are listed with references and referred to their place in synonymy when the species are not accepted. *S. compressus* (L.) Pers. is referred to *Nomochloa compressa* (L.) Beetle. —[A.H.G.A.]

750/1. CLADIUM MARISCUS (L.) R. Br. Hansen, S., 1949, Bidrag til Skånes Flora, 43, Cladium mariscus in Skåne, *Bot. Not.*, **1949**, 127-136. The distribution and ecology of the species in Scania, Sweden, is discussed.—[A.E.W.]

753/15. CAREX BINERVIS Sm. Nelmes, E., The Utricle of Carex binervis Sm. and its two submarginal ribs, *Kew Bull.*, **1949**, 318. The prominent green submarginal ribs are not characteristic as stated by Smith, but are found in many other species, for example *C. laevigata* Sm.—[A.H.G.A.]

777. PHLEUM. Litardière, R. de, 1948, Sur l'existence dans les Pyrenées d'une nouvelle race chromosomique du groupe du Phleum alpinum L., *Comptes Rendus Acad. Sci.*, **226**, 1327-1329. Two species have been distinguished. *P. alpinum* L., self-fertile, 2n = 14, arista ciliate, and *P. commutatum* Gaud., self-sterile, 2n = 28, arista scabrid. The new plant has the chromosome number of *P. alpinum* with the morphological characters of *P. commutatum*.—[A.H.G.A.]

791. DESCHAMPSIA. Nygren, A., 1949, Studies in vivipary in the genus Deschampsia, *Hereditas*, **35**, 27-32.

791/3. DESCHAMPSIA SETACEA (Huds.) Hackel. Buschmann, A., 1948, Charakteristik und systematische Stellung von Deschampsia setacea (Huds.) Hackel, *Phyton*, **1**, (1), 24-41. *D. setacea* is an Atlantic species found from the north coast of Europe from Spain to Holstein, Rügen, Bornholm, southern Scandinavia and the British Isles.

The author places it in the section *Campbella*. The structure of the epidermal cells of the root is considered useful for the separation of the species. A key is given. There are also keys, accompanied by illustrations, which are based on the leaf-structure and on the palea (Deckspelze) and the glumes. Differences in the anthers and caryopsis are also discussed. A chromosome number of 2n = 28 is given for *D. flexuosa*, and 2n = 14 for *D. setacea*.—[A.H.G.A.]

813/1. MOLINIA CAERULEA (L.) Moench. Matuszkiewicz, A. & W., 1948, A Contribution to the taxonomy of the Genus Molinia Schrk., *Ann. Univ. Mariae-Curie*, Lublin, **3**, 347-367. (Polish with English summary). The scheme of classification is:—

a. Large plant (77)-111.8-132.1-(215) cm., with broad leaves (5)-7.6-8.7-(14) mm.
  b. Large panicle, (35)-43.0-(54) cm. long; long leaves (45)-57.2-(69) cm. Spikelets (4.9)-5.07-(7.0) mm. long; lower outer glume (2.4)-2.59-(2.8) mm. long; upper glume (2.7)-3.07-(3.4) mm. long; lower flowering glume (3.2)-4.02-(5.2) mm. long ..... 1. subsp. *arundinacea* Schrank.
  bb. Smaller panicle (19.5)-25.2-(38) cm. long; leaves shorter (21)-34.6-(45) cm. long. Spikelets large (5.4)-6.71-(8.0) mm. long; lower outer glume (2.3)-3.02-(4.4) mm. long; upper outer glume (2.8)-3.55-(4.6) mm. long; lower flowering glume (3.7)-4.6-(5.5) mm. long ..... 2. subsp. *litoralis* (Host).
aa. Smaller plants 52-124 cm. high, with narrow leaves (3.5)-5.05-5.53-(7.9) mm. broad; spikelets (3.2)-4.76-5.06-(6.3) mm. long; lower flowering glume (2.7)-3.50-3.73-(4.71) mm. long ..... 3. subsp. *minor* Besser.
aaa. Very small plants. Leaves (2.1)-3.4-(4.0) mm. broad, (2)-10.8-(16.5) cm. long; small spikelets (3.5)-4.31-(5.8) mm. long; lower outer glume (1.5)-2.02-(2.8) mm. long, upper outer glume (1.9)-2.42-(3.0) mm. long; lower flowering glume (3.0)-3.44-(3.8) mm. long ..... 4. subsp. *minima* Mat.

[A.H.G.A.]

824/14. POA ANNUA L. Litardière, R. de, Recherches sur les Poa annua subsp. exilis et subsp. typica, *Rev. Cytol. et Cytophysiol. végét.*, **3**, 135.

824/14. POA ANNUA L. Magron, T., 1947, *Bull. Soc. Bot. Fr.*, **94**, 317-319. The adaptation of *Poa annua* L. to high altitudes in the Central Pyrenees is discussed. It is suggested that the perennial mountain form (*P. annua* subsp. *varia* (Gaud.)) is derived from the lowland plant (*P. annua* subsp. *typica* (Beck.)) by adaptation to mycorrhiza. The lowland plant is without mycorrhiza or the mycorrhiza is destroyed soon after it invades the roots. Quoting M. de Litardière *P. annua* subsp. *typica* is stated to be tetraploid (2n = 28) whilst *P. annua* subsp. *varia* includes two "varieties": *P. supina* (Schrad.) Reichb. a diploid (2n = 14) and *P. rivulorum* (Maire et Trab.) R. Lit. et Maire, emend. a tetraploid (2n = 28).—[A.E.W.]

825/3b. GLYCERIA DECLINATA Bréb. Walters, S. M., 1948, Glyceria declinata Bréb., En förbisedd nordisk art, *Bot. Not.*, **1948**, 430-440. The occurrence of the species in Denmark, Norway and Sweden is discussed. He states that " the plant seems to have a S.W. distribution in Scandinavia. Ecologically it may be confined in Sweden to eutrophic regions; although this is not the case in Britain. Many Scandinavian localities resemble the typical localities for the plant in Britain, i.e. disturbed or trodden ground by water. Its general European distribution is by no means clear, but it appears to be western (material from

France, Portugal and N.W. Germany has been seen), and no certain records are known from Central or eastern Europe".—[A.E.W.]

825(2)/2×1. PUCCINELLIA DISTANS (L.) Parl. × P. MARITIMA (L.) Parl. Jansen, P., 1949, Floristische Aantekeningen, No. 5, × Puccinellia Krusemaniana Jans. & Wacht., *Ned. Kruidk. Arch.*, **56**, 248. *Glyceria maritima* × *G. procumbens*, which was originally described from Chichester, Sussex, by Druce, is referred to this hybrid, which was formerly described and figured in the same journal in 1932. There the description reads (translated):—" Larger than *P. maritima*, which it resembles in habit and superficial sterile stolons, but differs from it by the flat, narrow and flaccid (not rigid and folded) leaves of the stolons. Panicle like *P. maritima* but rigid, basal branches with sessile spikelets. Verticils composed of two long and one short branches, the longer alternating, the shorter secund (as in *P. rupestris*). Spikelets large (8-9 mm. long), glumes 1-3-nerved, lemma (when dry) prominently nerved; anthers large (2 mm. long) with a few abortive pollen grains. Fruit sterile."—[A.H.G.A.]

826. FESTUCA. Litardière, R. de, 1947, Festuca nouveaux ou rare des France et d'Espagne, *Bull. Soc. Hist. Nat. Toulouse*, **82**, 110-122. Deals mainly with varieties of *F. ovina*.—[A.H.G.A.]

827/4. BROMUS TECTORUM L. Stewart, G., & Hull, A. C., 1949, Cheatgrass (Bromus tectorum L.), An ecologic intruder in southern Idaho, *Ecology*, **30**, 58-74. An adventive from Europe, first recorded in the U.S.A. about 50 years ago, and from southern Idaho about 1900, has, in that State, become a dominant species over large areas. At first it occurred on roadsides, and in cultivated land, etc., and then spread to range lands wherever the plant cover was badly injured by drought, fire or overgrazing. The biological and ecological relationships of this grass and its control are discussed. It is said to be valuable for soil protection, but is highly inflammable and allows fires to spread rapidly.—[A.E.W.]

828. BRACHYPODIUM. Jouvet, P., & Bouby, H., 1949, Brachypodium phoenicioides Roem. & Schult., *La Feuille des Naturalistes*, N.S., **4**, 68. This species is recorded from near Paris, perhaps introduced on a railway bank. It was previously known from Southern France and the west Mediterranean. It looks like *B. pinnatum*, but is glaucous with inrolled leaves shortly mucronate.—[A.H.G.A.]

835. HORDEUM. Covas, G., 1949, Taxonomic Observations on the North American species of Hordeum, *Madroño*, **10**, 1-21. The North American representatives of *H. nodosum* are separated as *H. californicum* and *H. brachyantherum*. *H. Stebbinsii* and *H. leporinum* are separated from *H. murinum*. *H. marinum* Huds. is only a casual in U.S.A.—[A.H.G.A.]

847/1. PTERIDIUM AQUILINUM (L.) Kuhn. Conway, E., & Arbuthnot, M., 1949, Occurrence of endotrophic mycorrhiza in roots of Pteridium aquilinum Kuhn, *Nature*, **163**, 610. Bracken roots from two areas in W. Scotland (v.-c. 75 and 99), one acid moorland and the other cul-

tivated ground, contained hyphæ of an endotrophic fungus. Affected roots were often rather fleshy and larger than normal.—[D.P.Y.]

FLORAS, ETC.

BELGIUM. Lawalrée, A., 1949, Catalogue des Ptéridophytes de Belgique, *Lejeunia*, **13**, 21-27. A revised catalogue arranged by Copeland's system. *Isoetes echinospora* Durieu is reduced to *I. tenella* Lem. Belgium has *Lycopodium tristachyum* Pursh, *Selaginella helvetica* (L.) Spreng, *Botrychium simplex* Hitchc., *Azolla caroliniana* Willd. and *Asplenium foresiacum* (Le Grand) Christ, which do not occur in Britain.—[A.H.G.A.]

HOLLAND, Heukels, H., 1949, *Geillustreerde Schoolflora voor Nederland*, ed. 13 (by W. H. Wachter & S. J. van Ooststroom), Groningen, 900 pp. In Dutch. It has keys and illustrations. Many aliens are also described.—[A.H.G.A.]

PALESTINE. Duvdevani, S., & Osherov, S. Analytical key for the identification of wild plants in yard, garden and field, from their leaves, stems and roots, (in Hebrew), *Kew Bull.*, **1948**, 45-46. W. B. Turrill reviews the work and points out that such a key could be of value to specialists, e.g. ecologists and horticulturists, who have to follow their plants through their whole life histories. There are special difficulties in the preparation of a key based on vegetative characters, for example, change in leaf shape with age of the individual plant, but it is felt that many will agree with the author's conviction that very much more use should be made of vegetative characters in floras and monographs.—[K.S.H.]

HISTORY.

DONY, J. G., 1949, A Bobart Herbarium at Bedford, *Beds. Nat.*, **3**, 15-16. Quotes *Proc. Linn. Soc.*, **160**, Pt. 1 (Nov. 1946).—[J.G.D.]

DONY, J. G., 1949, Bedfordshire Naturalists: III, Charles Abbot, *Beds. Nat.*, **3**, 38-42. An account with original information of the work of Abbot (1761-1817), author of *Flora Bedfordiensis* (1798), etc.—[J.G.D.]

EDEES, E. S., 1948, The Early History of Field Botany in Staffordshire, 1597-1839, *Trans. N. Staffs. F.C.*, **82**, 81-110.

EDEES, E. S., 1949, Richard Forster of Stone, *Trans. N. Staffs. F.C.*, **83**, 96-97. Gives some biographical details relating to the late 18th century Staffordshire botanist, Richard Forster.—[A.E.W.]

GRANT, V., 1949, Arthur Dobbs (1750) and the Discovery of the Pollination of Flowers by Insects, *Bull. Torr. Bot. Club*, **76**, 217-219. The discovery of the pollination of flowers by insects has usually been attributed to J. G. Kölreuter, but the author points out that the Irish amateur botanist Dobbs preceded him.—[A.H.G.A.]

RUMILLY, R., *Le Frère Marie-Victorin et son temps*. Brother Marie-Victorin, whose real name was Conrad Kirouac, was a teacher at the College of Longueuil at Westmount, Canada. His deeply reli-

gious and mystic personality, combined with an enthusiasm for the teaching of Science, made him many friends and admirers. Specialising in Botany, he was given the Chair in Botany at the University of Montreal. This book describes in detail this period of Canadian history, a period which may be said to have produced in him one of the most famous men of French Canada. The book consists of 500 pages and the price is $2. The most important of a number of Marie-Victorin's publications appears to be *La Flore Laurentienne*, published in 1935, price $10. Both the above books are to be obtained from Les Frères des Écoles Chrétiennes, 949, rue Côté, Montreal, 1, Canada.—[W.R.P.]

SARTON, G., 1948, *Introduction to the History of Science*, **3**, pt. 2, Carnegie Inst. The second half of the third volume, which brings the work done to the end of the fourteenth century. The author states that the Silesian doctor Thomas of Sarepba (1297-c. 1378) made himself a herbarium of dried plants, which is the earliest mention of such a collection except that Villard de Honnecourt gave a recipe for the preservation of colours in dried flowers. The herbarium contains some English specimens mentioned in the MS. Michi competit.—[A.H.G.A.]

NOMENCLATURE

FURTADO, C. X., 1949, A Further Commentary on the Rules of Nomenclature, *Gardens Bull. Singapore*, **12**, 311-377.

HERTER, W. A., 1949, Weitere Vorschläge zur Abänderung der Nomenklaturregeln (Further proposals for the alteration of the rules of Nomenclature), *Rev. Sudamer. Bot.*, **8**, 11-12. An amplification of proposals published in *Rev. Sudamer. Bot.*, **6**, 46 (1938) for the modification of certain articles and recommendations of the International Rules of Nomenclature.—[K.S.H.]

HORN AF RANTZIEN, H., & OLSEN, S., 1949, A suggested starting-point for the nomenclature of Charophyta, *Svensk. Bot. Tidskr.*, **43**, 98-103. The authors suggest Alexander Braun's *Fragmente* (1883) instead of Linnaeus, largely to avoid the old names revived by Groves and Bullock-Webster.—[A.H.G.A.]

INTERNATIONAL RULES OF BOTANICAL NOMENCLATURE, 1947, *Brittonia*, **6**, 1-120. Formulated by the International Botanical Congress of Vienna, 1905, Brussels, 1910, and Cambridge, 1930, adopted and revised Amsterdam, 1935. Compiled from various sources by Camp, W. H., Rickett, H. W., and Weatherby, C. A.—[K.S.H.]

LAWRENCE, G. H. M. Discussions in Botanical Names of cultivated plants, *Gentes Herbarum*, **8**, 3- . The author adopts *Anemone hybrida* Paxt. for the garden plant misidentified with *A. japonica* Thunb., *Arabis caucasica* Willd. for the *A. albida* of gardens, *Lens culinare* Medic. for *L. esculenta* Moench, *Oenothera erythrosepala* Borb. for *O. Lamarckiana* De Vries (non Seringe), *Stachys olympica* Poir. for *S. lanata* Jacq. non Crantz, ×*Nepeta Faassenii* Bergmans for *N. Mussinii* hort., *Collinsia heterophylla* R. Grah. for *C. bicolor* Benth., *Echinops*

exaltatus Schrad. for *E. Ritro* hort. amer. and *E. sphaerocephalus* hort. amer. and *Dimorphotheca pluvialis* (L.) Moench for *D. annua* Less. (*Gattenhoffia pluvialis* (Moench) Druce). *Rudbeckia columnifera* Nuttall is said to be the commonly cultivated Coneflower. The generic separation of *Pyrus* and *Malus* is discussed. The pale form of *Impatiens glandulifera* Royle is designated forma *pallidiflora* (Hook.) Weatherby. —[A.H.G.A.]

LAWALRÉE, A., 1949, Note sur quelques ptéridophytes de Belgique, *Bull. Jard. Bot. Brux.*, **19**, 237-242. The author makes a number of new combinations for varieties and forms.—[A.H.G.A.]

MCVAUGH, R., 1949, Questionable validity of names published in Gilibert's Flora of Lithuania, *Gentes Herbarum*, **8**, 83-90. The writer gives arguments for rejecting Gilibert's names.—[A.H.G.A.]

PICHON, M., 1948, Sur l'article 37 ter des Règles de la Nomenclature, *Notulae Systematicae*, **13** (4), 258-260. The writer discusses the article, which reads:—"A name of a taxonomic group is not validly published unless it is definitely accepted by the author who publishes it. A name proposed provisionally (nomen provisorium) in anticipation of the eventual acceptance of the group, or if a particular circumscription, position or rank of a given group, or merely mentioned incidentally, is not validly published." He argues that the simultaneous publication of alternative names, such as *Cymbopogon Bequaerti* and *Andropogon Bequaerti* should be valid.—[A.H.G.A.]

SCHWARZ, O., 1949, Beiträge zur Nomenklatur und Systematik der mitteleuropäischen Flora, *Mitt. Thüring. Bot. Ges.*, **1** (1), 82- . The author adopts:—*Allosorus* Bernh. for *Cryptogramma* R. Br., *Gymnocarpium obtusifolium* (Schrank) O. Schwarz for *G. Robertianum* (Hoffm.) Newm., *Polystichum paleaceum* (Borck.) O. Schwarz for *P. Braunii* Spenn., *Sparganium minimum* Wallr. (1840) for Fries (1846), *Bromus ramosus* Huds. for *B. asper* auct., *Agropyrum littoreum* (Schum.) O. Schwarz for *A. littorale* (Host) Dum., and many other name changes.—[A.H.G.A.]

SMITH, ALBERT C., 1949, A Legislated Nomenclature for Species of Plants?, *Amer. J. Bot.*, **36**, 624-626. The principle of *nomina specifica conservanda* will doubtless be discussed at the forthcoming Seventh International Botanical Congress to be held at Stockholm in 1950. [It was discussed and again rejected.—ED.] The author argues that this principle, which has been rejected by previous Congresses, is impracticable; the number of conserved generic names is at least 850, and if the principle were extended to specific names, a very much larger number would be likely to be affected. He considers it is better to have a specific nomenclature which is slowly evolving towards stability under the ministrations of competent specialists.—[K.S.H.]

SYMPOSIUM ON BOTANICAL NOMENCLATURE, 1949, *Amer. J. Bot.*, **36**, 1-32, includes the following papers:—I, Introduction, by Sherff, E. E. II, Botanical Nomenclature since 1867, by Weatherby, C. A. III, Byways of Nomenclature, by Blake, S. F. IV, An Editor's point of

view. V, Adventures in locating validly published but unlisted binomials, by Merrill, E. D. VI, Towards a simple and clear nomenclature, by Pennell, W. VII, Problems in Taxonomy, by Bailey, L. H. VIII, The Problem of Subspecific Categories, by Rosendall, C. O IX, The nomenclature of Fossil Plants, by Just, T.—[K.S.H.]

TOPOGRAPHICAL

5-6, SOMERSET. The *Proceedings of the Somersetshire Archaeological and Natural History Society*, **92**, 98-100, 1947, contains the recorder's (W. Watson) notes on the more interesting plants observed during 1946.—[A.E.W.]

6, 34, N. SOMERSET; W. GLOS. Sandwith, C. I. & N. Y., 1948, Bristol Botany in 1947, *Proc. Bristol N.S.*, **27**, 203-208.

7-8, WILTS. Collett, Gilbert W., 1949, Some phenological notes, *Wilts. Arch. and N.H. Mag.*, **53**, 94-96.—[A.E.W.]

7-8, WILTS. Grose, J. D., 1948-1949, Wiltshire Plant Notes, *Wilts. Arch. and N.H. Mag.*, **52**, 224-231; **53**, 88-93. Gives a large number of locality records. Several species new to the county are given. See Plant Records.—[A.E.W.]

14, EAST SUSSEX. Brightmore, D., 1949, *Hastings and East Sussex Naturalist*, **7**, 172-174, lists the more interesting records made during 1948 and also gives a list of species observed during 1946 on eight bombed sites in closely built-up areas in Hastings. 59 species are recorded, the highest number from any one site being 33, and the lowest 13.—[A.E.W.]

28, W. NORFOLK. Chapman, V. J., 1948, Some Vegetational Changes on a shingle off-shore bar at Thornham, West Norfolk, *Trans. Norfolk and Norwich N.S.*, **16**, 274-279. The article is illustrated by photographs and three vegetation maps of Thornham Island in 1937 and 1941 with lists of species.—[A.E.W.]

32, NORTHANTS. Collyer, E., Allen, H. G., and Gilbert, J. L, 1949, *Journ. Northants N.H.S.*, **31**, 188-194. Notes on the more interesting plants met with in 1948, and J. Wilson gives a list of 18 species found by the River Nen between Westley's Mill and the paper mills in the same year.—[A.E.W.]

32, NORTHANTS. Gilbert, J. J., 1948, Botanical Records, 1947, *Journ. Northants N.H.S.*, **31**, 131-134. *Lactuca Serriola* L. recorded from waste places in Peterborough is apparently new to the county.—[A.E.W.]

39, STAFFS. Edees, E. S., 1948, *Trans. N. Staffs. F.C.*, **82**, 138-148. Reports on botanical activities and gives the Plant Notes and Records for 1947, and an account of *Myrica Gale* L. in the county, and Records for 1949, *ibid.*, **83**, 88-96. *Cochlearia danica* L. is recorded as an inland adventive.—[A.E.W.]

40, SHROPSHIRE. Lloyd, Ellen R., 1949, *Trans. Caradoc and Severn Valley F.C.*, **12**, 25-27. A report on the botany for 1943-44. The list of plants is preceded by a few phenological notes.—[A.E.W.]

63, S.W. York. Jackson, G., & Sheldon, J., 1949, The Vegetation of Magnesian Limestone Cliffs at Markland Grips near Sheffield, *J. Ecol.*, **37**, 38-50. Includes a discussion of the status of *Tilia platyphyllos*, and it is concluded that there are strong reasons against regarding it as a native tree of the area. *Carex montana* and *C. ericetorum* are recorded.—[K.S.H.]

96, Easterness; 97, Westerness. Gordon, S., 1950, Snow Flora of the Scottish Hills, *Nature*, **165**, 132-134. In Scotland two small snowfields usually, and perhaps permanently, remain unmelted throughout the year: under Ben Nevis and in Garbh Choire Mor, Braeriach. The flora around the margins, which are free from snow for progressively shorter periods as one approaches the permanent snow, is described. Phanerogams which grow in the area uncovered by snow for only a few weeks in the year (in October) on Braeriach are *Saxifraga stellaris* and *Gnaphalium supinum*; only the latter ripens seeds. The only phanerogam around the snowfield on Ben Nevis is *S. stellaris*, which never flowers, and which may arise from seeds from the colony on the plateau above.—[D.P.Y.]

104, N. Ebudes. Raven, J. E., 1949, Alien plant introductions on the isle of Rhum, *Nature*, **163**, 104-105. *Polycarpon tetraphyllum* L. was first detected at Kinloch Burn by J. W. Heslop Harrison in 1939, when there was a single plant. On the 6th Aug. 1948 the author found four plants, which differed in their much-branched inflorescence and narrow acuminate sepals from the southern English form, and indeed did not match any specimen in the British Museum Herbarium, although they were most like Maltese and Greek material. Amongst one of the plants was growing a small plant of *Wahlenbergia* (?) *nutabunda* A. DC., which is subspontaneous in some botanical gardens but otherwise unknown in Britain. The author also saw *Carex bicolor* Bell. in a recently found colony (the third to be discovered) in Coire Dubh. This consisted of seven mature and two young plants, on bare gravel banks at the junction of two small burns. Six of these had *Poa annua* L. and/or *Sagina apetala* Ard. sprouting amongst the leaves, although neither of these could be found elsewhere in the neighbourhood, which was an unlikely habitat for either. Associated with both *Polycarpon* and the *Carex* was the very rare *Juncus capitatus* Weig. The author concludes that *Polycarpon tetraphyllum* and *Carex bicolor* are both introductions in these stations.—[D.P.Y.]

110, Outer Hebrides. Poore, M. E. D., & Robertson, V., 1949, The Vegetation of St Kilda in 1948, *J. Ecol.*, **37**, 82-99. Considerable changes have occurred in plant species since the evacuation in 1930 of the human population and their grazing animals.—[K.S.H.]

MISCELLANEOUS

Abbayes, H. des. Quelques Phanérogames adventices de Bretagne, III, *Bull. Soc. Sci. Bretagne*, **21**, 61-62; *op. cit.* **22**, 73-76 (1947).

ALLAN, H. H., 1949, Wild Species-Hybrids in the Phanerogams, II, *Botanical Review*, **15** (2), 77-105. This is a supplement to the author's paper in vol. **3**, 593-615 (1937) of the same periodical. There is a useful list of hybrids recorded with references to the original papers.—[A.H.G.A.]

BEHRENS, G., 1949, Blüten- und Gestaltsbildung bei Chrysanthemum und Sempervivum unter photoperiodischen Einflüssen, *Biol. Zentralbl.*, **68**, 1-32. Phyllody of the inflorescence can be brought about by photoperiodic influences.—[A.H.G.A.]

BELLRINGER, H. E., 1949, Phyto-photo-dermatitis, *Brit. Med. J.*, **1949**, **1**, 984-986. Attention is drawn to the fact that blistering of the skin may occur after 24 hr. following contact *in bright sunlight* with *Anthriscus sylvestris*, *Pastinaca sativa*, *Achillea Millefolium*, *Angelica sylvestris*, *Ranunculus bulbosus*, *Sinapis arvensis*, *Convolvulus arvensis*, *Heracleum Sphondylium*, *giganteum* and *Mantegazzianum*, "meadow grass", *Agrimonia Eupatoria* and *Rutaceae*.—[D.P.Y.]

CHENERY, E. M., 1948, Aluminium in the plant world, *Kew Bull.*, **1948**, 173-182. The author considers that the uptake of aluminium has some value in plant taxonomy, as it appears to be highly specific.—[K.S.H.]

GUSTAFSSON, A., 1948, Polyploidy, Life-form and Vegetative Reproduction, *Hereditas*, **34**, 1-22. Mentions evolutionary trends in *Poa*, *Bromus*, *Juncus*, *Rumex*, *Polygonum*, *Chenopodium*, *Stellaria*, *Cerastium*, *Sagina*, *Ranunculus*, *Papaver*, *Lepidium*, *Cardamine*, *Sedum*, *Saxifraga*, *Alchemilla*, *Medicago*, *Trifolium*, *Vicia*, *Lathyrus*, *Geranium*, *Malva*, *Viola*, *Myosotis*, *Lamium*, *Stachys*, *Solanum*, *Veronica*, *Plantago*, *Galium*, *Campanula*, *Erigeron*, *Gnaphalium*, *Chrysanthemum*, *Senecio*, *Cirsium*, *Centaurea*, *Crepis* and *Sonchus*. Annual groups show low basic numbers, while perennial groups often acquire high basic numbers and high polyploids. Vegetative propagation is thought to be an important agent in these evolutionary events.—[A.H.G.A.]

DOVASTON, H. F., 1949, A factor limiting downward spread of some Scottish mountain plants, *Nature*, **164**, 370. It is suggested that, as in the Himalayas, etc., certain Scottish alpines are confined to above the winter snow-line because of their sensitivity to winter moisture. For example, *Veronica fruticans*, *Cerastium alpinum* and *arcticum*, *Arenaria rubella* and *sedoides*, *Lychnis alpina*, and *Gnaphalium supinum* are liable to die off in cultivation at lower altitudes unless protected from rain; the last-mentioned sp. is found as low as 1000 ft., but is then an annual. Other spp., *e.g.* various *Draba*, *Saxifraga*, *Salix*, etc., can tolerate moisture in winter.—[D.P.Y.]

ERDTMAN, G., 1948, Palynology, aspects and prospects, *Svensk. Bot. Tidskr.*, **42**, 467-483. The paper consists of contributions from various authors reviewing the present position of research on pollen and spores in their respective countries.—[A.H.G.A.]

FASSETT, N. C., Herbarium Technique, *Rhodora*, **51**, 59-60. The writer recommends such detergents as "Tide", "Vel" and "Dreft" for softening herbarium material for dissection, instead of boiling.

GODWIN, H., 1949, The Spreading of the British Flora considered in relation to conditions of the late-glacial period, *J. Ecol.*, **37**, 140-147. Over 78 species plus 22 genera have been identified from Late-Glacial or Early Post-Glacial mud layers at Nazeing near London, and native status has been in consequence assured to such plants as *Linaria vulgaris, Taraxacum officinale et alia.* It seems probable that as such work proceeds, more and more of our ruderal and weed species will be recognised as being native to the British flora. Several species have been identified widely beyond their present-day area in Britain; their contraction was probably largely due to dense forest establishment, and to a lesser degree to the development of peat meres upon flat and gently sloping mountains at altitudes above the forest limit. Under-representation of certain categories of British plants in Ireland can be explained as a result of their being able to spread in the Late-Glacial or Early Post-Glacial period owing to temperature limitations. Later movement was hindered by the Irish Sea, which previously occupied only a very small area, having reached its present size.—[K.S.H.]

KLOOS, A. W., 1948, Nieuwe vondsten van zeldzame planten in Nederland in 1943-1947, *De Levende Natur*, **51**, 75-79.

LINDQUIST, B., 1948, The main varieties of Picea Abies (L.) Karst. in Europe, *Acta Hort. Berg.*, **14** (7), 249-342. The writer finds that there is a striking agreement between the presumed glacial refuges and the habitats of *Picea Abies* var. *arctica* Lindq., and adds a general discussion of the Scandinavian refuges. Some were nunataks and some probably areas now submerged. The species regarded as probable glacial survivors are *Pedicularis flammea, Rhododendron lapponicum, Vahlodea atropurpurea, Papaver* spp., *Arenaria humifusa, A. norvegica, Poa flexuosa, P. arctica, Luzula parviflora, Aconitum septentrionale, Anemone ranunculoides, Viola rupestris, Ranunculus platanifolius, Alchemilla glomerulans, A. Wichurae, Urtica dioica* var. *Sondenii, Betula tortuosa, B. callosa, Draba crassifolia, Cavernularia Hultenii* (lichen), *Tholurna dissimilis* (lichen) and others. The bulk of the mountain flora and a number of sub-alpine species are considered to be glacial survivors.—[A.H.G.A.]

LINTON, D. L., 1949, Unglaciated enclaves in glaciated regions, *Irish Geography*, **2** (1), 1.

POST-GLACIAL CLIMATE CHANGE, 1949, *Nature*, **163**, 160-161. Record of joint meeting of Royal Meteorological and Royal Astronomical Societies. Dr Godwin describes pollen analyses indicating a climatic optimum about 3000 B.C., and a sudden worsening about 500 B.C. Holly and ivy are controlled by winter temperature and mistletoe by summer temperature. Prof. Manley stated that the greatest post-glacial expansion of glaciers began in Scandinavia about 1750 A.D., in the Alps 1550 and in Iceland 1350. Glaciers are now retreating rapidly. Dr Brooks stated that tidal maxima would tend to break up the Arctic ice-cap and ice would drift into the Atlantic.—[A.H.G.A.]

POUCQUES, M. L. DE, 1949, Recherches caryologiques sur les Rubiales, *Rev. Gén. Bot.*, **56**, 5-27, 75, 138, 172-188. The chromosome numbers

of a number of genera have been counted, and the writer makes the following comments. Polyploidy is frequent in *Galium* and *Rubia*. *Adoxa* bears a strong resemblance to the *Caprifoliaceae* in caryological characters, and these justify a separate family for the genus. New counts are given for *Sambucus Ebulus* (n = 18), *Lonicera Caprifolium* (n = 9), *L. Xylosteum* (n = 9), *L. Periclymenum* (n = 18), *Kentranthus ruber* (n= 7).—[A.H.G.A.]

Reid, Mrs E. M., 1949, The Late Glacial Flora of the Lea Valley, *New Phyt.*, **48**, 245-252. The paper discusses material from Lea Valley pits, provided in 1933 and subsequently by Hazeldine Warren, and incorporates with this the results of the earlier investigations of the Lea Valley flora made by Clement Reid (1910) and by Reid, E. M., and Chandler, M. E. J. (1923). Material from a total of ten pits is listed; these are tentatively assigned to Sub-arctic climate (3 pits), Cold or Cool (6 pits) and Cool Temperate (1 pit). A list is given of 156 species, some of which are imperfectly identified, with the localities in which they were found. There are included notes on the determination of *Ranunculus hyperboreus*, *R. acris*, *Silene* spp., *Linum praecursor*, *Armeria* sp., *Salix herbacea* and *Carex atrata*.—[K.S.H.]

Tamm, C. O., 1948, Observations on reproduction and survival of perennial herbs, *Bot. Not.*, **1948**, 303-321. Describes investigations to determine the average rate of both reproduction and mortality of some perennial herbs in sample plots. Diagrams are given showing the flowering frequencies in different years and the fates of individual plants of the species examined. A very low rate of renewal in some meadow and forest habitats has been found, and irregular flowering observed in some species. "The longevity of the individual specimens, which is closely connected with the low rate of renewal, is interpreted as an expression of the hard competition within closed plant communities. The significance of this longevity factor for stability and composition of vegetation is briefly discussed". Among the species dealt with are *Filipendula hexapetala*, *Fragaria vesca*, *Orchis mascula*, *Primula veris*, *Sanicula europaea*, and *Taraxacum vulgare*.—[A.E.W.]

Webb, L. J., 1950, Alkaloid tests in herbarium specimens, *Nature*, **165**, 411. A technique is developed for detecting alkaloids in 0.1 g. of dried plant, and herbarium specimens are found to provide suitable material. The alkaloid content fell, in general, with the age of the specimen.—[D.P.Y.]