ABSTRACTS FROM LITERATURE

Compiled by D. H. KENT.

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SYSTEMATIC, ETC.

6/33. RANUNCULUS FICARIA L. Marsden-Jones, E. M., & Turrill, W. B., 1952, Studies on Ranunculus Ficaria, *J. Genetics*, **50**, 522-534. The authors give further statistics obtained from their studies in leaf shape and mottling, and in the colour of the petals. The chromosome number of the non-buliferous forms is stated to be usually 2n=16, while that of bulbil-producing plants has always been found to be 2n=32.—[D.H.K.]

7/1. CALTHA PALUSTRIS L. Leoncini, M. L., 1951, Biotipi cariologici e sistematici di Caltha in Italia, *Caryologia*, **3**, 336-350. Of the three Italian segregates of this species, *C. cornuta* Schott is diploid (2n=16), *C. laeta* Schott tetraploid (2n=32) and *C. palustris* L. both tetraploid and hexaploid (2n=48). *C. laeta* occurs at subalpine and alpine levels in the Apennines and in a few places in the eastern Alps, while *C. cornuta*, which is considered a glacial relict, is found in a few lowland localities in Tuscany, Emilia and Venice. *C. palustris* prefers the lower alpine levels, whence it spreads downwards into the plains. The morphological differences between the three are discussed in detail.—[D.E.A.]

CRUCIFERAE. Murley, M. R., 1951, Seeds of the Cruciferae of Northeastern N. America, *Amer. Midl. Nat.*, **46**, 1-81. Contains a key for the identification of the seeds of 118 species and varieties of Cruciferae, including some which are also found in Britain. Many N. American plants which are found as casuals in this country are given. The account includes a number of drawings of seeds.—[D.H.K.]

35. NASTURTIUM. Howard, H. W., & Lyon, A. G., 1951, Effect of Light on the Germination of Watercress Seeds, *Nature*, **168**, 253-254. *N. officinale* seeds germinate both in the light and in the dark. Those of *N. microphyllum* only germinate in the light, though the amount of light required is apparently very small.—[D.H.K.]

35. NASTURTIUM. Howard, H. W., & Haskell, G., 1951, The So-called Chromosome-Races of Cardamine pratensis and Nasturtium officinale, *Nature*, **168**, 477-478. *N. microphyllum* is not cultivated. The brown or so-called Winter Cress is *N. microphyllum* × *officinale*.—[D.H.K.]

35/1. NASTURTIUM OFFICINALE R. Br. Howard, H. W., and Lyon, A. G., 1952, Nasturtium officinale R. Br., *J. Ecol.*, **40**, 228-238 (Biological Flora).

35/1(2). NASTURTIUM MICROPHYLLUM (Boenn.) Rchb. Howard, H. W., & Lyon, A. G., 1952, Nasturtium microphyllum Boenn. ex Rchb., *J. Ecol.*, **40**, 239-245 (Biological Flora).

39/1. CARDAMINE PRATENSIS L. See 35. NASTURTIUM.

44/5. EROPHILA CONFERTA Wilmott. Campbell, M. S., 1951, Erophila conferta Wilmott in Scotland, *Scottish Nat.*, **63**, 49. The plant originally accidentally introduced into a garden near Aberfeldy (cf. *Watsonia*, **1**, 137 (1949)) has now escaped and has spread to a nearby wall top.—[D.H.K.]

49. SISYMBRIUM. Bangerter, E. B., & Welch, Mrs. B. W., 1952, The London Rocket and its Allies of the London Area, *Lond. Nat.*, **31**, 13-17. The authors describe the various adventive species of *Sisymbrium* found near London and give a key to their identification. The leaves and siliquae of some of the plants are illustrated by line-drawings.—[D.H.K.]

53/1. SUBULARIA AQUATICA L. Woodhead, N., 1951, Subularia aquatica L., *J. Ecol.*, **39**, 465-469 (Biological Flora).

54. BRASSICA. Gates, R. R., 1950, Genetics and Taxonomy of the Cultivated Brassicas and their Wild Relatives, *Bull. Torr. Bot. Club*, **77**, 19-28. The history of cultivated *Brassicae* shows that many new types have appeared through mutation and hybridization at different times during the last two thousand years, and that old types have undergone great transformation. *B. Rapa* (n=10) and *B. Napus* (n=19) produce vigorous hybrids despite the disparity in chromosome number. Some forty species are found in the Mediterranean region, which has been regarded as the centre of origin of the group. The forms on the coasts of Western Europe consist of populations differing in fruit and seed characters and were ranked by Onno in 1933 as subspecies of *B. sylvestris* (L.) Mill., one of two segregates into which *B. oleracea* was divided. This is regarded as most probably native, chiefly on account of its remarkable uniformity in comparison with the great variety of cultivated forms.—[D.E.A.]

54/14. SINAPIS ARVENSIS L. Fogg, G. E., 1950, Sinapis arvensis L., *J. Ecol.*, **38**, 415-429 (Biological Flora).

98(2). MELANDRIUM. Baker, H. G., 1951, The Inheritance of Certain Characters in Crosses between Melandrium dioicum and M. album, *Genetica*, **25**, 125-156. The author gives statistics obtained from detailed studies of *M. dioicum* and *M. album* and the hybrid between them. The most convenient character for determination of the hybrid would appear to be the length of the calyx teeth. In almost all cases where the hybrids are intermediate between the parents they tend to resemble their maternal parent to a greater extent.—[D.H.K.]

98(2)/2. MELANDRIUM DIOICUM (L.) Coss. & Germ. Baker, H. G., and Jackson, W., 1951, Cytology of the Ecotypes of dioecious Melandrium dioicum (L. emend.) Coss. & Germ., *Nature*, **168**, 747-748. The

coastal ecotype in the Shetland Isles is diploid (2n=24), no tetraploids being found, despite the fact that this race shows many morphological features normally associated with polyploidy, such as increased flower-, capsule- and seed-size along with thicker and hairier leaves and stems. —[D.H.K.]

98(2)/2. MELANDRIUM DIOICUM (L.) Coss. & Germ. Löve, D., 1952, Tetraploid dioecious Melandrium, *Nature*, **169**, 591-592.

100. CERASTIUM. Möschl, W., 1951, Cerastia Lusitaniae Archipelargorumque Açores et Madeira, *Agron. Lusit.*, **13**, 23-66. A key is given of all species of this genus known or likely to occur in the Iberian Peninsula, the Azores and Madeira. Distribution maps of the Portuguese species, a synopsis of all the European members of the genus, and figures to aid identification are also added.—[D.E.A.]

100/5. CERASTIUM VULGATUM L. Kotilainen, M. J., & Salmi, V., 1950, Two Serpentinicolous Forms of Cerastium vulgatum L. in Finland, *Archiv. Soc. Zool. Bot. Fenn.*, **5**, 64-68. A new variety, var. *kajanense*, is described from serpentine rocks in central Finland. This and var. *serpentini* (Novak) Gartner [antedated by var. *serpentini* (Syme) Druce, which may be the same plant], which differs from the type in having darker leaves, longer (3-6.5 mm.) petals and larger seeds and in flowering about a month later, both come true in cultivation.—[D.E.A.]

100/8. CERASTIUM SEMIDECANDRUM L. Möschl, W., 1949, Cerastium semidecandrum Linne, sensu latiore, *Mem. Soc. Brot.*, **5**, 5-123. The taxonomy and synonymy of the species and its segregates is discussed at length. The author has seen British material of *C. semidecandrum* L. f. *genuinum* (Rouy & Fouc.) Möschl from Kent, Surrey, Oxfordshire and Norfolk, and f. *stenopetalum* (Beck) Hegi from Cambridge and Glamorgan. The var. *congestum* Gren. is referred to f. *genuinum*, and the vars. *glandulosum* Koch and *pellucidum* (Chaub.) are not kept up. Hybrids with *C. glutinosum* and *C. subtetrandrum* are cited from Europe, and with *C. vulgatum* from Oxfordshire.—[D.H.K.]

185. RUBUS. Watson, W. C. R., 1952, Rubus, in Kent, D. H., & Lousley, J. E., *A Hand List of the Plants of the London Area*, 74-100. Over 200 species of brambles and the localities in which they are known to occur within a 20 mile radius of St. Paul's Cathedral are listed. Three new species:—*R. Averyanus*, *R. iodnephes*, and *R. spadix*, and one variety, *R. egregius* var. *pliocenicus*, are described. The following new combinations are made:—*R. pustulatus* (P. J. Muell. ex Sudre) W. Wats., *R. derasifolius* (Sudre) W. Wats. and *R. bavaricus* (Focke) W. Wats. *R. squalidus* Genev. antedates *R. Naldretti* (J. W. White) W. Wats., *R. hylophilus* Rip. ex Genev. replaces *R. Brittonii* Bart. & Ridd. *R. taeniarum* Lindeb. replaces *R. spurius* L. M. Neumann, and *R. obcuneatus* L. & M. antedates *R. botryeros* (Focke ex Rog.) Focke. An appendix of 31 species additional to the last published list of British Rubi (*J. Ecol.*, **33**, 337-344 (1946)) is also given.—[D.H.K.]

188/2. FRAGARIA VESCA L. Cameron, J. I., 1951, Note on the Late Flowering of Fragaria vesca Linn., *Glasgow Nat.*, **16**, 67.

195. MALUS. Potter, J. M. S., 1952, The History of the Apple, *J. Roy. Hort. Soc.*, **77**, 65-75.

195(2). SORBUS. De Poucques, M.-L., 1951, Etude chromosomique des Sorbus latifolia Pers. et Sorbus confusa Gremli, *Bull. Soc. Bot. France*, **98**, 89-92. *Sorbus latifolia* and *S. confusa* have often been confused in the past. The latter, found in various localities, has sterile pollen and is usually considered to be a hybrid between *S. torminalis* and *S. Aria*. The former, long known from Fontainebleau, produces fertile pollen and is believed by some authorities to be a fixed hybrid of the same parentage as *S. confusa*. The four species are strikingly alike cytologically and all have 2n=34. The few differences observed are very slight. Besides being very closely related, the two supposed hybrids are structurally intermediate between the parents and are considered to be the result of reciprocal crossing.—[D.E.A.]

199. SAXIFRAGA. Webb, D. A., 1950, Saxifraga L. section Dactyloides Tausch; *J. Ecol.*, **38**, 185-213 (Biological Flora).

214/1. HIPPURIS VULGARIS L. Vries, V. de L., 1950, Hippuris vulgaris, *De Levende Natuur*, **53**, 188-191. The fruits of *H. vulgaris* possess a layer of woody cells rich in air. This layer has been said to protect the fruit against rotting while imbedded in the mud, or to allow them to float on the water. Fruits found in the stomachs of wild ducks caught on Vlieland and Terschelling were successfully germinated.—[D.H.K.]

217. CALLITRICHE. Fassett, N. C., 1951, Callitriche in the New World, *Rhodora*, **53**, 137-155, 161-182, 185-194 and 209-222. The American species, which include several which are also found in Britain, are described in detail. *C. stagnalis* Scop. is believed to have been introduced into eastern N. America. The names *C. verna* L. em. Kuetz. and *C. palustris* L. are rejected, the Linnean descriptions apparently being based only on foliage.—[D.H.K.]

220. EPILOBIUM. Andersen, S. 1951, Fremmede Arter af Slaegten Epilobium i Danmark, *Bot. Tidsk.*, **48**, 387-400. *E. adenocaulon* Hausskn. has been found in Denmark, where it hybridizes with *E. parviflorum* Schreb. The author claims that this and other North American species and their hybrids with European species can be distinguished by their seeds having a pellucid beak below the plume of hairs. *E. americanum* Hausskn., an alien new to Europe, was found in Denmark in 1943 in a locality where it may have been introduced with *Zizania aquatica* which had been planted to serve as a fish food. It is distinguished from *E. adenocaulon* by its white flowers and narrower, thinner leaves. The presence of five more North American alien *Epilobia* in Denmark has since been detected by the author, who urges that herbarium material of the genus should be re-examined, and the neighbourhood of docks and similar places searched more carefully.—[D.E.A.]

220/17. EPILOBIUM PEDUNCULARE Cunn. Lee, J. R., 1952, The New Zealand Willow Herb, *Glasgow Nat.*, **16**, 70-73. The confusion between *E. pedunculare* and *E. nummulariifolium* is discussed, and the differences between the two plants are described. The known records for the Glasgow area are given.—[D.H.K.]

301. VALERIANA. Meyer, F. G., 1951, Valeriana in North America and the West Indies, *Ann. Missouri Bot. Gard.*, **38**, 377-503. Two species found in Britain apparently occur in North America. *V. officinalis* L. has been introduced into gardens in the United States and Canada and is established as an escape, while *V. dioica* L. occurs as the subspecies *sylvatica* (Sol. ex Richards) F. G. Meyer.—[D.H.K.]

301. VALERIANA. Skalińska, M., 1951, Studies in Cytoecology, Geographic Distribution and Evolution of Valeriana L., *Bull. Acad. Polon. Sci. Lett.*, Ser. B, **1**, 149-175. The section *Officinalis* is represented in Poland by three species, which are sharply delineated both morphologically and cytologically: *V. exaltata* Mikan (*V. officinalis* L., *sensu stricto*), which is almost exclusively diploid (2n=14), though in one locality tetraploids (2n=28) have been found; *V. tenuifolia* Vahl, a tetraploid; and *V. sambucifolia* Mikan, which is an octoploid (2n=56) and evidently of northern origin, with its centre in Scandinavia. The diploid has the widest geographical and ecological range and is prevented from intercrossing with the polyploids by a distinct ecological separation. The occurrence of three distinctly delineated species is in sharp contrast to the state of affairs in the British Isles and Western Europe, where a range of intergrading forms connects the extreme types of the collective species *V. officinalis*. The putative ancestors of this wide range of forms are the two central European species *V. exaltata* and *V. sambucifolia*. Their rather abrupt decrease at the western limit of their range, evidently due to a climatic barrier, coincides with the appearance of *V. procurrens* Wallr., a polyploid complex of hybrid origin, suggesting that in this region the two formerly separate species have merged. The possibilities of their intercrossing in Western Europe were presumably favoured when their normal ecological separation broke down as a result of the more oceanic climate. The products of initial hybridization (which normally occurs only in rare instances) might have continued to cross so as to produce a large polyploid complex. This phylogenetically younger group formed by convergence shows a higher degree of tolerance for oceanic conditions than its putative ancestors and has thus proved capable of an expansion over Western Europe.—[D.E.A.]

COMPOSITAE. Harling, G., 1951, Embryologic Studies in the Compositae, *Acta Hort. Berg.*, **16**, 1-56 and 73-120.

393. ARCTIUM. Arènes, J., 1950, Monographie du Genre Arctium L., *Bull. Jard. Bot. Brux.*, **20**, 67-156. The history and taxonomy of the group is given, with a discussion on the value of characters used in identification. The confusion of the genus by British botanists is discussed at length. The British species may be keyed as follows:—

Section EGLANDULOSA Arènes

Inflorescences all corymbiform ..... *A. Lappa.*
Inflorescences either all racemose or partly racemose-subcorymbiform at summit, at least those terminating the main axis ..... *A. minus.*

1. *A. Lappa L.*

A. Corymb lax, heads large, solitary on ± thin elongated (up to 10 cm. and more) peduncles; pericline 18-20 (35-40) mm. in diameter (the second figures give the overall diameter including the tips of the bracts); middle and outer periclinal bracts of the spreading part 0·7-1 mm. wide at base, inner bracts reaching 1·8 mm., shorter than the preceding; achenes 4·6× 2-2·5 mm.; pappus 2-2·5 mm. ..... subsp. *majus* (Bernh.) J. Ar. comb. nov.

[AA. Not British.]

2. *A. minus* Bernh.

A. Internal periclinal bracts 14-15 mm. long, much longer than the paleal bracts (9-10 mm.); corollas equalling inner bracts; tube strongly and gradually enlarged towards base ..... subsp. *nemorosum* (Lej.) Syme.

B. Peduncles short or 0; term. heads in twos or clustered 3-5; periclinal bracts 0·5-1 mm. wide; corolla throat tubular; tube longer than limb; term. append. of anther attenuate-apiculate 0·5-0·7 mm. long, basal append. simple or bifid ..... var. *eunemorosum* J. Ar. var. nov.

[BB. Not British.]

AA. Internal periclinal bracts 10-13 mm. long, a little longer than the paleal (7-10 mm.); corolla equalling or overtopping inner bracts; tube gradually and weakly enlarged towards base:

C. Heads small; peric. ± contracted at top when mature and 12-14 (15-22) mm. diam.; corollas overtopping tops of inner bracts; throat tubular; term. append. of anthers not attenuate, apiculate ... subsp. *eu-minus* Syme.

D. Heads very numerous, forming a long cluster, thick and dense at tops of branches ..... var. *pycnanthum* J. Ar. var. nov.

CC. Heads moderate; pericline ± open at maturity and 14-22 (20-35) mm. diam.; corollas equalling or overtopping inner bracts; throat ± enlarged or contracted above; term. appendage of anthers attenuate-apiculate.

E. Penduncles up to 15 cm.; upper heads ± spaced out; periclinal bracts very narrow, inner 10-11 mm. long, a little exceeding the paleal (by 1-2 mm.); corolla throat ± narrowed above; term. anther append. attenuate-apiculate 0·3-0·5 mm. long; basal append. 0·7-1·5 mm. simple to bifid or trifid ..... subsp. *pubens* (Bab.) J. Ar. comb. nov.

[EE. Not British.]

—[E.B.B.]

It may be noted that while in most cases the author names both varieties into which a subspecies is divided, this is not done for "subsp. *eu-minus*". The type var., which should be called var. *minus*, is said to be widespread in Britain while var. *pycnanthum* is reported only from Wigtown. It may also be noted that, under the rules, subsp. *majus* should be called subsp. *Lappa*; var. *eunemorosum*, var. *nemorosum*; and subsp. *eu-minus*, subsp. *minus*.—Ed.

419. Hieracium. Omang, S. O. F., 1951, Descriptiones specierum novarum e stirpe Hieracii alpini, II, *Nytt Mag. Naturvid.*, **88**, 87-152. 68 new alpine species are described for Norway.—[D.E.A.]

423. Taraxacum. van Soest, J. L., 1951, Sur Quelques Taraxaca du Portugal, *Agron. Lusit.*, **13**, 67-76. Two new species are described and several others are noted as additions to the Portuguese flora. A key to all the species so far recognized in Portugal is supplied.—[D.E.A.]

431/1. LOBELIA DORTMANNA L. Woodhead, N., 1951, Lobelia dortmanna L., *J. Ecol.*, **39**, 456-464 (Biological Flora).

440/1. ARBUTUS UNEDO L. Sealy, J. R. & Webb, D. A., 1950, Arbutus unedo L., *J. Ecol.*, **38**, 223-236 (Biological Flora).

446. ERICA. Hansen, I., 1950, Die Europäischen Arten der Gattung Erica L., *Bot. Jahrb.*, **75**, 1-81. The taxonomy and ecology of all the European species is dealt with, and their distribution is illustrated by maps. The Irish *E. mediterranea* is referred to *E. purpurascens* L.—[D.H.K.]

455(2)/1. DIAPENSIA LAPPONICA L. Blakelock, R. A., 1952, Diapensia lapponica L.: Its Occurrence in Scotland, *Kew Bull.*, **1951** (3), 325-326. An account of the discovery of the species in Scotland with comments upon its supposed status there.—[D.H.K.]

455(2)/1. DIAPENSIA LAPPONICA L. Roger, J. G., 1952, Diapensia lapponica L. in Scotland, *Trans. and Proc. Bot. Soc. Edin.*, **36**, 34-36. Records the discovery of the plant in Scotland and discusses its ecology and distribution throughout the world. An excellent figure of the species is given.—[D.H.K.]

460. PRIMULA. Valentine, D. H., 1952, Studies in British Primulas III: Hybridisation between Primula elatior (L.) Hill and P. veris L., *New Phyt.*, **50**, 383-399. 15 offspring have been raised from crosses between *Primula elatior* and *P. veris*, with the latter as the female parent. When *P. elatior* was the female parent, no hybrids were obtained. Two of the offspring were haploid (2n=11) and three diploid (2n=22). One had 2n=24, which has not been explained, and three 2n=approx. 33. The chromosome numbers of the others have not yet been counted. The diploid hybrids were in many characters intermediate between the parents. Viable offspring have been obtained by back crossing one of the diploid hybrids to both parental species, the diploid hybrid being used as both male and female parent. These results resemble those previously obtained in experiments on hybridisation between *P. elatior* and *P. vulgaris*. It is shown that *P. elatior* and *P. veris* may be classified as gradual ecospecies; attention is drawn to the fact that both species are complex groups consisting of numerous subspecies, and it is considered doubtful whether these groups can be adequately described in any existing terminology. Further experimental studies in seed compatibility, hybrid fertility and meiotic pairing may perhaps point the way to a new and more comprehensive classification.—[K.J.H.]

460/1. PRIMULA ELATIOR (L.) Hill. Meyer, H. & D., & Reynolds, J., 1946-47, The Oxlip and its Distribution, *J. Letchworth and Dist. N.H.S.*, **5**, 10-11 and **6**, 18-19. Gives an account of the morphology of the species, its distribution and ecology, and its hybrids with *P. vulgaris* and *P. veris*.—[D.H.K.]

462. CYCLAMEN. Doorenbos, J., 1950, Taxonomy and Nomenclature of Cyclamen, *Meded. Landb. Wageningen*, **50**, 19-29. A short survey of the genus is given and a few species which have given rise to

taxonomic difficulties are treated in detail. *C. europaeum* L. is probably referable to the Mediterranean *C. neapolitanum* Ten. (*C. hederifolium* Ait.), but the author has not seen the Linnean type and so refrains from making any change.—[D.E.A.]

467. ANAGALLIS. Ondráková, A., 1949, Zajímavý nález mísence v rodu Anagallis L., *Českoslov. Bot. Listy*, **2**, 51-52. The hybrid between *A. arvensis* ssp. *phoenicea* and ssp. *caerulea* is discussed.—[D.E.A.]

532. LINARIA. Dilleman, G., 1951, Notes sur quelques Hybridations dans le genre Linaria et remarques sur le hybrides obtenus, *Bull. Mus. Nat. d'Hist. Nat.* Paris, **23**, 140-145. An account of experimental work with various species. The author obtained the following hybrids:—*L. vulgaris* × *repens*, *L. repens* × *vulgaris*, *L. purpurea* × *repens*, *L. repens* × *purpurea*, *L. purpurea* × *vulgaris* and *L. genistiflora* × *purpurea*. *L. vulgaris* × *purpurea* gave seed, but none germinated. The following notes are given:—

Hybrids between *vulgaris* and *repens* are intermediate in most respects particularly as to size and flower colour.

Hybrids between *purpurea* and *repens*: main stem erect like *purpurea* but shorter, lateral branches more numerous and shorter; habit intermediate but nearer *purpurea*; leaves 3 or 4, whorled as in *purpurea*; inflorescence a spike, laxer than *purpurea*; corolla same size as parents, but form and colour nearer *purpurea*; less reddish-purple than *purpurea*, and deeper stripes than *repens*; spur shorter and less curved than *purpurea*.

Hybrid *purpurea* × *vulgaris*: taller than *purpurea*, though habit nearer that species. Flowers in crowded spikes as in parents; corolla intermediate in size with long curved spur, strongly marked with purple to appear more purple than yellow.

Hybrid *genistifolia* × *purpurea* (reciprocal not tried): flowers of doubtful purple mixed with weak proportion of yellow; leaves nearer *genistifolia*.—[E.B.B.]

540/1. SIBTHORPIA EUROPAEA L. Rilstone, F., 1948, Fluctuations of Sibthorpia L., *North West. Nat.*, **23**, 130-131.

543. VERONICA. Boivin, B., 1952, Quelques Veronica du Canada, *Le Nat. Canadien*, **89**, 173-176. *V. agrestis* L., *V. anagallis-aquatica* L., *V. persica* Poir., *V. polita* Fries, *V. scutellata* L. and *V. serpyllifolia* L. are all found in Canada. *V. scutellata* with white petals is described as f. *alba*, forma nov., and var. *pilosa* Vahl apparently antedates f. *villosa* Schum. A new variety of *V. serpyllifolia* (var. *decipiens*) is described; it differs from the usual form mainly in its inflorescence being glandular-pubescent.—[D.H.K.]

543/41. VERONICA FILIFORMIS Sm. Muenscher, W. C., 1949, Veronica filiformis, a weed of lawns and gardens, *Rhodora*, **51**, 365. In central New York the plant has completely over-run many lawns and presents a difficult control problem. Behaving as a perennial it spreads vegetatively and no mature capsules have been seen. The species is

susceptible to attack by the fungus *Sclerotium Rolfsii* Saccardo which kills it and causes brown patches on infected lawns.—[D.H.K.]

581/6. LAMIUM AMPLEXICAULE L. Bernström, P., 1952, Cytogenetic Intraspecific Studies in Lamium, I, *Hereditas*, **38**, 163-220. The author gives details of experimental studies on *Lamium amplexicaule*. —[D.H.K.]

606/17. HALIMIONE PORTULACOIDES (L.) Aell. Chapman, V. J., 1950, Halimione portulacoides (L.) Aell., *J. Ecol.*, **38**, 214-222 (Biological Flora).

611. SALICORNIA. Corrillion, R., & Dizerbo, A., 1952, Sur la présence du Salicornia fruticosa L. dans le N.W. de la France, *Bull. Soc. Bot. France*, **99**, 58-60. The authors attempt to clear up the distribution of the species which has been obscured by confusion of *S. fruticosa* with *S. radicans* Sm. (*S. perennis* Mill.). They claim that the locality studied by them at Aber is the only certain one for *S. fruticosa* in N.W. France. Some ecological information is also given.—[E.B.B.]

626/1. VISCUM ALBUM L. Weevers, T., 1950, Viscum album en zijn gastheren, *Ned. Kruidk. Arch.*, **57**, 360-362. It is suggested that as Mistletoe lives only on trees growing on soils containing calcium it is a calciphilous species. Other possibilities are however discussed. Some hosts are given, as well as details of germination and the detrimental effect on the hosts.—[D.H.K.]

626/1. VISCUM ALBUM L. Thoday, D., 1951, The Haustorial System of Viscum album, *J. Exper. Bot.*, **2**, 1-19.

633. ULMUS. Melville, R., 1951, The Elms of the Dumortier Herbarium, *Bull. Jard. Bot. Brux.*, **21**, 347-351. The Dumortier herbarium at Brussels contains types of the elms described in the *Florula Belgica*. Some of the material consists of juvenile foliage, which cannot be identified with certainty. *U. reticulata* Dumort. proves to be *U. stricta* Lindl., the Cornish Elm, the earliest valid name for which is *U. cornubiensis* Weston. *U. reticulata* var. *sepearia* Dumort. is *U. Plotii* Druce; the locality cited is Cornwall, which is evidently an error.—[D.E.A.]

642. BETULACEAE. Hall, J. W., 1952, The Comparative Anatomy and Phylogeny of the Betulaceae, *Bot. Gaz.*, **113**, 235-270. The wood anatomy of the Betulaceae has been studied comparatively in an attempt to use it in establishing the phylogenetic position of the family. Descriptions are given of the wood of six genera, *Alnus*, *Betula*, *Corylus*, *Ostryopsis*, *Carpinus* and *Ostrya* as well as of the two tribes in which these genera occur (*Betuleae* and *Coryleae*) and of the family as a whole. The study indicates that the family is moderately advanced. Evidence from other fields of investigation is considered to support this and the view that *Betulaceae* might have originated from some hamamelidaceous stock.—[K.J.H.]

646. QUERCUS. Cahen, E., 1950, The Two British Oaks: Their Occurrence in Devon, *Rep. and Trans. Devonsh. Assocn.*, **82**, 195-204. The history, taxonomy and distribution of the two species is given. The origin of the name Durmast Oak as applied to *Q. petraea* is also discussed.—[D.H.K.]

649/1. FAGUS SYLVATICA L. Clowes, F. A. L., 1951, The Structure of Mycorrhizal Roots of Fagus sylvatica, *New Phyt.*, **50**, 1-15. The root system of *Fagus sylvatica* is described in detail. Both the long and the short roots may become mycorrhizal, though the extent of infection is not constant. Some of the theories of mycorrhizal nutrition are discussed.—[D.H.K.]

651/8. POPULUS ALBA L. Wladyslaw, B., 1951, Kilka nowych odmian i mieszańców Populus alba L., *Acta Soc. Bot. Pol.*, **21**, 42-57. The author describes several new varieties of *Populus alba* L. found in Poland in recent years. A possible hybrid between *P. tremula* and *P. alba* is described as *P.* × *rogalinensis*.—[D.H.K.]

669. ORCHIS. Harrison, J. Heslop, 1949, Notes on the Dactylorchids of North-western Donegal, *Irish Nat. Journ.*, **9**, 291-298. Some results are given of statistical population studies of Dactylorchids in Donegal. A race of *O. Fuchsii* occurring on the coast is perhaps identical with var. *hebridensis* (Wilmott) H.-Harr., and a very similar form is to be found in certain coastal districts of Connemara. This variety seems to form one end of a cline in the Outer Hebrides, the plants tending to be progressively more like the type as one traverses the Inner Isles to the Scottish mainland. A race of *O. latifolia* found in W. Mayo, Sligo and W. Donegal is either var. *cambrica* Pugsl. or an endemic Irish race; it is a smaller plant with smaller, dark purple flowers and a faintly-marked labellum. The status of the var. *pulchella* (Druce) Pugsl. of *O. purpurella* is indefinite and needs further study.—[D.E.A.]

669. ORCHIS. Harrison, J. Heslop, 1951, A Comparison of some Swedish and British Forms of Orchis maculata L. sens. lat., *Svensk. Bot. Tidskr.*, **45**, 608-635. *O. maculata* and other Dactylorchids are characterized by regional variation coupled with intense local variation, phenomena which can only be satisfactorily treated by biometrical analysis. Biometrical comparison of Swedish material reveals that the diploid form of base-rich soils in southern and central Sweden falls within the variation range of *O. Fuchsii*. The widespread tetraploid form found in the same area on more acid soils has, however, no counterpart in the British Isles, and on the basis of Linnaeus's description and specimen is to be interpreted as being *O. maculata* L., *sensu stricto*. A tetraploid race with more slender spurs and narrower leaves, coming within the variation range of *O. ericetorum*, was encountered in great abundance at rather high altitudes in western Jämtland, where it replaces the diploid with the transition from the herb-rich spruce forest to the open birch forest of the higher slopes. The characters of the three races are compared by means of tables showing the statistical differences. *O. Fuchsii* is synonymous with *O. maculata* var. *trilobata* Bréb., var. *Meyeri* Rchb. f., and var. *obscura* Neum. The Swedish populations differ from the British ones to a certain extent, but the creation of separate subspecies is considered premature. The two tetraploids are best ranked as subspecies of *O. maculata*, the British plant thus becoming *O. maculata* ssp. *ericetorum* Linton. The identity of *O. elodes* Griseb. (from North Holland) with the latter is quite possible, but the

matter needs further investigation. Other races of the maculata-complex occur in Scandinavia and await study.—[D.E.A.]

669. ORCHIS. Harrison, J. W. Heslop, 1951, Vascular Plants in the Outer Hebrides in 1950, *Proc. Univ. Durham Phil. Soc.*, **11**, 1-11. The Outer Hebridean plants of *Orchis mascula* constitute a distinct race, which is described as ssp. *ebudium*. It occurs in Lewis, Harris and Berneray, and is characterized by its very small size, leaves almost without blotches, flowers few, widely separated, much less brightly coloured, smaller, and with the notches in the median lobe of the lips much deeper. Wilmott's promotion of *O. latifolia* var. *coccinea* Pugsl. to subspecific rank is considered far too premature, for contrary to his statement the type is quite widely distributed in the Outer Isles. A triple hybrid between *O. purpurella*, *O. latifolia* and *Coeloglossum viride* was detected in Harris. *O. majalis* ssp. *occidentalis* Pugsl. has almost been hybridized out of existence by *O. purpurella* in parts of South Harris. A hybrid between *O. ericetorum* and *Platanthera bifolia* was also found in the same area.—[D.E.A.]

669/8. ORCHIS PRAETERMISSA Druce. Andersen, S., 1951, Orchis praetermissa Druce, en for Norden ny Gøgeurt, fundat i Jylland, *Bot. Tidsk.*, **48**, 439-41. *Orchis praetermissa* has been found in Jutland, and is thus new to the Nordic region.—[D.E.A.]

669/9(3). ORCHIS TRAUNSTEINERIOIDES (Pugsl.) Pugsl. Gough, K., 1952, Orchis traunsteinerioides Pugsl. in Co. Clare, *Irish Nat. Journ.*, **10**, 273. The plant was discovered in 1951 near the borders of Co. Galway and Co. Clare. This represents the most westerly station so far recorded.—[D.H.K.]

669/11. ORCHIS FUCHSII Druce. Harrison, J. Heslop, 1950, Orchis Fuchsii Druce subsp. hebridensis (Wilm.) H.-Harr. in Co. Kerry, *Irish Nat. Journ.*, **10**, 57. The Hebridean race of this species has been collected on the shores of Brandon Bay, Kerry. It will probably be found to be widespread along the western seaboard of Ireland in sandy coastal meadows.—[D.E.A.]

674(1)/1. GYMNADENIA CONOPSEA (L.) R. Br. Meikle, R. D., 1950, Gymnadenia conopsea (L.) R. Br. in Ireland, *Irish Nat. Journ.*, **10**, 72-73. The var. *densiflora* (Wahlenb.) Rchb. replaces the type in parts of Northern Ireland, but it is of uncertain status and the author seeks further information about its characters and distribution. Co. Down plants can be distinguished from the type as follows:—

G. conopsea.	var. *densiflora.*
Flowers quite over by end of July.	Flowers fully out in August.
Seldom over 12 ins. tall.	Up to 20 ins.
Leaves 5 × ½ in.	Leaves 5-6×¾-1 in.
Inflorescence slender, 1½-2½ ins. long, bearing fewer, paler, mauve-pink, heavy scented flowers.	Inflorescence stout, 2-4 ins. long, bearing a large number of closely packed, rich crimson-pink, carnation-scented flowers.
Dry hilly pastures and heaths.	Damp banks and swamp margins, usually on slightly alkaline soils.

[D.E.A.]

675/1. CYPRIPEDIUM CALCEOLUS L. Dilleman, G., 1951, La répartition du Cypripedium Calceolus L. en France et le problème de sa disparition, *Bull. Soc. Bot. France*, **98**, 145-148. In France this species is a facultative calcicole and likes open woods, preferably of beech. It is still common in the Alps, but in the Massif Central only small colonies are known. Apart from these mountainous regions it is also found in parts of the north-east. The plant has suffered equally from vandalism and deforestation.—[D.E.A.]

709/1. FRITILLARIA MELEAGRIS L. Buschmann, A., 1951, Zur Kenntnis von Fritillaria Meleagris Linne, *Phyton*, **3**, 276-297. The plant is very rare in Austria, but in 1949 a large population was discovered in East Styria. Variations in the population are described in detail.—[D.H.K.]

709/1. FRITILLARIA MELEAGRIS L. Turrill, W. B., 1952, The Snake's Head, *R.H.S. Lily Year Book*, **1951-52**, 108-116. The history and distribution of the species is given. Special mention is also made of the decrease in population in the Oxford district during the last 50 years. From 1941-45 it was difficult to find any flowering specimens in most of the meadows between Oxford and Iffley. The sole exception was Magdalene Meadows where the plant was protected from trampling and uprooting, and where grazing animals were prohibited. Here the plants increased in number. A full account of the various colour forms and their nomenclature and synonymy is also given.—[D.H.K.]

712/1. LLOYDIA SEROTINA (L.) Reichb. Woodhead, N., 1951, Lloydia serotina (L.) Rchb., *J. Ecol.*, **39**, 198-203 (Biological Flora).

718. JUNCUS. Tweed, R. D., & Woodhead, N., 1947, The Taxonomy of Juncus effusus L. and J. conglomeratus L., *North West. Nat.*, **22**, 216-222.

719. LUZULA. Nordenskiöld, H., 1951, Cyto-taxonomical Studies in the Genus Luzula: 1. Somatic Chromosomes and Chromosome Numbers, *Hered. Gen. Arkiv.*, **37**, 325-355. The chromosome numbers of species which are found in Britain are given as follows:—*L. silvatica* (Huds.) Gaud. 2n=12, *L. luzuloides* (Lam.) Dandy & Wilm. 2n=12, *L. Forsteri* (Sm.) DC. 2n=24, *L. pilosa* (L.) Willd. 2n=66, *L. spicata* (L.) DC. 2n=12, 14, 24, *L. arcuata* (Wg.) Sw. 2n=36, 42, *L. campestris* (L.) DC. *sensu stricto* 2n=12, *L. multiflora* (Retz.) Lej. 2n=24, 36, *L. congesta* (Thuill.) Lej. 2n=36, 48.—[D.H.K.]

736/1. SCHEUCHZERIA PALUSTRIS L. Moore, J. J., 1952, The Occurrence of Scheuchzeria in Ireland, *Irish Nat. Journ.*, **10**, 248. About nine specimens of this species were found in 1951 in a bog in Co. Offaly. It is new to Ireland.—[D.E.A.]

737/32. POTAMOGETON EPIHYDRUS Raf. Harrison, J. W. Heslop, 1952, Occurrence of the American Pondweed, Potamogeton epihydrus Raf., in the Hebrides, *Nature*, **169**, 548-549. Records the discovery of the species in South Uist, Outer Hebrides in 1943. Visits made to the locality in 1949 and 1950 showed the plant to be very abundant.—[D.H.K.]

741/2. NAJAS FLEXILIS (Willd.) Rostk. & Schmidt. Eriksson, K., Olsen, S. E., & Reenberg, C. E., 1949, Najas flexilis (Willd.) Rostk. et Schmidt fundet i Danmark, *Bot. Tidsskr.*, **48**, 223-230. This species has been discovered on sandy mud in one lake in Denmark, whither it may have been brought by migratory birds from Scandinavia. After the last glaciation the species was much more widely distributed than now. In lakes in countries north of the Alps it persisted through the Atlantic period, but later almost died out in the dry and warm Sub-boreal. The causes of its gradual disappearance should perhaps be sought in the increasing covering of the lakes by vegetation rather than in climatic changes.—[D.E.A.]

746/3. SCIRPUS LACUSTRIS L. Seidel, K., 1952, Zur Ökologie von Scirpus lacustris, *Ber. Deutschen Bot. Ges.*, **64**, 342-352.

753. CAREX. Senay, P., 1950-51, Le Groupe des Carex flava et Carex Oederi, *Bull. Mus. Nat. Hist. Nat.*, Paris, **22**, 618-624 and 790-796 and **23**, 146-152. The taxonomy, and the confusion over the nomenclature of the flava group is discussed at length. The distribution of the various species throughout the world is given and some ecological information is also supplied. The following key is provided:—

1. Utricles 4-7 mm. long (incl. beak), the lower at least reflexed (tufts ceasing to grow after flowering).
   2. Utricles (4) 5-6 (7) mm., all, except at top, arched or bent outwards (rarely straight) ± attenuate to a beak of 1·5×2·5 mm. ♂ spike sessile or nearly so. ♀ spikes (not 1) 2-4 (7) 10-15×10-12 mm. When ripe, usually very close to ♂ spike, or, sometimes, the lower ± distant and stalked. Leaves (2) 3-5 (6) mm. wide usually almost as long as the upright, smooth, sometimes scabrous at top, stem (1) 2-4 (8) dm. Antiligule (footnote says that "antiligule" means in contrast to the ligule proper, the upper part of the sheath opposite to the limb) of the lower bract ± concave straight or truncate ..... *C. flava.*
   2. Utricle c.4 mm., less markedly bent in *flava* and usually more swollen (only the lower arched and bent outwards), contracted into a beak 1·5-2 mm. long. ♂ spike (rarely a second rudimentary one) ± long; stalked, often oblique. ♀ spikes (1) 2-3 (4), 7-15×7-9 mm. when ripe ± spaced out (rarely more than 3 cm.); usually none at the middle of the stem. Leaves (narrow typically) (1·5) 2-2·5 (4) mm. usually not more than half the length of the upright scabrous at top, often entirely smooth stem (1) 8-5 (7) dm. Antiligule of lower bract ± convex, straight or emarginate ..... *C. lepidocarpa.*
1. Utricles 2-4 (4·5) mm. long (incl. beak) spreading-divaricate, not, or hardly, reflexed, except the lower. (Stock giving off, uninterruptedly to the Autumn, new fertile and sterile shoots).
   3. Antiligule, of lower bract at least, convex ± prolonged into a small tongue, rarely emarginate. Stem curved at base, even almost decumbent, sometimes ± upright, (4) 1-3 (5) dm., smooth or scabrous (often in same plant!). Leaves (1·5) 2-4 (6) mm. wide, flat, deep green in spring, more than ½ length of stem. Bracts usually spreading, reflexed at maturity. ♂ spike ± long-stalked. ♀ spikes (1) 2-4 (6), 5-15×4-9 mm. when ripe, the 2-3 upper crowded beneath the ♂ spike, or often separated up to 1·5 cm., the lower ± stalked usually distant, most often far from the next, often towards the base of the stem. Utricles (3) 4 (4·5) mm. (less swollen than in *lepidocarpa*), deeper green and retaining colour longer than *serotina*, many nerved, contracted into a visibly 2-toothed beak, relatively broad and almost flat, c. 1·5 mm. bent or straight, the lower reflexed ..... *C. demissa.*
   3. Antiligule concave or truncate.
      4. Utricles 2-3 mm., beak straight, indistinctly toothed.

5. Beak usually c. ½ length of body of utr. bracts usually spreading. Stem upright (2) 1-3 (7) dm., smooth. Leaves (1) 2-3 mm. broad, flat or channelled, green in spring, yellowing (as the bracts) later, longer than stem (except in large-sized specimens). Bracts reflexed at maturity, often ♂ spike sessile or shortly stalked (rarely long-stalked on large plants). ♀ spikes 2-4 (8), 4-10×3-6 mm. at maturity, all or most crowded beneath ♂ spike; lower, stalk included, often 1-2 cm. (rarely farther) from next. Utricles 2-3 mm., green, yellowing finally, many-nerved ± abruptly contracted into a beak (rarely 0) of 1 mm. at most. Nut occupying ¾ or (rarely less) of utricle ..... *C. serotina.*

5. Beak about ⅓ length of body. Bracts almost always erect. Nut occupying at least ¾ of utricle ..... [not British] *C. viridula.*

4. Utricles c. 2 mm. long, beak c. 5 mm. long. Bracts spreading or reflexed. Nut occupying the whole utricle or nearly ..... [not British] *C. pulchella.*

C. flava L. and *C. lepidocarpa* Tausch are described as plants of wet meadows and marshes with basic soil, above all calcareous. The habitat of *C. demissa* Hornem. is given as peaty bogs, etc., but whilst calcifuge in France, it is calcicolous in its N. American area. *C. serotina* Mérat is native in marshy places, bogs, sandy and siliceous places: very rare on basic soils, etc., and considered as an acidiphile until 1946 when J. P. M. Brenan found it at Port Meadow, Oxford on alluvial soil of the Thames.

The following hybrids are recorded from Europe:—*flava* × *lepidocarpa* (Sweden), *lepidocarpa* × *demissa* (Gt. Britain, etc.), *lepidocarpa* × *serotina* (Gt. Britain, etc.), *demissa* × *serotina* (Gt. Britain, etc.), *Hostiana* × *lepidocarpa* (Gt. Britain, etc.), *Hostiana* × *demissa* (Gt. Britain, etc.), *Hostiana* × *serotina* (Gt. Britain, etc.), *distans* × *flava* (Germany), and *distans* × *lepidocarpa* (Bohemia).—[E.B.B.]

758/3. SPARTINA TOWNSENDII H. & J. Groves. Chater, E. H., & Jones, H., 1951, New Forms of Spartina Townsendii, *Nature*, **168**, 126. In recent years a number of untypical plants of *S. Townsendii* have appeared in the Dovey Estuary. Among these, two very distinct forms have been noticed. One is very dwarf (3-4 ins. above ground), with brownish leaves and sheaths, and flowering only sparsely. The other is variegated and has a leaf-blade with usually a yellow median portion and a band of green tissue along either side; the flowering of this form is also sparse. The dwarf form has also been found in the Severn Estuary near Chepstow. It is suggested that these new forms possibly represent the disintegration of the formerly stable polyploid hybrid.—[D.H.K.]

766/1. ANTHOXANTHUM ODORATUM L. Litardière, R. de, 1949, Observations caryologiques et caryosystématiques sur diverses graminées principalement de la flore mediterranéenne, *Trav. Bot. Déd. René Maire*, 199-208. A diploid form of this species, var. *corsicum* (Briq.) Rouy, has been discovered in the Mediterranean.—[D.E.A.]

780/6. AGROSTIS CANINA L. Jones, K., 1952, Autotetraploidy in Agrostis canina, *Nature*, **169**, 159-160. *Agrostis canina* var. *fasciculatis* is a diploid (2n=14). *A. canina* var. *arida* is an autotetraploid (2n=28), possibly the autotetraploid form of var. *fasciculatis*.—[D.H.K.]

783. CALAMAGROSTIS. Polakowska, M., 1951, Przeglad systematyczno-anatomiczny krajowych gatunków rodzaju Calamagrostis Adans.,

Ann. Univ. Mariae-Curie, **1-6**, No. 1. A key is given to all the known Polish species.—[D.H.K.]

813/1. MOLINIA CAERULEA (L.) Moench. Guinochet, M. & Lemée, G., 1950, Contribution à la Connaissance des Races Biologiques de Molinia caerulea (L.) Moench, *Rev. Gén. Bot.*, **57**, 565-593. Cultivation experiments reveal that this species consists of at least four genetically and morphologically distinct ecological races, associated respectively with Molinion, Oxycocco-Ericion, Mesobromion and Quercetalia roburis-sessiliflorae. The descriptions of vars. *genuina*, *arundinacea*, *depauperata* and *litoralis* must be modified in consequence. The distinction between var. *genuina* A. & G., with lower glume oval-obtuse and no more than 3-4 mm. long, and var. *litoralis* (Host) A. & G., with lower glume attenuate, acute, and reaching 6 mm. in length, holds good. Three of the varieties have a chromosome number of 2n=36, but in var. *litoralis* two gatherings had 2n=90 and a third 2n=36. The form with 2n=90 flowers a month later than those with 2n=36, is twice as tall, and has a greater leaf surface, cellular volume and transpiration rate. It is characteristic of slopes facing south, on basic soils which are very wet in spring but almost dry in summer. The authors treat it as a new subvariety *gigantea* of var. *litoralis*.—[D.E.A.]

813/1. MOLINIA CAERULEA (L.) Moench. Jefferies, T. A., 1952, The Story of a Moorland Grass (Molinia caerulea), *Glasgow Nat.*, **16**, 68-69. The morphology, and the status of the species in Britain is discussed. The author has made a study of the plant and claims to be able to recognize 16 different varieties.—[D.H.K.]

824/14. POA ANNUA L. Tutin, T. G., 1952, The Origin of Poa annua L., *Nature*, **169**, 160. An account of the experimental crossing of *Poa annua* with *P. infirma*. The author supports Nannfeldt's suggestion that *P. annua* is an allotetraploid (2n=28) the diploid parents of which are *P. infirma* and *P. supina*.—[D.H.K.]

825/3(2). GLYCERIA DECLINATA Bréb. Störmer, P., 1951, On Glyceria declinata, *Blyttia*, **9**, 1-15. The species has a wide distribution from southern Norway and Sweden, through north-west Germany, Britain, and western France to Portugal and the south coast of Spain; it also occurs in one place in the mountains of California. The characters of *G. fluitans* and *G. plicata* are listed and figured for comparison. In Norway *G. declinata* prefers damp ground near ponds where cattle have trodden or wet tracks. The species is cited from ninety British vice-counties on the authority of C. E. Hubbard.—[D.H.K.]

827/9. BROMUS INERMIS Leyss. Nielsen, E. L., 1951, Cytology and Breeding Behaviour of Twin Plants of Bromus inermis, *Bot. Gaz.*, **113**, 23-54.

829. LOLIUM. Cooper, J. P., 1951, Studies on Growth and Development in Lolium, *J. Ecol.*, **39**, 228-270.

830. AGROPYRON. Godley, E. J., 1951, Two Natural Agropyron Hybrids occurring in the British Isles, *Ann. Bot.*, **15**, 536-544. The hybrids of *A. junceum*×*A. pungens* and *A. junceum*×*A. repens* are described and compared with the parental species in respect of 14 charac-

ters. A list of all known hybrids in the *Hordeeae* is also given.—[D.H.K.]

830/5. ROEGNERIA DONIANA (F. B. White) Meld. Melderis, A., 1950, The Short-awned Species of the Genus Roegneria of Scotland, Iceland and Greenland, *Svensk Bot. Tidskr.*, **44**, 132-166. Examination of *Agropyron Donianum* from Ben Lawers shows that it is not closely related to *Elytrigia* (*Agropyron*) *repens* but is clearly a member of the genus *Roegneria* and is further conspecific with the North American *Agropyron trachycaulon* (Link) Steud. var. *majus* (Vasey) Fern. (*A. pseudorepens* Scribn. & Sm.). The author suggests that the species immigrated to Scotland from North America, where it exhibits much greater variability, during the Quaternary period—perhaps in the Mindel-Riss Interglacial period—when a broad land-bridge may have connected the two areas via the Faeroes, Iceland and Greenland. This hypothesis is supported by the fact that separate geographical races occur in Iceland (var. *Stefanssonii*) and Greenland (var. *virescens*); these may have originated after the severance of the land connection, surviving glaciation on ice-free nunataks.—[D.E.A.]

836/1. ELYMUS ARENARIUS L. Bond, T. E. T., 1952, Elymus arenarius L., *J. Ecol.*, **40**, 217-227 (Biological Flora).

847/1. PTERIDIUM AQUILINUM (L.) Kuhn. Braid, K. W., 1952, Bracken—A Botanist's Plaything and an Agricultural Pest, *Glasgow Nat.*, **16**, 61-67. Deals with the life-cycle of the species and methods of eradicating it from agricultural land.—[D.H.K.]

849/1. BLECHNUM SPICANT (L.) Roth. Druery, C. T., 1951, Blechnum Spicant, *Brit. Fern Gaz.*, **8**, 7-9.

857. CYSTOPTERIS. Larsen, K., 1952, Udbredelsen i Grönland af Cystopteris fragilis coll. med piggede og vortede sporer, *Bot. Tidsskr.*, **49**, 39-43. The *C. fragilis* complex in Greenland consists of the Arctic "*C. Dickieana*", with verrucose spores, and the subarctic *C. fragilis*, with spiny spores. In Iceland and the Faroes, the latter is very common, whereas "*C. Dickieana*" has only been found in one locality in Iceland. A few of the Greenland plants had spores of an intermediate type. Three of these were on the north-east coast, far beyond the northern limit of *C. fragilis*. In the transition area between the two species supposed hybrids have been found.—[D.E.A.]

858/1. POLYPODIUM VULGARE L. Martens, P., 1949, Les paraphyses de Polypodium vulgare et la sous-espèce serratum, *Compt. Rend. Acad. Sci. Paris*, **228**, 502-505. The ssp. *serratum* is best characterised by the presence of glandular, unilaterally branched paraphyses. This was observed on individuals collected in England, France, Switzerland, Portugal, Spain, Macaronesia, and many Mediterranean countries. In Italy the subspecies shows a marked preference for coastal conditions, but in Spain and Portugal this is less noticeable.—[D.E.A.]

876/1. CHARA BRAUNII Gmel. Shaw, S., 1948, Chara Braunii Gmelin, *North West. Nat.*, **23**, 166-167. Gives an account of the plant's arrival, and its subsequent history, in the Reddish Canal.—[D.H.K.]

876/15. CHARA FRAGIFERA Durieu. Corillion, R., 1952, Sur la présence du Chara fragifera Durieu en Afrique intertropicale, *Bull. Soc. Bot. France*, **99**, 45. *Chara fragifera* has been discovered in Togo. The world distribution of the species is given.—[D.H.K.]

TOPOGRAPHICAL

1, W. CORNWALL. Green, H. E., 1951, Wild Plants at the Lizard, *Proc. Liverpool Nat. F.C.*, **1950**, 25-29.

3-4, DEVON. Keble-Martin, W., & Brokenshire, F. A., 1948-51, 40th Annual Report on the Botany of Devon, *Rep. and Trans. Devonsh. Assocn.*, **80**, 39-47. Contains a few new county records. 41st Annual Report etc.; *op. cit.*, **81**, 57-65. Gives many new county records, and also includes a list of first records of Devon plants earlier than the dates given in *Flora of Devon*, by the researches of Dr. J. A. R. Bickford (pp. 63-65). 42nd Annual Report, etc., *op. cit.*, **82**, 49-56. 43rd Annual Report, etc., *op. cit.*, **3**, 43-55. An enumeration of new stational records includes (pp. 47-48) a Report on *Spartina Townsendii* H. & J. Groves in the Lower Torridge, by V. C. Boyle.—[A.E.W. & D.H.K.]

6, N. SOMERSET, and 34, W. GLOS. Sandwith, C. I. & N. Y., 1951, Bristol Botany in 1950, *Proc. Bristol Nat. Soc.*, **28**, 169-175. A report on the more interesting records made. The rediscovery of *Centaurium capitatum* (Willd.) Borbás on Crook Point, N. Somerset, is reported, and the aliens *Ranunculus marginatus* Urv. var. *trachycarpus* (Fisch. & Mey.) Aznavour, *Trifolium Petrisavii* Clementi, and *Anthemis hyalina* DC. from Portway tip, Bristol (W. Glos.) are reported as new to Britain. —[A.E.W.]

7-8, WILTS. Grose, J. D., 1951, Wiltshire Plant Notes, *Rep. Nat. Hist. Sect., Wilts. Arch. and Nat. Hist. Soc.*, **1950**, 75-79.

10, WIGHT. White, E. H., 1951, Botanical Notes, *Proc. Isle of Wight Nat. Hist. and Arch. Soc.*, **4**, 145-148. Gives an account of the state of the rarer plants of the island, and many other interesting records, including an account of the reappearance in 1945 of *Ophrys aranifera* Huds. (last recorded in 1896). The following species are believed to be extinct:—*Thalictrum flavum* L., *Vicia Lathyroides* L., *Lathyrus maritimus* Bigel., *Helleborus foetidus* L., *Senecio integrifolius* (L.) Clairv., *Filipendula vulgaris* Moench, *Oxycoccus quadripetalus* Gilib., *Hypopitys Monotropa* Cr., *Gentiana campestris* L., *Parentucellia viscosa* (L.) Caruel, *Orobanche purpurea* Jacq., *Mentha Pulegium* L., *Narcissus biflorus* Curt., *Wahlenbergia hederacea* (L.) Reichb., *Asplenium marinum* L. and *Osmunda regalis* L.—[D.H.K.]

11, S. HANTS. Read, W. J., 1951, Plant Life in the Hampshire Rivers, *Proc. Bournemouth Nat. Science Soc.*, **41**, 58-60. The distribution of *Potamogeton* and other aquatic species found in the Avon, Itchen, Test and other Hampshire streams is discussed.—[D.H.K.]

11, S. HANTS. Chambers, E., 1951, Bournemouth District Flora: Recent Additions and Records, *Proc. Bournemouth Nat. Science Soc.*, **40**, 72-73.

14, E. SUSSEX. Ward, F. Kingdon, 1952, The Flora of the Crumbles, *Gard. Chron.*, **131**, 7-8.

15, E. KENT. Wilson, L. W., 1949-52, Thanet Flora, *Ann. Rep. Isle of Thanet Field Club*, **1**, 25-38. A systematic, but unlocalized list of phanerogams and vascular cryptogams found in the Isle of Thanet. Notes on Species in Thanet and Fringing Districts, *op. cit.*, **2**, 48-50. Additions to Thanet Flora, *op. cit.*, **3**, 25. Botanical Notes, 1950-51, *op. cit.*, **4**, 36-38.—[D.H.K.]

15, E. KENT. Rose, F., 1950, The East Kent Fens, *J. Ecol.*, **38**, 292-302. A historical and ecological account of the marshy areas near Sandwich and Ham Ponds.—[D.H.K.]

16, W. KENT. Rose, F., 1950, Botanical Records for Metropolitan Kent, 1942-1949, *Lond. Nat.*, **29**, 15-20.

16, W. KENT, 17, SURREY, 18-19, ESSEX, 20, HERTS., 21, MIDDX. and 24, BUCKS. Lousley, J. E., 1947-52, Botanical Records, 1946-51, *Lond. Nat.*, **26**, 73-78, **27**, 38-42, **28**, 26-30, **29**, 8-14, **30**, 4-8, and **31**, 10-13. Gives many records of interesting plants found within a 20-mile radius of St. Paul's Cathedral.—[D.H.K.]

16, W. KENT, 17, SURREY, 18-19, ESSEX, 20, HERTS., 21, MIDDX. and 24, BUCKS. Kent, D. H., & Lousley, J. E., 1951-52, A Hand List of the Plants of the London Area: Flowering Plants, Ferns and Stoneworts, Supplement to *Lond. Nat.*, **30-31**. A systematic account of the plants found in the London area compiled from the records of the London Natural History Society. These are parts 1 and 2, covering families from *Ranunculaceae* to ***Rosaceae*** (*Mespilus*).—[D.H.K.]

17, SURREY. Ager, J. A. M., 1949, Flora of St. Thomas's Hospital and Bombed Sites, *St. Thomas's Hospital Gazette*, **47**, No. 1. Gives short accounts of the localities, which are areas within the grounds of St. Thomas's and bombed sites within half a mile range of the hospital, followed by a systematic list of vascular plants. (Corrected from 21, MIDDX., in *Watsonia*, **2**, 128).—[E.B.B.]

17, SURREY. Bangerter, E. B., & Castell, C. P., 1951, Further Notes on the Vegetation of Gun-pits in Eastern Plain, Bookham Common, *Lond. Nat.*, **30**, 54-56.

17, SURREY. Whitehouse, Mrs. M., 1952, The Present Flora of Barnes Common, Surrey, *Lond. Nat.*, **31**, 17-19.

19, N. ESSEX and 20, HERTS. Bishops Stortford and District Nat. Hist. Soc., 1952, List of Vascular Plants of Bishops Stortford and District, *Trans. Bishops Stortford and Dist. Nat. Hist. Soc.*, **1** (2). An account of the plants recorded from within a circle having a six mile radius from the Corn Exchange, Bishops Stortford.—[D.H.K.]

21, MIDDX. Wrighton, F., 1951, Plant Ecology at Cripplegate, *Lond. Nat.*, **30**, 73-79.

22, BERKS. and 24, BUCKS. Marler, P., 1950, Plant Records, *Middle-Thames Nat.*, **2**, 15-17.

22, BERKS. and 24, BUCKS. Hyde, M. B., 1951, Plant Records, *Middle-Thames Nat.*, **3**, 8-11.

29, CAMBS. Kassas, M., 1952, Studies in the Ecology of Chippenham Fen, *J. Ecol.*, **40**, 50-73.

31, HUNTS. Walters, S. M., 1949, Flora, *Ann. Rep. Hunts. Fauna and Flora Soc.* for **1949**, 13-19. Gives a number of new records for the county.—[D.H.K.]

31, HUNTS. Gilbert, J. L., 1951, Flora, *Ann. Rep. Hunts. Fauna and Flora Soc.* for **1950**, 14-22. Gives further new county records, and additional stations for plants.—[D.H.K.]

32, NORTHANTS. Allen, G. H., & Gilbert, J. L., 1951, Botanical Records for 1950, *Journ. Northants Nat. Hist. Soc. and F.C.*, **32**, 81-85. G. H. Allen gives a list of plants noted on the site of the proposed Pitsford reservoir.—[A.E.W.]

33-34, GLOS. Price, W. R., 1951-52, Phanerogams and Vascular Cryptogams, *Proc. Cotteswold Nat. F.C.*, **30**, 170-188 and 244-251. Gives additions to the known flora of the county including a number of adventives.—[D.H.K.]

33-34, GLOS. 1951-52, Flora of Gloucestershire: Corrigenda, *Proc. Cotteswold Nats. F.C.*, **30**, 192-193 and 253.

33-34, GLOS. Price, W. R., 1951, Plant Distribution in Gloucestershire, *Proc. Cotteswold Nat. F.C.*, **30**, 119-147.

33-34, GLOS. Townsend, C. C., 1951-52, Old Records, *Proc. Cotteswold Nat. F.C.*, **30**, 189-190 and 252-253. Comments on the present status of various Gloucestershire rarities.—[D.H.K.]

34, W. GLOS. See 6, N. SOMERSET.

37, WORCS. Day, F. M., 1950, Plant Records from Worcestershire, 1944-49, *Trans. Worcs. Nat. Club*, **10**, 193-195.

37, WORCS. Fincher, F., 1952, Worcestershire Maritime Plants, *Trans. Worcs. Nat. Club*, **10**, 265-269. Maritime plants have been recorded in Worcestershire mainly on three geological formations, Bunter, Keuper Marl and Lower Lias. The last two provide the saline springs which favour the occurrence of halophytes. At Droitwich water from the brine baths is discharged into a derelict canal, which has a salt concentration approximately 15% of full sea-water strength. A list of forty maritime species recorded from the county is appended.—[D.E.A.]

39, STAFFS. Edees, E., 1950, Plant Notes and Records for 1949, *Ann. Report and Trans. North Staffs. F.C.*, **84**, 86-94.

41, GLAM. Sykes, M. H., & Webb, J. A., 1947, The Flora of the Bombed Areas and Slum-Clearance Sites of Swansea, *Proc. Swansea Scient. and Field Nat. Soc.*, **2**, 291-306. The authors list 242 species found on bombed sites; these include such familiar plants as *Senecio squalidus* and *Buddleja Davidii*.—[D.H.K.]

41, GLAM. Vachell, E., 1947, Botanical Notes, 1939-46, *Trans. Cardiff Nat. Soc.*, **72-78**, 23-26.

41, GLAM. Wade, A. E., 1950, Botanical Notes, 1947-48, *Trans. Cardiff Nat. Soc.*, **79**, 52-54.

41, GLAM., 42, BRECON, 43, RADNOR., 44, CARMARTHEN. and 45, PEMBROKE. Webb, J. A., 1944, Plant Records, 1941-44, *Proc. Swansea Scient. and Field Nat. Soc.*, **2**, 188-191. Gives many new county records for Carmarthen and a few for Brecon and Radnor.—[D.H.K.]

43, RADNOR. Wade, A. E., & Webb, J. A., 1945-46, Radnorshire Plant Records, *North West. Nat.*, **20**, 158-160. The authors give many new records for the county.—[D.H.K.]

53-54, LINCS. Gibbons, J. E., 1950-51, Botany, *Trans. Linc. Nat. Union*, **3**, 146 and 196-197. Gives a few new records for Lincolnshire.—[D.H.K.]

57, DERBY. Hollick, K. M., 1948-50, Botanical Records for Derbyshire, 1947-49, *Journ. Derby. Arch. and Nat. Hist. Soc.*, **67**, 121-128 and **68**, 82-88.

58, CHESHIRE. Henderson, M., & McMillan, N. F., 1951, Some Botanical Records for Wirral, 1945-50, *Proc. Liverpool Nat. F.C.*, **1950**, 9-11.

59, S. LANCS. Henderson, M., & McMillan, N. F., A Further Note on changes in the Dee Marshes, *Proc. Liverpool Nat. F.C.*, **1950**, 32. Up to 1945 only *Salicornia* had colonised the mud of the recently increased salt-marshes near Parkgate, but by the end of 1947 the area had become a grassy marsh with *Puccinellia maritima* dominant. *Aster Tripolium* has also spread considerably. In 1946 only 2 plants of *Spartina Townsendii* had been noted on the Cheshire side of the estuary; now there are clumps well distributed over the area. The latest plants to establish themselves on this new marsh appear to be *Halimione portulacoides* and *Suaeda maritima*.—[A.E.W.]

58, CHESHIRE. London, M.E., 1951, Flora of a Plot of Waste Ground at Blundellsands, *Proc. Liverpool Nat. F.C.*, **1950**, 12-15. 100 flowering plants and 1 horsetail are recorded from a stretch of waste ground which formerly formed part of the sand dunes. The ground is used for dumping rubbish, but only garden escapes which are really established are included in the list.—[A.E.W.]

59, S. LANCS. Blackie, J. E. H., 1947, The Flora of a Manchester Housing Estate, *North West. Nat.*, **22**, 260-268.

70, CUMBERLAND. Puri, G. S., 1948, The Ash-Oak Woods of the English Lake District, *Journ. Ind. Bot. Soc.*, **27**, 211-227.

71, MAN. Paton, C. I., 1950, Introduced Weeds, *Proc. Isle of Man Nat. Hist. and Antiq. Soc.*, **5**, 122-127.

90, FORFAR. Duncan, U. K., 1951, Alien Plant Invaders at Dundee, *Scottish Nat.*, **63**, 183. Gives an account of the adventive plants established on the city rubbish-dump.—[D.H.K.]

95, ELGIN. Ovington, J. D., 1950, The Afforestation of the Culbin Sands, Moray Firth, *J. Ecol.*, **38**, 303-319.

96, EASTERNESS. Metcalfe, G., 1950, The Ecology of the Cairngorms, *J. Ecol.*, **38**, 46-74.

96, EASTERNESS. Burges, A., 1951, The Ecology of the Cairngorms, *J. Ecol.*, **39**, 271-284.

97, WESTERNESS. Pigott, C. D. (with the assistance of Raven, J., & Poore, D.), 1951, Some Notes on the Vegetation and Flora of Knoydart, *Scottish Nat.*, **63**, 50-55.

102-104 and 110, INNER and OUTER HEBRIDES. Harrison, J. W. Heslop, 1950, A Dozen Years' Biogeographical Researches in the Inner and Outer Hebrides, *Proc. Univ. Durham Phil. Soc.*, **10**, 516-524. The Macaronesian element in the Hebrides, exemplified by the moss *Myurium hebridarum*, is regarded as having survived in the area since Tertiary times. Unglaciated areas suitable for survival through the Ice Age are to be found in South Uist, Harris and Rhum. The numerous races of plants and animals endemic to the Hebrides are considered to have evolved in this region through isolation in late glacial or interglacial times. It is, however, inconceivable that every colony of endemics evolved independently on the separate islands on which they are now found. Instead, they may be regarded as having originated on some major Hebridean land mass, probably lying to the far west, and as having emerged over land areas to reach not only their present island habitats, but also, in some cases, the Scottish mainland. To account for the occurrence of the Irish-American element in Tiree and Coll, which must have been all but submerged by the late glacial rise in sea level, the existence of a post-glacial land-bridge must be postulated. This would have been created by the isostatic rise in land level which occurred in the Boreal period. A continuous land mass to the west of Scotland must, in fact, have been developed at that time, affording the endemics opportunities of free movement within the area and permitting the entry of other biota from the south and west, about the same time as the Irish-American element immigrated from northern Ireland. This land mass was eventually largely submerged in the course of the great marine transgression which took place during the Atlantic period as a result of further isostatic recovery in Northern Europe.—[D.E.A.]

102-104 and 110, INNER and OUTER HEBRIDES. Harrison, J. W. Heslop, 1951, Further Observations on the Vascular Plants of the Outer and Inner Hebrides, *Trans. Bot. Soc. Edinb.*, **35**, 415-426. The ecotypes of *Melandrium dioicum* from Rhum, Tiree, Eigg and Muldoanich differ both from the Shetland form and from another distinct form found in South Uist. *Orchis Fuchsii* ssp. *rhoumensis* H.-Harr. f. is transferred to *O. ericetorum* in spite of the difference in chromosome number; forms of this subspecies have also been found on Eigg and Muck, but with much paler flowers than the Rhum plant. A large number of new locality records is also given.—[D.E.A.]

104, N. EBUDES. Spence, D. H. N., 1952, Flora of Eigg; Additions and Notes, *Trans. and Proc. Bot. Soc. Edinb.*, **36**, 74-79. Records plants new to Eigg discovered by a party from Edinburgh University Biological Society in 1949.—[D.H.K.]

IRELAND. Brenan, J. P. M., & Simpson, N. D., 1949, The Results of Two Botanical Journeys in Ireland in 1938-39, *Proc. Roy. Irish Acad.*,

52 B, 57-84. The authors give a large number of new records for Irish Vice-counties.—[D.H.K.]

IRELAND. Carrothers, E. N., and Moon, J. McK., 1952, Notes on the Flora of the North-East of Ireland, *Irish Nat. Journ.*, **10**, 284-286.

IRELAND. Webb, D. A., 1952, Alchemilla vulgaris agg. in Ireland: A Preliminary Report, *Irish Nat. Journ.*, **10**, 298-300. A summary of records of the Irish segregates of *Alchemilla* based on specimens at Dublin, Kew and the British Museum (Natural History). The Vice-county distribution is given as follows:—

A. minor Huds. H.29. Known only from O'Rorke's Table, Co. Leitrim.

A. vestita (Bus.) Raunk. H.1, 2, [3?], 5-11, 13-25, [28?], 29, 31, 33, 36, 37.

A. xanthochlora Rothm. H.1, 9, 16-18, 22-25, 27-34, 36, 38-40.

A. glabra Neygenf. H.1, 8-10, 16, 18, 21, 26-29, 31, 33, 35, 36, 39, 40. —[D.H.K.]

H.33, FERMANAGH. Carrothers, E. N., Meikle, R. D., & Moon, J. McK., 1950, Co. Fermanagh Plants, *Irish Nat. Journ.*, **10**, 46-50. A large number of new county records is given, including *Cirsium heterophyllum*, which is new to Ireland.—[D.E.A.]

JERSEY. Attenborough, T. W., 1946-51, Botanical Reports, 1940-50, *Soc. Jers. Bull. Ann.*, **14**, 205-206, 275-276 and 356 and **15**, 11 and 296. Gives a brief account of the effects of the German occupation on the rare plants of the Island. The buildings in Beaumont Marsh have destroyed one of the best stations for *Orchis laxiflora*, and a series of bunkers in St. Ouen's Bay have endangered *Orobanche ritro*. *Erigeron canadensis* which became so abundant during the occupation began to disappear in 1948, while sandpit operations in St. Ouen's Bay have practically wiped out the only locality for *Dianthus gallicus*. *Limonium vulgare*, last recorded in 1839, reappeared in St. Catherine's Bay in 1946.—[D.H.K.]

JERSEY. Baal, H. J., 1951, The Indigenous Trees of Jersey, *Soc. Jers. Bull. Ann.*, **15**, 341-346.

HISTORICAL

ARDAGH, J., 1947, W. W. Newbould and his Manuscripts, *North West. Nat.*, **22**, 223-225.

CARDEW, F., 1950, A Note on the Number of Plates in Curtis's 'Flora Londinensis', 1777, and Hooker's Enlarged Edition, 1817-28, *Journ. Soc. Bibl. Nat. Hist.*, **2**, 223-224.

COOMBE, D. E., 1952, The Wordsworths and Botany, *Notes and Queries*, **197**, 298-299. The author has in his possession a copy of Withering's *An Arrangement of British Plants* (Ed. 3) containing a few manuscript notes on localities for plants in the handwriting of William and Dorothy Wordsworth.—[D.H.K.]

DAWSON, W. R., 1950, Sir Joseph Hooker and Dawson Turner, *Journ. Soc. Bibl. Nat. Hist.*, **2**, 218-222.

DONY, J. G., 1950, William Hillhouse, 1850-1910, *Bedfordshire Nat.*, **4**, 40-42.

GRIGSON, G., 1952, John Aubrey's Flowers, *The Countryman*, **45**, 272-274. A popular account of some of the Wiltshire plants observed by John Aubrey, with a discussion on the etymology of some of their local names.—[D.H.K.]

OSBORN, T. G. B. 1951, The Oxford Botanic Garden, *Endeavour*, **10**, 70-77. Deals with the history of the old Oxford Physic Garden from its foundation by Henry, Lord Danvers, in 1621 to 1840.—[D.H.K.]

OSBORN, T. G. B., 1952, Botany in Oxford (G.B.), *Taxon*, **1**, 92-93. Gives an account of the history of the various herbaria contained in the University of Oxford.—[D.H.K.]

NOMENCLATURE

LANJOUW, J., 1951, The Stockholm 1950 Rules of Botanical Nomenclature, *Taxon*, **1**, 7-8. The author reports on the most important changes agreed on at the 1950 Congress.—[D.H.K.]

LANJOUW, J., 1951, The New Rules of Typification, *Taxon*, **1**, 19-21. The author gives further details of changes in the rules of Botanical Nomenclature, decided at the Stockholm Congress.—[D.H.K.]

SPRAGUE, T. A., 1951, Botanical Nomenclature, *Proc. Cotteswold Nat. F.C.*, **30**, 164-169. A popular account of the system and practice used in naming plants.—[D.H.K.]

MISCELLANEOUS

AHLES, H. E., 1951, Interesting Weeds in New York City, *Bull. Torr. Bot Club*, **78**, 266-269. Between 40 and 50 adventive plants introduced with ballast and rubbish have become more or less established in the south-eastern portion of Bronx County, New York. An analysis of the native homes of 43 of the plants shows 30 of them to be natives of Europe, 7 from Eurasia, 3 from Africa, 2 from S. America and 1 from Asia. The European species include *Senecio viscosus*, *Diplotaxis tenuifolia*, *Carduus nutans*, *Galega officinalis* and *Coriandrum sativum*.—[D.H.K.]

ALLISON, J., GODWIN, H., & WARREN, S. H., 1952, Late Glacial Deposits at Nazeing in the Lea Valley, North London, *Phil. Trans. Royal Soc.*, **236**, 169-240. The authors list and describe the seeds of many plants found in glacial deposits in N. Essex.—[D.H.K.]

ANDERSON, E., 1951, Concordant versus Discordant Variation in relation to Introgression, *Evolution*, **5**, 133-141. Introgressive hybridization can be recognized almost immediately by its effect on the variation of entire populations. In populations of a good species the variation may be considerable, but it is usually all on one theme or "concordant". With introgression the variation lacks any harmonious pattern, becoming "discordant". The greater the degree of introgression, the more conspicuous will be the discordance of the population. A fundamental point about introgression is that until it becomes severe it does not suggest hybridization but merely excessive specific variability.—[D.E.A.]

BAKER, H. G., 1951, Hybridization and Natural Gene-flow between Higher Plants, *Biol. Rev.*, **26**, 302-337. It is emphasized that natural hybridization is much more widespread, and has greater influence on populations, than has formerly been supposed. Although many pairs of species can form hybrid swarms in which genes are readily interchanged, this occurrence is often restricted by internal and external factors. Internal factors include physiological unbalance, habitual self-pollination, facultative apomixis, plasmon sensitive genes which are not easily transferred, competition between pollen tubes, multifactorial inheritance and linkages limiting the number of different recombinations, dissimilarity in floral morphology, and phenological differences. External factors include massing to form a pure stand resulting in inbreeding, and ecological isolation. Man also has an effect in disturbing the habitat to create a low selection pressure. In introgressive hybridization between two species genes of importance in ecological adaptation tend to flow less readily than those whose function has no such connection.—[D.E.A.]

BANGERTER, E. B., 1952, Some Alien Flowering Plants, *Countryside*, **16**, 223-226. Describes *Epilobium pedunculare*, *Impatiens glandulifera* and *Galinsoga ciliata*, and gives a short account of their history in Britain. *E. pedunculare* is illustrated by an outline drawing.—[D.H.K.]

BARNES, H., & STANBURY, F. A., 1951, A Statistical Study of Plant Distribution during the Colonization and Early Development of Vegetation on China Clay Residues, *J. Ecol.*, **39**, 171-181.

BASTIN, H., 1952, Plants Beyond Control, *Discovery*, **13**, 161-162. Gives a popular account of the recent spread in Britain of *Chamaenerion angustifolium*, *Claytonia alsinoides*, *C. perfoliata*, *Elodea canadensis*, *Impatiens glandulifera* and *Matricaria matricarioides*.—[D.H.K.]

BERESFORD-PEIRSE, Sir H., 1952, A Century of Forestry, *Nature*, **168**, 130-134. The substance of the Chairman's address read to Section K* (Forestry) on August 9, 1951, at the British Association meeting at Edinburgh and dealing with forestry in the U.K. over the last century. —[K.J.H.]

BLEASDALE, J. K. A., 1952, Atmospheric Pollution and Plant Growth, *Nature*, **169**, 376. Experiments with *Lolium perenne* L. indicate that pollution decreases the growth-rate, even in the absence of visible leaf injury.—[K.J.H.]

COOMBE, D. E., & WHITE, F., 1951, Notes on Calcicolous Communities and Peat Formation in Norwegian Lapland, *J. Ecol.*, **39**, 33-62.

DAVIES, E. W., 1952, Preservation of Cytological Material by Storage at or below −10° C., *Nature*, **169**, 714. Anthers and sporangia fixed in 3 : 1 absolute alcohol: glacial acetic acid, and 4 : 3 : 1 chloroform: absolute alcohol: glacial acetic acid, and stored in a deep-freeze "Frigidaire" cabinet maintaining a temperature between −10 and −14° C. produce as good cytological preparations using the aceto-carmine squash technique after 6 months as freshly fixed material.—[K.J.H.]

FORESTRY COMMISSION, 1951, *Guide to the National Pinetum and Forest Plots at Bedgebury.* Describes the history, development and present state, with maps and photographs, of the site which occupies 2,431 acres in the High Weald of Kent.—[K.J.H.]

FORESTRY COMMISSION, 1950, *Cannock Chase.* The state forest occupies 6,000 acres, mostly planted with pines, in a region of high open moorlands.—[K.J.H.]

FORESTRY COMMISSION, 1952, *Britain's Forests: Thetford Chase.* Describes the history and development of the area, and gives short references to some of the rarer plants found there.—[D.H.K.]

GIMINGHAM, C. H., 1951, The Use of Life Form and Growth Form in the Analysis of Community Structure, as Illustrated by a Comparison of Two Dune Communities, *J. Ecol.*, **39**, 396-406.

GODWIN, H., & CLAPHAM, A. R., 1951, Peat Deposits on Cross Fell, Cumberland, *New Phyt.*, **50**, 167-171. It was felt desirable to revisit the site reported on by Dr. F. J. Lewis in 1904 to find whether the developments in pollen-analytic technique would enable the deposits to be brought into line with more recently disturbed deposits. No trace could be found of remains of identifiable willow species, but it was possible to identify *Empetrum* as Lewis recorded. It is inadvisable to retain the term " Arctic Bed " for the willow layer at the base of the upper peat, since it was formed in conditions scarcely colder than those of to-day. The authors enter a " caveat " against the view that the " clay " is glacial, or its contained plant layers " interglacial." A few grains closely resembling those of *Pterocarya* were found.—[K.J.H.]

GODWIN, H., & TALLANTIRE, P. A., 1951, Studies in the Post-Glacial History of British Vegetation, XII. Hockham Mere, Norfolk, *J. Ecol.*, **39**, 285-307.

HARRIS, T. M., 1950-52, Notes on the Jurassic Flora of Yorkshire, *Ann. and Mag. Nat. Hist.*, **3**, 1001-1030, **4**, 915-937 and **5**, 614-627.

HARRISON, J. HESLOP, 1951, Fresh Aspects of Irish Vegetational Problems, *Irish Nat. Journ.*, **10**, 125-130 and 145-149. Anomalous ecological behaviour of some Irish plants is not unexpected as a result of the reduced pressure of competition in a flora impoverished through early isolation, coupled with the effect of the prevailing oceanic climate. The various " floristic " elements that have been defined are often simply composed of relicts of ecological associations once important in the Irish scene. *Cirsium heterophyllum*, *Melampyrum sylvaticum* and *Geranium sylvaticum* are species of the boreal forest belt, and their present very limited Irish distribution is due to their being relicts and not, as has been suggested, recent arrivals. Some species which are curiously conservative in their behaviour, such as *Mercurialis perennis* and *Adoxa Moschatellina*, seem to lack spreading power owing to excessive biotype impoverishment. Others appear to consist of different physiological races, the one static, the other much more aggressive. Fragmentation of one large original population has

caused some species, of which *Arabis petraea* is a good example, to develop a different facies in each surviving area. Many Irish groups are marked by a lack of genetical and ecological equilibrium, resulting in the formation of hybrid complexes. This instability is the inevitable result of post-glacial climatic oscillations with the consequent migration and counter-migration of floras and extensive modification of the existing vegetation by man.—[D.E.A.]

JONKER, F. P., 1952, A Plea for the Standardization of Pollen Diagrams, *Taxon*, **1**, 89-91.

HARRISON, J. HESLOP, 1952, Statistical Methods in Plant Taxonomy, *Taxon*, **1**, 53-59 and 73-78. The author surveys the various techniques used in the statistical approach to taxonomic problems.—[D.H.K.]

KENDALL, M. W., 1952, Some Conifers from the Jurassic of England, *Ann. and Mag. Nat. Hist.*, **5**, 583-594.

LÖVE, Á., 1951, Taxonomical Evaluation of Polyploids, *Caryologia*, **3**, 263-284. Reports of "intraspecific chromosome races" by cytologists are criticized. It is pointed out that over 90% of the newly-detected polyploids occurring in northern Europe have been previously described by classical taxonomists, and that polyploid types completely indistinguishable on a morphological basis are unknown, at least in north-western Europe. The author advocates classifying them as distinct species.—[D.E.A.]

LUTHER, H., 1951, Verbreitung and Ökologie der höheren Wasserpflanzen in Brackwasser der Ekenas-Gegend in Südfinnland, *Acta Bot. Fenn.*, **49**, 1-232 and **50**, 1-370.

MEROLA, A., 1949, Osservazioni sul Piante del Napoletana, *Delpinoa*, **2**, 7-38. *Pinguicula vulgaris* var. *hirtiflora* Ten. is considered a glacial relict in the peninsula of Sorrento, near Naples. Curiously enough, however, instead of becoming scarcer, it is expanding its range every year. *Galinsoga parviflora* is now very widespread, especially in Central Europe. Its southern limit up till now has been the river Po in northern Italy. Its discovery in the Naples area represents a great extension of range.—[D.E.A.]

POLUNIN, N., 1950, Botanical Research in Scandinavia: 375 Contemporary Workers and their Special Interests, *Canad. Field Nat.*, **64**, 105-119. A provisional list of Scandinavian botanists is published in the interests of transatlantic collaboration. After the name of each worker an effective postal address is given together with a brief statement indicating his or her main current (or at least recent) research interests.—[D.E.A.]

PRAEGER, R. LL., 1951, Hybrids in the Irish Flora: a Tentative List, *Proc. Roy. Irish Acad.*, **54** B, 1-14. The occurrence of natural crossing has not received much attention in Ireland. A number of interesting cases are selected for discussion from *Equisetum*, *Senecio*, *Saxifraga*, *Caltha*, *Cochlearia*, *Erica* and *Orchis*. A list is given of all hybrids in the Irish Flora so far recorded with remarks on their frequency.—[D.E.A.]

RAYMOND, M., 1950, Esquisse Phytogéographique du Québec, *Mem. Montreal Bot. Gard.*, No. 5. A floristic survey is made of the flora of the province of Quebec, illustrated by numerous maps and photographs. A large number of the species mentioned are either British or else have transatlantic counterparts. The occurrence of American species in north-west Europe and European ones in north-eastern America is one of the points discussed. *Alisma gramineum*, *Butomus umbellatus* and *Lythrum Salicaria* were apparently introduced at Montreal with ballast from European ships about fifty years ago, since when they have spread along the St. Lawrence river and its tributaries, giving it a totally new character, and have been gradually replacing the indigenous vegetation. —[D.E.A.]

TURRILL, W. B., 1952, Some Taxonomic Aims, Methods and Principles. Their Possible Application to the Algae, *Nature*, **169**, 388-393. Indicates the possibilities of improving the taxonomy of plants by understanding more clearly the principles of classification, and by utilising data on a much wider scale than is at present usual. The many new facts from ecology, genetics, cytology, biochemistry, etc., have to be taken into consideration by the new systematics. There are two aims in plant taxonomy: 1. To make the best possible classification for the most precise and easiest determination of individual plants. 2. To illuminate the problems of range, distribution and evolution of floras. Consideration is given to some theoretical aspects of taxonomy.—[K.J.H.]

WARDLAW, C. W., 1952, The Study of Growth and Form in Plants, *Endeavour*, **11**, 97-106. The author outlines the study of plant anatomy and morphology from Malpighi's *Anatomia Plantarum* published in 1685 to the present time.—[D.H.K]

WILSON, D. P., & WILSON, M. A., 1952, Plants of the Sea Coast, *Discovery*, **13**, 211-215.