THE BOTANICAL SOCIETY AND EXCHANGE CLUB OF THE BRITISH ISLES.

(VOL. V. PART V.).

REPORT FOR 1919

BY THE

SECRETARY,

G. CLARIDGE DRUCE,

to whom, at YARDLEY LODGE, 9 CRICK ROAD, OXFORD, the Subscription, 7s 6d per annum, and Non-Contributing Members' Subscription of 5s per annum, should be paid on and after January 1, 1920.

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Rev. E. S. AND Mrs MARSHALL.

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THE

BOTANICAL SOCIETY & EXCHANGE CLUB OF THE BRITISH ISLES.

THE REPORT OF THE SECRETARY & TREASURER

G. CLARIDGE DRUCE, YARDLEY LODGE, OXFORD,

FOR 1919.

BALANCE-SHEET FOR 1918.

Subscriptions received,	£103	18	9	Balance due from 1917, -	£5	16 1
Sale of Reports and Advertisements, - - - -	14	19	0	Printing Reports, Supplements, &c., - - -	102	4 9
Balance due to Treasurer, -	5	1	3	Expenses of Distribution,	3	2 6
				Postages, Carriages, Stationery, &c., - - - - -	12	15 8
	£123	19	0		£123	19 0

Life Members' Fund (at cost), invested in War Savings, £35 ; in hand, 13s.
Audited and found correct, January 25, 1920.—F. TWINING.

All subscriptions should be paid to the above address on the first of January each year or to the account of G. C. Druce in the London County, Westminster and Parr's Bank, Oxford Branch. Payment in advance for two or more years saves much trouble and expense. Exchange Members pay 7/6, Ordinary Members 5/-. New Ordinary Members pay 11/-, Exchange Members 15/- which covers the entrance fee.

There are still a few complete sets of Volumes I., III., and IV. of the *Reports* available to members at £1 10s each. Parts can also be obtained.

The greatly increased cost of printing, postages and paper has made it extremely difficult to avoid a deficit. Indeed had all the expenses been charged a loss would have been shown on the year's working. One instance may be cited. In the past 17 years two

Barlock typewriters have been worn out for which no charge has been made. In order to keep up our pagination in the future it will apparently be necessary to increase the subscription. This one would greatly regret. Would not those who can afford to help subscribe an annual sum say of £3 or £5? If a dozen would help in this way the tension would be removed. As it is the *Reports* are probably the cheapest printed scientific matter issued, and they have the largest circulation of any purely Botanical publication in Britain.

We have to thank Mr W. C. Barton for a donation to the Benevolent Fund, for his very able editing of the Distributor's Report and for his distributing the plants so expeditiously. He spared no trouble in elucidating the accurate names of the critical species in which the divergent views of members had to be carefully judged and discriminated. Rarely have we had a *Report* freer from ambiguity. In addition his own careful research has settled more than one vexed question—*e.g. Spergularia*, and thrown light upon much that was obscure.

The production of the *Report* this year has been one of great difficulty, and almost led one to despair. The long delay adds much to secretarial work, in itself no light task. This year will witness, one hopes, an earlier publication.

We are indebted to Rev. F. Bennett, Mr T. Gambier-Parry, Mr F. N. Williams, and Mr and Mrs Corstorphine for literary help. Critical assistance has been rendered by Prof. Lindman, Prof. C. H. Ostenfeld, Mr C. E. Britton, Canon Bullock-Webster, Dr Drabble, J. Groves, W. P. Hiern, C. C. Lacaita, D. Lumb, W. H. Pearsall, H. W. Pugsley, Rev. H. J. Riddelsdell, Dr W. C. Smith, W. B. Turrill, Lieut. Col. A. H. Wolley-Dod and others. For naming adventive plants, great acknowledgments are due to Dr Albert Thellung. To Sir David Prain and the staff of the Royal Herbarium at Kew, to Dr Rendle and Mr E. G. Baker of the National Herbarium, Cromwell Road, and to Professor Percival, F.R.S., of the Royal Agricultural College, Reading, our grateful thanks are also due. We are indebted to Prof. Osler and the Committee of the Ashmolean Natural History Society of Oxfordshire for allowing us to incorporate the "Additions to the Berkshire Flora" taken from their Annual Report of 1919.

The year 1919 has witnessed much good work. A remarkable discovery was made by our member, Mr F. Robinson, in the well-explored district of the Lizard where he found a solitary plant of *Isoetes Hystrix*. He kindly sent it me and a microscopical examination showed that it was correctly named. The Misses Cobbe discovered a most extensive growth of *Scirpus nanus* (which has well nigh disappeared from its old habitats) near Pwlheli, Carnarvonshire. Mr Pugsley has reported (*Journ. Bot.* 175) *Euphrasia hirtella* from Llanberris where, in common with several members, I saw it last year. Professor Lindman has passed specimens gathered by me at Farr and Durness, Sutherland, as *Cerastium subtetrandrum*, a new British plant. Herr Dahlstedt has also determined some Dandelions, which I sent him before the war, as *T. lacistophyllum*, *T. brachyglossum*, *T. Norstedtii*, *T. tenebricans*. *T. dissimile*, and *T. faroense* and also two new species for one of which he proposes the name *T. anglicum*. The second is allied to *T. Dahlstedtii* Linb. f.

We have to offer very sincere congratulations to our Honorary Member and past Secretary, Mr J. Gilbert Baker, F.R.S., on his receiving the degree of Doctor of Science from Leeds University. May he live long to enjoy it. We also congratulate Mrs Gregory, the authoress of *British Violets*, upon her receiving a Civil List Pension "for her service to Botanical Science." Our heartiest good wishes are offered to Miss Hersie Butler, the Hon. Miss Evelyn de Saumarez, and Lady Kathleen Thynne on their marriages respectively to Major the Hon. Ivo Fiennes, Major Wood and Captain O. H. Stanley, D.S.O.; also to Mr T. J. Foggitt, the son of an old Secretary, who has also been married during the year.

Our congratulations go to Mr R. H. Compton, Prof. F. Keeble, Prof. R. C. Maclean and Prof. R. Yapp on their appointments to the chairs of Botany at Cape Town, Oxford, Cardiff and Birmingham, and now to Prof. A. H. Trow who has been made Principal of the University at Cardiff.

Death has been terribly severe this year. No fewer than twelve of our members have been carried off. They include Dr A. Adams of Looe, Cornwall, an all-round naturalist, but chiefly interested in the Mycetozoa, of which he was preparing a list of the East Cornish species; Mrs Babington, the widow of our old member, the cele-

brated botanist, Charles Cardale Babington; the Rev. E. S. Marshall, a most valued member, whose contributions since 1892 have been both numerous, well selected, and carefully prepared. His contributions amounted in these 27 years to 5380 specimens. These were accompanied by numerous critical notes. He very freely commented upon the specimens contributed to the Exchange Club, and in the year 1901 acted as its Distributor and Editor. I made his acquaintance in his undergraduate days and had the pleasure of showing him *Orchis Simia*. In conjunction with our member, Mr F. J. Hanbury, an excellent *Flora of Kent* was published. His help is gratefully acknowledged by Frederick Townsend in the second edition of the *Flora of Hampshire*, and he recently issued a valuable second edition of the *Flora of Somerset*. He had a trained and critical eye and in his many visits to Scotland and Ireland made most valuable discoveries, including *Carex chordorrhiza*, which was new to Britain. He named among other plants *Ranunculus scoticus*, *Cochlearia micacea*, and *Saxifraga Drucei*. He was an acute student of the Hieracia, one of which he named after his wife and another after his fellow traveller, Dr Shoolbred. We have also lost Mr Herbert Napier, a very promising young botanist, the on of Professor Napier; the ex-Provost of Oriel, Dr C. L. Shadwell; Dr Frederick Smith, the well-known Harley Street consultant; Professor James Trail, F.R.S., the able joint editor of that useful periodical, now unfortunately moribund, *The Annals of Scottish Natural History*, who did so much for the study of Topographical Botany in Scotland; the octogenarian, Rev. Canon Tuckwell, most erudite and eloquent; Rev. C. H. Waddell an old member of the Exchange Club and contributor, and Prof. G. S. West, the son of a distinguished algologist, and himself the acknowledged British authority on the subject. At the close of the year this serious toll was augmented by the death of the world-renowned Sir William Osler who was to have given us an address on the unpublished correspondence of William Withering which had recently come into his possession. Our sincerest condolence is now offered to their relatives as it is to Professor Geddes on the loss of his son, Major Alastair B. Geddes, killed in action, who had won the Military Medal, and to our valued member Mr F. Ransom, and his wife on the terrible bereavement they suffered in the death of their two sons,

Lieut. Herbert Ransom, R.F.C., who was killed in action March 21st, 1918, and their eldest born, Captain John Ransom, M.C., of Pembroke College, Cambridge, aged 27, who died at Etaples of blood poisoning, following wounds. He lost his leg at Neuve Chapelle in 1914. General Uniacke said of him—"He was in every sense of the word a gentleman unafraid." Coming of a Quaker stock these two gallant boys were among the first to offer their services for their country, and even after John had lost his limb his ardour was not daunted and he bravely carried on hampered as he necessarily was by the effects of his wounds. To the writer it was a grievous sorrow that the two lads whom he had known from their earliest days should have thus so prematurely crossed the bar. They had the world at their feet. Well educated, intelligent, and blessed with great worldly possessions they inherited the right instincts of duty, loyalty and devotion. The country is the poorer for the loss of these and other deaths of the same kind it has had to bear.

We have lost six members by lapses or resignation.

The year 1919 has been signalised by a large accession to our ranks, and it is encouraging to find many young promising botanists ready to take up the torch which has fallen from other hands. Even with these additions many counties are still poorly represented and Ireland lamentably so. A little more science and less politics would not be unwelcome there. Her Royal Highness, The Princess Royal, has consented to became a Patroness. Among our new members for 1919-1920 are:—H.H. Prince Roland Bonaparte, Dr A. Adams, F. Allchin, M.A., G. Stafford Allen, Miss Barbara Allen, Mrs Paul Ascherson, Mrs Berkeley, Rev. P. Bevan, M.A., the Natural History Society and Free Library of the City of Birmingham, J. C. A. Boys, C. E. Brown, Dr Robert Bridges, the Poet Laureate; Miss Diana Cator, Stanley Chipperfield, W. G. Clarke, F.G.S., W. G. Craib, Lady Douie, Capt. Eckford, Miss Dora Egerton, E. W. Ellis, Mrs Evans, Mrs Graham, R. D. Graham, H. Gray, Capt. W. Balfour Gourlay, A. E. Greaves, H. L. Green, J. R. H. Greeves, R. Grierson, A. E. Hall, Leslie B. Hall, F.L.S., Rev. Charles Hall, G. W. H. Harris, Dr J. Harley, F.L.S., Miss Haynes, Sir George Holford, J. Humphreys, F.L.S., The Countess Jersey, Miss Jeyes, D. A. Jones, M.Sc., H. Humphrey Jones, Ph.C., F.L.S., E. Marsden Jones,

F.L.S., Prof. F. Keeble, D.Sc., F.R.S., H. H. Knight, G. W. E. Loder, F.L.S., R. B. Loder, Dr F. Long, R. Lynch, M.A., Prof. R. C. Maclean, D.Sc., Mrs Mallinson, The Manchester Free Library, H. McKechnie, F. Mills, J. F. Milne, R. H. Milne, Miss Mooney, Nottingham Museum, Rev. H. W. O'Rorke, L. G. Payne, Dr Olive C. Rayner, Reading Natural History Society, Paul Richards, Lady Rose, Miss Sangster, Lady Blanche Seymour, The Head Master of Shirburn (Noel Smith, M.A.), Dr Singer, W. W. Smith, D.Sc., Mrs Thatcher, Andrew Templeman, Alban Voigt, Capt. G. H. Vevers, Miss Williams, G. S. V. Wills, Ph.C., F.R.G.S.

We have secured for the next Editor and Distributor of the Exchange Club, that excellent Essex worker, Mr G. C. Brown. Parcels should be sent by December 1, 1920, to him at 16 Lion Walk, Colchester.

If members have any copies of *Reports* which they do not require, they would be gladly received by the Secretary who has now difficulty in making up sets.

PLANT NOTES, ETC., FOR 1919.

(Mostly New Plants to the British Isles).

3 (2). THALICTRUM BAUHINII Crantz Stirp. Austr. ii., 76, ed. alt. 105, 1759. Thal. foliis angustissimis aeque latis integerrimis. Crantz, *l.c.* Described by Rouy & Foucaud (*Fl. Fr.* i., 26):—Plant with long stolons; stem 5-12dm., strongly channelled, straight, not compressed; leaves erect, lanceolate throughout . . . the leaflets lanceolate-linear or linear, often shining, glabrous, as are the petioles, either entire or bi- or trilobed; flowers upright or a little inclined; stamens with apiculate anthers; carpels ovoid-rounded or suborbicular; panicle usually more or less narrow with ascending or upright branches. Native in the Isles of Gothland and Oeland, France, Germany, Switzerland, Austria, Hungary, Russia. Crantz's was an aggregate species. Alien. Near Clovenfords quarry, Selkirk, 1917, Miss I. M. HAYWARD. Origin probably hortal, but I have not seen it in gardens there. G. C. DRUCE.

22. RANUNCULUS BULBOSUS L., var. ALBONAEVUS (Jord. Diagn. 81 as a species). "Plante robuste; souche bulbiforme, grosse, déprimée; feuilles toutes tachées de blanc, velues, ternées ou biternées, à dents subobtuses; carpelles grandes, obovales." Rouy & Foucaud *Fl. Fr.* i., 105. Near Oxford, June 1918, G. C. DRUCE.

41 (2). R. PSEUDO-FLUITANS Baker & Foggitt, var. MINOR Pearsall in Rep. B.E.C. 436, 1918. Plentiful in the Wilts Avon as at Wilsford, Durnford, DRUCE and TENNANT; near Salisbury, S. Wilts, GODDARD; Llangammarch Wells, Brecon, Miss TODD. The flowers are not always smaller than type.

54 (3). AQUILEGIA PUBESCENS Colville in Contr. U.S. Nat. Herb. iv., 56, t. 1893. *A. formosa* Fisch., var. *flavescens* Hook. f. Bot. Mag. t. 65526. Non *A. flavescens* S. Wats. Alien, California. Naturalised on rocks near Aberdour, Fife, 1919, A. TEMPLEMAN.

68. ACONITUM NAPELLUS L., var. LACINIOSUM Seringe Mus. Helv. i., 159, 1823. Floribus laxe spicatis paniculatisque coeruleis amplis subconicis, laciniis foliorum profundis linearibus acutis. Cette variété se distingue de toutes les autres par un casque très bombé, embrassant les sépales latéraux et se prolongeant insensiblement en un bec aigu. Les feuilles ont leurs lobules très longs-linéaires et terminés insensiblement en pointe. See BARTON in *Rep. B.E.C.* 485, 1918. It flowers earlier than the common Swiss plant (*compactum*) and the leaves are thinner in texture. The foregoing identification is agreed to by Dr Stapf who, for a long time, thought our British plant was distinct from the continental *Napellus*. The question arises. Is our plant indigenous in the same sense as the Oak or has it spread from ancient cultivation? Aconite has been known from early times as a virulent poison, and has long been cultivated in Britain. It must be remembered that Carmarthenshire was the seat of a cult in medicine in quite early days (*cf.* Dr Small, who says that " Medical Botany was one of the three sciences of the Gwyddoniad before 1000 B.C., a statement I have been unable to confirm). Had our British plant been distinct from any continental form its claims to indigenity would have been strengthened. Of course it is completely naturalised.

134 (2). ARABIS MURALIS Bert. Pl. Rar. Ital. dec. ii., 37. Alien. Greece, Italy. Rubbish heaps, Glasgow, R. GRIERSON.

183. SISYMBRIUM SOPHIA L., forma GLABRESCENS (Zuratzka) Beck. Alien, E. Europe. Hull Docks, 1903, C. WATERFALL. Det. A. THELLUNG.

187 (2). S. HISPANICUM Jacq. *Rep. B.E.C.* 274, 1907. St Philip's, Bristol, J. W. WHITE in *Flora Bristol* 149. This must be deleted. The specimens are, teste Dr Thellung, S. VOLGENSE Bieb., which I gathered at St Philip's in 1916. Equally wrong were the referees (*Wats. B.E.C.* 220, 1910), who ascribed it to *S. obtusangulum* or *Brassica elongata*. G. C. DRUCE.

192. S. THALIANUM Gay, forma PUSILLA (Petit)=f. SIMPLEX Zimm. Wall, Cuxham, Oxon, G. C. DRUCE. See *Rep. B.E.C.* 316, 1915.

202. CAMELINA SATIVA Crantz, var. PILOSA DC. Syst. Nat. ii., 516, teste Thellung. *Myagrum Turcicum* Chabr. Sciagr. 283, f. 4. *M. sylvestre* C. Bauhin Pinax 109. Differs from the type " foliis integris pilosis " and appears to be the wild form. On the docks, Southampton, S. Hants, 1895, G. C. DRUCE; Castle Hill, N. Devon, Countess FORTESCUE.

202 (2). C. ALYSSUM (Mill.) Thell. *C. foetida* Fr. Railway-side, Ashton, Northants, 1899, G. C. DRUCE.

215. BRASSICA NIGRA Koch, var. BRACTEOLATA (Fisch. & Mey.) Spach. Probably of alien origin. Brickfield, The Folly, Hitchin, Herts, 1918, J. E. LITTLE. Det. A. THELLUNG.

215. B. NIGRA (L.) Koch, var. TURGIDA (Pers.) Alef., acced. ad var. BRACTEOLATUM (Fisch. & Mey.) Spach. Alien. Brickfield, The Folly, Hitchin, Herts, 1918, J. E. LITTLE. Det. A. THELLUNG.

216 (2). B. TURGIDA Pers. Syn. ii., 207. *Sinapis turgida* Del. *S. arvensis*, var. *turgida* Aschers. & Schweinf. Ill. Fl. Egypte 41, 1887. Alien, Egypt. Canal Bank, Seaforth, 1872, H. S. FISHER.

247 (31). LEPIDIUM RAMOSISSIMUM A. Nelson in Bull. Torr. Bot. Club 124, 1899. Alien, N. America. St Philip's Marsh, Bristol, 1916, Miss COBBE and G. C. DRUCE; Welbeck, Notts, 1918, R. W. GOULDING.

253. IBERIS AMARA L., var. DECIPIENS (Jord.) Thell., forma RUFICAULIS Rouy et Fouc., non Lej. Near Hitchin, Herts; Princes Risborough, Bucks; Wallingford, Oxon, G. C. DRUCE.

287. HELIANTHEMUM BREWERI Planchon. Culture accentuates the characters which distinguish it from *guttatum*. The bracts become large, the pubescence slight, chiefly of stellate hairs, the flowering branches relatively short, and the leaves broadly elliptical, blunt. Specimens grown in ordinary garden loam by Mr J. E. Griffiths from Holyhead seeds have leaves (the third pair) 60 mm. long by 23mm. broad. The petals, with dark blotch at base, make a glorious show on a sunny morning, opening about 9 but falling before 4 p.m., to be succeeded the next day by another display. Mr

Griffiths says at Holyhead in poor soil the plants are from 1-3in. high, but in shady spots at Llanfairynghornwy he has seen them as large as the specimens sent to the Club this year. Occasionally the bracts are lacking f. EBRACTEATA. G. C. DRUCE.

347. SILENE ARMERIA L., var. SPARSIFLORA Schur Enum. Pl. Transsilv. 105. Alien. Harlech, Merioneth, 1918, Miss COBBE. Probably hortal, and perhaps not more than a depauperate form. The plant is, however, more branched than the type and the flowers are more longly pedicelled.

370. CERASTIUM VULGATUM L. forma LUCENS Druce in Rep. B.E.C. 493, 1918. [Ref. No. R. 7195.] Turran Reif, N. Aberdeen, on serpentine, Aug. 1918. Mrs Wedgwood found it there some years ago in the locality where *Asplenium Serpentini* abounds. It differs from the type in its small size and in its shining, nearly glabrous leaves. The small flowers separate it from *C. Serpentini*. It may prove to be a distinct variety. G. C. DRUCE.

374 (2). C. SUBTETRANDRUM Murbeck in Baenitz Herb. Eur. Lief. n. 73, n. 7165, 1892 et Bot. Not. 259, 1898. *C. glutinosum*, var. *bracteatum* C. A. Westerl. in Bot. Not. 145, 1863, not *C. bracteatum* Rafin. of 1814. *C. pumilum*, f. *subtetrandra* Lange Haandb. Dansk. Fl. 676, 1887. Durness, between Farr and Bettyhill, W. Sutherland, in dry sandy situations. This is closely allied to *C. tetrandrum* Curt. of which it may only be a marked variety. The members of this genus are, however, plastic and critical. Some botanists consider it to be a sub-species, but for the time being the grade given it by Murbeck and adopted by Lindman is chosen. Murbeck diagnoses it—Caulis ramique a medio vel in superiore tantum parte floriferi; bracteae omnes herbaceae, late ovatae-ovato-lanceolatae, inferiores quoque foliis caulinis angustiores ac breviores vel in individuis luxuriantibus eis aequilatae, submucronatae; sepala in acumen longum membranaceum producta; semina 0.45mm. diam., dilute brunnea. *C. tetrandrum* he diagnoses—Caulis ramique plerumque jam longe infra medium floriferi; bracteae omnes totae herbaceae, orbiculari-ellipticae-ovatae, inferiores foliis caulinis latiores iisque saepius aequilongae, obtusae; sepala sat breviter acutata; semina 0.6mm. diam., obscure brunnea.

It is a Baltic plant which I have long been searching for. Dr Lindman has identified it but I have yet to submit it to Dr Svante Murbeck. G. C. DRUCE.

423. ELATINE HYDROPIPER L. in Worcestershire. For many years Worcestershire botanists have endeavoured to confirm the occurrence of this plant in the county. In the *Phytologist* vol. ii., 401, 1857-1858 A. Irvine records the discovery of *Elatine Hydropiper* along with the commoner *E. hexandra* as growing " in a millpond near Churchill, Kidderminster." Since that date diligent search has been made through all the chain of pools in that neighbourhood but neither of the Elatines have been found. On the 4th August 1919 I visited Westwood Pool, distant about a mile from Droitwich. This pool is a lake of considerable size and on its northern and western sides I found on the bare mud as it was gradually exposed by the evaporation of the water, dense quantities of *Elatine Hydropiper*, and I could also clearly detect large numbers of it growing on the mud still covered by the water. This plant seems to flower and to be fertilised whilst still under the water, as all the specimens that I obtained were in fruit and contained the characteristically bent, v-shaped seeds in their capsules. CARLETON REA.

485. GERANIUM ROTUNDIFOLIUM L., forma THURSTONII Druce. Essentially differing from the type in having the petals slightly emarginate, a character which, when it was in the young flowering stage combined with its habit, led me to think it might be a form of *pusillum*. More mature specimens, however, showed that its fruit was normal *rotundifolium*. If its more deeply lobed leaves and emarginate petals prove constant it may be worth varietal distinction. The specimens were gathered by our member, Mr Edgar Thurston, on Looe Cliffs, Cornwall, in May 1919, the earlier being sent on March 21 of that year. Mr Thurston's large collection of Cornish plants has been presented to Kew. G. C. DRUCE.

488. G. ROBERTIANUM L., nova sub-sp. CELTICUM Ostenfeld. Quam typus gracilius et multo minus foetidum; caules non nisi ad nodos erubescentes, etiam in plantis in sole natis, petioli foliorum et pedunculi inflorescentiae quam in typo breviores; laminae foliorum

superiorum quam petioli longiores. Habitat: Hibernia occid. in saxis calcareis ad Ballyvaghan. During the International Phytogeographical Excursion in 1911 a very interesting form of *Geranium Robertianum* was found on the calcareous cliffs near Ballyvaghan, Co. Clare, Ireland. At first it was taken to be a form of the allied species, *G. purpureum* Forst., but further examination soon showed that the flower and fruit did not agree with this species, but with common *G. Robertianum*. Nevertheless it had quite a distinct habit and was much more slender and in spite of growing in exposed places was only slightly red while *G. Robertianum* from sunny localities is usually very red all over (f. *rubricaule* Hornem.). As I happened to save ripe seeds in the specimens brought home I had them sown and have since 1912 had the plant in cultivation in the Botanical Garden of Copenhagen. It has kept its peculiarities quite unaltered during these seven years in which I have grown four generations. I have had the Irish plant and the true *G. Robertianum* raised from seeds from Denmark and from Scotland growing side by side to be able to compare them when existing under the same outer circumstances. The results of these repeated examinations show that the Irish plant is a well marked " microspecies " which breeds true and keeps constantly different from the ordinary *G. Robertianum*. A comparison between the two plants gives the following characters :—

G. Robertianum TYPUS. Strongly scented (foetid), coarse, tinged with red at the nodes and at the basal parts of the peduncles and more or less at the pedicels and the basal parts of the sepals. Leaves long-stalked, the blades of the leaves, in the axils of which the floral peduncles appear, shorter than the stalks. Peduncles about eight times as long as the leaf-stalk. The whole plant much hairier with long patent hairs.

G. Robertianum, sub-sp. CELTICUM. Faintly scented, slender and tiny, only somewhat tinged with red at the nodes in spite of growing in the open. Leaves shorter stalked, the blades of the leaves, in the axils of which the floral peduncles appear, longer than the stalks. Peduncles about five times as long as the leaf-stalks. The whole plant less hairy than the type.

The differences between the two plants are already very strongly marked during the first year of growth. The rosette of leaves is

quite green and smaller in the Irish plant, while in the typical plant it is more or less tinged with red, coarser, more hairy, and with longer stalks, the whole rosette being larger and coarser. I have been unable to identify the Irish plant with any hitherto described form of the *Robertianum*-group and have therefore given it a name referring to its place of occurrence. I do not know anything more about its distribution, but recommend this point to British botanists. C. H. OSTENFELD.

494 (2). ERODIUM GEOIDES St. Hil. Fl. Bras. Mér. i., 80. Alien, S. America—Argentine, Uruguay, &c. Lanal. Meanwood, Leeds, York, 1914, F. A. LEES. Det. A. THELLUNG. Adventive also in Germany.

506 (2). OXALIS DILLENII Jacq. Oxal. 28, 1794. *O. Navieri* Jord. in Billot Annot. 20, 1865. Alien, Europe. Garden ground, Cemmaes, Montgomeryshire. The description of *O. Navieri* (*l.c.*) is :— Fruiting peduncles deflexed, usually two flowered; adnate stipules absent or very small; stems ascending from the base, not rooting and not stoloniferous; plant finely (not shaggy) pubescent; flowering early. Type *corniculata* has the fruiting peduncles deflexed, usually 2-7 flowered; adnate stipules quite easily seen; stems spreading and creeping; plant with no subterranean stolons; plant pubescent with shaggy hairs; flowering early. Another species, *O. europaea* (*stricta* L.), has the fruiting peduncles erect-ascending (rédressées); styles spreading, not rapprochés at the top; stipules none; stems erect or diffuse, not creeping or ascending from the base, with the subterranean stolons numerous; plant glabrescent and late flowering. Jordon, however, admits that there is no sharp division of characters. Rouy & Foucaud (*Fl. Fr.* iv., 123) treat *O. Navieri*, *O. diffusa* Bor. and *O. stricta* L. (under which is *europaea*) as three forms of *corniculata*, but oddly enough no reference is made to Jacquin's plant. B. L. Robinson (*Journ. Bot.* 386, 1906) tried to reverse the Linnean names as universally used till then, but fortunately he has had no important support. G. C. DRUCE.

530 (2). LUPINUS POLYPHYLLUS Lindley Bot. Reg. t. 1096. Alien, California. On the grassy border of Scoulton Mere, W. Norfolk, F. ROBINSON. Recorded as *nootkatensis* in *Rep. B.E.C.* 497,

1918. Known in the locality for 30 years, of course planted. It is one of the most popular garden lupines. See Nicholson *Gard. Dict.* iv., 302. Mr Robinson showed it me growing at Scoulton in 1918 and I have seen it native at Victoria, B.C. G. C. DRUCE.

589 (2). MEDICAGO ROTATA Boiss. Diagn. ser. i., 2, 24. Alien, Scio, Syria. Gorgie, Midlothian, J. FRASER.

595 (2). MELILOTUS POLONICA Pallas Reise iii., 537, 1776, ? not of Persoon. *Melilotus wolgica* Poir. Enc. Suppl. iii., 648, 1813= *M. ruthenica* Ser. in DC. Prod. ii., 186. Alien, Russia. Leith, Midlothian, 1910-12, J. FRASER. Det., as *wolgica*, by W. B. TURRILL.

640 (4). TRIFOLIUM CILIATUM Nuttall in Journ. Acad. Philad. N.S. ser. 2, i., 152, 1847. *T. ciliolatum* Benth. Pl. Hartw. 304. Alien, N. America. Llanberris, Carnarvon, Aug. 1919, Miss A. B. COBBE!

649. LOTUS HISPIDUS Desf., var. MAJOR Rouy Fl. Fr. v., 153. *L. suaveolens* Pers. Syn. ii., 354. Tiges de 3-6dm., épaisses; folioles grandes (7-12mm. de long), plus larges, ovales-lancéolées. On the slopes of the east cliff, Polperro, Cornwall, 1919, E. THURSTON; Vale, Guernsey, 1906, G. C. DRUCE. Assuming our plants are identical with those of Rouy one would scarcely have given varietal grade as my specimens grew in a damp quarry and Mr Thurston's on ground under vegetable cultivation.

Gen. 145 (2). HOSACKIA Dougl., ex Benth. in Bot. Reg. t. 1257, 1829.

650 (10). H. AMERICANA Piper in Contr. U. S. Nat. Herb. xi., 366, 1906. *H. Purshiana* Benth. *Trigonella americana* Nuttall Gen. ii., 120, 1818. *Lotus americanus* Bisch. Alien, N. America. Glasgow, 1919, R. GRIERSON.

684 (5). VICIA ALTISSIMA Desf. Fl. Atl. ii., 163. Alien, Italy, Dalmatia, N. Africa. Garden weed, Haymesgarth, Cleeve Hill, E. Gloster, 1919, C. BAILEY.

697. V. CORDATA Wulfen in Sturm Deutschl. Fl. heft 32. *V. angustifolia*, var. *cordata* Boiss. Fl. Orient. ii., 575. *V. cordifolia*

Spreng. Syst. Veg. iii., 264. *V. sativa*, var. *cordifolia* Beck. This is characterised by the obcordate leaflets of the lower leaves, those of the upper are oblong-cuneiform with a deep notch, the midrib ending in a long mucro; flowers smaller than those of *sativa* but larger than those of *angustifolia*; calyx-teeth often longer than the tube; pods yellow when ripe, smooth; seeds more compressed than those of *sativa*. The aspect is that of a luxuriant *angustifolia* rather than *sativa*. Watton, Norfolk, 1915, F. ROBINSON; Cothill, Wootton, &c., Berks, G. C. DRUCE. See *Rep. B.E.C.*, 316, 1913.

731 (4). PISUM FULVUM Sibth. and Sm. Fl. Graeca vii., 79. Alien, Asia Minor, Syria. On cotton-cake refuse, Colchester, 1914, G. C. BROWN.

739. PRUNUS DOMESTICA L. Stone rough on its surface.

Rouy & Camus (*Fl. Fr.* vi., 4, 1900) group under *P. sativa* R. & C. three sub-species, *i.e.*, *P. domestica*, *P. ambigua* R. & C., and *P. insititia*, thus briefly described in the clavis :—

1. Jeunes rameaux glabres; drupes oblongs; arbre ou arbrisseau non épineux.....*P. domestica* L.
2. Jeunes rameaux brièvement pubescents ou faiblement velus; drupes ovoides ou ovales-oblongs; arbrisseau ou arbre non épineux, rarement un peu épineux.....*P. ambigua* R. & C.
3. Jeunes rameaux plus ou moins velus; drupes globuleux ou subglobuleux; arbre ou arbrisseau épineux ou non épineux.. *P. insititia* L.

P. DOMESTICA is divided into 4 subordinate species :—

1. Pédicelles solitaires, glabres; fleurs paraissant longtemps avant les feuilles .....*P. elegans* Clav.
   Pédicelles géminés, pubescents; fleurs paraissant avant les feuilles.....*P. saxicola* Bor.
   Pédicelles géminés, pubescents; fleurs et feuilles contemporaines 2
2. Fleurs nombreuses; pétales dressés; anthères jaunes.....*P. gymnoclada* Clav.
   Fleurs peu nombreuses; pétales étalés; anthères presque orangées .....*P. intermedia* Clav.

P. AMBIGUA is divided into 7 subordinate species :—

1. Arbrisseau un peu épineux; drupe bleuâtre .....*P. silvatica* Desv.
   Arbre ou arbrisseau non épineux; drupe d'un violet noirâtre 2
   Arbre ou arbrisseau non épineux; drupe jaune ou rougeâtre; calice à tube glabre 4
2. Fleurs paraissant en même temps que les feuilles; pétales grands, légèrement teintés de jaune.....*P. Pruna* Bor.
   Fleurs passées avant le développement des feuilles 3
3. Pétales d'un blanc rosé, à bords non contigus.....*P. Ballota* Lamotte.
   Pétales d'un blanc jaunâtre, à bords contigus.....*P. Arvernensis* R. & C.
4. Fleurs paraissant avant la naissance des feuilles..... 5
   Fleurs paraissant en même temps que les feuilles; fruit petit d'un vert jaunâtre, à saveur musquée..... ...*P. Varactensis* Bor.

5.	Fruit mûr déprimé au sommet ; d'un jaune verdâtre, puis glauque	*P. Sanctae-Catharinae* Lamotte.
	Fruit mûr un peu déprimé au sommet, d'un rouge brun	*P. rubescens* Lamotte.

P. INSITITIA L. is divided into 16 subordinate species :—

1.	Feuilles atténuées aux deux extrémités, aiguës au sommet (On doit observer les feuilles sur les rameaux fertiles.)	2
	Feuilles atténuées aux deux extrémités, subarrondies au sommet	7
	Feuilles faiblement atténuées à la base, obtuses au sommet	11
	Feuilles ovales-elliptiques ou suborbiculaires	*P. dulcis* Clav.
2.	Fleurs en fascicules denses	3
	Fleurs en fascicules lâches	6
3.	Pétales largement ovales, presque contigus	4
	Pétales ovales-oblongs, écartés, non contigus	5
4.	Style dépassant les anthères ; arbrisseau non épineux	*P. silvestris* J. & F.
	Style ne dépassant pas les anthères ; arbrisseau tortueux, diffus, épineux	*P. virescens* Paillot.
5.	Anthères d'un rouge violacé ; arbrisseau épineux	*P. erubescens* Paillot.
	Anthères jaunes ; arbrisseau peu ou point épineux	*P. Vapincensis* J. & F.
6.	Pétales grands, presque contigus ; anthères jaunes	*P. sepivaga* J. & F.
	Pétales petits, non contigus ; anthères rougeâtres	*P. Desvauxii* Bor.
7.	Fleurs en fascicules lâches	8
	Fleurs grandes, en fascicules denses ; anthères roses	*P. rosiflora* Paillot.
8.	Fleurs petites ; arbrisseau épineux ; anthères jaunes	*P. porcorum* Clav.
	Feuilles grandes ; arbrisseau non épineux	9
9.	Fleurs grandes ; pétales rétus ou tronqués, presque contigus ; anthères orangées	*P. agrestis* J. & F.
	Fleurs assez petites ; pétales ovales, arrondis au sommet	10
10.	Style égalant les étamines ; anthères jaunes ; pétales écartés	*P. discreta* R. & C.
	Style plus court que les étamines ; anthères d'un jaune vif ; pétales presque contigus	*P. dumetorum* J. & F.
11.	Arbrisseau à épines longues, étalées ; fleurs grandes ; pétales contigus	*P. cerasiflora* Paillot.
	Arbrisseau non épineux	12
12.	Fruit petit (de la grosseur d'une cerise) ; feuilles assez petites, étroites, oblongues-obovales	*P. cinerascens* Lamotte.
	Fruit assez gros ; feuilles plus grandes et plus larges	13
13.	Feuilles grandes, largement obovales ; fleurs en fascicules assez lâches ; pétales suborbiculaires	*P. latifolia* J. & F.
	Feuilles médiocres, elliptiques-oblongues ; fleurs en fascicules compactes ; pétales ovales-oblongs	*P. congestiflora* Clav.

P. SPINOSA L. This very polymorphic species, with stone smooth on its surface, is divided into 14 subordinate species :—

1.	Pédicelles glabres	2
	Pédicelles pubescents ou velus	7
2.	Drupe ovoide ; feuilles glabres sur les deux faces ; fleurs épanouies avant la naissance des feuilles	*P. ovata* R. & C.
	Drupe sphérique	3
3.	Feuilles adultes glabres sur les deux faces	6
	Feuilles pubescentes, au moins en dessous	4

4. Fleurs et feuilles naissant en même temps ; anthères jaunes ; fleurs petites ; calice rougeâtre ; arbrisseau épineux ..... *P. ericiflora* Savat.
Fleurs assez grandes, naissant avant les feuilles 5

5. Anthères jaunes ; fleurs épanouies avant la naissance des feuilles ; arbrisseau nettement épineux ..... *P. fœcundissima* Clav.
Anthères d'un jaune orangé ; fleurs s' épanouissant à la naissance des feuilles ; arbre presque inerme ..... *P. subinermis* Clav.

6. Fleurs épanouies avant la naissance des feuilles ; calice à dents non rétrécies à la base ..... *P. vulgaris* R. & C.
Fleurs et feuilles naissant en même temps ; calice à dents rétrécies à la base ..... *P. lucida* Clav.

7. Feuilles glabres sur les deux faces ; drupe ovoide ..... *P. lucens* Savat.
Feuilles pubescentes, au moins en dessous ; drupe sphérique 8

8. Feuilles pubescentes sur les deux faces 9
Feuilles glabres en dessus, pubescentes en dessous 11

9. Fleurs naissant avant les feuilles ; pédicelles pubescents 10
Fleurs naissant en même temps que les feuilles ; pédicelles velus ..... *P. Lamottei* Savat.

10. Arbrisseau peu épineux, à bois non grumeux ; fleurs peu nombreuses, assez grandes ; anthères jaunes ..... *P. pubescens* Clav.
Buisson très épineux, à bois grumeux ; fleurs nombreuses, petites ; anthères rouges ..... *P. densa* Martr.

11. Drupe à peine acerbe ; fleurs naissant peu avant les feuilles : arbrisseau peu épineux ..... *P. subcylindrica* Savat.
Drupe très acerbe ; fleurs naissant bien avant les feuilles 12

12. Fleurs petites ; anthères rouges ; drupe sphérique ; pétales lancéolés-oblongs ; arbrisseau peu épineux ..... *P. parviflora* Paillot.
Fleurs petites ; anthères jaunes ; drupe plus large que long ; pétales ovales ; arbrisseau subinerme ..... *P. depressa* Clav.
Fleurs relativement grandes ; anthères d'un rouge orangé ; pétales largement ovales ; drupe sphérique ; arbrisseau très épineux ..... *P. latiflora* Clav.

In Jordan and Fourreau's magnificent *Icones ad Floram Europae* 1866-8, are figured ten species of *Prunus*, *i.e.*, 219. *oviformis*, 220. *densiflora*, 221. *rusticana*, 222. *pedunculuris*, 223. *sepivaga*, 224. *dumetorum*, 225. *latifolia*, 226. *Vapincensis*, 227. *sylvestris*, and 228. *agrestis*, all first described by those authors. Of these six are put by Rouy under *insititia*, the remaining, *i.e.*, *densiflora*, *rusticana*, *pedunculuris*, and *oviformis* have, he contends, too incomplete a description to allow him with certainty to place them under *spinosa*. It may be added that Savatier (*Bull. Soc. Rochel* 40, &c., 1882) named a large number of micro-species of which nine are said by M. Rouy to be without importance. Clavaud (*Act. Soc. Linn. Bordeaux* 600, &c., 1884) also described many species which for the greater part have been accounted for by M. Rouy, and many others have been described by M. Paillot in *Bull. Bot. Soc. Fr.* vol. xvi.

I suspect a part of the excessive variability of the section of *Prunus*, under which are grouped the three Linnean species, is due to hybridity. That being the case, it follows that in France, where so many forms of *domestica* are grown and run wild, the number of more or less distinct forms would be greater than in Britain where the races of *domestica* are comparatively few. It by no means follows that a half-way house is necessarily a hybrid, but if one sees a very spinous *insititia* with paler anthers the influence of *spinosa* is suggested, so too if *insititia* occurs with larger and broader leaves and longer drupes the influence of a *domestica* form seems probable. Again larger-flowered, or longer-fruited *spinosa* would likely result from an *insititia* parentage. *Coetanea* may be a real sub-species but the offspring of a cross varies in such remarkable ways that its characters may also have been caused by hybridity. I have seen it, however, in localities where one or the other or both the supposed parents were absent. Herbarium specimens are practically valueless. The Blackthorn is a most refractory subject. At least three gatherings of each plant are necessary to obtain flower, leaf and fruit. The spaces left between the sheets in the cabinet are the refuge of every herbarium pest, and it is usually firewood material alone that presents itself for study. Flowers should be dried separately and at once affixed to gummed paper with a note as to the colour of the anthers. The fruits shrivel or mould or are squashed in drying so that they are practically useless. A coloured drawing of the fruit with exact measurements is necessary. In Britain I can differentiate about six forms, but even with the beautiful plates of Jordon and Fourreau I cannot say that our plants are exactly represented in them. That too is the case with many Roses and I think Dahlstedt would also say the same of many British Hieracia to which his name is at present attached. Perhaps members will make investigation of the Pruni. G. C. DRUCE.

740. P. INSITITIA × SPINOSA? Mr J. E. Little sent from Old Park Wood, Fishbourne, Sussex, a plant locally called Wild Damson, bearing fruit which suggests the above parentage. The petioles are hairy, as are the undersides of the leaves; the branches spinous; the leaves elliptic, strongly veined and thick in texture; the fruits 24 x 22 mm. and 22 x 20 mm. black, pendulous. This plant was also

sent to the Watson Exchange Club. (See *Report* 57, 1918.) Flowers will be gladly received.

743 (2). SPIRAEA OBOVATA Waldst. & Kit., ex Willd. Enum. Hort. Berol. 541. *S. hypericifolia* Hort., non L. Alien, Europe austr. occ. Hortal. This is, teste Thellung, Baxter's plant of 1830 recorded from South Hinksey as *S. hypericifolia* in *Fl. Berks.*

906. POTENTILLA NORVEGICA L., var. VARIANS (Moench Meth. 658, 1794, as a species) comb. nov. *P. norvegica* L., var. *degener* Lehm. Pugill. ix., 75 and Revis. Potentil. 199, 1856. Differs from the type "foliis radicalibus nonnullis digitatis vel pinnatis." Alien. Race-course, Northampton, 1917, ex H. N. DIXON. Det. A. THELLUNG, as var. *degener*. I have had it also from Slough, Bucks, G. C. DRUCE.

923. ROSA ARVENSIS Huds., var. SUBERECTA mihi. This differs from the type in the erect, persistent sepals. Greenham, Berks, 1893, G. C. DRUCE. See *Fl. Berks* 206, 1897.

926. R. CANINA L., var. NITENS Desv. in Journ. de Bot. ii., 114. Sutton Walls, Hereford, A. LEY in *Hb. Druce.*

928. R. ANDEGAVENSIS Bàst., var. LITIGIOSA (Crép.). Hunsbury Hill, Northants, 1878, then named *verticillacantha* by Baker. Now referred to the above by Wolley-Dod.

931. R. DUMETIS Burnat. Foy, Hereford, A. LEY as *Blondeana* in *Hb. Druce.*

931 (2). R. OPERTA Déségl. Ivy Bridge, S. Devon; Claydon, Sussex; Milton Road, Banbury, Beckley, Oxon; Foxhall, Northants, G. C. DRUCE.

932. R. CANESCENS Baker Rev. 28. Allied to *hemitricha* Rip. of the group *dumetorum*, but more biserrate, teste Wolley-Dod. Only known with certainty from v.-c. 12. Twinstead, N. Essex, Aug. 1919, G. C. DRUCE.

936. R. MICRANTHA Sm., var. BORAEANA R. & F. Ascot, Berks, G. C. DRUCE.

Var. PARVIFLORA Rouy=*R. diminuta* Bor. Maidenhead, Berks, G. C. DRUCE.

The foregoing are identified by Lieut.-Col. Wolley-Dod.

969 (4). CRATAEGUS SANGUINEA Pall. Pl. Ross. i., 25, var. GLABRA Maxim. Alien, Russia, Siberia. Three Shire Bush, Leicester, 1915, A. R. HORWOOD. Planted of course.

981. SAXIFRAGA HYPNOIDES L., var. ROBUSTA ined. Probably from Black Head, Co. Clare. Flowers mostly larger; axillary buds either absent or rudimentary; stems stouter and stiffer, as are the cauline leaves. E. S. MARSHALL in *Wats. B.E.C.* 63, 1918.

1074 (4). OENOTHERA AMOENA Lehm. Ind. Sem. Hort. Hamb. 8, 1821. *Godetia amoena* G. Don. Alien, N. America. Hortal. On the fore-shore near Golspie, E. Sutherland, 1902, G. C. DRUCE.

1075 (6). CUCUMIS MYRIOCARPUS Naudin in Ann. Sc. Nat. sér. 4, xi., 22, 1859. Alien, South Africa. Bradford, York, 1919, J. CRYER.

1114 (3). PIMPINELLA ANISUM L. Alien, Asia. St Philip's, Bristol, 1916, in some plenty, G. C. DRUCE and Miss COBBE.

1160. DAUCUS CAROTA L., forma NANUS. On the sea-sand near Farr, W. Sutherland, July 1919, G. C. DRUCE. Plant small, 9 cm., simple; leaves oblong, 3 cm. long exclusive of petiole, bipinnatifid, slightly bristly; umbels 1-2, small, 15-20 mm. across; involucral leaves narrowly trifid, as long as the flowers. It differs from the var. *exiguus* Pers. and the sub-var. *pusillus* Coss. & Germ. in the trifid involucral leaves, and in other ways, but both are probably dry-soil forms growing in sea-sand in full sun and wind exposure.

1181. VIBURNUM LANTANA L., var. VIRIDE Kerner in Dalla Torre and Sarnth. Fl. Tirol vi., 3, 394, 1912. Wytham Wood, Berkshire, partly shaded by trees but itself a bush about 15 feet high. It was first noticed by Master Owen, who showed the specimen to Mr G. Haynes. As it was so different from the normal form of *Lantana* I went with the finders to see if, as I suspected, it was a shade-grown form. The leaves are much thinner in texture,

and almost devoid of the tomentum so characteristic of the type, but it was sparingly present on the veins of the underside. The cymose inflorescence is much less compact, the naked pedicels being 20 mm. long. This form must not be confounded with var. *glabratum* Chabt. in Bull. Bot. Soc. Fr. xxxi., 369, in which the leaves are undulated, almost glabrous, not tomentose on the veins and without the stellate hairs on the interspaces. Judging from specimens in *Herb. Baenitz* Wilsbaur's *glabrescens* (Celak. Result. . . . Bohm. 1892) is nearer our common plant. G. C. DRUCE.

1192. GALIUM BOREALE L., var. VOGESIACUM Rouy Fl. Fr. viii., 10. Differs from the type in having " feuilles ovales ou sublancéolées, médiocres; fruits hispides." Ben Laoigh, M. Perth; Glen More, Easterness. Rather a form than a true variety. G. C. DRUCE.

1195. G. HERCYNICUM Weig., var. TRANSIENS Rouy Fl. Fr. viii., 41. *G. montanum* Huds. Fl. Ang. 67, 1672, not of L. Differs from the type in its greater size—stem 10-25 cm. as against 5-15 cm.; in its narrower leaves, the upper linear-oblong in shape; in the oblong, elongate panicle with ascending not converging branches (not short and ovate); in the verticels being more or less remote, and in being less densely caespitose. Boar's Hill, Berks; Arthur's Seat, Edinburgh, G. C. DRUCE; Odiham Wood, N. Hants, Miss PALMER. Rouy cites Hudson for this variety but in *Flora Anglica* the leaves are said to be " obovatis." It seems rather a form dependent upon shade and shelter than a true variety, but cultural experiments are needed.

1198. G. PALUSTRE L., var. GLABRATUM Raunkier. Burpham Meadows, W. Sussex, 1918. A small glabrous form which is near *debile*. Prof. Ostenfeld names it as above. Raunkier is the author of the *Danish Excursions Flora*. G. C. DRUCE.

1244 (3). SOLIDAGO SEROTINA Ait., forma LATIFOLIA Thellung. Alien. Galashiels, Selkirk, 1917, G. C. DRUCE.

1250. ASTER NOVI-BELGII ? × SALIGNUS. Wicken Fen, Cambridge, Aug. 30, 1892, coll. G. GOODE; comm. J. A. WHELDON. See *Rep. B.E.C.*, 551, 1897. Both species have been recorded from

this Fen but on these specimens Dr Thellung remarks " quasi intermedius inter *A. novi-belgii* et *A. salignus* Willd." This also may explain the divergent opinions given respecting the Wicken Fen plants. It will be well to collect plants having intermediate characters, so as to establish or disprove this suggested hybrid Aster.

1255 (2). A. LAEVIGATUS Lam. Enc. i., 307. Alien, N. America. Banks of the Thames at Maidenhead, Oct. 1821, W. BLAKE in *Hb. Druce*. Not given in *Fl. Berks*. Cynon side, near Llwydcoed, Glamorgan, 1901, H. J. RIDDELSDELL.

1257 (5). A. JUNCEUS Aiton Hort. Kew. ii., 304. Alien, N. America. Marston, Oxford, 1907, G. C. DRUCE.

1281 (2). INULA ENSIFOLIA L. Alien, Europe. Hortal. Holwood Park, W. Kent, 1919, ST. J. MARRIOTT.

1310. BIDENS TRIPARTITA L., var. INTEGRA. See *Rep. B.E.C.* 33, 1917. The Rev. E. A. Woodruffe-Peacock tells me he sowed hundreds of seeds of the Sibbertoft plant (which he thought was *cernua* × *tripartita*) in ideal conditions at Cadby but all proved sterile. " Thousands were naturally sown at Sibbertoft by the plants but not one seedling appeared at either place."

1347. ANTHEMIS COTULA L., forma LATISECTA Thell. in lit. Abingdon, Berks, 1918, G. C. DRUCE.

1362 (2). MATRICARIA OCCIDENTALIS Greene in Bull. Calif. Acad. ii., vi., 150, 1886 & Man. Bot. San Franc. Bay 208, 1904. *M. discoidea*, var. *occidentalis* Scully Fl. Kerry 152. See *Rep. B.E.C.*, 416, 1916. This differs from *discoidea* in its larger size, larger heads, and the fruits have a toothed crown. Co. Dublin, 1894, N. COLGAN; near Beal Point, Kerry, 1903, R. W. SCULLY; Aber, Carnarvon, G. C. DRUCE.

1393. SENECIO AQUATICUS Hill, var. vel forma DISCOIDEUS. Mr G. C. BROWN sent a specimen [Ref. No. 1618] from Bastwick, E. Norfolk, Aug. 1919.

1395. S. ERUCIFOLIUS L. The leaves of this species vary much in leaf-cutting, indeed Jacquin (*Fl. Austr.* iii., 42) described a

species, *tenuifolius*, which notwithstanding the acute, narrow leaf-segments is now by general consent treated as a variety of *erucifolius*. This was distributed through the Club (see *Report* 573, 1916) from Birkenhead, and I have it from St Neot's, Hunts; Willesden, Middlesex, &c. There is another distinct modification chiefly found on the coast of the south English counties which I propose to call var. *subintegrifolius*, characterised by its elliptic leaves, about 6 cm. long by 12-15 mm. broad, narrowed gradually into a shaft. The leaf-margin is cut into teeth 3-4 mm. long, the apex of which is usually a little spreading. The leaves are clothed below with white bristly hairs and the upper surface is green with many, mostly reflexed, hairs. Occasionally the upper leaves are more deeply cut or slightly lobed. It differs from *latilobus* Boissier in the less deeply lobed leaves and the smaller amount or absence of the cottony hairs on the leaves and stem. It is commoner near the coast, occurring as it does in Salcombe, Devon, E. B. BISHOP; Weymouth, Dorset, 1909, &c., G. C. DRUCE. It has also been noticed on the chalk railway bank near Kimble, Bucks. It is rather curious that, like *Hedera Helix* and *Anthriscus sylvestris*, the southern form should have less deeply incised leaves than the northern plants of the same species.

Var. VIRIDULUS (Martr.-Don.) Rouy Fl. Fr. viii., 334. Characterised by being more strongly branched, with sub-glabrescent leaves which have many lobes and a less firm texture. This is perhaps an edaphic condition. I have seen it near Bagley Wood, Berks, in a shady situation. It is the f. *glabra* of the *Berkshire Flora* 294. G. C. DRUCE.

1396. S. SQUALIDUS L., var. vel forma SUBINTEGER (Druce Fl. Berks 292, 1897). This curious plant has now reproduced itself in my garden for three or four years. The leaves are entire with the margin coarsely toothed. Plants are distributed this year. The variety or mutant does not appear to be mentioned in the continental Floras. I could probably supply seeds for cultural tests. G. C. DRUCE.

1451. CENTAUREA NIGRA L., var. OBSCURA (Jord.), teste Britton. Ditcham Park, Hants, R. S. ADAMSON; Twinstead, N. Essex; Rescobie, Forfar, a form with very dark scales, G. C. DRUCE; Lower

Morden [Ref. No. 2059], Mickleham [Ref. No. 1644], Surrey; Shepperton, Middlesex [Ref. No. 1818], C. E. BRITTON.

1451. C. NIGRA L., var. NEMORALIS (Jord.), teste Britton. Cambridge, 1903; Hungerford, Berks, 1890, G. C. DRUCE, as f. *radiata*. Under this C. C. Lacaita puts the plant [Ref. No. 1766] from West Horsley, Surrey, C. E. BRITTON but rather as *C. macroptilon* Borbas —a mere individual variant. Also [Ref. No. 2006] from Sunbury Lock, [Ref. No. 2022] Headley, [Ref. No. 2058] West Barnes, and [Ref. No. 2056] Worcester Park, Surrey, C. E. BRITTON. Here too he puts R. S. ADAMSON's *pratensis* from Ditcham Park, Hants, in *Rep. B.E.C.* 147, 1914.

1451. C. NIGRA L., var. CONSIMILIS Jord., teste Britton. Glendalough, Co. Wicklow, 1901, G. C. DRUCE; Clandon Downs, Surrey, J. GROVES.

1451. C. NIGRA L., var. PRATENSIS (Jord.), teste Britton. Delapré, Blisworth, Northants, 1872; Rescobie, Forfar, 1899, G. C. DRUCE; Epsom Downs [Ref. Nos. 1971, 2, 3, 4], Surrey, 1918, C. E. BRITTON, teste C. C. LACAITA.

1451. C. NEMOPHILA Jord. Wellington College, Berks and Surrey, C. E. BRITTON.

1451. C. SEROTINA Bor. Seaford, Sussex, C. E. SALMON, teste C. C. LACAITA.

1451. C. MICROPTILON Gren. "Chiefly distinguished by its medium-sized ovoid heads with narrow lanceolate, acuminate appendages exposing the underlying phyllaries and with the appendages more or less erect but distinctly curved outwards in their upper part, this feature being more apparent on the well-formed but unopened heads. Normally *C. microptilon* is rayless and the fruits have no pappus. Billingshurst, Sussex, A. WEBSTER; Lower Morden, Surrey, C. E. BRITTON; East Hendred, Berks, J. BALL. See C. E. Britton in *Rep. B.E.C.* 507, 1918. Goring, Oxon, 1883, G. C. DRUCE.

1451. C. SUBJACEA (Beck.) Dr A. von Hayek in Fl. Stiria

Exsicc. and Die Centaurea-arten Oesterreich-Ung. in Densschr. d. Math. Nat. Cl. d. Kais. Akademie d. Wissensch. Wien 1901, 12 Lief., Dec. 1907, n. 594, teste C. E. Britton. Lewes, 1900, G. C. DRUCE; Hurstpierpoint, Sussex, HILTON.

1451. C. OXYLEPIS Hayek. Tower-o'-the-Moor, N. Lincoln, F. H. ALSTON. Probably adventive.

1451. C. DEBEAUXII Gren. & Godr. Billot Exsicc. 807. [Ref. No. 73420]. Wilbury, Beds, 1905, G. C. DRUCE. "The only satisfactory *Debeauxii* I have seen from Britain," C. E. BRITTON.

1451 (2). C. VOCHINENSIS Bernh. Alien, Europe. Goring, Oxon, 1917, T. GAMBIER-PARRY. Mr C. C. Lacaita says between this and *transalpina* Schleicher there are many intermediates. Both come under *C. nigrescens* Willd., sens. lat. (see Briq. *Cent. Alp. Marit.* 81), to which Thellung refers it.

NOTE.—The names of the foregoing Centaureas should be considered as tentative. Messrs Britton and Lacaita (whose views in all cases are not identical) are making investigations, the results of which will appear later on. At present Mr Lacaita rejects *pratensis*, *microptilon* and *Debeauxii*.

1459. C DIFFUSA × RHENANA = C. ZIMMERMANNIANA J. B. Lins in Mitt. d. Bayer Bot. Ges. Bd. iii., No. 13, 282, 1916 = *C. psammogena* G. Gayer. See *Report* 37, 1917.

1477. CARTHAMUS TINCTORIUS L., var. INERMIS Schweinfurth in Muschl. Fl. Egypt. Alien. Near Glasgow, 1919, R. GRIERSON. Differs from the type, as its name suggests, in the absence of spines on the phyllaries and their almost entire absence from the leaves.

1645. TARAXACUM VULGARE (Lam.) Schrank.

In Lindman's *Svensk Fanerogamflora* Dahlstedt has described 99 species of Dandelion which he has divided into 6 groups all of which, save No. 3, Ceratophora, of which there are only two species in Sweden, are represented in Britain.

Group 1. Erythrosperma. British representatives:—(1) T. LACISTOPHYLLUM Dahlst. in Bot. Not. 168, 1805. Pyrford, 1909, G. C. DRUCE; as a modification at Great Burgh, Surrey, 1911, W. A. TODD; Boar's Hill, Berks, 1890, G. C. DRUCE. Doubtless it is the plant often reported as *T. erythrospermum* Andr. (2) T. BRACHY-

GLOSSUM Dahlst., *l.c.* 170. Wyrardisbury, Bucks, 1902, G. C. DRUCE; Barnes Common, Surrey, 1911, W. A. TODD.

Group 2 includes T. OBLIQUUM Fries.

Group 4. Palustria. Includes T. BALTICUM Dahlst. Menmarsh, Oxon, G. C. DRUCE. See *Rep. B.E.C.* 166, 1912, for the first British record. Very closely allied to this is a new species which I gathered in Holme Meadow, near Huntingdon, in 1908, and probably the same form from Coleman's Moor, Berks. To it Dahlstedt also refers a Surrey specimen from Chipstead Valley, 1911, W. A. TODD. For these plants Dahlstedt proposes the name T. ANGLICUM Dahlst. ined. Hunnybun distributed the Holme Meadow plant through the Club in 1910. This and *balticum* belong to *T. paludosum* (Schlecht.). (See p. 567.)

Group 5. Spectabilia. It includes (1) T. NORDSTEDTII Dahlst. Under this come some of the plants called *udum* by British botanists. It occurs at Colnbrook, Bucks, 1902; near Moulsford, Oxon, 1904, G. C. DRUCE; Ham Common, Wimbledon Common, in wet drives of wood; Worms Heath and Telegraph Hill, Surrey, 1911, W. A. TODD. (2) T. SPECTABILE Dahlst., *l.c.* 159. This is already recorded from many places but doubtless in a wider sense than Dahlstedt would allow. For instance Beeby puts under it *T. maculigerum* which Dahlstedt keeps as a distant species. To this group also belongs an interesting plant which I gathered in Glen Dole, Forfar, with Dr F. J. Smith and Mr and Mrs Corstorphine in 1916 which Dahlstedt refers to his T. FAROENSE, a plant not included in the Swedish Flora.

Group 6. Vulgaria. This contains:—(1) T. TENEBRICANS Dahlst., *l.c.* 157. Oxford, by the Cherwell, 1910, G. C. DRUCE. (2) T. HAMATUM Raunk. Dansk. Exc. Fl. ed. 2, 1906. Uxbridge, Bucks; Acton, Middlesex, G. C. DRUCE, already recorded in *Rep. B.E.C.* 327, 1913. (3) Here probably comes T. DISSIMILE Dahlst. from Great Malvern, Worcester, 1888, G. C. DRUCE. Its facies is, however, rather that of *obliquum*. (4) Also a new species allied to *T. Dahlstedtii* Lindb. f., which I distributed as N. 42 through the Club in 1915, from arable fields near Moulsford, Berks. This is a showy plant. To it Dahlstedt would also put specimens I gathered on the shingle of the Gala, Selkirk, in 1917. The stems of this form were blotched with reddish-purple. In cultivation it makes a large cabbagy plant.

1646 (4). TARAXACUM ANGLICUM Dahlst., n. sp. Humile. Folia anguste oblonga-lanceolata, in lobos paucos (2-3) partita. Lobi apicem versus majores, deltoidei, acuti, margine anteriore integri aut minute denticulati. Lobus terminalis in foliis exterioribus parvus, in interioribus magnus, sagittato-hastatus, nunc latior, nunc angustior, plus minus elongato-acutatus, integer. Petiolus cum nervo mediano purpureus. Involucrum parvum, atroviride. squamae exteriores paucae, latae, plus minus ovato-lanceolatae, laxe adpressae, breviter acutae. Calathidium parvum. (Color corollae?). Antherae polline repletae. Achaenium cum pyramide circa 3.5 mm. longum, superne aculeis brevissimis instructum, fusco-stramineum; pyramis brevis, conica; rostrum 8-9 mm. longum. Prope accedit ad *T. litorale* Raunk.; differt antheris polliniferis, squamis exterioribus brevius acutis, foliis angustioribus, lobo terminali longius protracto. H. DAHLSTEDT.

1663. TRAGOPOGON PRATENSIS L. (sub-sp. EU-PRATENSIS Thell.), forma ROSEO-MARGINATUS Thell. in Viertelj. Natf.-Ges. Zürich lxiv., 813, 1919. In some quantity on the sands between Bettyhill and Farr, W. Sutherland, July 1919, G. C. DRUCE. Det. A. THELLUNG.

1685. VACCINIUM INTERMEDIUM Ruthe. Captain W. Balfour Gourlay contributes to the *Transactions and Proceedings of the Botanical Society of Edinburgh* 327, 1919, an excellent account of the hybrid Bilberry which he and Captain Vevers found in many places on Cannock Chase. He first observed it in full flower in May 1919. In many places it grew where the ground had been disturbed and it was thought that the violent crushing or shaking together of flowering plants of the Bilberry and Cowberry might have resulted in cross fertilisation. In appearance the hybrid suggests *Myrtillus* but the round stem and evergreen leaves are significant of *Vitis-idaea*. It is entirely glabrous. The flowers are intermediate and the anthers have, says Capt. Gourlay, the conspicuous dorsal awn of *Myrtillus*, but this, as a minute awn, is present in *Vitis-idaea*. The hybrid produces fewer seeds than the parent, and its fruit lacks the flavour of either parent. It has a second flowering stage in August. Capt. Gourlay intends sowing the seeds and hopes to report on the result. In August 1919 Capt. Gourlay sent me fresh specimens from Whitmoor Common, Meer Wood and Cannock

Chase, localities all on the Bunter pebble beds and sandstone. They exhibited various modifications but were unmistakably the hybrid, but some were microphyllon forms, derived either from a small-leafed *Myrtillus* or arising from want of nutrition, probably the latter, as they came " from a dry artificial bank limiting the woody portion of the heath." Capt. Gourlay wrote in August that " in the drier areas, as on artificial banks, or when the soil is presumably very acid, the two Vaccinia produce small plants with very small leaves. Patches of *V. intermedium*, otherwise quite uniform (and therefore suggesting that they have originated in a single act of cross-fertilisation), also produce this small-leafed type locally within a perfectly normal patch." On September 8 he again wrote that he had " obtained more flowering and fruiting specimens. The fruit is usually a little longer than broad. Some, however, show longer fruit, and others again shorter. The microphyllous specimens were from the same patch as the one which always produces long fruit. On a dry bank, made artificially, is a patch about 2 yards by 1 yard which is so peculiar that it suggested a second cross between the hybrid and a Cowberry parent. On Meer Heath altogether six patches have been observed." The leaves of the microphyllon *intermedium* are about 6 by 4 mm., the type 20 by 10 mm. This small-leaved plant might possibly be *intermedium* × *Vitis-idaea*. In September, with Mrs Wedgwood and Sir Roger Curtis, I visited the place under the guidance of Captain Vevers who had also sent me fresh plants in flower and fruit. Where it grew recent military traffic had cut up the Chase. Whether this had influenced hybridity is open to doubt. It may be that, with increased access, the plants became more noticeable. When plants are at the limit of their distribution it is not unlikely that in the efforts to maintain themselves crossing between two allied species may occur. Such is, according to Sir J. D. Hooker, the case with *Sonchus oleraceus* and *asper* in New Zealand, where in Britain they rarely cross. On Cannock Chase *Vitis-idaea* is nearing its southern range. It was very satisfactory to see it growing in such quantity and so unmistakably intermediate. Its history as a British plant begins with a record on " A Curious British Plant " by R. Garner in *Science Gossip* 248, 1872. The plant was discovered by Mr D. Ball, F.R.C.S., in Maer Woods and exhibited at the Linnean Society on March 7, 1872, to

illustrate a paper on a hybrid *Vaccinium* between the Bilberry and the Cowberry. The consensus of opinion at the meeting was that they were luxuriant specimens of *Vitis-idaea*. In 1887, Mr N. E. Brown identified it as *V. intermedium* Ruthe. Since then it has been found as a solitary bush on Scarmclett Braes, near Watton, where I have unsuccessfully sought it; from the gorge of the Achorn Burn, Dunbeath (Crampton *Veg. of Caithness* 1911); Coniston Old Man, Lancashire, PEARSALL and ADAMSON in *Rep. B.E.C.* 273, 1915, and Lonsdale, N.E. Yorks, HESLOP-HARRISON in *Rep. B.E.C.* 116, 1917. Attention being directed to it, doubtless northern botanists will find it in other counties. Although I have had it in mind it has never been observed by me in Scotland.

1699. ERICA VAGANS L., lusus. Mr P. D. WILLIAMS of Lanarth, Cornwall, kindly sent last September a curious variation of the Cornish Heath which he had known for ten years. The cuttings come quite true. It never really flowers, but young vegetative shoots are formed with tiny clustered leaves 1 mm. long. The peculiarity may be caused by a mite or gall but Dr. W. G. Smith, to whom I sent it, has not seen anything like it. Mr. E. W. Swanton has little doubt that a mite causes this abnormality in growth.

1754. CENTAURIUM UMBELLATUM Gilib., var. or sub-var. ELLIPTICUM. A tall, stout plant with elliptic leaves 18-20 mm. broad by 20-40 mm. long. Steephill, Isle of Wight; Kenfig, Glamorgan, a condensed form, G. C. DRUCE; Sea wall, East Mersea, 1919, G. C. BROWN; near Woodham Ferris, S. Essex, 1910; Filey, York; Hoylake, Cheshire, G. C. DRUCE.

1757. C. PULCHELLUM (Sw.) Druce, forma SIMPLICISSIMUM (Schmidt in Linnaea vii., 482, 1832) Zimm., *l.c.* v., 71, 1914. Wye, Kent, July 1919, G. C. DRUCE. Doubtless a starved state.

1762. GENTIANA VERNA L., in Cleveland. Dr. Lees (*Naturalist* 390, 1919) thinks that in Cleveland its occurrence is an "assurgence" like the *Polygala* at Grassington. In the case of *Polygala* is there any evidence to justify the statement? One might equally well call *Carex chordorrhiza* at Alltnaharra an assurgence because it has only been detected in recent times. The space of ground seen

by a botanist in his explorations is very small, and it must be at the right time of the year, and in the right year, since each season has its profusion of a special plant. Why they may be so abundant one year and so rare the next is at present an unsolved problem. That the Gentian is a recent species in Teesdale or Galway can scarcely be maintained whatever its status may be in Cleveland.

1789 (6). BENTHAMIA MENZIESII (Lehm.) comb. nov. *Amsinckia Menziesii* Nelson and Macbride. Alien, Amer. bor. occ. It is, in part, the *intermedia* of A. Gray. Kilsby, Northants, L. CUMMING; Woodhall Fowl run, N. Lincs, 1919, F. ALSTON. The prominent flowers, with long orange corolla tube, make it a showy plant.

1807 (2). NONNEA VENTRICOSA (Sibth. & Sm.) Griseb. Spic. Fl. Rum. ii., 93. Alien, E. Europe. *N. alba* DC. Ovenden, Yorks, 1917, A. BATES.

1808 (2). PULMONARIA AFFINIS Jord. in Billot Arch. 322, 1854. *P. officinalis* Vill., non L. *P. saccharata* Gren. & Godr., non Mill. Alien (?), France, Belgium. Dartington Wood, S. Devon, 1919, C. V. B. MARQUAND, teste Dr STAPF.

1851 (7). PHYSALIS PERUVIANA L. Alien, South America. Bradford, York, 1919, J. CRYER.

Gen. 442 (2). PHYSOCHLAINA G. Don Gen. Syst. iv., 470, 1837.

1855 (5). P. ORIENTALIS G. Don, *l.c.* Alien, Orient. Rubbish-heap, in a cornfield, Marston, Oxford, Oct. 1919, T. GAMBIER PARRY. Probably from the Botanic Garden, where it is grown.

1882. LINARIA SUPINA Desf., var. vel lusus PELORIA. With regular, tubular corolla and 5 spurs, found with the type on Par Sands, Cornwall, Sept. 1919, G. HAYNES, vide sp.

1890. ANTIRRHINUM ORONTIUM L., var. GRANDIFLORUM Chav. Mon. 90. *A. calycinum* Lam. Enc. iv., 365. *A. elegans* Ten. Viagg. Abruzz. 175. Alien, S. Europe. Boiling Wells tip, Bristol, W. Gloster, Mrs WEDGWOOD. = var. *calycinum* (Lam.).

1892. SCROPHULARIA AQUATICA L., sub-var. FLAVO-VIRIDIS Thurston *in litt.* Flowers yellowish-green, an analagous form to

S. nodosa, var. *Bobartii* Pryor. Marsh, Talland, W. PENNYCOST; West Looe, Cornwall, E. THURSTON.

1898. MIMULUS GUTTATUS DC. The nomenclature of plants grouped under *M. luteus* L. is singularly confused. Greene (*Journ. Bot.* 4, 1895) suggested that our plant should be called *M. Langsdorfii* overlooking the fact that it was a name only cited in synonymy and therefore not now considered a valid publication. Whether or not the Yellow Mimulus naturalised in Britain is *M. luteus* awaits authoritative identification, so I retain De Candolle's name. Recently the spotted form has also become completely naturalised with us. I gathered it in Kintail, W. Ross, in 1881. It has been identified by Dr. Thellung as the sub-species *M. rivularis* (*M. rivularis* Nuttall in Journ. Act. Philad. vii., 47, 1834) forma *variegatus* (Loddiges) Voss. *M. variegatus* Lodd. Bot. Cabinet t. 1872. The common form has flowers with rich marone blotches on a yellow ground, but at Glen, Peebles, it occurs as a form with bright red or dark red blotches on the corolla forming a very ornamental plant. Mr and Mrs Corstorphine have also seen it at Clatterin' Brig, Kincardine, with flowers nearly half the usual size coloured a deep orange.

1906 (5). VERONICA SPURIA L. Alien, Central and Eastern Europe. Hortal. An escape from cultivation at Thornton, N. Lincoln, 1918, F. H. ALSTON. Det. A. THELLUNG.

1929 (2). V. ORIENTALIS Miller Gard. Dict. 10, 1768. Alien, Asia Minor, Persia. Hortal. Levenhall, Edinburgh, 1916, J. FRASER. Det. A. THELLUNG.

1934 (3). EUPHRASIA HIRTELLA Jord. ex Reut. in Compt. Rend. Soc. Haller iv., 120, 1854-6. Llanberis, Carnarvonshire. See H. W. PUGSLEY in *Journ. Bot.* 173, 1919. Wettstein's description is "Caulis erectus, strictus, robustus, rarius tenuis, simplex vel in parte inferiore ramis nonnullis 3-25 cm. altis rubescens vel fuscescens, pilis crispis albidis eglandulosis vel glandulosis articulatis immixtis pubescens. Folia infima caulina cuneato-ovata obtusa dentibus obtusis paucis et caetera opposita, superiora ovata vel fere orbicularia, acuta utrinque dentibus acutiusculis 3-6. Bracteae suboppositae fere orbiculares vel orbiculari-triangulares acutae

dentibus utrinque 5-8 acutis vel acuminatis plerumque imbricatae calyces tegentes in speciminibus siccis nervis subtus prominentibus. Folia et bracteae setis albidis et pilis glanduliferis longis articulatis micantibus dense obsita raro solum glabrescentia. Spica initio condensata, et post anthesin non valde elongata, in parte superiore semper densissima rarius elongata. Calyx indumento ei foliorum conformis, fructifer vix accretus. Corolla parva, 5-7 mm. longa, labio superiore bilobo lobis denticulatis, labio inferiore trilobo, lobis emarginatis angustis. Corolla albida, striis violaceis et macula lutea in fauce picta. Capsula ovata vel lineari-ovata calycem aequans, margine longe ciliata, caeterum in parte superiore setulis sparsis obsita. Exsicc: Schultz 1188, 2570 (Brandisii Billot 2332, bis & ter). Distribution: Spain, France, Switzerland, Italy, Austria, Hungary, Bosnia, Rumelia, Russia, eastwards to Mongolia. Wettst. *Mon.* 175. He groups it under the Parviflorae. In company with Miss Eleonora Armitage, Mr D. A. Jones, Mr J. A. Wheldon, and others I gathered this at Llanberis in August. Rouy (*Fl. Fr.* xi., 149) puts it as a race (glanduleuse) of *Tatarica* and under it, as a less hairy and less glandular variety, *brevipila*. *Stricta*, he considers another race of *Tatarica*. Rouy's description is:—Stem branched below, the branches patent ascending with short crisp hairs, glandular or not glandular; leaves strongly pubescent with long stipitate glands, the lower ovate-cuneiform, obtuse and with obtuse teeth, the upper broadly ovate, with 6-12 broad and sub-acute teeth; bracts usually ovate-suborbicular, with 8-14 pointed or acuminate teeth; spike rather elongate; calyx glandular-pubescent with elliptic-pointed teeth; corolla medium sized, 6-11 mm.; capsule equalling the calyx.

1939 (2). E. CONFUSA Pugsley in Journ. Bot. 172, 1919. To this name Mr Pugsley assigns the Exmoor, Somersetshire, *E. minima*. On the other hand, Dr. Ostenfeld considers the British *scottica* to be only a form of *minima*. Mr Pugsley also, and doubtless correctly, rejects Bucknall's var. *arbuscula* as a var. of *minima* or *confusa*.

1946 (2). BARTSIA LATIFOLIA Sibth. & Sm. Fl. Graeca vi., 69, t. 586. *Trixago latifolia* Reichb. *Eufragia latifolia* Griseb. Alien, S. Europe. Boiling Wells tip, Bristol, W. Gloster, Mrs WEDGWOOD.

2004. ORIGANUM VULGARE L., lusus. Mr C. F. Vincent sent from Torquay plants of this species in which the corollas were entirely abortive.

2009 (2). SATUREIA MONTANA L. Alien, Europe. On Dec. 3, 1919, Mr J. Cosmo Melvill sent me a specimen which he had gathered on Oct. 12 on the ruined cloisters of Beaulieu Abbey, S. Hants, quite naturalised. This at once recalled to my mind an immature Labiate which I saw there in the early part of 1910, and of which I brought back a root. It, however, died off. The smell told me it was not Hyssop and I thought it was a *Micromeria*. But the matter slipped out of my memory. Its naturalised occurrence here instead of being merely a casual as in Sussex (*Rep. B.E.C.* 350, 1908), demands an asterisk to its name. That it is of no recent introduction is proved by a specimen of it, labelled *Hyssopus*, in Miss C. E. Palmer's collection, gathered on Sept. 20, 1900. According to Rouy (*Fl. Fr.* xi., 343) this Beaulieu plant comes under his variety RIGIDULA (Jord. & Fourreau Ic. 38, t. 104), characterised by "Grappes allongées, élancées, lâches, étroites; feuilles longement linéaires-lancéolées; fleurs plus petites; tiges élevées, grêles mais raides." Jordan & Fourreau make no mention of the size of the flowers nor is their figure of the flower smaller than in *brevis*. Their *provincialis* and *flexuosa* to the latter of which Dr Thellung would refer the Beaulieu plant, are closely allied and critical forms.

2023 (3). SALVIA BERTOLONII Visiani Fl. Dalm. ii., 189. Alien, S. Europe, Adriatic, etc. Ware, Herts, 1904. Nearly allied to *pratensis* but a more scabrid plant with smaller corollas, leaves cordate at base, and branched racemes. It is kept as a distinct species by Archangeli. G. C. DRUCE.

2031 *b*. S. VERTICILLATA L., var. PULCHRA mihi. Alien, Europe. This occurred in the gravel pits at Ware, Herts, in 1907. It differs from the type in its much smaller leaves which are of a much firmer texture, and more regularly and neatly crenate, and in the stems being of a bright amethystine or even bluish tint. The leaf-blade measures 30 to 45 mm. by 20 to 30 mm. In the type they often reach 1.20 cm. by 80 mm. G. C. DRUCE.

2035 (4). NEPETA GRANDIFLORA M. Bieb. Fl. Taur. Cauc. ii.,

42. Alien, Caucasus. Salisbury Crags, Edinburgh, 1919, A. TEMPLEMAN, teste A. THELLUNG.

2091 (4). PLANTAGO LOEFLINGII L. Alien, Central Spain, Canary Isles, North and West Africa. Ovenden, York, 1917, F. PULLAN, ex C. H. HORRELL.

2114 (2). AMARANTHUS ASCENDENS Loisel. Not. Pl. Fr. 141, 1810. This is the *A. Blitum* as figured in *Eng. Bot.* t. 2212, 1810. Specimens are in my Herbarium (teste Thellung) from Turnham Green, Middlesex, 1876, T. R. Sim, but there are also specimens collected from that area by Dillenius in 1724.

2116. A. LIVIDUS L., var. POLYGONOIDES (Moq.) Thell. in Asch. & Graebn. Syn. v., 320, 1914. *Euxolus viridis*, var. *polygonoides* Moq. Alien, tropics. In cultivated fields about London, circa 1822, W. BLAKE in *Hb. Druce*. Det. A. THELLUNG. This is not the *A. polygonoides* L. (see Thellung, *l.c.*, 351). It is found in the tropics of both hemispheres and adventitiously at Hamburg, Hanover and Strasburg. In Britain it has occurred in Middlesex.

2131. CHENOPODIUM BERLANDIERII Moq., var. PLATYPHYLLUM Issler. St Philip's, Bristol, 1916, G. C. DRUCE; Galashiels, Selkirk, 1917, Miss I. M. HAYWARD. This, as its name suggests, has broader and larger leaves than the type. It bears some outward resemblance to *opulifolium*, but the base of the leaves is less rounded. The young leaves are often pale purplish in tint, especially at the base.

2138. C. VULVARIA L., forma RHOMBICUM Murr. Waste ground, Bradford, 1918, J. CRYER. Det. A. THELLUNG. The leaves have a curious rhombic outline, hence the name.

2210 (12). RUMEX MAGELLANICUS Griseb. in Goett. Abh. vi., 118, 1854. Alien, Magellan area. Glasgow, 1919, R. GRIERSON. Named at Kew.

2228 (2). EUPHORBIA VIRGATA W. & K. In the *Report*, 308, 1918, attention was drawn to this species as having been passed over for *E. Esula* L. and it was stated that other plants named *Esula*, besides those from the localities given, will have to be transferred to *virgata*.

Among these Dr Thellung says are the *E. Esula* from Redbrook, Monmouth, A. LEY, sent to, but not commented on, in the *Report* 1904; railway bank near Loch Spynie, Elgin [Ref. No. 2184], E. S. MARSHALL; *Euphorbia* sp. from Littlemore railway-side, Oxon, 1917, G. C. DRUCE, which in the *Report* 308, 1907, was named *Esula* by A. B. Jackson, C. Bucknall and E. S. Marshall, and *E. mosana* by E. F. Linton; Marcham, Berks, as *Euphorbia* sp. G. C. DRUCE, which Bucknall thought (*Report* 309, 1902) to be the same as the Littlemore plant. Both were without fruit. Subsequently I thought both belonged to the var. *lutescens* Huth. Banks of the Thames between Wallingford and Cholsey as var. *Pseudo-cyparissias* R. F. TOWNDROW (*Journ. Bot.* 400, 1900); railway-side, Slough, Bucks, 1900, G. C. DRUCE; Marnhull, near Blandford, Dorset, Lady DOUIE, who in painting it thought it to be untypical; Caversham, Oxon, 1918, V. MURRAY.

Forma ESULIFOLIA Thellung. See *Report* 308, 1918. This is the *E. Esula* L. (see *Fl. Berks* 437) from the Bucks side of the Thames near Hambledon, now extirpated and the ground built over, and from the Avon side near Evesham, Worcester, 1916, J. LAMB.

It may be added that the only British specimens as yet passed as *Esula* are Sparham, Norwich, 1890, F. J. HANBURY; Melrose Bridge, Roxburgh, 1915, Miss I. M. HAYWARD (see *Adv. Fl. Tweedside* 288), and possibly H. BROMWICH'S specimen from railway-bank, Leek Wootton, Warwick, 1869.

2230. E. CYPARISSIAS × VIRGATA Schroeter in Ber. Zürch. Bot. Ges. 13, et 81-90, 1917. This hybrid occurs in several parts of Switzerland—Greifensee, Zürich; Branson, Wallis, Tübach, St Gall; Kiesgrube in Basel-Land, and also at Hanover with *virgata*. Dr Thellung, with some slight doubt, identifies a plant in my herbarium collected by Lady Muriel Percy in 1908 near Alnwick, Northumberland, and named *Esula*, as this hybrid.

2250. URTICA DIOICA L., f. PURPURASCENS mihi. Lanarth, Cornwall, Oct. 1919, P. D. WILLIAMS. The leaves are suffused with violet-purple.

2260. CORYLUS AVELLANA L., var. CONTORTA. Tortworth, W. Gloster, Earl DUCIE. See *My Garden*, Bowles.

2316. HELLEBORINE VIRIDIFLORA Wheld. & Trav., forma VECTENSIS T. & T. A. Steph. (forma DUNENSIS is the Southport type plant) in Journ. Bot. 1, 1918. Ventnor, Isle of Wight. Rolfe (*Orch. Rev.* 183) says "the significance of the variations is not clear and *viridiflora* is usually considered to be a sub-species of *latifolia*."

2325 (2). ORCHIS PRAETERMISSA L. This year I had many opportunities of seeing this plant over wide areas. Conducted by Mr Arnett, Mrs Wedgwood and I saw it in two or three places near Tenby, Pembroke. I also saw it in many marshes between Tenby and Fishguard, Narberth, &c. In one marsh it grew with *O. incarnata*, then going out of flower, and hybridised with it. There too grew *O. Fuchsii* and *O. maculata* with which it also hybridised. Mr Attenborough sent it me in flower from St Ouen's Pond, Jersey (it was not in flower when I was there in the spring), and as a slightly different form from the Quenvais. I gathered it also in marshes near Kingscliffe, Northants, and Mr Boys sent fresh specimens from N. Somerset. By the White Water in Northants it is an abundant and luxuriant plant, there hybridising with *Fuchsii* and *incarnata*. In our Oxford marshes it was abundant this season, and I found it in good condition in a new locality in a marsh in an unwooded portion of Wychwood Forest. Mr Gwatkin sent a specimen from Totland Bay, Isle of Wight, and I saw it with Miss Hersie Butler and Sir R. Curtis in great luxuriance at Rudley Marsh, S. Hants, where it hybridised with *Fuchsii*, *maculata* and *incarnata*, all these being present with it. In marshes in Brecon it was locally common and hybridised with *maculata*. I also saw it in Radnor, Carmarthen, Monmouth, Hereford, Gloster and Cardigan. Mr Dymes sent a specimen from Middlesex where it hybridises with *maculata* agg., and grows with *incarnata*. I also saw it in Carnarvon, Anglesey, here hybridising with *maculata*, and Stafford. Miss Cobbe sent it from Morfa, Merioneth; Mr Rilstone from Lambriggan, Cornwall; Mr Hurst from the Kennet Meadows, S. Wilts, near Stype Wood; and Mr Greenwood from the neighbourhood of Cirencester where it crosses with *Fuchsii*. Mr J. E. Little also forwarded it from several Norfolk Fens such as Foulden, Shingham, Caldecote, Beechamwell and Oxborough where it was predominant or almost exclusively representated. At Marham Fen, W. Norfolk, it hybridised with *incarnata*. Near Stoke Ferry and Caldecote it certainly hybridised with

Fuchsii and that combination was present in plants sent by Mr Little. Other specimens came from Chilton Foliat, N. Wilts, and W. Drayton, DYMES, Shapwick peat-moor, N. Somerset, MARSHALL, *in litt.* The Rev. T. STEPHENSON also told me he saw it in several marshes near Tenby, Pembrokeshire, and that he found it 12 inches high at Penally, with " ' *latifolia* ' which was 2 feet high, the leaves being heavily spotted or faintly blotched " (this tall plant is doubtless my *praetermissa-Fuchsii*). I saw splendid plants near Haverford West in the same county. The diagnoses of these plants in the field is not difficult. The result of seeing many thousands of specimens is (1) to convince me of the specific value of *praetermissa*, (2) that I have seen no constant intermediate species between it and *maculata* agg., although the tall plant with strongly marked leaves, paler flowers, and robust growth is doubtless the *latifolia* of most British authors. I have yet to be convinced it is not one of the many hybrids and probably the first cross of *praetermissa* and *maculata* agg.

Another variation of *praetermissa* is now to be considered. For this I suggest the name of PULCHELLA (see *Gard. Chron.* 1920), either as a variety, sub-species or species, whichever grade it may have to take. With our present knowledge I now call it a variety. Description :—Plant from 10-30 cm., stem hollow; leaves erect or ascending, usually narrowing upwards, often keeled, rarely widest above the middle, about 18 mm. wide at the broadest part, in an exceptionally robust plant 26 mm. wide and 15 cm. long exclusive of sheath, unspotted and usually light green; inflorescence 25-70 mm. long with bracts as long or sometimes longer than flowers, sometimes narrow, rarely broad and conspicuous; flowers showy, of bright tints of purple, purplish-rose, dark bluish-purple, rarely pale rose or white; labellum smaller than *praetermissa*, from 6-12 mm. broad, broader than long, *e.g.*, 8 x 11, 8 x 10, 5 x 7, with the small central lobe as long or longer than the broad side lobes which are often angled or notched along their margin, often marked with darker and sometimes well defined lines, confluent dots, or hieroglyphics. This I have from Killington Common, Westmorland, A. WILSON; Frith, Orkney, HALCRO JOHNSTON; Lomonds, Fife, TEMPLEMAN; Moy, Aviemore, Easterness; Avoch, Black Isle, Bonar Bridge, Strathpeffer, &c., E. Ross; Cnochan, &c., W. Ross; Inchnadamph, Elphin, Tongue, Farr, Altnaharra, West Sutherland; Scarmclett, Watton, near Wick, &c.,

Caithness; near Bonar Bridge, Dornoch, E. Sutherland, DRUCE; Carngaroo Hill, Co. Down, STELFOX. Often in great abundance and an adornment of the marshes of the northern counties. *O. praetermissa*, var. *pulchella* × *maculata* Scarmclett, Wick. Caithness; Elphin, Tongue, W. Sutherland; Avoch, Strathpeffer, E. Ross. To this combination I suspect the Ambleside *cruenta* belongs. *O. incarnata* var. *pulchella*, from the New Forest, has an even smaller labellum which is more reflexed and less cut than the northern plant. To this formerly I referred the Hamworthy plant. It is possible that further study may result in uniting both these forms under *praetermissa* and therefore I have selected the same name for the northern plant, but definitely making it subordinate to *praetermissa* as it is distinctly in closer alliance with that than *incarnata* under which for the time I leave the Hants and Dorset plants. I have long doubted the correct identification of the Lake District *cruenta* (*Journ. Bot.* 37, 1899) and suggest it may be a hybrid of *pulchella* and *maculata* agg., but there is another plant in Teesdale which may be a distinct form. Lindman makes *cruentus* a sub-species of *incarnatus*.

2325. O. LATIFOLIA L. My friend, M. Alban Voigt, has sent me from San Giacomo Val Moesa, at 3,800 feet, and from the Ueschinen Valley, Kandersteg, Switzerland, specimens so labelled, with hollow stem, very strongly spotted leaves, the lower 40 mm. by 22 mm. the third leaf 70 mm. by 30 mm., narrowed at both ends, and broadest in the middle. The first plant has inconspicuous bracts, the second long leafy bracts slightly exceeding the flowers. They appear different from our hybrid. M. Voigt speaks of them as rare, and says, "I am inclined to think the species is kept up as a tribute of respect for Linné. . . . I have never seen *latifolia* here [Tessin] and Chenevard gives in his *Cat. Pl. Vasc. du Tessin* only three localities in Soltomeri and then only on the strength of literature dating from 1857. The local herbarium contains no specimens and ten other herbaria consulted by Chenevard were also without a representative of it and he himself only collected it in four localities in northern Tessin." Prof. Lindman tells me *Orchis latifolia* is rare in Sweden and has little hope of sending it in a fresh state. The plant of the Linnean Herbarium is very near to fresh specimens sent from Aarau, Switzerland, by Dr Keller.

2326. O. INCARNATA L., vera. Foulden Fen, Marham Fen, W. Norfolk, LITTLE; Rudley Marsh, S. Hants; Tenby, Pembroke, DRUCE; Llandrindod, Radnor, TODD; Oakhill, Froxfield, N. Wilts, HURST; Linton, Peebles, TEMPLEMAN; Strathpeffer, E. Ross, DRUCE & WEDGWOOD; Killington, Westmorland, WILSON. Var. *ochroleuca* Wüst. Still at Fleet, Hants, Mrs GIBSON.

2327. O. MACULATA L., vera (ERICETORUM). There is no doubt of the preference this has for acid soils, therefore it is essentially the west of Britain plant from Cornwall to the Shetlands. It exists under various modifications. Lady Mexborough sent small specimens from near Helmsley, York (the *praecox* Webster) with pure white flowers (*albiflora*); Bangor, Co. Down, STELFOX; Tongue, W. Sutherland, DRUCE, with deeply cut labellum; Llandrindod, Radnor, Miss TODD, this perhaps crossed with *Fuchsii*; Middlewick Bog, Colchester, BROWN.

To *maculata* belongs a striking plant, the var. *macroglossa*, var. nov. Flowers very large, pale, with dark lilac markings, the labellum 18-22 mm. broad by 10-12 mm. long, the side lobes much larger than the central lobe which may be shorter, as long, or very slightly longer than the lateral. In other characters the plant is typical. Bogs at Llandrindod, Radnor, Miss TODD; near Harlech, Merioneth, Miss COBBE; near Moreton, Dorset, DRUCE.

2327. O. FUCHSII Druce. Tenby, Pembroke, ARNETT & STEPHENSON; Middlewick Range, Colchester, BROWN. These are robust plants, nearly two feet high, with solid stem and not, I think, crossed, although growing with *praetermissa* or its variety. This strong plant is often named *latifolia* in herbaria, the leaves being broad, and broadening upwards, strongly spotted, and the lower bracts somewhat conspicuous. A very dark purple form (*purpurascens*), sent by Mr P. B. O'Kelly from Ballyvaghan, Co. Clare, was thought by him to be a distinct species, another, which he calls *lilacina*, exists there as does *O'Kellyi* in millions. Forma *insignis*. Sent from Winchester Downs by Mr B. W. Thomas, with very dark purple lines.

2344. CYPRIPEDIUM CALCEOLUS L. The first record is stated by F. Arnold Lees (p. 341) to be Parkinson's somewhat incorrect state-

ment (*Theatrum* 1640) from marshes about Arncliffe, but the plant does not grow in wet places. Dalton gathered it in Grassington Wood in 1797 and it has been found there recently. *Naturalist*, Oct. 1919.

Gen. 576 (2). STERNBERGIA Waldst. & Kit. Pl. Rar. Hung. ii., 172, 1805.

*2380 (10). S. LUTEA Ker-Gawl., ex Schultes Syst. vii., 795. *Amaryllis lutea* L. *Operanthus luteus* Herbert. Alien, S. Europe. Slopes of Mont Orgueil Castle, Jersey, April, 1919. In company of Mr T. Attenborough and the Countess Fortescue last April I noticed growing there quite naturalised and in considerable quantity the leaves of a bulbous plant. The custodian, who had brought a large number into his garden, said it produced beautiful yellow flowers in the autumn. There seemed little doubt that ' the yellow crocus,' as he called it, was really *Sternbergia*. This was proved in October by Mr Attenborough kindly sending it to me in flower. It appears to be the first instance of its occurring naturalised in the British Isles. It was doubtless originally cultivated in the Castle garden. G. C. DRUCE.

Gen. 589 (2). CHIONODOXA Boiss. Diagn. ser. I, v., 61, 1844.

2408 (10). C. NANA Boiss. and Heldr. Diagn. xiii., 24. Alien, Crete. Several plants in a woodland in the parish of Oare, Somerset, March 14, 1919, ex W. P. HIERN.

2431. JUNCUS BALTICUS Willd., var. PSEUDO-INUNDATUS A. & G. Small specimens on Dornoch Links, E. Sutherland, G. C. DRUCE. Mr Adamson suggested the varietal name.

2467. ARUM ITALICUM Mill., var. IMMACULATUM DC. Fl. Fr. v., 303. The English plant always lacks the white veins on the leaves so characteristic a feature of the plants of S. Europe. In the Channel Isles both forms occur, as they also do (teste Syme *Eng. Bot.* ix., 16) at Monaco.

[2488. × POTAMOGETON ANGLICUS Hagström Crit. Res. 180 = *P. coloratus* × *polygonifolius* Hagstr. Woking Heath, Surrey, *Hb. Bennett*. This is the only place as yet from which Hagström has seen this hybrid. The apparent absence from Surrey and the long

distance of the Kent and Berkshire habitats for it is against the diagnosis. Mr Arth. Bennett (*Journ. Bot.* 12, 1919) states that the plant has no *coloratus* in it so that *anglicus* need not be added to our list.]

2499. P DECIPIENS Nolte, var. BREVIFOLIUS Hagst. Crit. Res. 244. Mr W. H. Pearsall identifies my plant from Rescobie, Forfar, as this. It was gathered with Mr John Knox in 1882.

2502. P. PERFOLIATUS L., var. MACROPHYLLUS Blytt. Abergavenny, Monmouth, 1897, C. BAILEY, as *perfoliatus*, of which it is a large-leaved form, not a true variety.

2503. P. CRISPUS L., var. OBTUSIFOLIUS Fieber. Hagst. *Crit. Res.* 60. Mr Pearsall identifies a plant in my herbarium from Caynton, N. Salop, coll. Bidwell, 1832, as this. It is curious that while reducing *P. interruptus* which so many botanists considered a distinct species Hagström should use the heaviest type for these mere leaf-varieties. It is true that immediately after he says "other forms" are *cornutus* Linton which again is put in heavy type. The earliest trivial for that plant is, however, *P. macrorrhyncus* (Gandoger) and it is used in a varietal sense by Asch. & Graebn. The name *cornutus* is also used as a var. of *lucens*. *Obtusifolius* is the *genuinus* of Reichb. Ic. 18, 1845 and is said to be the commonest plant in Swedish herbaria.

2508. P. PANORMITANUS Bivona ex Bivona A. ined. 6, 1838, ex Gussone Fl. Sic. Syn. i., 207, 1842. *P. gracilis* Fries Nov. Fl. Suec. 50, 1828, not of Wolfgang. This has been confused with *P. pusillus* or else treated as a variety, race or proles of it. It differs from *pusillus* in its lighter, more yellowish green colour. In habit it is more like *rutilus*, stretching itself elegantly upwards, whereas *pusillus* is of a darker green or brownish tint and expands into a bush-like growth with copious branches in the upper part if there is space. *P. panormitanus* stretches the upper internodes of the stem to the necessary length but never prolongs by branches of several ranks distichously. Usually there is in the axil of the upper involucral leaf a very short spike-bearing branch. *Pusillus* projects from the primary two involucral leaves long branches which in

their turn shoot out branches of the second rank and so on. The stem is terete or faintly compressed. The leaves are stiffer than *pusillus* owing to their strong midrib. *Panormitanus* never has the large celled lacunae along the midrib so the leaves lack the 1-2 light stripes of *pusillus*. The great distinctions, however, are in the stipular sheaths and in the shape and occurrence of the turios. *Panormitanus* has most gracile and small buds, 12-15 mm. long. The ligules are connate for more than two-thirds of their length, in *pusillus* they are open but convolute. Although contrasted with *pusillus* Hagström separates them by 14 species and many hybrids. Indeed *obtusifolius* comes as an intervening species. He divides his subsection *Pusilli* into two sections.

(*a*) Stipules connate, ochreate, not plicate. Leaves acute, ± longly cuspidate or gradually attenuate, at the most rigid . . . *rutilus, mucronatus, panormitanus.*

(*b*) Stipules split, convolute. Leaves ± obtuse, ± wide, less pointed . . . *pusillus, obtusifolius.*

Panormitanus is likely to be found in many places in Britain. Plants gathered at Marsh Gibbon, Bucks; Peakirk, Eye, Northants, 1909, Wolverton, Norfolk, G. C. DRUCE; Southill Park, Beds., J. E. LITTLE; Kennington Lane, Berks, 1893; Marden Park, Kent [Ref. No. 1097], E. S. MARSHALL; Brograve Level, Norfolk, C. E. Moss in *Rep. B.E.C.* 599, 1910; Odiham, N. Hants, 1918, Mrs WEDGWOOD; Clapham in Craven, York, MENNELL; Brickpond, York, A. WEBSTER; Aberarth, Cardigan, E. S. MARSHALL; Loch Beg, Blairgowrie, E. Perth, A. STURROCK; Loch of Kirkbister, Orkney, 1878, HALCRO JOHNSTON, have all been passed by Mr Arth. Bennett but Mr Pearsall queries the Loch Beg, Aberarth, and Kennington Lane specimens.

2508. P. PANORMITANUS × PUSILLUS = × P. DUALIS Hagström Crit. Res. 103. Ponds near York, 1881, ARTH. BENNETT; Salop, 1886, W. E. BECKWITH in *Hb. Stockholm.*

2512. P. PECTINATUS L., var. UNGULATUS Hagström Crit. Res. 45. This is divided into 7 forms of which *subaequabilis* is recorded from the " River Leen, MITCHELL " which probably refers to the tributary of the Trent in Notts and f. *latiusculus* from Benwick, Cambridge, FRYER. Mr Pearsall also identifies *ungulatus* in my

herbarium from Skinner's Lock, Berks & Oxon; Portmeadow, Tadpole, etc., Oxon; the Wantage Canal, Berks; King's Sutton, Cherwell, Oxon, & Northants, G. C. DRUCE; Wye, Guildford, Surrey, W. H. BEEBY.

2512. P. PECTINATUS L., var. DIFFUSUS Hagström Crit. Res. 47. Mr Pearsall identifies the following as this var. in my herbarium:—Penzance, Cornwall; Brean and Bridgwater, N. Somerset, 1882; Easton, Isle of Wight; Southall, Middlesex; Odiham, Hants, 1882, C. E. PALMER; Southill, Beds., J. E. LITTLE; Marston, N. Wilts; Ross, Hereford, PURCHAS; Sellack, Hereford, LEY; Longford, Warwick, 1853, KIRK; Chadshunt, Warwick, C. E. PALMER; canal, Warwick, BAKER; Great Yarmouth, E. Norfolk, 1852, TRIMMER; Eye, Oxney, Lode, Northants, Preston, Salop, 1838, BIDWELL; Cirencester, Gloster; Droitwich, Worcester, BAGNALL; Duddingston Loch, Midlothian, 1883; Loch Spynie, Elgin; Heriot, Roxburgh; Forfar, G. DON. Of this Hagström has a forma *scoparius* attributed to Wallroth who probably, however, called it a variety. It is in *Herb. Upsala* from Warwick, BABINGTON, who, however, called it his *flabellatus*. In my herbarium are plants (teste Pearsall) from Crouch, Essex; Chatteris, Cambridge, FRYER; Oxbridge, Glamorgan; Birkenhead, Cheshire. Forma *interruptus* (*P. interruptus* Kitaibel). Hagström makes this synonymous with Babington's *flabellatus* and he cites it from Stoke Heath, Warwick, T. KIRK. Pearsall also names plants thus in my herbarium from Mepal, Cambridge, FRYER; Cromford Canal, Derby, BAILEY; Lady Island, Lake Wexford, etc.

2545. SCIRPUS COMPRESSUS Pers., var. ERECTUS Uechtr. Asch. & Graeb. Syn. ii., 2, 229, 1903. Culmis rigide erectis ad 40 cm. altis. Perranporth, Cornwall, F. RILSTONE; River Greeta, Wrayton, W. Lancs. 1901, A. WILSON (see *Rep. B.E.C.* 28, 1901); Chilton Foliat, Berks, G. C. DRUCE. This gradually merges into the type.

Gen. 632 (3). MARISCUS Gaertn. Fr. i., 11, 1788.

2556 (20). M. CYPERINUS Vahl Enum. ii., 377. Alien, India, China, Japan, etc. Bradford, York, 1918, J. CRYER. Named at Kew.

2653. PHALARIS MINOR Retz., var. INTEGRA Trabut. Alien, N. Africa. Leith, Edinburgh, J. FRASER.

2682. MIBORA MINIMA (L.) Desv., forma VARIEGATA (F. Zimm.) Thell. & Zimm. Fedde *Report* 370, 1916. Spiculis partim (praesertim inferioribus) viridibus, partim purpurascentibus. Coron, Anglesey; St Ouen, Jersey, G. C. DRUCE.

Gen. 673 (4). GYNERIUM Humb. & Bonp. Pl. Aequin. ii., 112, t. 115, 1809.

2732 (26). G. ARGENTEUM Nees Agrost. Bras. 462. Alien, Brazil. In a swampy place, St Catherine's, Jersey. First noticed there in 1906. G. C. DRUCE.

2759. POA PRATENSIS L., var. LATIFOLIA Weihe Deutsche Gräser 31. Reichb. *Agrost. Germ.* clxi., n. 415, 1650. Rouy describes it as a more robust plant of a clearer green with leaves 5 mm. broad. This is the plant [Ref. No. R. 4774] sent to the Club in 1918. (*Report* 531). Lindman considers it to belong to his forma LATIFOLIA. It occurs under walls by roadsides and I have seen it at Chichester, Tenby, Oxford, Cothill, &c., G. C. DRUCE.

2759. P. PRATENSIS L. (ANGUSTIFOLIA), var. COLLINA Schur Nat. v. Siebenb. iv., 88. Weston-on-the-Green, Oxford [Ref. No. R. 1611]. See *Rep. B.E.C.* 531, 1918. G. C. DRUCE.

2769. P. ANNUA L., var. PERENNIS. Differs from the type in its more creeping and perennial growth, possibly educed by the high alpine habitat (the summit of Snowdon). (See *Report* 140, 1911.) This may come under Haussknecht's var. *reptans* but the stems are neither slender nor long, nor are the stolons elongate.

2850 (3). HORDEUM COMOSUM J. & C. Presl Rel. Haenke i., 327. Alien, Chile (*Ind. Kew*), S. Africa (Thellung). Bradford, York, J. CRYER, teste A. THELLUNG.

2933. NITELLA FLEXILIS Ag., var. FRYERI Groves & Bullock-Webster in Journ. Bot. 102, 1919. *N. flexilis*, var. *nidifica* Groves Charac. Brit. Exsicc. n. 59. Old Bedford and near Sutton Gault, Cambridge; West Norfolk, Hunts. Fryer showed me this in situ shortly after he found it.

2933 (2). N. SPANIOCLEMA Groves & Bullock-Webster in Journ. Bot. 1, 1919. Discovered by Canon Bullock-Webster in Lough Shannagh, Donegal, in 1916.

2937. N. MUCRONATA Miq., var. GRACILLIMA Groves & Bullock-Webster in Journ. Bot. 323, 1917. Distributed through the Club in 1918 by J. Walter White from Rangeworthy, Gloster. This differs from the type " in having the penultimate cell of the terminal branchlet-rays gradually narrowed to the apex instead of being rounded so that the ultimate cell does not form the small mucro-like appendage which gave rise to the specific name. In this respect and in being more slender it resembles *gracilis*." J. Groves *in litt.*

REVIEWS AND NOTES ON PUBLICATIONS, NEW BOOKS, ETC., 1918-1919.

(*Owing to exigencies of space much material has had to be omitted. The issue of Botanical Abstracts* (*see p.* 587) *will, however, render these less necessary.*)

ADAMSON, R. S. Notes on the Flora of Northern Cheshire in Journ. Bot. 91, 1919. Adds *Potamogeton praelongus* and confirms *Ceterach* for the county. There are, in addition, some new varieties and adventive plants.

ADAMSON, R. S., and CRABTREE, ALISON M'K. The Herbarium of John Dalton. Reprint from Mem. & Proc. Manchester Lit. & Phil. Soc. May 19, 1919. The collection, now in eleven vols., has been in the possession of the above Society since 1886. It was made between the years 1790 and 1829. It is arranged according to Withering's *Arrangement of British Plants* and contains 864 different species besides 72 non-vascular Cryptogams. There is a specimen of *Cypripedium Calceolus* from Arncliffe. Three specimens are included of plants not now admitted as natives, *i.e.*, *Potentilla alba*, *Helianthemum ledifolium*, both supplied by Robson who had a "Botanic Garden," and *Euphorbia Characias*, from Melbury Heath,

Gloster, which the authors unhesitatingly identify as *amygdaloides*. Dalton's specimen of the latter species is *Cyparissias* and like so many others, including *Ajuga genevensis* and *Cerastium tomentosum*, is of garden origin. The authors have done their work well.

ARMITAGE, ELEANORA. Madeira and its Flora. A paper read before the Liverpool Botanical Society on March 27, 1919. There are said to be 772 indigenous and 156 introduced flowering plants, 41 ferns, 150 bryophytes and 145 lichens. 106 species are endemic. I had the pleasure of meeting Miss Armitage when she was botanising in Madeira, and many pleasant memories have been recalled in reading this pleasing address.

ASCHERSON & GRAEBNER. SYNOPSIS DER MITTEL-EUROPAISCHEN FLORA. Lief. 95. Caryophyllaceae. Leipsic, Borntraeger, pp. 705-84, 1918.

BEAN, W. J. Abraham's Oak (*Quercus palestina*) in Kew Bulletin 233. The London Plane (*Platanus orientalis* × *occidentalis*). A discussion of Prof. Henry's suggested origin of the London Plane which is said to have originated in the Oxford Botanic Garden. Gard. Chron. ii., 47, 1919. See also A. D. Webster, 72, 1919, who is not convinced of its hybrid origin.

BIGWOOD, GEORGE. COTTON. pp. 204, 1918. Constable & Co.; 6/6. One of the Staple Trades and Industries Series, edited by Gordon D. Knox. A brief history of the Cotton plant is first given, then the development of spinning. The third chapter treats of the cotton fields. As much as nine-tenths of the clothing of the world is said to be made of this fibre. The triumphs of mechanical invention show how the difficulties connected with its manufacture have been overcome. There are some excellent photographs and the volume contains much valuable information.

BONAPARTE, PRINCE ROLAND. Notes Pteridologiques. Fasc. vii., p. 418, 1918; viii., 1919. In these volumes a large number of Ferns, chiefly from extra European localities, are recorded or described. The last fascicle contains an important contribution to the Ferns of Indo-China, Siam, Laos, Tonkin, Cambodia, Annam and Cochinchina.

BONNIER, GUSTAV. NAME THIS FLOWER. pp. 330, 64 coloured plates. J. M. Dent & Co.; 7/6. Translated by Prof. G. S. Boulger. A handy book for the beginner who by its aid may track down some of our British flowers. Half-a-dozen were taken at random and the names correctly arrived at. The Coltsfoot, however, was not traced on the first trial. A little more care should have been taken with the names. For instance, both *Orchis montana* and *Habenaria bifolia*, *i.e.*, two genera for the Butterfly Orchid, should have been *Habenaria*, the former *H. virescens*. *Orchis latifolia* is figured, but what is it? not broad-leaved nor spotted. The book is compact and the text-figures eminently useful. Its perusal may induce a neophyte to pursue the study.

BOSE, Sir J. C. LIFE MOVEMENTS IN PLANTS. Vol. i., pp. xxiv., 251, Calcutta.

BOTANICAL ABSTRACTS. Under this title has appeared a monthly serial furnishing abstracts and citations of publications treating of Botany in its widest sense. The prepaid price is 6 dollars 50 cents and it may be obtained from the Cambridge University Press, Fetter Lane, London, E.C. Its chief editor is Burton E. Livingston, John Hopkins University, Baltimore, with 17 sub-editors, including John Hendley Barnhart, New York Botanic Garden, Bibliography, Biography, and History; H. C. Cowles, The University of Chicago, Ecology and Plant Geography; J. M. Greenman, Missouri Botanic Garden, St Louis, Mo., Taxonomy of Vascular Plants; George H. Shull, Princeton University, N.J., Genetics. At present the Taxonomic side is quite inadequate, most British periodicals and our own *Report* being unnoticed. This is also true of Lotsy's *Bot. Centralblatt* in which no allusion is made to the various pages of our *Report* nor to the issue of the most widely circulated of the British Floras.

BOWER, Prof. F. O., Sc.D., F.R.S. BOTANY OF THE LIVING PLANT. pp. 580, tt. 477, 1919. Macmillan & Co., London; 25/- net. In this handsome volume Professor Bower has put before us the substance of his course of University lectures which have been so exceptionally successful for more than thirty years. The matter is treated in 32 chapters. The first deals with germination and the subject is carried on to seed dispersal, all being most clearly and

plainly described. As he rightly says, "It is easier to begin the study of the living plant from those of larger size . . . than from minute and unfamiliar organisms, which can only be examined microscopically." This is not according to evolution. As Prof. Bower says, "Vegetation began in the water, spread later to the land and found its climax in the seed-bearing plants of the present day. This too was the sequence of animal life. They had a common origin, they diverged in course of evolution. The most distinctive feature which separates them is nutrition. Plants advanced along the direct line of self-nutrition. Animals advanced along predatory lines. As animals take their food as organic material . . . it is obvious . . . that the green plant . . . is the essential source of supply of organised material to all other forms of life upon the earth's surface." It has recently been claimed that Botany as a science treats of 90 per cent. of the organic life of the globe. This volume must prove of great service to those who teach and those who learn the methods of life and growth of this great section of living matter. The last chapters are devoted to Schizophyta, Sex and Heredity, the latter including a clear statement as to hybridity. This difficult and complex problem is presented in a most lucid and simple manner. Without absolutely endorsing Weismann's theory Prof. Bower holds that evidence is still lacking which negatives that theory but he thinks that transmittable mutations have played a great part in evolution. An appendix treats of the Types of Floral Construction in the Angiosperms, beginning, curiously, with the Liliales. Appendix B. gives some useful particulars on Vegetable Food-stuffs. The well-printed work contains 200 specially prepared illustrations. Others are familiar, including the frontispiece of the Sequoia from Figuier's *Vegetable World*. Another from the same source, but wrongly indexed, is *Orchis maculata* which as usually happens in continental figures is the true *O. maculata* L. (the var. *ericetorum* Lint.), *i.e.*, not the basic-soil *O. Fuchsii*.

BOWER, Prof. F. O. Botanical Research in the United Kingdom during the war. Amer. Journ. Sc. vol. 47, pp. 117-22, 1919.

BRENCHLEY, Dr. WINIFRED. The Uses of Weeds and Wild Plants. Science Progress, July, 1919.

BRITTON, C. E. Note on *Centaurea* in Journ. Bot. 340, 1919.

BRITTON, N. L., and ROSE, J. N. THE CACTACEAE. Vol. 1, pp. vii., 236. Carnegie Institute, 1919.

CAMERON, KATHERINE. FLOWERS I LOVE. There are 24 full coloured reproductions of original drawings with an Anthology of Flower Poems by Edward Thomas. A delightful gift book, 10/6 net, T. C. & E. C. Jack.

CHAMBERLAIN, Prof. CHARLES JOSEPH. THE LIVING CYCADS. Chicago Press, 6/-.

CHRISTIANSEND, C. W. Ueber die Gattung Rosa in Schleswig-Holstein. Schrift. Natw. ver. Schles.-Holst. 247-80, 1916.

CHURCH, Dr A. H. Baxter's British Phaenogamous Botany in Journ. Bot. 58, 1919. Brunfels and Fuchs, *l.c.* 233. William Baxter is here called a Scotchman but according to my information he was born at Rugby in 1787, and he speaks of *Peplis Portula* as reminding him of Hill Morton, near that town, as the birthplace of his mother. Dr Church's paper is a very able account of Baxter and the excellent plates which were figured under his superintendence for *Phaenogamous Botany*.

CLEMENTS, F. E. PLANT SUCCESSION. pp. xiii., 512, tt. 436. Carnegie Institute, 1916.

CLOKEY, I. W. Carex Notes in Rhodora 21, 83-5, 1919. Two new species are described.

COCKERELL, T. D. A. The Story of the Red Sunflower. Amer. Mus. Journ. 18, 38-47, 1918. There are 50 distinct variations of *Helianthus annuus*. New Form of Red Sunflower in Gard. Chron. 64, 186, 1918.

CRABTREE, J. H. British Ferns and How to Identify Them, pp. 64. J. A. Sharp, Epworth Press; 1/6. In this volume of 64 pages an attempt has been made to give a popular description of our British Ferns. It is illustrated by photographs many of which are

useful but others leave much to be desired, being evidently photographed from rock-work plants. *Botrychium*, *Hymenophyllum*, *Woodsia* and *Cystopteris montana* are all unrepresented. The nomenclature is absolutely archaic, and is at variance with all modern ideas. A new edition, which will we trust soon be called for, may remedy these defects. Its portability and photographs are points in its favour.

DALLIMORE, W. The Falkland Islands. There is an account of their Forestry and the introduction of the Tussock Grass (*Poa flabellata*) into Britain in Kew Bulletin 209, 1919.

DEANE, W. *Amsinckia* in New England in Rhodora 21, 38-40, 1919.

DENHAM, H. J. GOSSYPIUM IN PRE-LINNEAN LITERATURE. Oxford University Press; 2/-. This gives a very full description of the early history of the Cotton plant, first mentioned by Herodotus in an account of the invasion of India by Darius, circa 520 B.C. "And further there are trees which grow wild there, the fruit thereof is a wool exceeding in beauty and goodness that of sheep." Theophrastus was not likely to have overlooked it and that great botanist says "the island, Tylos-Bahrein, in the Persian Gulf, also produces the wool-bearing tree in abundance," of which he gives a good description. Mr Denham traces the history down to Fuchsius and reproduces a plate of the plant. Fuchsius says by that date its cultivation had spread to Malta and Sicily, doubtless introduced there by the Moors. The records of its cultivation in India go back for three thousand years. Gerard's quaint account of the plant is cited. There is an indigenous cotton in Australia which must have been there before that island continent separated from Eurasia. The paper is an exceedingly useful account of this valuable economic subject.

DRUERY, C. T. British Shield Ferns in Gard. Chron. 200, 1919.

DUMMER, R. A. Vegetation of the Crater and Summit of Mount Elgon, 14,200 feet alt., in Central Africa. 150 species were collected in the crater and at the summit, a tenth per cent. being endemic. Gard. Chron. 138, 1919.

EVANS, B. POLE. The Plant Geography of South Africa. Dept. Agric. of S. Africa. Official Year Book (1917), 1918.

FARRER, REGINALD. THE ENGLISH ROCK GARDEN. 2 vols., pp. LXXIV., 504; viii., 524, 1919. T. C. & E. C. Jack, London & Edinburgh; £3 3s net. In these two large volumes our member, Mr Farrer, has given to those who are rock-gardeners a handsome and useful work. The paper, printing, and the very beautiful photographic illustrations from living plants reflect great credit upon its publishers. Mr Farrer has special qualifications for the task he undertook—a real love of his subject, much practical experience with rock-gardens and rock-plants and their vagaries and of their mysterious likes and dislikes, and a personal acquaintance with the habitats of so many of the included species which he has acquired in his not uneventful journeys in high mountain solitudes over a wide range of seldom visited country. He also possesses that innate touch of genius and enthusiasm that give vitality to what might have otherwise been a prosaic research and has presented the result in a somewhat flamboyant style which certainly does not induce somnolence. In the lengthy and useful introduction of 74 pages he alludes to his distaste for crabbed compilation of ugly Latin epithets which is certainly somewhat unduly prominent in many botanical works. He tells us he has tried to boil down the diagnosis into a few unvarying points so that cultivators may, with a minimum of trouble, be able to ascertain quite clearly the species in question. One trusts that, unlike Mr Ruskin who in one of his lectures tried to describe a dove in a popular manner but left such an impression on his hearers that the last thing in the world to be suggested by it was the bird in question, the popular manner in this work will lead to more definite results. Mr Farrer has adopted the only sound principle in nomenclature—the use of the earliest trivial. Scattered through the volumes, in which the plants are arranged in alphabetical order under their Latin names, are words of wisdom as to choice, usefulness, or otherwise, best methods of culture of the various plants and of the particular soils needed to give the best results. It is here the rock-gardener will find his money's worth. The general reader will meet with much to interest him, and the vivid word-pictures which have made his previous narratives delightful reading form a chain

which links together the disconnected pieces of a botanical lexicon into something less disarticulate. The botanical authority is not appended to the scientific names which, however, have been on the whole wisely selected. Much valuable information is given as to the natural habitats and distribution of many of the species. Mr Farrer alludes to the hybrid Saxifrage which he discovered on Ingleborough and which was named × *S. Farreri* by me in *Rep. B.E.C.* 256, 1907. He rightly calls it "an unshowy little thing with creamy white stars on stems an inch or two above rosettes of very minute three-cleft leaves. . . It is an intersectional hybrid found in one example on the western face of Ingleborough and even as a two year seedling showed such intermediacy of characters that its hybrid origin could not be disputed. The parents, it seems, are *S. hypnoides* and the annual *tridactylites*, also abounding there. The hybrid, however, is perennial and certainly distinct." The synonymy has been worked out with much care, but the merging of *Orobus* into *Lathyrus* by Bentham and Hooker has led to some confusion, *i.e.*, *Orobus vernus* is not the same as *Lathyrus macrorrhizus* nor is *Orobus tuberosus* L. the same as *Lathyrus tuberosus* L. The Linnean *O. tuberosus* does not equal *Lathyrus macrorrhizus* of which the valid name is the earlier *L. montanus* Bernh. *Lathyrus tuberosus* L., the Chipping Ongar Pea, is not an *Orobus*. Nor is the Eastern European *Peltaria alliacea* L., despite its garlic smell, the same thing as our British *Sisymbrium Alliaria*. The Peony of the Steep Holmes is *P. corallina*, not *officinalis*. *Villarsia* should have a cross reference to *Limnanthemum*, but it is more correctly *Nymphoides*. One does not seem quite content with the statement that "*Viola Curtisii* is a false name for the biennial *V. sabulosa* of the Channel Dunes." The French plant appears to be *sabulosa* which has not with certainty been recorded for Britain, but the west coast of England does afford a slightly different Pansy which is correctly named *V. Curtisii*. The Primulas occupy 96 pages and their careful and valuable treatment would of itself have justified the production of these eminently useful volumes. The excellence of the photographic reproductions has been alluded to. They are really things of joy and give an idea of life and beauty rarely equalled. Compare for instance those of *Primula lichiangensis* or *Sempervivum ciliatum* with what pass for illustrations of *Mesem-*

bryanthemum or *Atriplex sabulosa* in the *Cambridge Flora*. If in the twentieth century we cannot compete with the draughtsmen of the sixteenth century we may not be wholly disheartened when we feel that in photography we have a handmaid which should be more fully enlisted in our service.

FARRER, REGINALD. Burma-Chinese Alps in Gard. Chron. ii., 29, 75, 101, 124, 161, 221, 262, 288, 301, 315, 1919.

FARROW, E. PICKWORTH. Ecology of the Vegetation of Breckland in Journal of Ecology 55-64, 1919.

FAWCETT, W., & RENDLE, A. B. Notes on Jamaica Plants in Journ. Bot. 65, 312, 1919. Four new species are described.

FERNALD, M. L. The Unity of the Genus *Arenaria*. Reprint from Rhodora, Jan. 1919. In this paper our Honorary Member thinks it wise to retain *Arenaria* so as to include *Alsine*, *Minuartia*, *Ammodenia*, *Honkenya*, *Moehringia* and *Merkia*. This was the view of Bentham and Hooker whose union of genera is now so widely assailed. Professor Fernald shows how slight and variable are the characters on which these divisions of *Arenaria* rest. The nomenclatorial changes involved in this union do not concern our British plants belonging to *Arenaria* but it may influence the name *Spergularia* which, as our member, Mr W. P. Hiern, has already shown on historic grounds, should bear the name *Alsine*, notwithstanding that at present *Spergularia* is conserved by the so-called International Rules, which have been ignored by those who prefer the provincial American Code. Another school of botanists, however, consider the type of *Alsine* to be the Chickweed, *Alsine media* L., and to this the other species of *Stellaria* should be added. The rule as to the name of two united genera being the one which has the larger number of species would be against it. It is a rule, however, which is not consistently carried out and has a distinct limitation.

FERNALD, M. L. The Contrast of the Floras of East and West Newfoundland in Amer. Journ. Bot. 237-47, 1918. *Rubus Ideaus* and some of its Variations in North America Rhodora 21, 89-98, 1919.

GODFERY, Col. M. J. *Epipactis media* (Fries!) Bab. in Journ. Bot. 80, 1919. Suggests the deletion of *E. media* from the British list. The Problem of the British Marsh Orchids, *l.c.* 137, 1919.

GRAVESON, WILLIAM. BRITISH WILD FLOWERS: THEIR HAUNTS AND ASSOCIATIONS. pp. 320. Swarthmore Press, Oxford House, W.C.; 6/6. This, the paper edition for the pocket, makes a portable and charming volume which has already been noticed in the *Report*. The considerable demand for this pleasing work is a proof of its being both useful and attractive.

GROVES, JAMES. Suggests the name *Nitellopsis obtusa* Groves as the correct name for the old *Chara obtusa—Lychnothamnus stelliger* Braun in Journ. Bot. 127, 1919.

HARVEY-GIBSON, R. J., C.B.E., D.L., M.A. OUTLINES OF THE HISTORY OF BOTANY. pp. viii., 274. A. & C. Black, London, 1919. We cordially recommend this volume to those general readers who are interested in the manner in which the very comprehensive science of Botany has developed. It may be remembered that Prof. Harvey-Gibson completed the *History of Botany* (see *Rep. B.E.C.*, 46, 1914) which the late Prof. Reynolds Green had prepared. In the present volume which is the substance of a course of lectures given to the third year's men at the University of Liverpool one is delighted to see that Sachs has met with a well-merited reproof for his unfair treatment of Theophrastus whose work, the author thinks, had never been read by him. The statement, however, seems rather strong which suggests that not a single pure botanist appears for more than eighteen centuries later. Strictly speaking it may be accurate, but even if the study of the use as well as the characters of plants were combined during those ages, bare justice is not given to the Roman, Salernian or Arabic schools, not to speak of the Anglo-Saxon workers. The united efforts, although not published for the greater part yet gradually brought together the necessary materials which enabled subsequent workers to establish the science. Gesner, too, scarcely meets with his due meed of praise. The development of the subject from the time of Cesalpini onwards is excellently done. Bentham's appreciation of Linné is too unstinted. He says, "It was reserved for the master mind of the Swede to fix, by the establishment of

genera and species upon sound philosophical principles, a firm stage to serve as basis and starting point for further progress and exploration." Tournefort had already fixed the stage by grouping plants in genera even in a more thoroughly scientific manner. Attention was drawn to this by Sir John Hill. Linnaeus often not only altered the names but changed, for the worse, the characters or limitations of many genera, *e.g.*, *Statice* and *Limonium*, *Valeriana* and *Valerianella*, and *Helleborine*. Sachs held a very different and an equally unjust view. He says Linné " showed an utter incapacity of careful observation of any object difficult to observe." Harvey-Gibson harshly speaks of him as " not an investigator at all, for there is no evidence in his works that he made a single discovery of the slightest importance." The fact is, this is the comment of a Laboratory upon a taxonomic student, with a somewhat unpleasing assumption of superiority. Certainly Linné was no evolutionist. His dictum was, "There are just as many species [now] as in the beginning the Being created." A clear view is given of the system of Linné and not unfairly it is characterised as retrograde—as indeed Sir John Hill showed it to be in 1756, but the increased number of students it brought in, acted partly, if not wholly, as compensation. The author says Linné " closes a chapter, he does not open one: he writes the epilogue, not the prologue." Physiology and other branches whose progress was accelerated by the labours of Priestly, Ingenhouss, Senebier, Du Hamel, De Saussure, Knight and others afford some excellent reading. Due acknowledgment is made to Robert Brown. Sachs' savage criticism of Lindley's *Vegetable Kingdom* as " one of the most unfortunate classifications ever attempted " is quoted. One may add that the unconditional surrender of so many of our botanists to Engler's system receives a deserved rebuke when the author says, " I have no hesitation in prophesying that in years to come botanists will regard Engler's system as having done as much to retard the true phylogenetic classification of Angiosperms as Linnaeus's sexual system retarded a natural classification." The phylogenetic tree, however, is as yet but an artificial stage-structure, and it is highly probable that its ramifications are quite different from any already tentatively proposed or dogmatically asserted to exist. Science is alas frequently too dogmatic in some of its statements, and too often its deductions are doubtful. At

the beginning of the twentieth century it was heresy to doubt that half the Carboniferous flora was formed by Ferns. Within so short a space as five years Zeiller asserts that the Ferns of the Palaeozoic period though "probably not entirely absent occupied an altogether subordinate rank." It is now asserted that the Dictoyledons and Monocotyledons both appear for the first time in the Lower Cretaceous rocks. It may be recalled that Small dates the evolution of the Compositae from the Lobeloideae in the late Cretaceous—a not very long period in geologic time for such an enormous change from the simplest to the most highly specialised forms. We may have a future pronouncement denying that the Compositae are the climax of vegetable evolution. As putting the matter in a compact and readable form this *History of Botany* is a very valuable contribution.

Hayward, Ida M., F.L.S., and Druce, Dr G. Claridge, F.L.S. The Adventive Flora of Tweedside, pp. xxxii., 296, 1919. T. Buncle & Co., Arbroath; 10/6 net. Opportunities came to Miss Hayward to obtain living specimens of aliens within a narrow district of Scotland, and she worked skilfully and with much perseverance from 1908 to 1917 to put them on record. To this collection her co-author added careful research into the bibliographic history with probable place of origin, the synonyms, and distribution throughout the world, so that in this book the botanist has an account of the earliest arrival of some 348 aliens, with clear and most helpful descriptions of the characters of each family and genus, and a full one of each species, with good illustrations of 78 of them. The whole forms a standard of reference for those aliens, and from it one realises that man and commerce have much influence on the vegetation of areas, and that more information than a list of names is desirable for a Flora. G. Claridge Druce, LL.D., to call him by the new honour lately conferred on him by St Andrews University for good works done, on which members congratulate him, has given special supervision to secure completeness, and has furnished the Introduction, in which the floral history of Tweedside is clearly explained and the point brought out that within its limits wool aliens have appeared that number two-thirds of the unexampled richness met with at Montpellier. This harvest of plants was gathered on the delta-like

bed of shingle in the Tweed and Gala below Galashields, including the river banks and heaps of waste near, and the aliens owe their arrival there to wool, which from many countries is washed and prepared at the Mills. Mention is made of numerous species of *Lepidium*, *Chenopodia* and *Graminiae*, with other plants new to Britain or Europe, and Dr Murr has named a hybrid *Chenopodium Haywardiae* after its finder. *Calotis cuneifolia* R.Br. produces fruit known in Australia as "burrs," although on this side we limit the name to the *Medicago*; *Hordeum murinum* L. pierces by its awns the skin of sheep; *Soliva anthemifolia* Juss., 4 inches high, bears its achenes just above the roots; and *Bassia quinquicuspis* F. v. Muell. distributes its seed whilst being rolled by wind over the desert. The plant *Sisymbrium Turczaninowii* Sonder would in the opinion of Dr Druce be better placed under *S. Burchellii* DC. Some of the fruits or seeds after much drastic treatment had a fugitive life, and since the new forms of waste disposal have practically stopped the supply, only a few of the aliens are likely to remain in our Flora, such as *Senecio lautus*, *Rumex Brownii*, *Erodium cygnorum*, and a Rosaceous *Acaena* of New Zealand. At the end of the book a list is added of 289 other adventitious plants found or known on Tweedside, whose introduction is not due to wool.

I. M. R.

[It may be added that the Edition was exhausted within a month of its publication.—Ed.]

Heal, J. Hybridisation. Treats chiefly of Begonias, Cinerarias and Primulas. The failures to secure a cross are suggestive. See also pp. 46, 55, where Belladonna, Chamomile, *Colchicum*, Foxglove, Henbane, *Rosa centifolia* and Valerian are the plants recommended for culture with some hope of profit. Gard. Chron. 25, 1919.

Hiern, W. P. Tenth Report of the Botany Committee of . . . Devonshire. Reprint from Trans. Dev. Ass. of Sc. Lit. & Art 219-227, 1918. Includes *Saxifraga tridactylites*, forma *minuta* Pollini, Tormohan, Miss Larter. Is this identical with Pollini's Corsican plant? *Euphrasia foulaensis* Towns. Highweek, Miss Larter.

Hitchcock, A. S. Report of the Committee on Generic Types of the Bot. Soc. of America in Science ii., 49, 333, 1919.

HOLLAND, J. H. Food and Fodder Plants in Kew Bulletin 1-84, 1919. Contains a large amount of valuable information. The arrangement is peculiar beginning with Leguminosae. Grasses come next, then Cruciferae. *Brassica alba* and *juncea* are both wrongly attributed to Hooker. The use of a capital in specific names is arbitrary. *Vicia Faba* has it but not *Anthyllis Vulneraria*. *Rubus idaeus* does not require one.

JORGENSEN, E. Norwegian Forms of *Euphrasia officinalis*. 5 species, numerous sub-species, forms and sub-forms are described in Bergens Museums Aarbok 1916-17, pp. 337, 1919.

LACAITA, C. C. Revision of some Critical Species of *Echium* in Journ. Linn. Soc. 363, 1919. Five species are described—*E. judaeum* nov. sp., *E. australe*, *E. Coincyanum* nov. sp., *E. pycnanthum* and *E. salmanticum*. An account of the genus *Echium* represented in the herbaria of Tournefort, Jussieu and Lamarck is also given as well as those included in Sibthorp and Linnaeus. The *E. creticum* of Linnaeus is shown to be an inextricable compound. Miller's species are also dealt with. Six out of the seven species in the *Gardener's Dictionary* " give rise to troublesome questions." Miller's *E. anglicum*, which has dropped out of our Floras, is, he says, merely the small-flowered pistillate form called var. *parviflorum* by St Amans (*Fl. Agen.* 81, 1821). That author states both forms of corolla had been seen on the same plant by the banks of the Garonne. Miller also transposed the names, his herbarium specimen of *anglicum* being ordinary *vulgare*. Mr Lacaita suggests the revival of Miller's *E. angustifolium* (not of Lam.) to replace *E. hispidum* Sibth. & Sm. It is a valuable note on the plants in question. Mr H. B. Guppy (p. 439) discusses in a masterly way " Plant Distribution from the Standpoint of an Idealist."

LEES, F. ARNOLD. A Poem on Cheiraths (not a Slavonic Race, but the Wallflower) and a paper On the Nightmare of Names in the Bed of Roses in the Naturalist. The latter contains an astonishing statement namely, " On August 16, 1893, between Nidd Hall and Brearton in the hedge was noticed a huge . . . bush of *Rosa canina* (different from any form noticed before in Yorkshire). This was afterwards named unhesitatingly by J. Gilbert Baker as *R. agrestis*

Savi. Sixteen years later with A. Bradley the place was again visited, but the rose had been plashed and the branches had been half-severed and horizontally wattled to form a low fence. This treatment had not killed the rose, indeed it had vegetatively increased, but the facies had altered and, though glandulous, the plant would no longer pass as *agrestis* Savi at all. It now answered much better to Baker's *frondosa* or *arvatica* in leaf-serration and glandulosity. . . . Any one who had not been able to take oath as to the identity of the stock must have referred the product of 1909 to a quite different section of the genus . . . the stock is still, as it must be, *agrestis*, but it has evolved or developed into . . . Puget's *arvatica*." One would much like to have Lt.-Col. Wolley-Dod's opinion on both these gatherings.

LINDMAN, C. A. M. SVENSK FANEROGAMAFLORA. pp. viii., 639, 1918. In a compact, well printed volume Professor Lindman, our Honorary Member, has made a most admirable digest of the Swedish Flora aided by text figures from his own pen which illustrate the essential characters of the plants under consideration. Terse descriptions of the plants (alas for me in the Swedish language) and a clavis of the species are added. The first 36 pages are occupied in giving a key to the Linnean system of classification, but the arrangement of the Flora is based on Engler's system. The Vienna Rules are strictly followed. To those who hoped that the millennium (botanical) would come by such means there will probably be a sense of disappointment when attempts are made to identify the British plants here named *Cuviera europaea*, *Zerna sterilis*, *Typhoides arundinacea*, *Aronicum paludosum*, *Naumburgia thyrsiflora*, *Scirpus alpinus* and *Trimorpha borealis*. It is pleasing to see the genera *Radicula*, *Helleborine* and *Centaurium* retained. *Polygonatum odoratum* is used instead of *P. officinale*. Dr Lindman has been rather sparing of varieties and his standard of species in many of the Families is fairly high and not unlike our British plan. The grade of sub-species is very sparingly employed. Adventive plants are included and for some a smaller type is used, but very many, with no claims to indigenity, are printed in the same type as the natives, *e.g.*, *Ranunculus Cymbalaria*, *Reseda odorata*, *Rudbeckia*, *Malva crispa*, *Amsinksia*, *Solanum tuberosum*, &c. The greatest diverg-

ence from the British Floras is in generic standards for, following Engler, many Benthamian genera are sub-divided, and it seems, in some cases, needlessly so. *Brassica* is separated into 3 genera, *Dentaria* is apart from *Cardamine*, *Armoracia* from *Cochlearia*, *Turritis* from *Arabis*, *Lychnis* from *Melandryum*, *Vaccaria* from *Saponaria*, *Alsine*, *Moehringia* and *Honkenya* from *Arenaria*, *Filipendula* from *Spiraea*, *Torilis* and *Turgenia* from *Caucalis*, *Pastinaca* and *Imperatoria* from *Peucedanum*. *Erigeron* has no British representative, our plants coming under *Trimorpha*. *Bromus* is employed in the sense of *Serrafalcus* and the other species come under *Zerna*. One would have liked much to give a close comparison between the floras of the two countries but space forbids. A superficial glance may, however, not be unwelcome. Dr Lindman is not only an accomplished linguist and artist but a real observer in the field, therefore his views are entitled to great respect. He diverges from our British view in keeping *Cardamine dentata* a distinct species from *pratensis*. *Thalictrum dunense* is not referred to. Is it absent? Nor is *Ranunculus heterophyllus* mentioned. *R. trichophyllus*, *Drouetii* and *floribundus* are all put under *paucistamineus* Tausch. In Britain, hitherto, *floribundus* has been universally put under *peltatus*. No reference is made to *Caltha radicans*. *Helleborus foetidus*, *Capnoides claviculata*, *Cochlearia groenlandica* and *C. alpina* do not appear to reach Sweden which also lacks *Chrysosplenium oppositifolium*, *Apium nodiflorum* and *Erodium maritimum*. No slavish adherence to the *Species Plantarum* is maintained. *Cerastium vulgatum* being replaced by *C. caespitosum*, *C. viscosum* by *C. glomeratum*. *Ulmus campestris*, *Montia fontana*, *Potentilla verna*, *Sparganium natans*, *Potamogeton compressum*, *P. marinus*, *Zannichellia palustris*, *Ruppia maritima* and *Scirpus caespitosus* are, among other names, abandoned. As to the contrasting treatment of critical genera it may be mentioned that only one *Erophila* and two species of Pansies are given. *Viola collina* has specific rank and *V. montana* and *V. canina* are fortunately used in the same sense as in *British Violets*. *Polygala amarella* and *uliginosa* are merged under *amarellum*. The Caryophyllaceae include *Scleranthus*, *Corrigiola* and *Herniaria*. *Stellaria pallida* Piré is distinct from *media* and the latter has *S. neglecta* as a sub-species. *Cerastium subtetrandrum* is a distinct species. Under *Sagina Linnaei* (not *sagi-*

noides) is *S. media* Brügg. Is this the same as *scotica*? *S. nivalis* Fr. has another name—*S. caespitosa* Lange, based on the earlier trivial of J. Vahl, a change which must apparently be followed. *Arenaria leptoclados* is a sub-species, but *Spergula sativa* is only a var. of *S. arvensis*. No varieties of *Geranium Robertianum* appear. *Rubus* includes 36 species only, one of which is the big species *arcticus*. The glandular species are singularly absent. This may account for the paucity of species in Sweden. Many of the segregates belong to the Corylifolian group of which *cyclophyllus* is kept as a distinct species. *Alchemilla* has 15 species, *minor*, *pratensis*, *alpestris* and *acutidens* having that rank. It is, however, in the Roses which have been described by S. Almquist (abbreviated At.) that the greatest divergence is exhibited. There are 31 species-groups and no fewer than 205 species are enumerated. Of these it may be presumed that *R. Barclayi*, *scotica*, *scoticella* and *hibernicina* are British. *Crataegus* has been long the subject of study by Prof. Lindman. Here he describes six species of which *C. Oxyacantha* (used in the sense of *oxyacanthoides*) and *Palmstruchii* have two or more styles and *monogyna*, *curvisepala*, *calycina* and *lagenaria* are one-styled. Prof. Lindman, however, tells me that he must describe at least four more species. *Sedum Telephium* and *purpureum* are kept distinct. Have we true *Telephium* in Britain? *Callitriche polymorpha* is distinct. Glück thought it to be a hybrid. *Circaea intermedia* is a separate species. In *Galium*, *G. erectum*, *Mollugo*, *tyroliense* and *elatum* are separate species, as is *Bidens radiata*. *Cirsium* is correctly used instead of *Cnicus*, and another change of name of a British species seems involved, *Cirsium bulbosum* DC. replacing the Avebury *C. tuberosum* All. *Mulgedium* is kept apart from *Lactuca*. *Hieracium* is described by Dahlstedt, who is content with 56 species. Any one attacking our British plants must surely reduce the overloaded list of 150 British species. *Taraxacum* by the same author is more liberally dealt with, as many as 99 species being described under six groups all of which, save the Ceratophora, are represented in Britain. There is only one *Erica* in Sweden, *E. Tetralix*. *Oxycoccus microcarpus* is put as distinct. Unfortunately the names *Statice* and *Armeria* are retained in the old sense. A new name is employed for *Centaurium vulgare*, *i.e.*, *C. Erythraea* Rafn. By an error R. & Br. are given as the authors of *C. capitatum*.

Gentiana baltica and *G. uliginosa* are kept distinct from *campestris* and *Amarella*. *Convolvulus* and *Volvulus* (*Calystegia*) are merged. *Myosotis repens* is not mentioned. The genus *Linaria* is divided into *Cymbalaria*, *Kickxia* and *Chaenorrhinum*. *Veronica serpyllifolia* and *V. borealis* are kept distinct species, as also are *Veronica Anagallis* and *V. aquatica*. *Bartsia* has only one species, *alpina*. *B. Odontites* is split into three species—*Odontites verna*, *serotina*, and *litoralis*. Nine species of *Euphrasia* are given and the shadowiest of shady hybrids which abound in our British literature are unmentioned. *Rhinanthus* is represented by *R. minor* with var. *borealis* and sub-species *stenophyllus*, *major* and *groenlandicus*. Twelve Menthae, five of them not British, are described and only *Thymus Serpyllum* and *Chamaedrys*. *Atriplex hastifolium* Salisb., *deltoideum* and *patulum* are separate species. *A. hastatum* L. is used in the sense of *calotheca*. *A. arenarium* Woods is retained and *Obione* separated as a distinct genus. *Salicornia* is much simplified by the admission of only one species, *herbacea* and a var. *stricta*. In Polygonaceae one is glad to find such innovations as *Rumex glomeratus* and *Rheum digynum* rejected. *Rumex domesticus* is kept apart from *aquaticus* and *maximus* is treated as a hybrid. If that be correct either the true *aquaticus* must occur in Britain or our plants have been wrongly identified as *maximus*. Again in the Elms, Lindman rejects the names used in the *Cambridge Flora* and employs *U. scabra* Mill. for the Wych Elm and *U. foliacea* Gilib. for *U. glabra* Mill. *Parietaria ramiflora* is wisely kept distinct from *P. officinalis* which is not British. Seven Betulae are described and twenty-four Salices—*S. hastata*, *S. polaris*, *S. glauca and S. depressa* are lacking with us. Nine Poplars are given. Here again there are wide differences in the names from those of the *Cambridge Flora*. *Helleborine media* (Fries) remains unnoticed. *Orchis* has eleven species. The figure of the flower of *latifolia* is not like that of *praetermissa*. *O. cruentus* is made a sub-species of *incarnatus*. *Traunsteineri* is distinct but *maculatus* has no varieties given. Fifteen species of *Luzula* are given, *L. pallescens*, *sudetica*, *multiflora* and *congesta* being kept distinct. We have no certain evidence of *sudetica* occurring in Britain. The Junci number twenty-seven species, *J. Kochii* with a syn. *nigritellus* D. Don being kept distinct. There are eight species of Cotton Grass, *Polystachyum* designating *angustifolium*.

Eleocharis and *Scirpus* are merged, the combined genus having twenty species including as it does *Eriophorum alpinum*. *S. austriacus* and *germanicus* represent *caespitosus*. *S. uniglumis* is also distinct. There are ninety-two Carices against our seventy-three. One is glad to find that *C. Pairaei* is retained and not in the sense a few botanists wished to make it replace *C. muricata* L. Lindman gives up *C. muricata* L. for the unambiguous one of *C. contigua* Hoppe, but it scarcely seems advisable. *C. muricata* L., em. Hudson is free from uncertainty. Remembering the howl of derision which first greeted my use of the var. *nemorosa* of *vulpina* one is comforted in seeing it now stand as a distinct species. The lower grade, however, seems more in consonance with fact. *C. rostrata* is still employed instead of the earlier *C. inflata* Huds. *C. aquatilis* has no varieties cited. *C. Leersii* Willd. poses for *C. echinata* Murr. (*C. stellulata* Good.), but surely without justification. *C. helvola* is put as a hybrid under *canescens*. *Agrostis stolonifera* replaces *A. alba*. *Calamagrostis* and *Deyeuxia* are merged. There are no varieties mentioned under *Phragmites vulgaris*. The two Melicae are named as in the *List*. The treatment of *Poa* differs from our British plan. *P. pratensis*, *P. angustifolia* and *P. irrigata* are made distinct species. *P. glauca* has a sub-sp. *Balfouri*. The *distans* section of *Glyceria* is called *Puccianellia*. *Atropis suecica* is made a var. of *P. retroflexa*. An untenable name is employed in *P. rupestris* which should be *P. procumbens*. *Festuca elatior* is given up and the species stand as *F. arundinacea* and *pratensis*. *Vulpia* and *Scleropoa* are separated from *Festuca*, as is *Zerna* Panzer from *Bromus*. *Z. Benekeni* is distinct from *ramosus* as is *Bromus racemosus* from *commutatus*. *Brachypodium* includes *Triticum caninum*. *Agropyron* has only three species including *violaceum*. *Elymus europaeus* is *Cuviera europaea* Koel. Enough has been quoted to show how interesting a Flora has been prepared by Prof. Lindman, and we heartily congratulate him upon completing so useful a work in the terrible time of war.

Linnean Society Proceedings. Sir David Prain's Presidential Address was mainly occupied in treating of the financial side of the Society and was full of valuable suggestions which cannot fail to be of advantage to the Society. The Linnean Gold Medal was presented to Prof. I. Bayley Balfour for his valuable labours in the

science. Jan. 15. The Secretary lectured on " Methods of Botanical Illustrations during Four Centuries." Feb. 20. Mr C. E. Salmon exhibited some beautiful plant drawings by Mr T. A. Stephenson of Orchids which included *Helleborine* (*Epipactis*) *viridiflora*, var. *dunensis* (Whld. & Trav.); var. *vectensis* (Steph.); *Orchis incarnata*, var. *pulchella*; *O. O'Kellyi*; × *O. Evansii*; *O. Fuchsii* Druce; *O. maculata*, var. *insignis* Steph., &c., and Mr E. G. Baker showed some of Miss Corfe's drawings now being made for the Brit. Mus. Bot. Dept. It may be remembered that several of the Orchid drawings in *Rep. B.E.C. Suppl.* 1917 were from the pencil of this talented lady. May 1, 1919. Mr James Small demonstrated the various forms assumed by the pappus in Compositae. June 19. Mr T. A. Dymes gave " Notes on the Life-history of *Iris Pseudacorus*." Nov. 6. Mr L. V. Lester-Garland gave a " Revision of the Genus *Baphia*." The obituary notices include Edward Alexander Newell Arber, M.A., D.Sc., 1870-1918; Sir Frank Crisp, 1843-1919; Anne Casimir Pyramus de Candolle, 1836-1918; Sir Edward Fry, 1827-1919; F. Ducane Godman, 1834-1918, the joint author of the *Biologia* in 63 quarto volumes; John Henry Lace, C.I.E., 1857-1918, a great worker at the Flora of Punjaub and Burma; Dr Alberto Lofgren, born at Stockholm, 1854, died at Rio in 1918, an enthusiastic student of the Brazilian flora.

MARSHALL, Rev. E. S. Notes on Somerset Plants in Journ. Bot. 147, 175, 257, 1919. *Limonium vulgare*, *Carex disticha* and *Verbascum thapsiforme* are given as new records and the latter is claimed to be indigenous. The plant, which is already included as No. 1861 in the *List* as a European adventive in Britain, is best left in that grade on present knowledge.

MONCKTON, H. W. The Flora of the Thames Valley Drift between Maidenhead and London, 1919. A portion of Buckinghamshire is included in this area. A more or less complete list of the more important species is given in the Botany of that county in the *Victoria County History*, which has escaped the author's notice. It would have added several species to the list. Has the true *Fumaria muralis* been found in Middlesex? The early records were often incorrect and Pugsley does not give that county for it. *Alchemilla vulgaris* occurs in the alluvial meadows of the Colne in Middlesex and Bucks,

Oenanthe crocata in Bucks and Berks, *Viburnum Lantana* in Bucks and Berks, *Senecio erucifolius*, *Campanula glomerata*, *Hottonia*, *Polygonum dumetorum* all occur in the Bucks area. *Orchis incarnata*, *O. praetermissa*, *Carex vesicaria*, *Avena pubescens*, *Poa nemoralis*, *Koeleria britannica* are among the omissions. Mr Monckton is quite wise in ignoring Mr Hunnybun's record (*Journ. Bot.*, 58, 1918) of *Cuscuta europaea* for Middlesex as the locality is in Bucks which was long known to produce it. He has made an interesting feature in the introduction of plants occurring in neolithic remains which were recorded chiefly from the Lea Valley by Dr Clement Reid. Mr Monckton's list contains 632 species, 31 varieties and 6 hybrids. It makes a compact and useful publication.

Morris, Sir Daniel, K.C.M.G. A Chapter in the Geographical Distribution of Plants—The Dispersal of Fruits and Seeds by Ocean Currents and Tides. Presidential Address to the South-Eastern Union of Scientific Societies, 1918. In this address Sir Daniel Morris alludes to the tropical seeds which have drifted across the Atlantic to our shores, some being mentioned by Sir Hans Sloane in his *Natural History of Jamaica* published 1707-1725. In the Hebrides these seeds were known as Molucca Beans and on the British coast as Sea-Beans and Sea-Nuts. The most widely distributed are the seeds of *Entada scandens*, known in Jamaica as Cocoon. The flat, brown, polished seeds, about $2\frac{1}{2}$ inches in diameter, have great floating powers and are able to retain their germinating capacity for a long period. The Grey Nicker, *Caesalpinia Bonducella*, can also remain in water for years unharmed. A seed of the Horse-eye, *Mucuna urens* was picked up in Cornwall and Darwin obtained a number of them from the Azores, the plant itself being a native of the West Indies where I have seen it in Grenada. Another *Mucuna* seed, perhaps *altissima*, was found as a drift seed at Salcombe. In the Orkneys seeds of *Ipomaea tuberosa* have been found. For three centuries they were unidentified although figured by Petiver. Palms have also drifted to Scotland and *Sacoglottis amazonica*, a native of S. America and the South of Trinidad, drifted to Bigbury Bay in Devon. It appears that Clusius in 1605 knew this seed but it remained unidentified till 1895. Sir Daniel mentioned the wide dispersal by ocean currents of the coconut which is probably indigenous to S. America. He concluded a brilliant address by alluding to the

new flora which has occupied Krakatoa since the great eruption in 1883. Sir Daniel Morris occupied the chair of Section K. at the British Association Meeting at Bournemouth in 1919 and gave an able address in which he touched in the losses Botany had sustained in the deaths of Oliver, Massee, Clement Reid, Ethel Sargent, Pearson, Vilmorin, Ducane Godman, Sir Edward Fry and others. Allusion was made to the important Floras in course of publication, to the spread of *Spartina Townsendii*, and to the recent discovery of *Potamogeton upsaliensis*. The greater part of the address was, however, devoted to a subject on which he is the acknowledged authority —the economic development of plant culture in our colonies, in which the importance of selecting the proper strain or sport might result in an immense increase of yield. An instance of the success attending the growth of some of Biffen's new wheats was given. The same is true of Cotton, in which, by certain crossings, a plant immune to disease may be obtained. The importance of this is brought home to us in the actual destruction of the Coffee industry in Ceylon by the disease *Hemiteia vastatrix*. In the light of our present knowledge of seed-selection and perhaps by the use of phosphates instead of nitrogenous manures this might have been avoided. Plant-breeding is now in the forefront in relation to the improvement of crops and it is one which should receive the attention of the professional botanist.

Morris, George. Reconnaissance of the Plant Associations in the Neighbourhood of Newbury, Berkshire, in Journal of Ecology 65-70, 1919.

The National Trust. Report 1918-19. 25 Victoria Street, Westminster, S.W.1. Subscriptions of £100 qualify as Honorary and £20 as Life Members. In 1919 Bulfir Grove, Norfolk, of about 8 acres of woodland between Bale and Gunthorpe was presented by Sir Lawrence and Lady Jones. The Pike of Scafell has also been presented by Lord Leconfield.

Newman, L. F., and Walworth, G. Note on the Ecology of Part of the South Lincolnshire Coast—from Gibraltar Point to 17 miles south to the mouth of the River Witham in Journal of Ecology 204-210, 1919.

PENNELL, FRANCIS W. *Symphoricarpos Symphoricarpos* in Addisonia 3, 61, 62, t. iii., 1918. Notes on Plants of the Southern United States in Bull. Torr. Club 183, 1919. Some Remarks on *Limosella* in Torreya 19, 30, 1919.

PUGSLEY, H. W. Revision of the Genera *Fumaria* and *Rupicapnos*, in the Linnean Society Journal xliv., n. 298. A most valuable and critical study of these difficult genera. Mr Pugsley suggests that *F. vulgaris cornubiensis alba* of Parkinson's *Theatrum Bot.* 287, 1640, noted as growing in cornfields in that county, may be *F. occidentalis*. Is not *pallidiflora* the more likely plant? He notes that *F. confusa* of *E. B. Suppl.* t. 2976, is *F. Bastardi*, var. *hibernica* Pugsley. This was drawn from a Scilly specimen collected by Townsend. A hybrid between *Bastardi* and *Boraei*, he says, has been gathered in Guernsey and one between *Boraei* and *officinalis* in that island as well as in Britain. The latter is the × *F. Painteri* named after our member, the late Rev. W. H. Painter. Under *F. parviflora* it is stated that the *Eng. Bot.* plate, t. 590, is the var. *acuminata* Clavaud. No members of the *Rupicapnos* are found in these islands. Six new species of the two genera are well figured from Mr Pugsley's careful drawings. One wishes he would do an equal service to science in attacking the genus *Thalictrum*.

PUNNETT, R. C., F.R.S. MENDELISM. Ed. 5. Macmillan & Co., London; 7/6 net.

RAMSAY, F. M. EVERYBODY'S FLOWER BOOK. Illustrated by M. Snape. 8vo. pp. xi., 126, 1918. Simpkin, Marshall, Kent & Co.; 5/-. Treats chiefly of plants for decorative purposes.

REHDER, ALFRED. Publications of the Arnold Arboretum, No. 3. The Bradley Bibliography. A Guide to the Literature of the Woody Plants of the World Published before the Beginning of the Twentieth Century. Compiled at the Arnold Arboretum of Harvard University under the direction of Charles Sprague Sargent. Vol. V. Index of Authors, Titles and Subsect. Index. pp. 1008, 1918.

REUTER, G. F. Notulae in species novas vel criticas plantarum Horti Botanici Genevensis . . . 1852-68 factae in Ann. du Conserv. et du Jard. Bot. Genev. 239—254, 1914-15. Includes *Helleborus occi-*

dentalis (differt a *H. viridi* habitat in Galliae occid., in Pyr. cent., in monte Hisp. bor. et in Britannia). This corroborates my statement in the *Flora of Berkshire*.

ROBERTS, W. Some Little Known Botanists in Gard. Chron. 147, 1919. Includes Dr Thomas Clarke, King's Botanist in Jamaica, c. 1774. The others mentioned, which are not included in Britten and Boulger's excellent *Biographical Index* were judiciously omitted as they do not seem to have made any substantial contributions to botanical literature.

ROLFE, R. A. On the Marsh Orchids in Orchid Review 162, 1918. Mr Rolfe says :—"Conducted by Mr T. A. Dymes, F.L.S.," he visited " a marsh near West Drayton, Middlesex, where *O. latifolia* was quite common, many plants being frequently seen in a few square yards of ground. This is the plant known as the Broad-leaved Marsh Orchid, the leaves being unspotted, and the flowers dark purple. *O. incarnata* has flesh-coloured pink flowers and narrower unspotted leaves and was far less common . . . it flowers at least ten days earlier than *latifolia* [*sic*]. Of the hybrid several were found . . . this being *O. Aschersoniana* Hausskn. [?]. The hybrid has unspotted leaves, thus differing from Schulze's figure as it does in the lighter coloured flowers." Mr Rolfe rightly connects it with the Hambledon hybrid which I have recorded as *incarnata* × *praetermissa*. It is quite evident that Mr Rolfe's Drayton ' *latifolia* ' is my *praetermissa* and is not the *latifolia* of Linnaeus. Through Mr E. G. Baker's kindness I have been enabled to see what Linnaeus wrote in *Act. Holm.* 15, 1744, which is referred to under *latifolia* in the *Species Plantarum*. It is quite evident that ' *latifolia* ' is a collective species. Nine different authorities are cited in *Act. Holm.*, and no leaf-characters are mentioned. We shall have to refer to the *Flora Suecica* for a more restricted *latifolia* and there it is quite evident we have a plant which is not *praetermissa*. Mr Rolfe takes a different view and says *latifolia* L. is based on several earlier records, including plants of Bauhin and Vaillant. " These again include Morison's *O. palustris latifolia* and Gerard's *Palma Christa mas*, both of which represent the Marsh Orchis with broad unspotted leaves so that there is not the slightest doubt about the plant intended and Gerard's figure dates from 1597 and is believed to be the

earliest British record." An extraordinary fallacy underlies these statements. The *latifolia* of Linnaeus (if a species at all) in a restricted sense must be based upon its description not on its synonyms. When the synonymy contradicts the description the former must be ignored. Linnaeus (*Fl. Suec.* 311-2) puts *latifolia* between *maculata* and *incarnata* and uses the words " *folia parum maculata*" to distinguish it, and says of *incarnata* that it differs from it by " *foliis pallide viridibus immaculatis, nec saturate viridibus maculatis.*" So there is no doubt that *latifolia* L. has leaves which are spotted and is therefore not *praetermissa*. In his herbarium it is represented by a spotted-leaved plant which is not *praetermissa*, but is very like Swiss *latifolia* sent me by Dr Keller. Mr Rolfe states that Gerard's *Palma Christa mas* is the first evidence of *O. latifolia* [*sic*] as British and that it has unspotted leaves. Is the figure cited that of a British plant? The wood block from which it was made was used before, and then not for the first time by Dodoens (*Stirp. Hist.* 240, 1583) for his *Satyrium Basilicum mas*. Gerard not only borrowed the figure but the description, omitting however " nullis aut omnino vix apparentibus maculis respersa." Gerard gives as a locality ' Swainescombe Wood, near Gravesend, Kent and Hampstead Wood, four miles from London ' a record which is referred by Trimen and Dyer (*Fl. Middl.* 270) not to *latifolia* but to *incarnata*. I have never seen *praetermissa* in woodland. The Flemish wood block was probably selected by Gerard as the nearest he could obtain to represent a Marsh Orchid and doubtless Trimen and Dyer have taken the more correct view in identifying it with *incarnata* not *latifolia*. There are several woodcuts in Gerard which also belong to the Palmate Orchids, one or more of which fit ' *O. latifolia* ' better than the one cited, *e.g.*; *Serapias palustris latifolia*. That distinguished botanist, Robert Brown, also fell into an error owing to a woodcut in Gerard. He wished to define the genus containing the *Satyrium repens* of Linnaeus under a new generic name, ignoring the fact that Haller had already established it as *Epipactis*. Seeing in Gerard a figure of the pine-wood Orchid he called it *Goodyera* because he saw in the text connected with it a statement that it had been found near Petersfield, the home of Goodyer, in Hampshire. But he could never have read the description. It undoubtedly refers to *Helleborine palustris* which does grow in ' moist meadows ' where-

as *Goodyera* does not. At that time *Goodyera* was unknown as British. Goodyer's name is therefore connected with a plant he had never seen. Morison's figure, referred to by Mr Rolfe, is of a strongly bracteate plant and no mention is made of the leaves save that they are ' liliacea, latiora.' A large number of synonyms are added, some of which cover spotted-leaved plants. Here, as elsewhere, synonyms rank secondary to descriptions. Linnaeus' diagnosis does not apply to *praetermissa*. It is quite open to doubt if Linnaeus ever saw a specimen of the Marsh Orchid from Bauhin or Bobart. Moreover we have Bobart's type of *Orchis palmata palustris latifolia* at Oxford which Mr Rolfe says is *praetermissa*, but the specimen is very near aggregate *maculata* (perhaps crossed with *praetermissa*), so that contention falls to the ground. Mr Rolfe says, " modern figures include *O. latifolia* Sm. Eng. Bot. t. 2308, now *O. incarnata* Syme Eng. Bot. 1385 (not of L.). Under this we include the West Drayton plant and now *O. praetermissa* Druce." This statement seems confused and excites doubt as to whether the point at issue is understood. The plate of Syme *Eng. Bot.* t. 1385 represents *Typha latifolia*—probably a wrong reference to t. 1457. Assuming that t. 1457 is meant, this surely represents a form of *incarnata* L. as named by Syme, certainly not *praetermissa* type. T. 1457 is taken from the plate 2308 of Smith which he wrongly labelled *latifolia*. Syme realised that an unspotted-leaved Orchid is not *latifolia* and, following Babington, corrects the error, inserting a plate labelled *latifolia* which Babington contributed to *E. B. Suppl.* t. 2973, both botanists therefore recognising that the Linnean *latifolia* was a plant with spotted leaves, which Mr Rolfe seems to controvert. Again this *Eng. Bot. Suppl.* plate t. 2973, labelled *latifolia*, seems to me a hybrid of *praetermissa* with *maculata* agg. At any rate it is not *praetermissa*. Mr Rolfe seems to think that the spotted-leaved *O. Braunii* grows where ' *latifolia* ' and *maculata* occur together and he cites Curtis in this connection. Curtis's figure of *latifolia* is, however, *incarnata* and a good one, though it is just conceivable there is a trace of *praetermissa*, evidenced in the slightly flatter and broader labellum. Curtis is quite accurate in saying he could not find his ' *latifolia* ' to have spotted leaves near London. The date of his figure, it may be well to say, is not 1821 as given by Mr Rolfe, but before 1788. He died in 1799. Mr Rolfe

is quite correct in saying that *maculata* [L.], *latifolia* [Rolfe], *i.e. pratermissa*, and *incarnata* [L.] are three distinct species, frequently hybridising and "camouflaged by their hybridity which has created great confusion." One cannot at present expect agreement as to the putative parents of this mongrel offspring. That will have to be tested in a scientific manner under varying conditions and in different soils. One of these, as has been said, Mr Rolfe identifies pretty confidently with *O. Aschersoniana* Hausskn., but it is by no means certain the Middlesex specimens he saw are that plant: indeed he says they are not identical with Schulze's figure. It is quite certain that plants which Keller sent me from Aarau in Switzerland as *latifolia* differ from any I have as yet seen in Britain and Mr St Quintin also agrees that the *latifolia* he is conversant with in Swiss valleys is different from the plant I call *praetermissa* × *maculata*. As to whether *maculata* and *Fuchsii* are distinct species depends partly on the specific standard one sets up. Based on that of the *British Plant List* they would be, on that of the *Student's Flora* they would be sub-species, on Hayward's *Pocket Book* or Bentham they would be varieties. It also depends partly on whether the numerous intermediates are hybrids or natural variants. A third theory, not yet disproved, is that they are soil-species. Mere transference of a tuber from a peaty to a basic soil has not, however, changed the character. Mr C. Wolley-Dod (*Garden* ii., 7, 1878) is cited by Mr Rolfe as asking "whether *O. latifolia* is really specifically distinct from *O. maculata*. Near Eton they grow side by side. Where the ground lies higher the form is *maculata*, but where a swampy hollow intervenes *latifolia* (or *incarnata*) is the prevailing type. The extremes are distinct enough, but I find among them intermediate connecting forms in which no distinct line of difference can be drawn—the lighter the flowers, the slenderer the stalk and the greater the tendency to spotted leaves. But this rule is not without exceptions. By *latifolia* I understand the commoner form of the Marsh Orchis without spots on the leaves, and with rosy purple flowers." An excellent and truthful observation, Wolley-Dod's *latifolia* being *praetermissa* and his *maculata*, *Fuchsii*. The occurrence of intermediates led observers of that era to doubt whether there were two distinct species. Exactly the same thing occurred with the Primrose and the Cowslip and with regard to

Stachys alpina and *germanica*. No one now doubts their distinctness. So too with *Viola stagnina* and *canina*. I have seen the wetter part of an Irish turlough occupied by the pale-flowered *stagnina*, the dry rim with the slatey-blue flowered *canina*, the colour shading off as the ground got moister where the hybrids grew. That is the case too with the two forms of *Orchis maculata* in Oxfordshire. *Fuchsii* grows on the upper and drier soil of a hollow and *maculata* on the moister hollow on humus accumulation; *Fuchsii* on a basic soil in woodland, *maculata* on the glacial drift in an adjoining moor sufficiently acid to give a home to *Salix repens* and *Viola canina*. The distinctness of *Fuchsii*, *maculata* and *O'Kellyi* can only be solved by experimental culture. This, we trust, may be undertaken by such a careful worker as Dr Trow whose study-cultures of *Senecio* have been so crowned with success. Although I have ventured to strongly combat the opinion of so eminent an authority on exotic epiphytal Orchids as my friend, Mr Rolfe, I trust he will understand that it is in no spirit of disrespect, but as emphasising the results of my own observations on the many thousands of plants which I have seen growing in the marshes of nearly every British county.

ROLFE, R. A. *Mesembryanthemum edule* L. in Bot. Mag. t. 8783, 1918. *Ophrys* Hybrids raised by Fernald Denis, Balaruc-les-Bains. A new hybrid, × *Ophrys Fernaldii* Rolfe is described. Orchid Review xxvi., 82, 102.

RYDBERG, PER AXEL. Rosaceae in North American Flora, vol. 22, 481-533, 1918. This concludes the genus. He also describes the Penthoraceae and Parnassiaceae. Psoraleae, *l.c.* vol. 24. Includes 7 new genera. There is a great disturbance of the old nomenclature.

SALISBURY, E. J., D.Sc. Variation in *Eranthis hyemalis*, *Ficaria verna* and other Members of the Ranunculaceae with Especial Reference to Trimery and the Origin of the Perianth. Annals of Botany 47, 1919. Among the theoretical conclusions which the adduced facts seem to warrant are:—(a) meristic variation is mainly the outcome of two tendencies, *viz.* fission and fusion; (b) the supernumerary perianth members are usually the result of fission; (c) the decrease in number is usually the result of fusion, *e.g.*, *Anemone*, *Paeonia*, more rarely of suppression; (d) the perianth is either de-

rived entirely from modified foliage leaves, *e.g.*, *Anemone*, *Eranthis*, etc., or in part from bracts and in part from stamens, *e.g.*, *Ranunculus;* (e) the flower of the Ranunculaceae is probably derived from a trimerous type which has, however, in many cases become obscured by multiplication of parts and consequent change in phyllotaxy, or by fusion and abortion.

SALMON, C. E. *Anemone Halleri*, *A. Pulsatilla*, *A. montana* in Gard. Chron. ii., 273. Mr Salmon is doubtless correct in saying that the *Pulsatilla* of many nurserymen is really *Halleri*. Surely 'more mauve tint' does not apply happily to native *Pulsatilla*. Norfolk Notes in Journ. Bot., 190, 1919. Wallis's Pembrokeshire and Carmarthenshire Notes *l.c.* 347, 1919. *Stachys alpina* × *germanica* in Journ. Linn. Soc. xliv., 357, 1919. Aiton (*Hort. Kew.* ii., 301, 1789) gave the name *S. intermedia* to a similar plant.

SALMON, C. E. *Papaver Rhoeas*, *P. dubium* and the Hybrid between them. This hybrid is included in the *Plant List* having been brought to my notice by the late Mr George Nicholson who showed me living plants which from the leaf, flower and capsule characters had doubtless this origin. He grew it and possibly the offspring may have furnished the sheets which Mr Salmon alludes to in the Aberdeen Herbarium which are, he says, forms of *Rhoeas* and *dubium*. Specimens of the hybrid were also distributed by Mr C. E. Britton through the Club. See *Report* 67, 1911. I have seen and recorded such plants in *Fl. Berks* 32, 1897. This is not referred to in this paper. Mr Salmon gives careful notes of the colour of the petals, the buds, peduncle-hairs, summit of peduncle, anthers, pollen and stigma disc, and also figures of the buds and capsules of the hybrid and its assumed parents. As regards the colour of the four poppies that of *hybridum* was described as crimson in the *Flora of Oxfordshire* of 1885, 28 years before the authority Mr Salmon cites. He correctly alludes to the varying colour of *P. Rhoeas* petals, but it is pretty certain that we have two or more micro-species in Britain. Miss Cobbe's Surrey specimens, which had been before me, I named as this hybrid, and with this Mr Salmon agrees. His own specimens, which are very carefully described, come from Chilworth in that county. It may be that plants called *strigosum* sometimes have a

hybrid origin. *Strigosum* in some cases does not breed true. New Phytologist 111-117, 1919.

SCHILLER, Z. *Thalictrum minus* Jacq., non L. in Botanik Közlem xvi., 91-8, 1917. *T. minus* L. is divided into two groups—*T. montanum* Wallr. and *T. collinum* Wallr.

SMALL, JAMES, D.Sc. Origin and Development of the Compositae (contd.). Reprint from New Phytologist 1-35, 65-91, 129-176, 201-234, 1919; 10/- nett. See *Report* 343, 1918. Chap. X. contains an account of the geographical distribution of *Senecio* which numbers about 2350 species. He considers Bolivia as the centre of distribution and that a number of tribes have arisen from this genus in widely separated regions of the world. Chapter XI. deals with the history and evolution and, while discussing the claims of the Dipsaceous origin, Dr. Small favours that of the Lobeloideae. He visualises the origin of the first *Senecio* as a living moving process. He traces its development from a *Siphocampylus* arborescent scrambler to a dwarf trailing shrub as it was pushed upwards on the hills where under new climatic conditions a stage in its development would be reached when in all essential characters it would be a *Senecio*. Chapter XII treats of fossil Compositae. Late Cretaceous or early Eocene times are indicated as their time of origin. Chapter XIII. General Conclusions. It is suggested that *Senecio* was the first genus to come into existence, and as a genus it consists of 10 per cent. of the huge Family first appearing in the Upper Cretaceous. The evolution of the other genera is shown in a family tree on fig. 79. *Achillea* is suggested to have a Mediterranean origin. Of the Astereae *Solidago* is the primitive genus. He places the anomalous Ambrosinae in the Heliantheae, the origin of which is in South America as early probably as the Lower Eocene. Chapter XIV. The Story of the Compositae in Time and Space is a fascinating treatment of the development of the Family through various geologic periods. Dr. Small can be most heartily congratulated upon a very brilliant contribution to the study of the largest Family which contains 23,000 species and he is also to be thanked for a very complete and necessarily laboriously compiled Bibliography to the subject.

SMALL, JAMES, D.Sc. The Application of Botany in the Utilisa-

tion of Medicinal Plants. Reprint from The Pharmaceutical Journal, 1919; 1/- nett. This is an extremely valuable and suggestive paper in which the very early application of plants as medicines is noted. A brief reference is given to the use of the Poppy in Palaeolithic times as well as to Linseed, etc., occurring in Neolithic remains. The Hindu, Chinese, Egyptian, American, Persian, Cymric (it is claimed that Materia Medica was one of the three sciences of the Gwyddoniad before 1000 B.C.), Greek and Roman Materia Medica are briefly alluded to. The early explorations are described. Preliminary and permanent exploitation of remedies is alluded to with Cinchona taken as a type. Up to 1777 this valuable drug was known to the botanist through amateur investigations. Alas the cultivation of it in the Neilgherries even in 1907 was rapidly decreasing and many of the plantations were being abandoned so that now Holland with its Javan plantations holds a virtual monopoly. This accounts for the high price of Quinine, that specific for Malaria. This failure arose from the imperfect knowledge of climatic conditions. Mere statistics of annual rainfall and temperature are not sufficient unless they agree with the distribution of rain throughout the year as well as the fluctuations of temperature. Ecologists are specially adapted to choose the situation of these and other drug plantations.

STEBBING, E. P. COMMERCIAL FORESTRY IN BRITAIN. pp. 186. John Murray, 1919; 6/- nett.

STOUT, A. B. Intersexes in *Plantago lanceolata*. Two hermaphrodite and one female form are described at length and illustrated by 57 figures in two plates. Bot. Gaz. 109-133, 1919.

SURFACE, F. M. Studies in Oat-Breeding. III. On the Inheritance of Certain Glume Characters in the Cross *Avena fatua* × *sativa*, var. *Kherson* in Genetics 252-286, 1916.

THELLUNG, Dr ALBERT. *Scandicium*, a new Genus of the Umbelliferae, in Fedde Report, xv., 15-22, 1919. The type of this genus is the plant formerly known as *Scandix pinnatifida* Vent. Jard. de Cels 1800, which I once found at Grandpont, Oxford, among some southern and eastern aliens. It is a native of the interior of south-eastern Spain, the inland of Algeria, Tauria, Asia Minor,

Syria, etc., and has been found adventive in Europe at Zürich. For this plant Thellung adopts the name *Scandicium stellatum*. It is the *Scandix stellata* Solander in Russell's Nat. Hist. Aleppo ed. 2, ii., 248, 1794. Dr Thellung describes several varieties.

THELLUNG, Dr ALBERT. Beitrage zur Adventivflora der Schweiz (III) in Viertelj. der Naturf. Gesell. in Zürich lxiv., pp. 683-815, 1919. As is the case with any work of Dr Thellung's there is an immense amount of valuable information scattered through this list of Swiss adventive plants. It contains a description of the various forms of *Bromus unioloides*. *Spergularia atheniensis* has occurred adventively in Switzerland, also in New Zealand and South Africa. Thellung describes it as a sub-species of *rubra*. There is a good account of the species of *Helianthus* and also useful diagnoses of *Anacyclus*, very critical species. Dr Stapf has named a new genus of Grasses *Thellungia* after our Hon. Member, associating with it, not unhappily, the species *advena* (Kew Bulletin 1919).

TURRILL, W. B. Contributions to the Flora of Macedonia (II) in Kew Bulletin 105, 1919. Botanical Results of Swedish, South American and Antarctic Expeditions in Kew Bulletin 268, 1919.

TURRILL, W. B. Observations on the Perianth in *Ranunculus auricomus* and *Anemone Coronaria* in New Phytologist 253-256, 1919.

UNITED STATES DEPARTMENT OF AGRICULTURE. Bureau of Plant Industry, Washington, William A. Taylor, Chief of Bureau. An enormous stream of valuable publications on this subject has continued throughout the war in increasing volume. The Inventory of Seeds and Plants imported from Jan. to March 31, 1916, issued in 1919, is a sufficient example to show the vivid interest and amount of work done by the department.

VINES, S. H., F.R.S., & DRUCE, G. CLARIDGE, LL.D. An Account of the Herbarium of the University of Oxford, pt. 1, pp. 20, 1897; pt. ii., pp. 55, 1919. Clarendon Press, Oxford. Contains an alphabetical list of contributors from Gregory of Reggio 1606 to present date, with, where possible, date of birth, death and country. Celsius, Linné, Haller, Nissole, Pontederana, Vaillant, Herman are

among the botanists represented. The Horti Sicci in the Oxford Colleges and Bodleian Libraries are also mentioned.

VRIES, HUGO DE. Mass Mutations and Twin Hybrids of *Oenothera grandiflora* Ait. in Bot. Gaz. 377-422, 1918.

WATT, A. S. On the Causes of Failure of Natural Regeneration in British Oak Woods in Journal of Ecology 173-202, 1919.

WEATHERWAX, PAUL. Ancestry of Maize in Bull. Torr. Club 278. He holds that Maize co-ordinately with *Euchlaena* and *Tripsacum* originated from an ancestor long ago extinct.

WILLMOTT, E. Notes from Warley Place [Essex]. *Crocus vernus* in Gard. Chron. 93, 1919. Our member, Miss Willmott, says she has traced the history of it here as far back as 1620-30. Excellent views of the Warley fields of *Crocus* appeared in The Garden Feb. 8, 1919.

WILLIS, J. C., M.A., Sc.D., F.R.S. The Floras of the Outlying Islands of New Zealand and their Distribution in Ann. Bot. 267, 1919.

WILLIS, J. C., M.A., Sc.D., F.R.S. A DICTIONARY OF THE FLOWERING PLANTS AND FERNS. Fourth edition, pp. vii., 701, suppl. pp. liv., 1919. Cambridge University Press; 20/- nett. For many years Lindley and Moore's *Treasury of Botany* was an almost indispensable occupant of the shelves of a botanist and it still is handy to keep within reach, but in a more specialised manner and with stricter limitations this new edition must be in every scientific or reference library. An enormous mass of extremely accurate information is packed in this volume and just the kind of matter which is informative. It is extraordinarily free from misprints or errors. The definitions of families and genera are exceedingly well done and the nomenclature, with few exceptions, is well up to date and authentic. One feels, perhaps, that too much prominence is given to Engler's System but then Dr Willis was brought up on it, and he has given the alternative Benthamian names. The symbols used are duly explained and they are such as shall henceforwards be adopted in these pages. The abbreviations are equally well con-

ceived, except that 'Webb' seems scarcely adequate for Webber since it is likely to be confused with Webb. Can it refer to Weber? One regrets to see *Helleborine* has not been used instead of the inchoate and later *Epipactis*, and that *Erythraea* is still preferred to the much older *Centaurium*, especially as both are valid according to the Vienna Rules and have been adopted by such authorities as Schinz, Lindman, etc. The genus *Cuviera* of the Rubiaceae is mentioned, but not the older Graminaceous genus which has been recently used by Swedish botanists for *Elymus europaeus*. One of very few misprints is *Geraniceae*. Under Huckleberry the Buckinghamshire name for *Vaccinium Myrtillus* should be added as doubtless this is the origin of the American name. One is glad that capitals are employed for specific names derived from genera, etc., and that *Dryopteris* and other Fern genera are used as in Christensen's *Index*. The book is excellently printed and the use of a heavy type for the name makes it most easy of consultation. The paper is sufficiently thin to allow of the large number of pages being compressed into a portable volume. There is a most useful and valuable key to the Families of Flowering Plants as a supplement. The work as a whole is one of the most useful to recommend to every botanist and is indispensable to those removed from a large library.

OBITUARIES.

DAVIE, ROBERT CHAPMAN, Capt. R.A.M.C., born at Glasgow 1887, died at Largs, February 4, 1919. He was educated at Glasgow High School and at Glasgow University where he graduated M.A. in 1907. In 1909 he took his B.Sc. and was awarded the Dobbie-Smith Gold Medal in Botany. In 1915 he took his D.Sc. and was appointed one of the Secretaries of Section K. of the British Association. He investigated the Fern genera *Paranema* and *Diacalpe* and in 1918 contributed a paper on the Leaf-trace of Ferns. At Edinburgh he took up the study of the Proteaceae and spent some months in Brazil in making observations. His premature death, as the result of influenza, robs us of one of our very promising members. See Obituary in Nature 189, 1919.

M'ANDREW, JAMES, born in the parish of New Spynie, Morayshire, January 29, 1836, died at Edinburgh, July 4, 1917 and was buried with Masonic ritual at Kells in New Galloway. He was a pupil teacher in Milne's Institute, Fochabers, after training at the Edinburgh Normal College, was master at Milne's for five years, then going to Dalbeattie and afterwards in 1869 to Kells. In 1901 he retired and went to reside in Edinburgh. This retirement was made the occasion of giving him a public dinner at Castle Douglas in December of that year in order to testify to the respect the participants had for him as a mark of gratitude for the example he had set as a teacher. The parish minister of Kells alluded to his high standard of method and to his thoroughness. During his residence in Galloway he studied the local flora with great assiduity and published his records in the local newspapers as well as in the *Transactions of the Natural History Society of Dumfries*. He sent lists of the Kirkcudbright plants to Scott-Elliot for the *Flora of Dumfries* in 1882, and of Wigton in 1893, and he was the first discoverer of several interesting species to Galloway. He added in 1882 *Rynchospora fusca* to the Scottish flora from Auchencairn Moor, Kirkcudbright. Among his first records for the latter county are *Rhamnus Frangula*, *Vicia Orobus*, *Saxifraga hypnoides*, *Cicuta*, *Ligusticum scoticum*, *Hieracium holosericeum* and *Poa palustris*. Many of his records appeared in the *Scottish Naturalist*, and they are duly acknowledged in the *Flora of Dumfries*. As his friend, Mr J. Fraser (*Trans. Nat. Hist. Soc. Dumfries*, 1913), says " the number of new records made since M'Andrew's List of 1882 is remarkably small and bears testimony to the care and completeness with which the district was botanised and to the lists compiled by that keen observer and veteran botanist."

MARSHALL, EDWARD SHEARBURN, M.A., F.L.S., born March 7, 1858, died November 25, 1919. By the death of Edward Shearburn Marshall in November last, the Botanical Exchange Club loses one of its best critical botanists and most generous contributors. It is impossible in the space of the brief note that I have been asked to write for the *Report*, to attempt to give a connected biography or even to summarise the botanical achievements of one of the most assiduous and successful British botanists of our generation. Moreover, this is rendered quite unnecessary as a most complete and ex-

cellent Memoir, with portraits of both Mr and Mrs Marshall, has been written by Mr James Britten, and appeared in the January number of the *Journal of Botany*. (I believe a few reprints of this are available for those who do not see the *Journal*.) I do not propose, therefore, to traverse this ground afresh, but will add a few notes on my own personal recollections. Our friendship began in 1884 when I was living in Upper Clapton, and Marshall was a curate in Tottenham. Bishop Walsham How, the first Bishop of Bedford (Suffragan Bishop of London) was interested in Botany, and often came to my house to talk of plants and look into the Herbarium. He said to me one day " There is a young curate at Tottenham who is very fond of Botany, and I should like to introduce him to you." Thus began a friendship and intimacy which constantly increased till the date of our friend's death. Curiously enough I knew the lady destined to be his future wife before Marshall met her. John Foster of Witley and his two daughters were staying at Cromer, and we were introduced to them. They liked to come for botanical walks, and the daughters were quick at finding the special *Medicagos* and other plants of the district. The younger, Fanny Isabel, was to be the future Mrs Marshall. From Tottenham, Marshall went to Witley as curate, and here met his fate—a very happy one, for no one knowing them could ever dissociate the two in their lives and botanical work both at home and in the field. Mrs Marshall was never a critical botanist but soon acquired a good general knowledge, and was extraordinarily apt at grasping the characteristics of a plant and often being the first to discover the objects of our search. She was an excellent walker, and never shirked difficult climbs or going into the wettest places. From his curacy at Witley, Marshall went as Vicar to the adjoining village of Milford, where he stayed for ten years. Thence he went as curate-in-charge to Lavington, Sussex, and two years later as Vicar to Keevil in Wilts. This place did not altogether suit him, and two years later he became Rector of West Monkton, near Taunton, where he remained till within a few weeks of his death. He resigned his Cure last Michaelmas, and purchased a small estate of about thirty acres with a good house, which he called, " Offa's Dyke " at Tidenham, near Chepstow. Here he contemplated retiring and making a good botanical garden, and continuing his critical work on botany, being especially engaged on

working out the British Saxifrages, of which he had a very rich collection in the West Monkton garden. Whilst staying there last summer, Marshall gave me clumps of most of these Saxifrages, for which I have just constructed a special section in my rock-garden at Brockhurst, East Grinstead, where I trust they may thrive. In August, the Marshalls stayed with us for the last time, and we made many excursions together, on which Mrs Marshall accompanied us, though then suffering from cancer in an advanced stage. During their visit here his only brother died at South Godstone from the effects of a motor-cycle accident. This was a great grief and shock to him. After they left us, Mrs Marshall grew rapidly worse, and died early in November. He was utterly overcome with his sorrows, and on the 25th of the same month passed away himself. This tragic ending to such happy, useful and devoted lives came as a great shock to their own children as well as to their wide circle of friends. After thirty-six years of close friendship, his loss is very deeply felt by myself. We were associated in the compilation and publishing of the *Flora of Kent*, in revising various editions of *The London Catalogue of British Plants*, in work on the *Hieracia*, and in botanical excursions in many parts of Britain, including visits to places as far removed as Caithness and Cornwall. It is impossible to do justice in few words to Marshall's many excellencies and great ability. He was always most generous with his beautifully dried specimens which enrich nearly every herbarium in the country. His painstaking, careful and accurate replies to botanical letters and enquiries are known to all his correspondents. They were often written at much personal inconvenience, in many cases involving references to his books or Herbarium. His botanical specimens were models of careful drying and disposition but attained often at the expense of much needed sleep and rest. When staying with each other I often found that Marshall had got up in the early morning and changed not only his own plants but all mine as well, so that we might not be hindered in starting the fresh day's excursion. He was top of the School at Marlborough College, and at Oxford obtained a Scholarship at Braesnose, retaining to the end his love of the classics. Both he and Mrs Marshall had a keen sense of humour, and their company and conversation were a delight to all who had the privilege of their intimate acquaintance.

The photograph is from a snapshot I took in 1915 of Mr and Mrs Marshall, collecting the variegated form of the common reed in a watery place on the north coast of Caithness. It is characteristic of the way in which they were always associated in their work.

FREDERICK J. HANBURY.

Sir WILLIAM OSLER, Bt., born July 12, 1849, died December 29, 1919. Our revered and beloved President, whose loss we, in common with the civilised race, only in a special degree because of our intimacy with him, so deeply mourn, accepted our highest office at a time, unfortunately, when he was more than usually deluged with work. This prevented his attendance at our meetings in the early part of the year, while during the last sad months of Autumn he was on a bed of sickness. This was brought on by a chill contracted during his long motor journey from Newcastle, where he was unexpectedly held up by the railway strike, and had to take that method of conveyance through the night to Oxford. From this pneumonic attack he never recovered, for though at times he made some progress, yet—and doubtless a fact owing to his life's hope being shattered in the death of his only son in the great war—he lacked the recuperative energy to overthrow his foe, and Oxford has lost one of her most distinguished sons; Medical Science, one of its greatest exponents; literature, a brilliant disciple—witness the 'Old Humanities and the New Science;' and civilisation, the higher culture and the human race, a student instinct with knowledge, a scholar who knew so well what to absorb, what to reject and what to teach; and a man whose generous kindness, whose intense human sympathy and whose power of bringing out the best in anyone with whom he came in contact, made a harmonious combination, the occurrence of which, in the same individual, is of the rarest, and therefore to be held in special reverence and regard. Sir William was not of British birth, although of Cornish ancestry. He was born in the great Dominion beyond the sea at Bondhead, in Ontario, on July 12, 1849. He had much of the Celtic temperament—high strung, keenly intellectual, and with that subtle charm of character perhaps only seen at its very best in that race. He passed through the Toronto University, where he studied medicine, as he did afterwards at M'Gill University, Montreal—a University which has

already honoured his memory—and there he graduated in 1872. But his medical studies were not limited to Canada, they were further pursued at London, Leipsic and Vienna. He then went home to occupy the Chair of the Institute of Medicine at M'Gill University. He was made Galstonian Lecturer of the Royal College of Physicians in 1884, and then went as Clinical Professor of Medicine to the University of Pennsylvania. There he was made Professor of the Principle and Practice of Medicine at the John Hopkins University, which he held till he was selected as our Regius Professor in 1905. During his residence at Baltimore he became most keenly interested in the treatment of tuberculosis, and on his coming here he awakened interest in this most important subject, and gave without stint his time and energy to combat the scourge which laid its toll in so many cases upon the bread-winner. But he also created here almost out of chaos the framework of a great medical school, but of this it is not for me to speak. He took the highest ideal of his Professorship and the attendant duties of Master of Ewelme, where this Society has received his welcome. He was also a Curator of the Bodleian—to him a most congenial post—he loved men, and I was going to say most of all books. His own library stands in the front rank as one rich in the history of medicine, but his love of literature was not to be trammelled by even such a wide scope as medicine afforded. He knew the Classics and the English Classics. You may remember that at a paper on the Early History of Botany, although unable to be present he kindly lent for exhibition the first editions of Theophrastus and Dioscorides. As Curator of the Bodleian he kept his eyes open, and through his generosity and kindness such an important collection of 17th and early 18th century Botanical Correspondence (that which belonged to Dr Richardson at Bierley) was secured for our library. A sonorous clock to mark the hours in that place, where the hours flee by too quickly, was another instance of his kindness. Oxford as a city owes much to him—he recognised that he was not only Regius Professor of the greatest University, but a citizen of no mean city, so that he gave freely of his time, of his experience and advice in all matters relating to health in its widest sense. And here as representing the Public Health Committee of the Oxford City Council, I offer my most grateful thanks for all his help. The exigencies of a crowded life left him little time to attend our meetings,

but on almost my last interview with him, then little knowing what the immediate future would bring forth, we discussed the subject on which he was to have made his presidential address to-night; and now, instead of a contribution to literature such as that would have been, you have by ironical fate to bear with me while I vainly try to give expression to our feelings of admiration, appreciation and affection for one so recently departed. His subject would have been 'Notes on the Life and Correspondence of William Withering.' By a happy chance he came into possession by purchase of a quantity of letters to Withering, which, however, were more of a medical than botanical character. This seemed a good opportunity to draw attention to one who was not only a great botanist but a great doctor. The use of *Digitalis* in Medicine we owe to him, and although curiously enough he did not seem to be acquainted with its action on the heart, yet it was in anasarca—often one of the results of heart affection—that he made many cures and brought Foxglove into repute. As a botanist, Withering's *Arrangement of British Plants*, first published in 1776, went through many editions, and was the chief British botanical text book for many years. We also know that it was through Sir W. Osler's intuitive knowledge that a copy of Sibthorp's *Flora Oxoniensis* was secured, which was full of notes of Ewelme plants. These were found to be by Randolph, Bishop of Oxford, 1798, and they have been recently published in our Annual Report. There is just one other side of his character which should not remain unnoticed. He was a most eminent and wise consultant —to his patient he gave of his best—a personal allusion may be allowed. During my four months' illness in 1912 he frequently came to me, and his kindness is one of the pleasant memories of an unpleasant time. I was ordered to lie very still, but the advent of an important Herbarium made me anxious to see it, and some packages had been put on my bed when his well-known step was heard on the stairs. Coming into the room he gave a horrified look round, and I could only hurriedly say, 'I hope you have not come to order "No flowers by request,"' when he brightened up and said, 'You will do,' and the storm was averted. As will have been gathered, his success in life was largely due to his bright outlook on things, his patience even with discordant factions, his power of eliciting the best response to demands, and his wide and generous views of men and

things. We have had connected with this Society three distinguished holders of the Chair of Medicine—Acland, pioneer of scientific teaching, to whose energy this building is mainly due; Burdon Sanderson—the brilliant experimenter in the laboratory; and Sir William Osler, whose merits speak for themselves. (G. Claridge Druce in *Report of the Ashmolean Natural History Society of Oxfordshire.*)

PETTY, SAMUEL LISTER, of Dykelands, Ulverston, who died May 1919, was a well-known authority on the district flora and was a contributor to the *Yorkshire Naturalist.*

SHADWELL, CHARLES LANCELOT, D.C.L., formerly Provost of Oriel College, Oxford, born December 16, 1840, died Oxford, February 1919, aged 78. His father, a barrister-at-law, was the son of Sir Lancelot Shadwell, Vice-Chancellor of England. Dr Shadwell was educated at Westminster and as Queen's Scholar he entered Christ Church taking first-class in Mods. in 1861. He was elected Fellow of Oriel in 1864, and was called to the Bar in 1872. He then returned to Oxford and lived a very busy life in University and City circles serving as the first University Sheriff. He was Curator, inter alia, of the Botanic Gardens. In 1905 he was made Provost of his College of which it was truly said he loved every stone, and the new buildings—much criticised as they have been—gifted by the 'Empire Builder,' Cecil Rhodes, are a monument of his reign. In his early days he was a great pedestrian and on his walks became acquainted with our more conspicuous species. The pages of the *Flora of Berkshire* bear testimony to his observations. A life member of our Society and a near neighbour for some years I dined with him almost weekly and, despite his failing memory which led to his resignation of his Provostship, he was glad to recall some of the plants he had noticed or to hear of fresh discoveries. He was a good Italian scholar and had translated the *Purgatory* and *Earthly Paradise* of Dante. He was literary executor of his life-long friend, Walter Pater.

SMITH, FREDERICK JOHN, M.D., born at Castle Donnington, Derby, 1853, his father being a surgeon there, died at Colyton, Devon, April 30, 1919. In 1881 he entered the London Hospital from Oxford, received the Diploma of M.R.C.S. and L.R.C.P., and

then the M.B. of Oxon in 1885. The next year he was awarded the Radcliffe Travelling Fellowship. He obtained the F.R.C.S. in 1887 and the M.D. in 1891. In 1902 he became physician to the London Hospital with which he was connected for 37 years. His lectures there were largely attended and his gratuitous labours were unstintingly given. He edited the last three editions of Taylor's *Medical Jurisprudence*. For some years he was a keen plant lover and in his scanty holidays made their search a special object and thus acquired a good herbarium of his own collecting. In 1907 he gathered *Linaria arenaria* near the Westward Ho Links and took it to the British Museum (See *Journ. Bot.* 411, 1907) when I happened to be there. Later I went to investigate the locality and found that it had been sown by a member of the staff of Westward Ho College, now one of our members, the seeds having been brought from Brittany. The plant has now spread for some distance, indeed as far as Saunton. Dr Smith also discovered a curious form of *Cerastium semidecandrum*, with very short capsules, at Aldborough. In the field he was a most cheery companion and over the Grampians and Breadalbanes he has been my delightful companion. He relinquished his important practice in Harley Street hoping to have some years of country life and botanical work. We had planned an attack on Ben A'an and Cairntoul for 1919. This was not to be for in the spring he developed a cerebral tumour and the end came quickly. At the memorial service in St Philip's Church Dr R. Hutchison finished an eloquent address by truly saying, " He did justly, he loved mercy, and he walked humbly in his passage on earth." He was eminently fair-minded, making an excellent examiner. Free from the least trace of affectation he made and kept friends easily. His herbarium has been given by his widow to the Exeter Museum. See Obituary in Nature 191, 1919.

SPENCE, MAGNUS, born at Birsay, January 1, 1853, died at St Ola, Orkney, August 20, 1919. He compiled a *Flora Orcadensis* which was published in 1914. In his later years he was much interested in Algae.

TRAIL, JAMES WILSON HELENUS, M.A., M.D., F.R.S., F.L.S., born at Birsay, Orkney, March 4, 1851, died at Aberdeen, September 18, 1919. He was the son of Dr Samuel Trail, Professor of Syste-

matic Theology at Aberdeen and Moderator of the General Assembly in 1874. Trail's inherent love of nature betrayed itself in his early days when as a boy at the Grammar School of Old Aberdeen he spent his spare time in wandering over Aulton Links and Scotstoun Moor intent on the pursuit of Natural History. This enthusiasm was maintained throughout his career at Aberdeen University. After graduating with honours in Natural Science he entered the Faculty of Medicine. During his first three years of medical study he acted as assistant to the Professors of Botany and Chemistry and to the curator of the Natural History Museum and published his first original papers, including contributions to the study of Galls, a subject which later made his name well known in Europe. In 1873 he interrupted his medical studies for two years to join an exploring expedition to the Amazon for the sake of gaining first-hand knowledge of tropical flora and fauna and on his return he published a paper on the Palms of the Amazon Valley. In 1876 he graduated M.A., M.B., C.M., with highest academical honours and in 1877 at the early age of 26 he was appointed to the Regius chair of Botany at Aberdeen which he occupied for 42 years being indeed the last of the taxonomists to hold a professoriate. One regrets that Trail out of his stock of wide and exact knowledge of Natural History has not left to the public a fuller account of his own observations but his University and civic work was arduous, and as a teacher whose aim was not merely to instruct but to develop other minds his work was invaluable. In 1883 he took over the editorship of the *Scottish Naturalist*, a journal started by Buchanan-White in 1871. From 1892 to 1911 he edited, on the botanical side, its outgrowth, the *Annals of Scottish Natural History*. An attempt was made in 1912 to have in Scotland a purely botanical quarterly and Trail must have felt keenly the manner in which some of the younger workers had passed him by. Had his name appeared on the title page the demise of the *Scottish Botanical Review* might not have come so quickly. Trail's systematic work covered a wide field. Besides his work on the Scottish Galls he published many papers on the Fungi and described some new species. In later years he took up the distribution of plants in Scotland and published papers on the Topographical Botany of Scotland from time to time. On this subject he had amassed an enormous quantity of material. Some of the other contributions from his pen

are:—The Modes of Dispersion of Seeds of Scottish Wild Plants in Scot. Nat. 257, 1881-82; On Some Leaf Parasites New or Rare in Britain, *l.c.* 124, 1883-84; Two New British Ustilagineae, *l.c.* 241, 1883-84; List of Casual and Introduced Plants in N.E. Scotland, *l.c.* 243, 1883-84; On the Influence of Cryptogams on Mankind, *l.c.* 86, 1887-88; Micromycetes, *l.c.* 57, 1889-90; Revision of Scottish Discomycetes, *l.c.* 125, 171, 1889-90; Some Unexpected Aliens in the Flora of Aberdeen in Ann. Scot. Nat. Hist. 58, 1859; Florula of a Piece of Waste Ground at Aberdeen, *l.c.* 231, 1896; 24, 237, 1897; 221, 1899; Progress of Botany in Scotland, *l.c.* 217, 1901; Alien Flora of Lower Spey, *l.c.* 103, 1904; The Flora of Fair Isle, *l.c.* 165, 1906; Man's Influence on the Indigenous Flora of Aberdeen, *l.c.* 176, 232, 1911.

TUCKWELL, Rev. WILLIAM, born at Oxford, 1829, the son of a leading Oxford surgeon, died at Pyrford Rough, Surrey, February 1, 1919. He was educated at Winchester, of which in 1893 he published memories in *Winchester Fifty Years Ago*, and proceeded to New College, Oxford, of which he was made a Fellow. In 1853 he became master of St Columba's in Ireland, was ordained deacon in 1854, priest in 1858, held for two years a curacy at St Mary Magdalene, Oxford, and was master at New College School from 1857 to 1864. He married in 1858 Rosa, daughter of Captain Strong, a sister of Lady Dilke. In Oxford he worked with ardour in the new movement of science with Acland, Westwood and Buckland and here founded a Microscopical Society. From 1864 to 1877 he was Headmaster of Taunton Grammar School and his advent stirred the dry bones into fierce vitality. Science was taught in a well-fitted laboratory, and he began a series of lectures in English Literature and Natural History which were continued in later days all over England. At Taunton he absorbed the local scenery and the Natural History of the area which radiated in a charming description of the Flora of the Quantocks. In 1878 he became incumbent of Stockton, Warwickshire, where I first made his acquaintanceship, which ripened into a warm friendship. He was so many-sided, so eager, so well read, such a fastidious scholar, and so human and humane that it is one of the privileges of my life to have had the opportunity of coming into contact with him. We had many rambles, not only in his immedi-

ate neighbourhood, but in the Oxford county he knew so well and loved so deeply. It was the irony of chance—and to me an unceasing regret—that a pilgrimage over the ground traversed by the ' Scholar Gipsy ' with Matthew Arnold and Tuckwell was prevented by the almost sudden death of the former in the very week set apart for this walk, one of the objects of which was to have been the identification of the ' Signal Elm ' which is now left somewhat conjectural. At Stockton Tuckwell threw himself into the Agricultural Labour Movement which earned for him not only the cognomen of the 'Radical Parson ' but much local antagonism. This is well treated in his *Reminiscences of a Radical Parson*, published in 1905. But his felicitous pen described less contentious matters in a charming work, *Tongues in Trees*, 1891, in which are described the gardens of Oxford, and in later days, after he had gone to Waltham in Lincolnshire, he issued graphic *Reminiscences of Oxford in 1902 and 1907* and in 1909 *Pretractarian Oxford*, in which the characters are limned with life-like fidelity. For some years prior to his death he became blind, but his wonderful memory remained unimpaired and his cheery optimism was as conspicuous as of yore. Only last autumn I called on him at his beautiful home, once the residence of Sir Charles Dilke, near Woking, when he was rejoiced to hear that the berries of *Pernettia*, with which the grounds abounded, were being carried by the birds into the adjacent heath where seedlings were springing up. He recalled not only the names of many mutual friends who had gone into the unseen but the curious instances of plant-occurrence which are often unsolved problems but on which his active and philosophic mind could always make pregnant suggestions. In an obituary notice of Bagnall in our last *Report* mention was made of a day spent in a Warwickshire wood with Bolton King, Tuckwell and Bagnall and now the ' master mind ' of the quartet has gone and the body rests with his wife in a grave marked with the motto " Supremum carpere iter consites parati."

WADDELL, Rev. COSSLETT HERBERT, B.D., born at Maralin, Co. Down, March 6, 1858, died at Grey Abbey on Whitsunday, June 8, 1919. In 1881 he commenced his ministerial work as Curate of Lurgan and in 1883 went to Warrenpoint. For four years he was at Kendal, Westmorland, and then in 1888 returned to Ireland as Curate of Carnamoney. In 1890 he was appointed Vicar of Saint-

field and in 1912 became Rector of Grey Abbey and Chaplain to the Marquis of Londonderry. He was a B.D. of Trinity College, Cambridge, and a member of the Royal Irish Academy. Archaeology as well as Natural History claimed him as a devotee. Stewart (*Flora of the Northern Counties* p. xii.) quotes his MS. notes of Mosses and Hepatics for Co. Down, and he contributed several papers to the *Irish Naturalist* among which are "*Tamus communis* in Sligo" (102, 1892), "*Rubus villicaulis* and *Selmeri*" (156, 1894), "Irish Knotweeds" (305, 1895), "*Lathraea Squamaria*" (166, 1896), "Irish Rosae" (167, 1898), "*Poa nemoralis* in Co. Down" (142, 1899). He had been a valued member of the Club since 1900 and in 1908 approved of the enlargement of its scope. I once met him in Co. Down and found him to be cheery and keen, and a hater of extremes in a county where extremes are not unusual. He had obtained and deserved the affection of his people. On Whitsunday, after conducting two services in the morning, he had a seizure in the afternoon to which he quickly succumbed. His collection of mosses is to be given to the College of Science, Dublin, and his Phanerogams to Queen's University, Belfast.

WALLIS, ANTHONY, born at Reading, July 14, 1919, died at Penrith, August 28, 1919. Educated at the Friends' School at Leyton Park, Owen's College, Manchester, and King's College, Cambridge, where he was Captain of the College Eight. There he took the M.A. degree. He was appointed Inspector in the Education Department where he soon became generally popular and when in Buckinghamshire sent me many interesting records. He added an unexpected plant in *Cladium Mariscus*—a solitary patch—from the Ouse drainage of Buckinghamshire, and only a few days later than myself found an equally rare plant, *Cyperus fuscus*, near Eton. His assistance was greatly valued by me in the preparation of the county Flora. In Cumberland he specially devoted himself to Fungi, and he said that he had eaten every kind known to him with no ill effects. He had travelled not only in Scotland but in Scandinavia and Central and Southern Europe. His premature death is a distinct loss to British Botany.

WEST, GEORGE STEPHEN, M.A., D.Sc., born at Bradford, April 20, 1876, died at Edgbaston, August 7, 1919. By the death of

Professor G. S. West, the botanical world, and the study of algology in particular, is deprived of one of its most ardent and enthusiastic adherents. He began his botanical studies at a very early age, and his father being already a competent botanist and having made Algae his particular study, George West had rather unusual opportunities for gaining knowledge in that branch of the science which he always made his own. From the first he helped his father in carrying out research, and even as early as 1889 the father acknowledged the help of his young son, then aged thirteen. He had a very pronounced talent for drawing, and from this time onwards the published work both of the father, William West, and their joint work was entirely illustrated by him. In conjunction with his father he published many papers on Algae, and between them they have probably contributed more than anyone else to our knowledge of this group. By their efforts the algal flora of the greater part of the British Isles has been investigated, besides that of other more distant parts of the world. His long experience with the subject has made him the one authority on Algology in this country, and his advice was much sought by workers in all parts of the world. He was very much appreciated by all who knew him, and his death leaves a gap which it is impossible to fill. His collections and library are left to the University of Birmingham, and his drawings of Algae to the British Museum.

The following is a list of his botanical publications:—

Notes on the Freshwater Algae of the East Riding of Yorkshire in *The Naturalist* 1893 (*b*); New British Freshwater Algae in *Journ. Roy. Micr. Soc.* 1894 (*b*); On some Freshwater Algae from the West Indies in *Journ. Linn. Soc.* 1894 (*b*); Freshwater Algae from Madagascar in *Trans. Linn. Soc.* 1895 (*b*); On some New and Interesting Freshwater Algae in *Journ. Roy. Micr. Soc.* 1896 (*b*); Algae from Central Africa in *Journ. Bot.* 1896 (*b*); On some North American Desmidiaceae in *Trans. Linn. Soc.* 1896 (*b*); Some recently published Desmidieae, *Journ. Bot.* 1896 (*b*); A Contribution to the Freshwater Algae of the South of England in *Journ. Roy. Micr. Soc.* 1897 (*b*); Desmids from Singapore in *Journ. Linn. Soc.* 1897 (*b*); Welwitsch's African Freshwater Algae in *Journ. Bot.* 1897 (*b*); On some Desmids of the United States in *Journ. Linn. Soc.* 1898 (*b*);

Observations on the Conjugatae in *Ann. Bot.* 1898 (*b*); Notes on Freshwater Algae. I. in *Journ. Bot.* 1898 (*b*); A further Contribution to the Freshwater Algae of the West Indies in *Journ. Linn. Soc.* 1899 (*b*); On Variation in the Desmidiaceae and its Bearings on their Classification in *Journ. Linn. Soc.* 1899; The Alga-flora of Cambridgeshire in *Journ. Bot.* 1899; The Alga-flora of Yorkshire in *Bot. Trans. Yorkshire Nat. Un.* 1900 (*b*); Notes on Freshwater Algae II. in *Journ. Bot.* 1900 (*b*); Flora of Koh Chang—Algae in *Botanisk Tidsskrift* 1901 (*b*); A Contribution to the Freshwater Algae of Ceylon in *Trans. Linn. Soc.* 1902 (*b*); A Contribution to the Freshwater Algae of the North of Ireland in *Trans. Roy. Irish Acad.* 1902 (*b*); On some Algae from Hot Springs in *Journ. Bot.* 1902; Scottish Freshwater Plankton in *Journ. Linn. Soc.* 1903 (*b*); Notes on Freshwater Algae III. in *Journ Bot.* 1903 (*b*); Treatise on British Freshwater Algae, Cambridge Univ. Press 1904; Monograph of the British Desmidiaceae, Ray Soc. vol. i., 1904; vol. ii., 1905; vol. iii., 1908; vol. iv., 1911 (*b*); West Indian Freshwater Algae in *Journ. Bot.* 1904; Freshwater Algae from the Orkneys and Shetlands in *Proc. Bot. Soc. Edinburgh* 1904 (*b*); Desmids from Victoria, *Journ. Bot.* 1905; A further Contribution to the Freshwater Plankton of the Scottish Lochs, *Trans. Roy. Soc. Edinburgh*, 1905 (*b*); A Comparative Study of the Plankton of some Irish Lakes in *Trans. Roy. Irish Acad.* 1906 (*b*); Freshwater Algae from Burma, including a few from Bengal and Madras in *Ann. Roy. Bot. Gardens, Calcutta* 1907 (*b*); Report on Freshwater Algae, including the Phytoplankton, of the third Tanganyka Expedition in *Journ. Linn. Soc.* 1907; Algae from Austwick Moss, W. Yorkshire in *The Naturalist* 1908 (*b*); Botanical Synonyms in the Desmidiaceae and Protococcoideae in *Journ. Bot.* 1908; On some Critical Green Algae in *Journ. Linn. Soc.* 1908; Phytoplankton of the English Lake District in *The Naturalist* 1909 (*b*); British Freshwater Phytoplankton, with Special Reference to the Desmid Plankton in *Proc. Roy. Soc.* 1909 (*b*); A Biological Investigation of the Peridineae of Sutton Park in *New Phytologist* 1909; Phytoplankton from Albert Nyanza in *Journ. Bot.* 1909; Algae of Birket Qarun, Egypt, *l.c.* 1909; Algae of Yan Yean Reservoir in *Trans. Linn. Soc.* 1909; The Red Snow Plant, "*Sphaerella nivalis*," *Journ. Roy. Micr. Soc.* 1909; *Hillhousia mirabilis*, a Giant Sulphur Bacterium, *Proc. Roy. Soc.* 1909 (*c*); On some new

African species of Volvox in *Journ. Queckett Micr. Club* 1910; British Antarctic Expedition—Freshwater Algae, London 1911 (*b*); Algological Notes i.-iv. in *Journ Bot.* 1911; The Structure of the cell-wall and apical growth in *Trentepohlia*, *New Phytologist* 1911 (*d*); On the Periodicity of the Phytoplankton of some British Lakes in *Journ. Linn. Soc.* 1912 (*b*); Algological Notes v.-xiii. in *Journ Bot.* 1912; Freshwater Algae of the Percy Sladen Memorial Expedition in South Africa in *Ann. S. Afr. Museum* 1912; Bacteria of the genus *Hillhousia*, *Ann. Bot.* 1913 (*c*); Voyage d'Exploration Scientifique en Columbia in *Memoirs de la Soc. Neuchât. des Sciences Naturelles* 1914; Algological Notes xiv.-xvii. in *Journ. Bot.* 1915; A Contribution to the Cytology and Life-history of *Zygnema ericetorum*, etc., *New Phytologist* 1915 (*e*); Algological Notes xviii.-xxiii. *l.c.* 1916; Cambridge Botanical Handbooks, I. Algae, Cambridge Univ. Press 1916; A further Contribution to our knowledge of the two African species of Volvox in *Journ. Queck. Micr. Club* 1918; A new species of *Gongrosira*, *Journ Roy. Micr. Soc.* 1918; The Ecology of the Upper Driva Valley in the Dovrefjeld, *New Phytologist* 1910 (*b*).

(*b*) **Jointly with his father, William West.**

(*c*) Jointly with B. M. Griffiths.

(*d*) Jointly with Miss Olive E. Hood.

(*e*) Jointly with Miss Clara B. Starkey.

Among other deaths in the botanical world are:—

Anne Casimir Pyramus de Candolle, **born at Geneva, April 20,** 1836, died at Vallon, October 3, 1918. He monographed the Juglandiaceae and Piperaceae for the Prodromus. See Nature 891, 1919.

Prof. Cogniaux, **born at Robechils, Belgium, 1841, died April 15,** 1916. He monographed the Cucurbitaceae for the Prodromus and the Melastomaceae for the *Flora of Brazil*. He also published the important *Dictionaire Iconographique des Orchidées* 1897-1907.

Dr W. G. Farlow, aged 75, Professor of Cryptogamic Botany at Harvard. See Obituary by Prof. Vines in *Ann. Bot.*, Oct. 1919, p. xiv.

F. Ducane Godman, D.C.L., F.R.S., died February 19, 1919, the very distinguished scientist on whom the Gold Medal of the Linnean Society was conferred in 1918. The enormous *Biologia Centrali-Americana* of 62 volumes was produced under his superintendence

and with his financial help. See Nature and an Appreciation by Lord Walsingham in Proc. Ent. Soc. 1919. A memorial, to take the shape of a bronze medallion portrait tablet is to be placed in the Natural History Museum, South Kensington, the surplus funds from which are to be handed to the Godman Memorial Exploration Fund which has been founded by Lady Godman and her two daughters with a sum of £5000. Subscriptions may be sent to C. E. Fagan, Esq., I.S.O., Natural History Museum, Cromwell Road, London, S.W.7.

JOHN HOPKINSON, died July 8, 1919, founded the Natural History Society of Hertfordshire in 1874 and contributed many important papers to its proceedings.

Dr ARTHUR E. LECHMERE, died February 14, 1919, a distinguished Mycologist and a pupil of our member, Prof. Priestly. His death occurred soon after his return from Ruhleben. He had previously been imprisoned in the Bavarian salt mines. His energy and stimulating influence in the internment camp did much to help his unfortunate comrades.

HECTOR LEVEILLE, born at Mons, March 13, 1863, died November 25, 1918. He founded and was perpetual secretary of the Academie Internationale de Geographie Botanique, and editor of the 28 volumes of its journal, the *Bulletin de Geographie Botanique*. He published a *Monographie du Genre Oenothera* and an *Iconographie du Genre Epilobium*, neither of them very satisfactory.

Sir JAMES SAWYER, died January 27, 1919, once Professor of Materia Medica at Queen's College, Birmingham, and a distinguished physician with whom I had much correspondence upon our native plants suspected of having therapeutic properties. These he freely experimented with and from such as *Chelidonium*, *Viola odorata* and *Senecio Jacobaea* thought he had good results.

HENRI SUDRE, the great French worker at Rubi and Hieracia, born at Bernac (Tarn), January 12th, 1862, died at Toulouse, December 4th, 1918, and Professor at L'Ecole Normale de Toulouse. His exhaustive Monograph of the Rubi Europae was noticed in the *Report* 368, 1913, and will be further alluded to in the next *Report*. His Monograph on the European Hieracia exists in MS. but has not been published.

NEW COUNTY AND OTHER RECORDS.

ABBREVIATIONS.—*Rep. B.E.C.* = *Report of the Botanical Society and Exchange Club*; *Wats. B. E. C.* = *Report of Watson Botanical Exchange Club*, Woodhall Spa = Plants gathered by the Rev. F. Alston at Tower o' the Moor Fowl-farm, N. Lincoln; Jones = D. A. Jones' MS. Fl. Merioneth (Ruddy's records are contained in Mr Jones' MSS.); † = Adventive; * = New County Record (in the case of adventive plants this is only rarely added); ! placed after a plant signifies that the compiler has seen a specimen; ! placed after a locality that the compiler has seen it there; × placed between two scientific names means that the plant is a hybrid; 52, &c., numbers following a county, refer to the Watsonian vice-county in Topographical Botany; [ ] enclosing a record mean that confirmatory evidence is needed.

*3. THALICTRUM FLAVUM L. Llanderfel, Talsarnan, Merioneth, JONES.

16. ADONIS ANNUA L. Nuffield, Oxon, H. L. GREEN.

17. MYOSURUS MINIMUS L. Between Bexhill and Pevensey, E. Sussex, HARRISON.

19. RANUNCULUS REPENS L. At 3,400 feet on Snowdon. It also occurs at over 3,000 feet on Brandon Mt., Kerry. To both places it may have been conveyed by sheep, but there seems no adequate ground for questioning its indigenity although Dunn included it in his *Alien Flora*. DRUCE.

20. R. ACRIS L., var. STEVENI (Andr.). Llanberris, Carnarvon, DRUCE.

23. R. LINGUA L., var. HIRSUTUS Wallr. Woodwalton Fen, Hunts; Wicken Fen, Cambridge; Shouldham, Norfolk, LITTLE, *in litt.*

32. R. PARVIFLORUS L. Newport, Pembroke (lacks pers. auth.), DRUCE.

*37. R. CIRCINATUS Sibth. Llanderfel, Merioneth, JONES.

38. R. TRICHOPHYLLUS Chaix, var. RADIANS (Revel). Knowle, W. Lancs, 1887, BAILEY, as *heterophyllus*.

40. R. HETEROPHYLLUS Web., var. TRIPHYLLUS (Hiern). Much Marcle, Hereford, 1894, BAILEY; *Llanderfel, Merioneth, JONES.

45. R. LENORMANDI F. Schultz. At over 2,000 feet on Carnedd Llewellyn, Carnarvon, DRUCE; perhaps a hybrid of this with HEDERACEUS, near Chelford, Cheshire, 1892, BAILEY, as *Lenormandi*.

46. R. HEDERACEUS L., var. OMIOPHYLLA (Ten.). Norbury Booths, Cheshire, 1894, BAILEY.

48. CALTHA PALUSTRIS L., var. MINOR DC. Pentlands, E. Lothian; W. Lomond, Fife, TEMPLEMAN.

49. C. RADICANS Forst. Moy, Easterness; Brahan, E. Ross; Tongue, W. Sutherland; Scarmclett, Caithness, DRUCE.

†66. ACONITUM NAPELLUS L. Long Oaks Common, Glamorgan, Miss London, not native in this area; Temple's Druid, Pembroke, ARNETT, *in litt.*

72. BERBERIS VULGARIS L. Rosehill, Pembroke, SAUNDERS; in two places, DRUCE, but known by Arnett for many years.

75. NYMPHAEA LUTEA L., var. INTERMEDIA (Ledeb.). Black Loch, Fife, TEMPLEMAN.

77. CASTALIA ALBA Wood, var. MINOR (DC.). With the foregoing.

80. PAPAVER RHOEAS L., var. PRYORII Druce. Tenby, Pembroke. Var. CAUDATIFOLIUM Fedde. Tenby, Pembroke; Twinstead, N. Essex, DRUCE.

83. P. ARGEMONE L. Glen More, Easterness, at 1,000 feet, DRUCE.

†91. ROEMERIA HYBRIDA DC. Portishead, N. Somerset, Mrs SANDWITH.

†93. ESCHSCHOLZIA DOUGLASII Walp. Dublin, on rubbish, GRIERSON.

†96. HYPECOUM PENDULUM L. Sandy field, Byfleet, Surrey, Lady DAVY.

*104. FUMARIA PALLIDIFLORA Jord. Llanfair, Merioneth, JONES.

*106. F. PURPUREA Pugsl. Fairnilee, Selkirk, DRUCE.

111. F. PARVIFLORA Lam., var. ACUMINATA Clav. Hitchin, Herts, LITTLE.

126. RADICULA ISLANDICA (Oeder) Druce. (PALUSTRIS). As an adventive, in a monstrous state, with very small fruits, at Bardowie ash-heaps, Glasgow, GRIERSON.

128. BARBAREA VULGARIS Br., var. CAMPESTRIS Fr. Bradwell, Coggeshall, N. Essex, BROWN.

130. B. ARCUATA Jacks., ? of Reichb. Llandilo, Carmarthen; Monmouth; Goodrich, Hereford, DRUCE; Galashiels, Selkirk, HAYWARD; side of Tyne, E. Linton, Haddington, TEMPLEMAN.

†137. ARABIS ALBIDA Stev. Naturalised on shingle, Kingsdown, Kent, Rev. H. E. FOX; Merthr Mawr, Glamorgan, WEBB.

140. A. PETRAEA Lam. Moelwyn, Merioneth, JONES. Removes ? in *Top. Bot.*

141. A. GLABRA Bernh. On a wall-top at Higher Carden, Cheshire, MARSDEN-JONES.

143. CARDAMINE AMARA L., var. ERUBESCENS Peterm. Side of Tyne, below Haddington, TEMPLEMAN.

†147. C. TRIFOLIA L. Naturalised on a mossy bank, Singleton, near Swansea, Glamorgan, in great quantity, Hon. Lady INGILBY, vide sp.

†150. LUNARIA ANNUA L. Devon, TROWER; N. Queensferry, Fife, TEMPLEMAN.

161. DRABA INCANA L. On village wall, Bettyhill, W. Sutherland, DRUCE.

164. EROPHILA PRAECOX (Stev.) DC. La Haule, Jersey, DRUCE.

168. COCHLEARIA ALPINA Sweet. Pentlands, above Dolphinton, Midlothian, TEMPLEMAN.

170. C. GROENLANDICA L. Dornoch, E. Sutherland, DRUCE.

†176. HESPERIS MATRONALIS L. Wellingborough, Northants; Walton on the Naze, S. Essex, DRUCE.

†177. WILCKIA MARITIMA Scop. Naturalised on shingle, Portsdown, Kent, Rev. H. E. Fox; Hayling Island, S. Hants; Tenby, Pembroke, DRUCE.

†178. W. AFRICANA F. v. Muell. St Philip's, Bristol, COBBE.

†181. SISYMBRIUM STRICTISSIMUM L. Addison's Walk, Oxon, PARRY.

†183. S. SOPHIA L. Kidderminster, Worcester, HUMPHREYS; N. Queensferry, Fife, TEMPLEMAN; near Belfast, Co. Down, GRIERSON; *Llanderfel, Merioneth, JONES.

†184. S. ALTISSIMUM L. Tenby, Pembroke; Wellingborough, Northants; Brocton, Staffs, DRUCE; Saltney, Flint; Hoygate, Cheshire, COBBE; Silloth, Cumberland, TRETHEWY; E. Boldon, Durham, TEMPERLEY; Cupar, Fife, MATTHEWS; N. Queensferry, Fife, TEMPLEMAN; Dunkeld, E. Perth, TRETHEWY; Belfast, Co. Down, GRIERSON.

†185. S. ORIENTALE L. Abingdon, Berks, PARRY; Hitchin, Herts, LITTLE; Saltney, Flint, COBBE; Silloth, Cumberland, TRETHEWY; Cardiff, Glamorgan; Southampton, Hants, DRUCE. Var. SUBHASTATUM Thell. St Anne's-on-Sea, Lancs, BAILEY, as *stenocarpum*.

†185 (2). S. ERYSIMOIDES Desf. St Philip's, Bristol, COBBE.

†187. S. LOESELII L. Hertford, GRAVESON; Park Royal, Middlesex, *Hb. Druce.*

†187. S. OFFICINALE Scop., var. LEIOCARPUM DC. Orford, E. Suffolk, PARRY.

†196 (2). ERYSIMUM SUFFRUTICOSUM Spreng. Eastbourne, E. Sussex, Dr GILBERT, as *virgatum.*

†200. CONRINGIA ORIENTALIS Dum. Lanarth, Cornwall, in ploughed up pasture, WILLIAMS; Cardiff, Glamorgan, VACHELL; Llandrillo, Merioneth, JONES; Llanberris, Carnarvon, COBBE; S. Queensferry, Linlithgow; N. Queensferry, Fife, TEMPLEMAN.

205. BRASSICA OLERACEA L. In magnificent show at Tenby, Pembroke, DRUCE.

†209. B. TOURNEFORTII Gouan. St. Philip's, Bristol, COBBE; Colchester, BROWN.

211. B. CHEIRANTHOS Vill. This, not *B. monensis*, is the plant of Shire Holme, Gower, Glamorgan, TROW.

†*217. B. ALBA Boiss. Barmouth, etc., Merioneth, JONES.

†218. B. JUNCEA Coss. Lyndhurst, S. Hants, COBBE; Ware, Herts, HIGGENS; Leicester, HORWOOD; Brocton Camp, Staffs, DRUCE; Sandal, York, HORRELL; Watton, W. Norfolk, ROBINSON [Ref. No. 139], as *elongata*; Rodemon, near Crossgar, Belfast, Co. Down, GRIERSON; Beaumaris, Anglesey, DRUCE; Ware, Herts, HAYLLARD; Edenbridge, Kent, TALBOT; Swaythling, S. Hants, RAYNER.

†219. B. DISSECTA Boiss. St Philip's, Bristol, COBBE.

†222. B. POLLICHII Druce. Long Ashton, N. Somerset, ROPER & COBBE; Hertford, GRAVESON.

†223. B. ERUCASTRUM L. (ERUCASTRUM NASTURTIIFOLIUM (Poir.) Schultz). Croft Castle, Hereford, MRS ATHERLEY.

†224. B. ADPRESSA Boiss. On shingle below Crawley Wood, Glamorgan, WEBB.

†225. DIPLOTAXIS ERUCOIDES DC. Bedminster, Bristol, COBBE & SANDWITH.

226. D. TENUIFOLIA DC. Tenby, Pembroke, ARNOTT & DRUCE; [Ref. No. 130] Watton, W. Norfolk, ROBINSON, as *Brassica*. (See *Rep. B.E.C.* 317, 1915).

†228. ERUCA SATIVA Mill. Saltney, Flint, COBBE; Monks Meadow, Gloster, 1911, ex RIDDELSDELL.

†228 (2). E. CAPPADOCICA Reut. Elland, York, HORRELL.

†230. MORICANDIA ARVENSIS DC. Silloth, Cumberland, TRETHEWY.

†233. CORONOPUS DIDYMUS Sm. Bangor, Carnarvon, DRUCE; Troon, Ardrossan, Ayr, GRIERSON; Harlech, Merioneth, JONES; Seacombe, Cheshire, 1871, H. S. FISHER.

†239. LEPIDIUM PERFOLIATUM L. Ashton Gate, N. Somerset, COBBE; Sharpness Dock, TODD; N. Queensferry, Fife, TEMPLEMAN.

†240. L. RUDERALE L. Kidderminster, Stourport, Worcester, HUMPHREYS.

†240 (2). L. NEGLECTUM Thell. Pwlheli, Carnarvon; Lyndhurst, S. Hants, COBBE; Dorchester railway station, Dorset, DRUCE.

†240 (3). L. RAMOSISSIMUM A. Nelson. St Philip's, Bristol, DRUCE; Welbeck, Notts, GOULDING.

246. L. SMITHII Hook. Near Aberdour, Fife, TEMPLEMAN.

†247. L. VIRGINICUM L. Pwlheli, Carnarvon, COBBE; Saltney, Flint; West Kirby, Chester, COBBE; N. Queensferry, Fife, TEMPLEMAN; Belfast, Co. Down, GRIERSON.

†247 (4). L. DENSIFLORUM Schrad. Silloth, Cumberland, TRETHEWY; Twerton, N. Somerset, DRUCE; Lyndhurst, S. Hants; Slough, Bucks, COBBE; Moulsford, Berks, NEILD; Woodhall Spa, Lincs., ALSTON.

†247 (5). L. BONARIENSE L. St Philip's, Bristol, DRUCE.

†249. THLASPI ARVENSE L. Llanberris, Carnarvon, COBBE; Beaumaris, Anglesey, DRUCE.

†253. IBERIS UMBELLATA L. Blackmill, near Bridgend, Glamorgan, WEBB; Silloth, Cumberland, TRETHEWY; Hayling Island, Hants, DRUCE.

[255. HUTCHINSIA PETRAEA Br. Was introduced by W. Pamplin to the Rectory walls at Llanderfel, Merioneth, RUDDY.]

†256. ISATIS TINCTORIA L. A dozen or more plants in a brickfield near Taplow station, Bucks. They grew on brick earth recently excavated. In this field a room with pottery was found in the soil. Can the woad have come from ancient seeds? A. WEBSTER, *in litt.*

†258. NESLIA PANICULATA Desv. N. Queensferry, Fife, TEMPLEMAN.

†267. RAPISTRUM ORIENTALE DC. Tenby, Pembroke, ARNETT; Billingshurst, W. Sussex, WEBSTER; Uxbridge, Middlesex, LOYDELL, as *rugosa*; Epsom, Surrey, BARTON; Abingdon, Berks, DRUCE.

268. R. RUGOSUM All. Truro, Cornwall, RILSTONE; Weston super Mare, N. Somerset, TODD; Llanberris, Carnarvon, COBBE; Burryport, Carmarthen, DRUCE; Humberstone, Leics, HORWOOD.

†269. R. LINNAEANUM B. & R. St Anne's-on-Sea, N. W. Lancs, BAILEY, as *orientale*; Ware, Herts, as sub-var. *hirsutum* Cariot; St Philip's, Bristol, DRUCE.

275. RAPHANUS MARITIMUS Sm., var. ALBUS. At Tenby, Pembroke, with the type, DRUCE.

†281. RESEDA ALBA L. Bexhill, Kent, GREEN.

284. R. LUTEA L., var. LONGIFOLIA Ten. Par, Cornwall, 1908, DRUCE; Newhaven, Sussex, HILTON. [The Merioneth record requires confirmation. Only one record, that in *Top. Bot.*, exists.]

293. VIOLA SYLVESTRIS Kit. Great Tey, Bocking, etc., N. Essex; Edwardstone, Little Waldenfield, W. Suffolk, BROWN. Var. PUNCTATA Druce. Alphamstone, etc., N. Essex; Hitcham, W. Suffolk, BROWN.

294. V. RIVINIANA Reichb., var. DIVERSA Greg. Cwm Idwal, COBBE; Clogwyn, Carnarvon, JONES; Alphamstone, etc., N. Essex, BROWN. Var. PSEUDO-MIRABILIS (Coste). Tongue, W. Sutherland, DRUCE; Wayland Wood, W. Norfolk, ROBINSON.

295. V. RUPESTRIS Schmidt, var. GLABRESCENS Becker. Linton, Upper Wharfedale, W. Yorks, WATERFALL.

296. V. CANINA L., var. PUSILLA Bab. St Catherine's, Jersey, DRUCE; Fordham Heath, N. Essex, BROWN; Wentbridge, S.E. Yorks, Miss ARUNDEL; Pennard, Pembroke, with var. SABULOSA, ROPER. × LACTEA. Spurn Head, E. Yorks, WATERFALL.

298. V. ODORATA L., var. SUBCARNEA (Jord.). Farthinghoe, 1919, CREED; Pury Lodge, Northants, DRUCE. Var. DUMETORUM (Jord.). Alphamstone, N. Essex, BROWN.

299. V. HIRTA L., var. HIRSUTA Lange. Edwardstone, W. Suffolk, BROWN. F. HIRTIFORMIS. Bracknell, Berks; Bletchingdon, Oxon, DRUCE. Var. FOUDRASII R. & F. Cockfield, W. Suffolk, BROWN. × ODORATA=PERMIXTA Jord. Stoke-by-Clare, etc., W. Suffolk, BROWN. × SEPINCOLA Jord. Edwardstone, W. Suffolk, BROWN.

301. V. EPIPSILA Ledeb. Newbridge on Wye, Radnor, TODD. F. GLABRESCENS A. & G. Stow Bardolph, W. Norfolk, LITTLE in *Wats. B.E.C.* 52, 1919; Poynton Park, Cheshire, 1892, BAILEY, as *palustris*.

†302. V. CORNUTA L. Tongue, W. Sutherland, DRUCE.

304. V. SUBTILIS Jord. Wool, Dorset, DRUCE.

306. V. CURTISII Forst., var. PESNEAUI (Lloyd) R. & F. Sheringham, E. Norfolk, F. LONG in *Wats. B.E.C.* 53, 1918.

310. POLYGALA COLLINA (Reichb.). Dornoch, E. Sutherland, DRUCE.

310. P. OXYPTERA auct. ang. Tenby, Pembroke; Wye, Kent, DRUCE.

313. P. AUSTRIACA Crantz. Locally plentiful in its old station at Wye, Kent, DRUCE & WEDGWOOD.

314. FRANKENIA LAEVIS L. At about 20 feet alt. on a cliff near Crabbe, Jersey, shown me by T. ATTENBOROUGH.

318. DIANTHUS DELTOIDES L. *Newborough, Anglesey, gathered by Mr KNIGHT on our excursion to the sandhills with Mr D. A. Jones in August last; Torryhill, Aberdour, Fife, TEMPLEMAN.

†331. SAPONARIA VACCARIA L. Portsdown Fort, S. Hants, Miss VIVIAN; Menai Gas Works, COBBE; N. Queensferry, Fife, TEMPLEMAN.

†332. S. OFFICINALIS L. A form with double flowers of a deep crimson colour, on the coast, Harlech, Merioneth, DRUCE.

336. SILENE CUCUBALUS Wibel, var. HIRSUTA (Gray). Common in Glamorgan, WEBB; near Largo, Fife, TEMPLEMAN.

†340. S. NOCTIFLORA L. Llanberris, Carnarvon, COBBE; N. Queensferry, Fife, TEMPLEMAN; once at Llanderfel, Merioneth, RUDDY, ex JONES.

†341. S. DICHOTOMA Ehrh. Evington, Leicester, HORWOOD.

†342. S. GALLICA L. Llanberris, Carnarvon, COBBE & DRUCE.

†345. S. PENDULA L. Hertford, GRAVESON.

†347. S. ARMERIA L. On railway bank, Ystalyfera, Glamorgan, WEBB; G. W. Railway embankment, Somerton, S. Somerset, BOYS.

†349. S. RUBELLA L. Ware, Herts, DRUCE.

†350. S. MUSCIPULA L. Ovenden, Yorks, PULLAN.

354. S. DUBIA Herbich. Lee-on-the-Solent, S. Hants, abundant, RAYNER.

†356 (4). S. ANTIRRHINA L. Galashiels, Selkirk, HAYWARD.

382. STELLARIA DILLENIANA Moench. S. Nailsea Moor, N. Somerset, SANDWITH.

392. ARENARIA LEPTOCLADOS Guss. Railway bank, Aberdour, Fife, TEMPLEMAN.

399. SAGINA NODOSA Fenzl, var. MONILIFORMIS Lange. Tenby, Pembroke, DRUCE; Gullane Links, Haddington; Tentsmuir, Fife, TEMPLEMAN; Dornoch, E. Sutherland, DRUCE.

401. S. SUBULATA Presl. * On sand, Dolphinton, Peebles; Traprain Law, Haddington, TEMPLEMAN.

407. S. MARITIMA Don. Dornoch, E. Sutherland, DRUCE.

408. S. PROCUMBENS L., var. MARITIMA Gren. La Haule, Jersey; St Lawrence, Guernsey, DRUCE.

412. SPERGULARIA MEDIA Presl (MARGINATA), var. ROBUSTA Druce. East Mersea, N. Essex, BROWN.

413. S. SALINA Presl. Dornoch, E. Sutherland, DRUCE.

†418. CLAYTONIA SIBIRICA L. Naturalised in thousands at Blairadam, Fife, as the white-flowered *alsinoides* Sims, TEMPLEMAN.

†419. C. PERFOLIATA Donn. Donibristle, Fife, TEMPLEMAN.

423. ELATINE HYDROPIPER L. Westwood Pool, Worcester, in quantity. C. REA, vide sp. A most interesting re-discovery.

†426. HYPERICUM HIRCINUM L. Vodol, Carnarvon, COBBE.

435. H. QUADRANGULUM L. (DUBIUM). Newport, Pembroke; Crickhowell, Brecon, DRUCE.

438. H. LINEARIIFOLIUM Vahl. In some quantity in new localities between Pwlheli and Abererch, Carnarvon, as well as at the old habitat near Bodfean, 1919, COBBE, also, with it, probably a hybrid with *humifusum*. This rare species was thought (*Fl. Carnarv.* 28) to be extinct, but about 12 years ago Herbert Napier, then a boy, brought me specimens, DRUCE.

†443. ALTHAEA HIRSUTA L. On fallow ground near Tenby, Pembroke, ARNETT & DRUCE.

†447. LAVATERA THURINGIACA L. Woodhall Spa, N. Lincs, ALSTON.

451. MALVA MOSCHATA L. Near Kirkliston, Linlithgow. TEMPLEMAN.

453. M. ROTUNDIFOLIA L. This is the *M. parviflora* from Little Ellingham, W. Norfolk, ROBINSON. See *Rep. B.E.C.* 478, 1916.

†468. LINUM USITATISSIMUM L., var. HUMILE (Mill.), (CREPITANS). Docks, Birkenhead, Cheshire, 1909, TRAVIS. See *Rep. B.E.C.* 78, 1911. Named by THELLUNG.

*478. GERANIUM PRATENSE L. Near the top of Bwlch-y-Groes, Merioneth, JONES.

†*481. G. PYRENAICUM Burm. f. Llanderfel, Merioneth, RUDDY, ex JONES.

485. G. ROTUNDIFOLIUM L. Blackpill, Glamorgan, WEBB.

486. G. PUSILLUM Burm. f. Tenby, Pembroke (lacks pers. auth.); Newborough, Anglesey, DRUCE.

488. G. ROBERTIANUM L., var. RUBRICAULE Horn. Pagham, W. Sussex; Hayling Island, S. Hants, DRUCE.

†490 (2). ERODIUM BOTRYS Bert. Exley's Dump, WEST; Meanwood, York, LEES.

†491. E. MALACHOIDES Willd. Carshalton, Surrey, 1889, *Hb. Druce*.

497 *b*. E. PIMPINELLOIDES Sibth. Pwlheli, Carnarvon, COBBE; Cotton, Beds, LITTLE.

†499. E. CYGNORUM Nees. Back Bentley Waste, Yorks, LEES.

†501. TROPAEOLUM MAJUS L. Beaumaris, Anglesey, DRUCE.

†503. LIMNANTHES DOUGLASII Br. In two places, Bexhill, Kent, GREEN.

504. OXALIS ACETOSELLA L., var. SUBPURPURASCENS DC. GRAIG, Monmouth; Cwm, Glamorgan, WEBB; Largo, Fife, TEMPLEMAN.

†506. O. STRICTA L. Beaumaris, Anglesey, DRUCE.

†512. IMPATIENS PARVIFLORA DC. Beaumaris, Anglesey, DRUCE; Corris, Merioneth, JONES; Coggs, Oxon, HEATON.

†513. I. GLANDULIFERA Royle. Beaumaris, Anglesey, DRUCE; on the banks of the Nidd between Knaresborough and York, 1919, Hon. Lady INGILBY. I saw it there quite naturalised.

†520. STAPHYLEA PINNATA L. In some plenty near Baldon, Oxon, DRUCE. Can this be one of the plants said to have been introduced by Rousseau? The locality adjoins Nuneham where he lived but none of the existing trees seem old enough. *Lilium Martagon* and other aliens are present. Wickwar, near Bishop's Hill Wood, W. Gloster, WHITE.

526. ACER CAMPESTRE L., f. INCISIFOLIA. Hunsbury Hill, Northants, DRUCE.

†529. LUPINUS ANGUSTIFOLIUS L. Llanberris, Carnarvon, COBBE.

*533. GENISTA ANGLICA L. Above Penrhyn Dovey, Merioneth, JONES.

535. GENISTA TINCTORIA L. Tenby, Pembroke, ARNETT.

539. ULEX MINOR Roth, var. LONGISPINOSUS (R. & F.) Druce. London Ride, Savernake, N. Wilts. Bedwyn Brailes (See *Rep. B.E.C.* 192, 1915) is in Wilts. The plant is erect up to 3 feet high, with strong spines. A dwarf form of *nanus*, stems only 4 inches high, grows in the N.E. part of Tottenham Park, N. Wilts, HURST, *in litt.*

†*548. TRIGONELLA FOENUM-GRAECUM L. Hertford, GRAVESON; Elland, York, HORRELL; Denton, S. Lancs, COLLIER, ex TRAVIS, a glabrate form.

†555. T. BESSERIANA Ser. Botley, Oxon; Cardiff, Glamorgan, DRUCE; Acton, Middlesex, LOYDELL; Foss, York, HORRELL.

†556. T. HAMOSA L. Falmouth Dock, Cornwall, COBBE.

†562. MEDICAGO FALCATA L., var. TENUIFOLIOLATA Vuyck. Leith Docks, Midlothian, FRASER.

†564 (2). M. VARIA Martyn. West Mount, Jersey; Ware, Herts, DRUCE; Woodhall Spa, N. Lincs, ALSTON.

†567. M. SCUTELLATA Mill. Odiham, N. Hants, PALMER; Worcester City, MURRAY.

†572. M. TRUNCATULA Gaertn. Shoreham, W. Sussex, HILTON, as *tribuloides* (*Rep. B.E.C.* 216, 1906); St Philip's, Bristol, COBBE.

†574. M. TUBERCULATA Willd. Colchester, BROWN; Kirkstall, PULLAN; Dewsbury, York, HALEY; Leith, Midlothian, FRASER; Bristol, COBBE.

†578 (2). M. PRAECOX DC. Bootle, S. Lancs, WHELDON.

†579. M. HISPIDA Gaertn. Kelso, Roxburgh, BROTHERSTON. *Journ. Bot.* 22, 1876, as *lappacea*. Var. APICULATA (Willd.). Kew, Surrey; Botley, Oxon, PARRY; *Llanderfel, Merioneth, JONES; Dublin, GRIERSON. Var. DENTICULATA (Willd.). Tenby, Pembroke, DRUCE; Llanderfel, Merioneth, JONES. Var. CONFINIS Burnat. Wallasey, Cheshire, 1875, LEWIS, as *apiculata*.

580. M. ARABICA Huds. Colchester, BROWN; N. Queensferry, Fife, TEMPLEMAN.

581. M. MINIMA Desr., var. LONGISETA DC. Abingdon, Berks, PARRY.

586. M. LUPULINA L., var. WILLDENOWIANA Koch. As a small fruited form, Glasgow, GRIERSON.

593. MELILOTUS OFFICINALIS Lam., var. UNGUICULATA Ser. Hove, W. Sussex, HILTON, as *ruthenica*; Haddington, Oxon, PARRY.

†596. M. ARVENSIS Wallr. and †597. M. INDICA All. N. Queensferry, Fife, TEMPLEMAN.

†615. TRIFOLIUM CONSTANTINOPOLITANUM Ser. St Philip's, Bristol, COBBE; Acton, Middlesex, LOYDELL, in *Hb. Druce*.

†616. T. ECHINATUM Bieb. (SUPINUM Savi). Andenshaw, S. Lancs, COLLIER, ex TRAVIS.

*618. T. SCABRUM L. Towyn, Barmouth, Merioneth, JONES.

620. T. SUBTERRANEUM L. On limestone bluff, near Port Eynon, Glamorgan, Miss SIMONS.

†629. T. MICHELIANUM Savi. Pyrford, Surrey, Lady DAVY.

†631. T. PARVIFLORUM Ehrh. Pyrford, Surrey, Lady DAVY.

†634. T. PATENS Schreb. Brighton, Sussex, HILTON, as *T. brutium*.

*638. T. FILIFORME L. Dolgelly, Merioneth, JONES.

641. ANTHYLLIS VULNERARIA L., f. OVATA. Rhossili, Glamorgan, RICHARDSON. Var. OCHROLEUCA Corb. Plemont, Jersey, DRUCE.

648. LOTUS TENUIS Kit. A specimen from Royston, Herts, 1915, LITTLE, is intermediate between this and *corniculatus*, teste

THELLUNG. Var. PEDUNCULATUS (Cavan.). Hythe Quay, Colchester, 1919, BROWN.

650. L. ANGUSTISSIMUS L. Morte Point, N. Devon, Prof. MACLEAN.

655. ASTRAGALUS DANICUS Retz. Dornoch, E. Sutherland, both white and purple, Mrs WRIGHT, vide sp.; St Andrews, Fife, with reddish-purple flowers, DRUCE.

†657. A. BOETICUS L. St Philip's, Bristol, Mrs SANDWITH.

†666. CORONILLA VARIA L. E. Boldon railway, Durham, TEMPERLEY.

671. HIPPOCREPIS COMOSA L. Limeslade, second station for Glamorgan, WEBB.

680. VICIA OROBUS DC. Brynamman, Glamorgan, WEBB.

†681. V. VILLOSA Roth. Evington, Leics, HORWOOD; Minehead, S. Somerset, LOYDELL.

†681 (2). V. BENGHALENSIS L. Belgrave, Leics, HORWOOD.

†683. V. VARIA Host. Ware, Herts, DRUCE; Belgrave, Leics, HORWOOD; Cobham, Kent, Miss RIDLEY; Port Talbot, Glamorgan, WAKEFIELD.

†686. V. CALCARATA Desf. This is the *V. monanthos* from St Philip's, Bristol, COBBE; Ware, Herts, DRUCE & TROWER.

688. V. SEPIUM L., var. MONTANA (not ANGUSTIFOLIA) Koch. Glen More, Easterness, where I saw it 51 years ago, DRUCE. Var. DUNENSIS Druce. Reay and Bettyhill, W. Sutherland, DRUCE.

†691. V. LUTEA L., var. CAERULEA Archang. Evington, Leics, HORWOOD; St Philip's, Bristol, COBBE.

†695. V. MELANOPS Sibth. & Sm. Kirkstall, York, PULLAN.

†701. V. PEREGRINA L. Ware, Herts, DRUCE & TROWER.

705. V. TETRASPERMA Moench, var. TENUISSIMA Druce. Wye, Kent, DRUCE.

713. LATHYRUS PALUSTRIS L. Near Thorp, Notts, N. & C. SANDWITH.

†721. L. CICERA L. Belgrave, Leics, HORWOOD; Newark, Notts, Rev. A. H. SMITH.

†722 (2). L. HIEROSOLYMITANUS Boiss. Morley, York, HORRELL.

†724. L. OCHRUS L. Pyrford, Surrey, Lady DAVY.

737. PRUNUS AVIUM L. Taychreggan, Argyll, LESTER-GARLAND, *in litt.*

†739. P. DOMESTICA L. Whittlesey, Hunts; Haywood, Staffs, DRUCE.

741. P. SPINOSA L., var. RUSTICANA (J. & F.). Gt. Bedwyn, Wilts, HURST.

†744. SPIRAEA SALICIFOLIA L. (as a garden hybrid). Pyrford, Sussey, 1913, DRUCE; Ashiestiel, Selkirk, HAYWARD.

†745 (3). S. DOUGLASII Hook. Between Skewen and Loulas, Glamorgan, WEBB.

†745 (5). S. OPULIFOLIA L. At Brahan, E. Ross, of course planted and not even an outcast, DRUCE.

750. RUBUS NESSENSIS Hall. Rhydydefaid Woods, Glamorgan, TROW.

758. R. CARIENSIS Genev. Blackpill, Glamorgan, WAKEFIELD.

764. R. INCURVATUS Bab. Tackley, Oxon, DRUCE & RIDDELSDELL.

777. R. VILLICAULIS Koehl. Highbury Wood, N. Somerset, ROPER.

804. R. LASIOCLADOS Focke, var. ANGUSTIFOLIUS Rogers. Herts, DRUCE.

815. R. RADULOIDES Rogers. Park Corner, Oxon, DRUCE.

817. R. MELANOXYLON P. J. Muell. Park Corner, Oxon, DRUCE.

*855. R. HOSTILIS P. J. M. & W. Nuneham, Oxon, DRUCE.

†877. R. LACINIATUS Willd. Near Kirkcaldy, Fife, TEMPLEMAN.

*879. R. SAXATILIS L. By the Tyne, above W. Linton, Peebles, TEMPLEMAN.

883. GEUM RIVALE L. With double red flowers at Dornford, S. Wilts, Hon. Mrs TRYON, vide sp.; also with a flower in the leaf axil, Blairadam, Fife, TEMPLEMAN; *near Chertsey, Surrey, 1920, where Miss Tulk found it some years ago, Lady DAVY, *in litt.*

886. FRAGARIA VESCA L. With white fruit at Old Quarry, Aberdour, Fife, TEMPLEMAN.

†887. F. MOSCHATA Duchesne. Near Bridgend, Glamorgan, Hon. Mrs LEITH.

†892. POTENTILLA RECTA L. Near Tintern, banks of Wye, Monmouth, 1873, BAILEY.

†895. P. ARGENTEA L. Balwearie Braes, Fife, TEMPLEMAN.

†906. P. NORVEGICA L. Purwell field, Herts, LITTLE; Burntisland, Fife, TEMPLEMAN; Dundee, Forfar, DRUCE; Glen More, Easterness, Mrs WEDGWOOD; Hitchin, Herts, LITTLE.

909. ALCHEMILLA ALPESTRIS Schmidt. Craig Cillie, Brecon, DRUCE; Cupar, Fife; Loch Loch, E. Perth, TEMPLEMAN.

909. A. MINOR Huds. Bangor and Llanberris, Carnarvon, COBBE; Pentlands, above Dolphinton, Midlothian; Glen Tilt, E. Perth, TEMPLEMAN.

†910. A. ARGENTEA Don. In a sand-pit, Comiston, Edinburgh, 1914, TEMPLEMAN, here a garden outcast.

†915. AGRIMONIA AGRIMONOIDES L. Ditch side, Garscadden, Dumbarton, GRIERSON.

*917. POTERIUM SANGUISORBA L. Near Cowarch, Merioneth, JONES.

†921. P. CANADENSE A. Gray. Innellan, Firth of Clyde, 1919, Mrs MALLINSON, vide sp.

*963. PYRUS TORMINALIS Ehrh. Hendre Mynach, Merioneth, JONES.

964. P. GERMANICA Hook. f. Spiny form, Holwood Park, W. Kent, MARRIOTT, vide sp.

†965. CRATAEGUS AZAROLUS L. On the peat moor and not near a house, Shapwick Station, N. Somerset, 1919, Mrs SANDMITH.

966. C. MONOGYNA Jacq. A specimen in flower at Berriedale, Sutherland, August 20, 1919, DRUCE. Var. LACINIATA (Wallr.). Harlech, Merioneth; Haywood, Staffs; and as untypical, large-leaved forms with the sinus not reaching the midrib at Ashton, Northants; Ramsey, Hunts; North Leigh, Oxon, DRUCE; Glyndyfrdwy, Merioneth, JONES. Var. INCISIFOLIA Druce. Colne, S. Lancs, TRAVIS; Ramsey, Hunts; Hunsbury Hill and Aynhoe, Northants; Haywood, Staffs, DRUCE. Var. QUERCIFOLIA (Loud.). Hunsbury Hill, Northants; Ramsey, Hunts; Selkirk; Lairg, E. Sutherland; Tongue, W. Sutherland, DRUCE. Var. PTERIDIFOLIA Loud. North Leigh, Oxon, DRUCE. Var. MICROPHYLLA Druce. Hunsbury Hill, Northants; Haywood, Staffs, DRUCE. Var. SPLENDENS Druce. Ramsey, Hunts; Hunsbury Hill, Northants, DRUCE. × OXYACANTHOIDES. Ramsey, Hunts; Hunsbury Hill, Northants; North Leigh, Oxon; Chatteris, Cambridge, DRUCE.

967. C. OXYACANTHOIDES Thuill. Pyle, Bishopton, Glamorgan, WEBB; Hunsbury Hill, Northants, DRUCE.

†972. COTONEASTER MICROPHYLLA Wallich. Llychgair, Carmarthen, quite naturalised; Llanberris, Carnarvon, DRUCE; Burntisland, Fife, TEMPERLEY; among heather, Ballcuirke, Galway, TRETHEWY.

†972 (2). C. SIMONSII Baker. Seedlings by Auchmore burn, Killin, M. Perth, FRASER.

975. SAXIFRAGA OPPOSITIFOLIA L. A stout form on rocks about 100 feet above sea level, Bettyhill, West Sutherland, DRUCE.

*982. S. GRANULATA L. Side of Dee, Llanderfel, Merioneth, RUDDY, ex JONES.

987. S. HIRCULUS L. By the Medwin, Pentlands. The habitat is in Lanark, not Peebles, TEMPLEMAN; *Cabrach, Banff, JOHN YEATS, a specially interesting new county record, and the ninth record for Scotland. Specimens are placed in *Herb. Hort. Bot. Edin.*

988. S. STELLARIS L., var. FONTANA Druce. Carnedd Llewellyn, Carnarvon, in some quantity; Corrie Sneachda, Cairngorm, Easterness, DRUCE.

*1000. PARNASSIA PALUSTRIS L. Llanymawddwy, Merioneth, JONES.

†1000 (10). PHILADELPHUS CORONARIUS L. Baldon, Oxon, DRUCE; Notgrove, Gloster, RIDDELSDELL.

†1001. RIBES GROSSULARIA L. Beauly, Easterness, DRUCE; Harlech, &c., Merioneth, JONES.

†1002. R. NIGRUM L. Crickhowell, Brecon; Carmarthen; Haverford West, Pembroke; Moy, Beauly, Easterness; bird-sown in the enclosure which once contained *Pinguicula alpina* at Avoch, E. Ross; Tongue, W. Sutherland; Berriedale, Caithness, DRUCE; Llanderfel, Merioneth, RUDDY, ex JONES.

†1003. R. RUBRUM L. St David's, Fife, TEMPLEMAN; Nantlle, Pembroke, SAUNDERS; Conan River, E. Ross, DRUCE.

†1004 (4). R. SANGUINEUM Pursh. Far from houses, Penrice, Glamorgan, WEBB.

1010. SEDUM TELEPHIUM L., var. PURPUREUM L. Near St Albans, Herts; Twinstead, N. Essex; Harlech, Merioneth; Llanberris, Carnarvon; Tay-side, M. Perth, DRUCE; Carmarthen, HAMER; Llandrindod, Radnor, TODD; Saline, Fife; Traprain Law, Haddington, TEMPLEMAN.

†1012. S. REFLEXUM L. Newbridge, Radnor, TODD; very profusely on shingle at Shingle Street, Hollesley, E. Suffolk, BROTHERS; Llanfair, &c., Merioneth, JONES.

†1014. S. SEXANGULARE L. Frequent at Ilston, Glamorgan, WEBB.

1015. S. ACRE L. Bridge of Allan, Stirling, OSTENFELD, so determined by him. Var. DRUCEI (Graebner). Sent by G. C. Brown from Pas de Calais, France, and by the lines in Belgium. In the dried state I am unable to distinguish it from our common British plant. At Tongue, W. Sutherland, a form with large flowers and with fewer trailing branches grew at sea-level, DRUCE.

†1016. S. ALBUM L. Pettycur, Fife, naturalised, TEMPLEMAN.

†1018. S. DASYPHYLLUM L. Between Denbigh and St Asaph, WEBB.

†1023. S. STOLONIFERUM Gmel. Llangyfilach, Blaenrhondda, Glamorgan, WEBB; Felixstowe, E. Suffolk, BROTHERS.

†1023 (2). S. SPURIUM M. Bieb. Pettycur, Fife, TEMPLEMAN.

1027. DROSERA ANGLICA Huds. *Cannock Chase, Staffs, where Capt. VEVERS showed it me. This year it was in extreme plenty in Ross, Sutherland and Caithness, DRUCE.

*1033. MYRIOPHYLLUM ALTERNIFLORUM DC. Near Norwich,

TALBOT. The specimens are not in good condition but I think they are correctly named.

1039. CALLITRICHE INTERMEDIA Hoffm., var. HOMOIOPHYLLA (Gren. & Godr.). In deep water at Milton of Morenish, Loch Tay, 1905. On this plant A. Bennett (*Ann. Scot. Nat. Hist.* 122, 1911) says the leaves are 1½ to 2 inches long, with the apex separated into a complete claw-like end twice the width of the leaf. FRASER.

†1045. LYTHRUM HYSSOPIFOLIA L. Bradford, York, CRYER.

1046. EPILOBIUM ANGUSTIFOLIUM L., var. BRACHYCARPUM Leight. Dunfermline, Fife, not native, TEMPLEMAN.

†1061. OENOTHERA BIENNIS L., var. PARVIFLORA (L.). Harefield, Middlesex, DRUCE; Aberdare, Glamorgan, RIDDELSDELL.

†1063. Œ. AMMOPHILA Focke. Braunton, N. Devon, COBBE.

†1067. Œ. SINUATA L. Boiling Wells tip, Bristol, WEDGWOOD.

1073. CIRCAEA ALPINA L. Georgetown burn, Cleish, Fife, and var. INTERMEDIA (Ehrh.). Near Blairadam, Fife, TEMPLEMAN.

†1077. MESEMBRYANTHEMUM EDULE L. Saunton Sands, N. Devon, Dr ASHBY!

†1077 (2). TETRAGONIA EXPANSA Thunb. Medley, Oxon, PARRY.

1080. ERYNGIUM CAMPESTRE L. Still at Par, Cornwall, HAYNES.

1082. ASTRANTIA MAJOR L., var. INVOLUCRATA Koch. River side, Beauly, Easterness, DRUCE & WEDGWOOD.

†1083 (2). A. MAXIMA Pall. (HELLEBORIFOLIA Salisb.). Wood, near Middleton in Teesdale, Durham, Mrs WILDE, vide sp. I saw it there in 1909, but omitted to record it.

*1097. APIUM GRAVEOLENS L. Mochras, etc., Merioneth, JONES.

†1101. AMMI MAJUS L. Lucerne field, Eastbourne, Sussex, LOMAX; Evington, Leics, HORWOOD.

†1102. A. VISNAGA L. Humberstone allotment, Leics, HORWOOD.

*1104. CARUM VERTICILLATUM Koch. Minfordd, Merioneth, JONES; also seen there by Miss COBBE in 1919.

†1107. C. BULBOCASTANUM Koch. Cornfield near Cheltenham, Gloster, August 1919, KNIGHT, vide sp. Known for some years as an adventive.

†1109. PRIONITIS FALCARIA Dum. Railway station yard, Barmouth, Merioneth, COBBE; a large patch, well established in a pasture field, Culham, Oxon, 1919, PARRY, specimens distributed this year; near Hook Norton, Oxon, LAMB.

†1125. SCANDIX IBERICA Bieb. Near Leckhampton Station, Gloster, 1912, TRUMP; St Philip's, Bristol, COBBE.

1126. ANTHRISCUS SYLVESTRIS Hoffm., var. LATISECTA Druce. Very characteristic at Billingshurst, W. Sussex, DRUCE & WEBSTER; Eltham, Wye, W. & E. Kent; Hambledon, S. Hants; Highclere, N. Hants; Andoversford, E. Gloster; near Gloucester, W. Gloster; Ross, Hereford; Crickhowell, Brecon; Carmarthen; Narberth, Pembroke; Cardigan; Pershore, Worcester; Coleshill, Warwick; Lichfield, Staffs; Shrewsbury, Salop; Ramsey, Hunts; Chatteris, Cambridge; Downham, W. Norfolk; Ranworth, E. Norfolk; Twinstead, N. Essex; Kirby-le-Soken, S. Essex; Stansteadbury, Herts; Sudbury, W. Suffolk; Uxbridge, Middlesex; Newport Pagnell, Bucks; Amphill, Beds; * St Aubin's, Jersey; Mt. St Michel, Brittany. Var. ANGUSTISECTA Druce. St Andrews, Fife; Blair Athol, E. Perth; Moy, Easterness; Brahan, Avoch, Bonarbridge, E. Ross; Ullapool, W. Ross; Tongue, W. Sutherland; Dornoch, E. Sutherland; John o' Groats, Caithness, all seen in 1919, DRUCE.

1134. ŒNANTHE CROCATA L. Shore, East Mersea, N. Essex, BROWN.

1135. Œ. PIMPINELLOIDES L. Rudley Marsh, S. Hants, Miss BUTLER and DRUCE; Virley, N. Essex (Gibson's locality), BROWN.

1136. Œ. MEDIA Griseb. = SILAIFOLIA auct. ang. Somerton, Oxon, RIDDELSDELL, a northern extension of its range. The habitat

is close to the Northamptonshire border into which county it may extend.

1138. Œ. FISTULOSA L., var. TABERNAEMONTANI DC. Whittlesey, Hunts, DRUCE.

1144. LIGUSTICUM SCOTICUM L. In shell sand, John o' Groats, DRUCE.

†1153. HERACLEUM VILLOSUM Fisch. Great Tew, Oxon, RIDDELSDELL; North Queensferry, Fife, TEMPLEMAN.

1154. H. SPHONDYLIUM L. Dwarfed to 4 inches in sand at Farr, W. Sutherland; with variegated leaves at Stanton St John, Oxon, DRUCE.

†1157. CORIANDRUM SATIVUM L. Near Swaffham, W. Norfolk, REYNOLDS; near Ryde, Isle of Wight, Miss VIVIAN; garden weed, Pyrford, Surrey, Lady DAVY.

1172. HEDERA HELIX L., var. SARNIENSIS Druce. La Haule, St Catherine's, Jersey, there the prevailing form, DRUCE. Var. BOREALIS Druce. Two or three plants at Pyrford, Surrey, Lady DAVY.

[1173. CORNUS SANGUINEA L. Merioneth, to be confirmed. As yet no corroboration.]

†1175. C. STOLONIFERA Michx. Water-break-its-neck, Radnor, TODD.

1176. ADOXA MOSCHATELLINA L. Kiel's Den, Largo, Fife, TEMPLEMAN.

1181. VIBURNUM LANTANA L. Gogar, Linlithgow, TEMPLEMAN.

†1187. LONICERA XYLOSTEUM L. Loughor, Glamorgan, SKERROW; Cardoxton-juxta-Neath, Glamorgan, WEBB; Great Tew, Oxon, RIDDELSDELL; Lochlornie Burn, Blairadam, Fife, TEMPLEMAN; Brahan Castle grounds, E. Ross, DRUCE; Harlech, Merioneth, JONES. Adventive in all the foregoing localities.

*1192. GALIUM BOREALE L. Cader Idris, etc., Merioneth, JONES.

*1194. G. ERECTUM Huds. On railway bank, Arnside, Westmoreland, BAILEY, 1874, as *saxatile*; Dalgety, Fife, TEMPLEMAN; Barmouth Junction, Merioneth, RUDDY.

1196. G. PUMILUM Murr. Goring, Oxon, 1919, a recent introduction, DRUCE.

*1197. G. ULIGINOSUM L. Llanderfel, Merioneth, RUDDY, ex JONES.

†1210. ASPERULA ARVENSIS L. Evington, Leics, HORWOOD.

*1217. VALERIANA DIOICA L. Bog, Llanderfel, Merioneth, RUDDY.

†1218. V. PYRENAICA L. Naturalised at W. Linton, Peebles, TEMPLEMAN.

*1229. DIPSACUS SYLVESTRIS L. Dyffryn, Merioneth, JONES.

†1244 (3). SOLIDAGO SEROTINA Ait. Claygate, Surrey, BRITTON.

†1250. ASTER SALIGNUS Willd. Near Byfleet, Surrey, Lady DAVY & DRUCE.

†1251 (2). A. LANCEOLATUS Willd. A. SALICIFOLIUS Lam., non alior. A. BELLIDIFOLIA Willd. A. PRAEALTUS Poir. A. FRUTESCENS Wimm. See Thell. in *Allgem. Bot. Zeit.* xix., 134, 1913. Hawkesbury Upton, W. Gloster, 1907, WHITE; Marston Brickyards, Oxon, DRUCE.

†1254. A. LONGIFOLIUS Lam. (SALIGNUS Bab.). Banks of Tay, M. Perth, 1869, J. B. SYME; Harlech, Merioneth, DRUCE.

†1254 (3). A. SALICIFOLIUS Ait. Marston, Oxon, DRUCE, teste Kew.

†1255. A. NOVI-BELGII L. Bournemouth, S. Hants, 1896, PALMER; Glamorgan, WEBB; Ware, Herts; Beaumaris, Anglesey,

DRUCE; Wicken Fen, Cambridge, 1899, LYNCH, as *salignus*. This record may explain the discordant naming of the Fen plant. It seems that both this and *salignus* occur. Marston, Oxon; Port Madoc, Merioneth, DRUCE; wood between Coniston and Torver, W. Lancs, COMBER; shore of Derwentwater 1868, EDMONDS (*Rep. B.E.C.* 10, 1868); Ullswater, Cumberland, BAKER; Tayside, M. Perth, 1918, DRUCE.

†1256. A. VERSICOLOR Willd., em. Thell. Raw dykes, Leics, 1904. BELL; Ashley, near Milton, S. Hants, CUMMING, as *lanceolatus*. See *Rep. B.E.C.* 110, 1917, teste Thellung, who corrects my identification.

†1257 (2). A. NOVI-ANGLIAE L. Marston, Oxon, DRUCE.

1258. A. TRIPOLIUM L., var. DISCOIDEUS Reichb. Barna, Galway, also with all blue flowers, TRETHEWY.

1261. ERIGERON ACRE L. * Harlech, Merioneth, JONES. Var. CORYMBOSUM Wallr. Near Chalfont, Bucks; Kidderminster, Worcester, DRUCE.

†1268. FILAGO GALLICA L. In fields, introduced with hay, Llanderfel, Merioneth, RUDDY, sp. non vidi.

1269. F. MINIMA Fries. Near Dolphinton, Peebles, TEMPLEMAN.

1270. ANTENNARIA DIOICA Br. Near Owlesbury, S. Hants, RAYNER; on limestone at Mumbles Head, Glamorgan, WEBB; Maentwrog Valley, Merioneth, a fine clump, COBBE.

†1271. ANAPHALIS MARGARITACEA C. B. Clarke. Yarcombe, S. Devon, HAYNES; between Crymmych & Llanfynach, Pembroke, DRUCE; Barmouth Junction, Merioneth, JONES; Bickram Village, Saline, Fife, a relic of cultivation, TEMPLEMAN.

1279. INULA HELENIUM L. Harlech, etc., Merioneth, JONES.

*1285. PULICARIA DYSENTERICA Gaertn. Aberdovey, Merioneth, JONES.

†1292. AMBROSIA TRIFIDA L. Addlestone, Surrey, LOYDELL; North Queensferry, Fife, with 1291. A. ARTEMISIFOLIA, TEMPLEMAN.

†1301. HELIANTHUS ANNUUS L. Patricroft, S. Lancs, HELSBY; N. Queensferry, Fife, TEMPLEMAN; Beaumaris, Anglesey, DRUCE.

†1302. H. GIGANTEUS L. Woodhall, N. Lincs, ALSTON; St Philip's, Bristol; Botley, Oxon, DRUCE; Colchester, BROWN.

†1306. GUIZOTIA ABYSSINICA Cass. St Philip's, Bristol, SANDWITH.

*1309. BIDENS CERNUA L. Towyn, Merioneth, RUDDY.

†1314. MADIA SATIVA Mol. Welbeck, Notts, GOULDING.

†1315. HEMIZONIA PUNGENS T. & G. St Philip's, Bristol, COBBE; Colchester, N. Essex, BROWN; N. Queensferry, Fife, TEMPLEMAN.

†1317. H. KELLOGGII Greene. N. Queensferry, Fife, TEMPLEMAN.

†1323. ANACYCLUS CLAVATUS Pers. Cardiff, Glamorgan, RIDDELSDELL; St Philip's, Bristol, DRUCE.

†1328. ACHILLEA LIGUSTICA All. Monks Meadow, W. Gloster, 1913, ex RIDDELSDELL.

1329. A. MILLEFOLIUM L., var. LANATA Koch. Rottingdean, Sussex, 1909, DRUCE. Var. CONSPICUA Druce. Caistor, E. Norfolk; Wellingborough, Northants, DRUCE.

†1331. A. NOBILIS L. Pettycur, Fife, W. R. LINTON. (See *Rep. B.E.C.* 294, 1907.)

1334. A. PTARMICA L. Galled specimens (*Rhopalomyia Ptarmicae* Vallot.), Askham Bog, York, INGHAM.

†1336. SANTOLINA CHAMAE-CYPARISSUS L. Hortal escape, Llanberris, Carnarvon, DRUCE.

†1340. ANTHEMIS COTA L. (ALTISSIMA). St Philip's, Bristol, DRUCE; Ware, Herts, HIGGENS; Dewsbury, York, HORRELL.

†1341. A. AUSTRIACA Jacq. Ware, Herts, HIGGENS.

†1344. A. RUTHENICA Bieb. Dewsbury, York, HORRELL; Ware, Herts, HIGGENS.

1353. CHRYSANTHEMUM LEUCANTHEMUM L. At 2,000 feet on Snowdon, DRUCE.

†1356. C. MACROPHYLLUM W. & K. Starleyburn, Burntisland, Fife, TEMPERLEY.

†1356. C. LATIFOLIUM DC. (LACUSTRE Brot.). North Leigh, Oxon, 1907, DRUCE.

†1356 (7). C. MAXIMUM DC. Arbroath, Forfar, DRUCE.

†1357. C. CORONARIUM L. N. Queensferry, Fife, TEMPLEMAN; Dewsbury, York, HALEY.

1360. MATRICARIA INODORA L., var. DISCOIDEA Celak. Pyrford, Surrey, Lady DAVY & DRUCE; Hayes, Middlesex, LOYDELL.

†1362. M. SUAVEOLENS Buch. Wellingborough, Northants; Cors Bodeilio, Anglesey; St Andrews, Fife; Inverness, DRUCE.

†1363. M. DECIPIENS C. Koch. Boiling Wells tip, Bristol, WEDGWOOD.

†1363 (3). M. DISCIFORMIS DC. St Philip's, Bristol, COBBE.

1367. ARTEMISIA ABSINTHIUM L. Beaumaris, Anglesey, GRIFFITH & DRUCE.

[1376. A. MARITIMA L. Barmouth Common, Merioneth, PURTON. Requires confirmation.]

†1378. A. STELLERIANA Bess. N. Queensferry Cliffs, Fife, TEMPLEMAN, a garden escape.

†1381. A. BIENNIS Willd. St Philip's, Bristol, SANDWITH. This is probably the *Tournefortiana* of the notes to the *Flora of Bristol*.

†1383. A. GNAPHALODES Nuttall. Beaumaris, Anglesey, DRUCE, teste THELLUNG; Leith, Midlothian, FRASER.

†1385. PETASITES FRAGRANS Presl. Llanbedr, Merioneth, JONES.

†1388. DORONICUM PARDALIANCHES L. Naturalised in wood, Llanderfel, Merioneth, RUDDY; Shropham, Norfolk, ROBINSON.

†1390. SENECIO SARRACENICUS L. Turners Hill, E. Sussex, WEBSTER.

†1391. S. DORIA L. Marston, Oxon, DRUCE.

†1396. S. SQUALIDUS L. Saltney, Flint, COBBE. × VULGARIS. Oxford. See *Rep. B.E.C.* i., 184, 337, 374, ii., 228. Reading, Berks, 1905; Cork, Ireland; cult. at Balmuto, Fife, by Syme, as *S. vernalis* W. & K. Dr Thellung agrees with me in referring the above mentioned plants to this hybrid.

†1399. S. VISCOSUS L. A railway immigrant. Peterborough, Northants, DRUCE; Saltney Wharf, Flint, COBBE.

1400. S. SYLVATICUS L. A glabrescent form on Cwm Meilionem, Carnarvon, WEDGWOOD & JONES.

1401. S. VULGARIS L. The segregates *S. praecox*, *erectus* var *radiatus*, *rubricaulis* and *multicaulis* are all found in W. Glamorgan by TROW.

†1411. CALENDULA ARVENSIS L. Ware, Herts, HIGGENS; Colchester, BROWN.

†1412 (10). ECHINOPS SPHAEROCEPHALUS L. Garden escape at Compton, Berks, DRUCE.

1418. ARCTIUM LAPPA × VULGARE. Burpham, W. Sussex, EVANS.

*1422. CARDUUS NUTANS L. Llanderfel, Merioneth, RUDDY.

1424. C. EU-CRISPUS L. Walmer, Kent, F. J. SMITH.

1430. CIRSIUM PRATENSE Druce, var. POLYCEPHALUM Druce. Llandrindod, Radnor, TODD.

1433. C. ARVENSE Scop., var. MITE Koch. Stourport, Worcester, HUMPHREYS. † Var. SETOSUM C. A. Mey. Crymlyn, Glamorgan, WEBB; Kidderminster, Worcester, abundant, DRUCE; Dunbar, Haddington, TEMPLEMAN.

1434. C. PALUSTRE Scop., var. FEROX Druce. Bathford Hill, N. Somerset, ROPER; Aviemore, Easterness; Dornoch, E. Sutherland, DRUCE.

†1442. CYNARA CARDUNCULUS L. Bexhill, Kent, GREEN.

*1449. CENTAUREA JACEA L., agg. Near Wellington College, 1919, BRITTON, of comparatively recent introduction.

1451. C. PRATENSIS Thuill. Delapré, Northants, 1873; Epsom, Surrey, BRITTON; Rescobie, Forfar, DRUCE; Wellington College, Berks, BRITTON.

1451. C. NEMORALIS Jord. Cambridge, DRUCE; Worcester Park, Merton, Headley, Sunbury Lock, Surrey, BRITTON, teste LACAITA; Hungerford, Berks, DRUCE; Ditcham Park, Hants, ADAMSON.

*1454. C. CYANUS L. Llanderfel, occasionally, Merioneth, RUDDY.

1456. C. SCABIOSA L., var. GELMII Briq. Effingham, Surrey, 1917, BRITTON.

†1463. C. MELITENSIS L. Llanberris, Carnarvon, COBBE & DRUCE.

†1477. CARTHAMUS TINCTORIUS L. Hertford, GRAVESON; Marston, Oxford, DRUCE; Dublin, in manured fields, GRIERSON.

†1495. CREPIS NICAEENSIS Balb. Field on left hand going from Seatoller to Seathwaite, Cumberland, ADAMS.

1502. C. TARAXACIFOLIA Thuill. Llandilo, Brecon; Carmarthen; Haverford West, Pembroke; Beaumaris, Anglesey, DRUCE.

*1503. HIERACIUM PELETERIANUM Mérat. Near Wadebridge, Cornwall, WEDGWOOD.

†1509. H. PRATENSE Tausch. Brislington, N. Somerset, ROPER.

†1512. H. AURANTIACUM L. Aspergy, Glamorgan, WEBB; Crymmych, Pembroke, ARNETT; Cleish, Fife, TEMPLEMAN.

1641. HYPOCHOERIS GLABRA L. Newborough Sands, Anglesey, COBBE. Var. ROSTRATA C. & G. Near the Gimlet rock, Pwlheli, Carnarvon, COBBE.

1645. TARAXACUM LAEVIGATUM DC. Llandilo, Carmarthen; Crickhowell, Brecon; Newport, Pembroke; Galashiels, Selkirk, DRUCE.

*1646. T. PALUSTRE DC. Llanderfel, Merioneth, RUDDY.

1646. T. SPECTABILE Moy. Easterness; Braemore, W. Ross, BAINES; Chalvey, Bucks, DRUCE; Barnes, Surrey, W. A. TODD.

1649. LACTUCA SERRIOLA L. Porthcawl Dock, Glamorgan, WEBB; in hedges, Kirby-le-Soken, S. Essex, DRUCE.

†1650. L. SALIGNA L. Port Talbot, Glamorgan, Miss WAKEFIELD.

1656. SONCHUS ARVENSIS L., var. GLABRESCENS G. G. & W. East Mersea, N. Essex, BROWN.

1657. S. ASPER Hill, var. PUNGENS Bisch. Ramsey, Hunts; Brocton, Staffs; Tenby, Pembroke, DRUCE. Var. INTEGRIFOLIUS Wallr. Ramsey, Hunts; Eye, Northants; Brocton, Staffs; Crickhowell, Brecon; Tenby, Pembroke; Carmarthen, DRUCE.

1658. S. OLERACEUS L., var. ALBESCENS Neum. Tenby, Pembroke; Beaumaris, Anglesey, DRUCE. Var. TRIANGULARIS Dum. Wilsford, Wilts; Cothill, Berks; Studley, Oxon, DRUCE.

†1660. TRAGOPOGON PORRIFOLIUS L. Bexhill, Kent, GREEN.

†1665. LOBELIA ERINUS L. Southport, Lancs, 1905, FIRTH.

†1670. CAMPANULA MEDIUM L. Wall top, Tenby, Pembroke; Crickhowell, Brecon, DRUCE.

†1676. C. PERSICIFOLIA L. A solitary plant about 2 miles from Carmarthen, HAMER, *in litt.*

1687. OXYCOCCUS QUADRIPETALUS Gilib. In plenty on Moss Morran, Aberdour, Fife, with var. PYRIFORMIS Druce, TEMPLEMAN.

†1691. GAULTHERIA SHALLON Pursh. Castlehill, Parkstone, Dorset, in considerable quantity and bearing fruit, FINLAYSON.

*1692. ANDROMEDA POLIFOLIA L. Aberdoven, Pughe, Arthog, Merioneth, 1904, JONES.

1695. ERICA TETRALIX L., var. or lusus FISSA Druce in Rep. B.E.C. 329, 1913. Aviemore, Easterness, NOEL SMITH; Sow of Athol, M. Perth, CORSTORPHINE; moorland above Tongue, W. Sutherland, DRUCE.

1714. LIMONIUM HUMILE Mill. Kirby-le-Soken, Essex, DRUCE.

1715. L. LYCHNIDIFOLIUM O. Kuntze, var. CORYMBOSUM Salm. In fresh localities on the coast near Crabbe, Jersey, ATTENBOROUGH. It was interesting to see it here in good quantity and in places where it is fairly safe from extirpation.

†1720. STATICE PLANTAGINEA All. Levenhall, near Edinburgh, FRASER.

1721. S. LINEARIFOLIA Lat. Newport, Pembroke; Berriedale, E. Sutherland, DRUCE.

1721 (2). S. PLANIFOLIA Druce. Snowdon, Carnedd Llewellyn, Carnarvon, DRUCE.

1726. PRIMULA VERIS L. *Llanfair, Merioneth, JONES; with double umbels at Donibristle, Fife, TEMPLEMAN; flowers on pedicels 1½ inches long, Bordon, Wilts, TODD.

*1727. P. FARINOSA L. With flowers on pedicels two inches long, West Linton, Peebles, TEMPLEMAN.

†1731. CYCLAMEN HEDERIFOLIUM Ait. Naturalised in a shrubbery, Inworth, Essex, ex Canon VAUGHAN.

*1733. LYSIMACHIA VULGARIS L. Llyn Hafody Llyn, 500 feet, &c., Merioneth, JONES.

†1745. ANAGALLIS FEMINA Mill. Possil, Glasgow, GRIERSON. This name was used for it in the earliest herbarium known, Gherardo Cibo of 1532.

*1745. CENTUNCULUS MINIMUS L. Glen Nant, Argyll, LESTER-GARLAND, *in litt.*

†1747. SYRINGA VULGARIS L. In hedge, Haywood, Staffs, DRUCE.

†1750. VINCA MAJOR L. Relic of garden, Beaumaris, Anglesey; Arthog, &c., Merioneth, JONES; Haywood, Staffs, DRUCE; N. Queensferry, Fife, TEMPLEMAN.

†1751. V. MINOR L. Harlech, &c., Merioneth, JONES.

1754. CENTAURIUM UMBELLATUM Gilib., var. CAPITATUM (Koch). Gullane, Haddington, TEMPLEMAN.

1755. C. VULGARE Rafn., f. or var. MINOR Hartm. Newborough, Anglesey, DRUCE.

1757. C. PULCHELLUM Druce. Near Bexhill, Kent, GREEN; Harlech, Merioneth, DRUCE.

1763. GENTIANA AMARELLA L. In full flower, Nov. 14, Tenby, Pembroke, ARNETT.

†1765. G. ACAULIS L. On a common at Amberley, Stroud, near a foot-path leading across it to the Priory Church, March 1919, Mrs DUNCAN TRAVERS, ex Rev. J. BUXTON. Doubtless planted there.

†1768. COLLOMIA GRANDIFLORA Dougl. Skegness, N. Lincs, B. REYNOLDS.

†1769. C. LINEARIS Nutt. (COCCINEA). N. Queensferry, Fife, TEMPLEMAN; Anniesland, near Glasgow, GRIERSON.

†1777. POLEMONIUM CAERULEUM L. By a copse side on the Downs, above Littlehampton, W. Sussex, Miss ROBLEY.

†1778. PHACELIA CILIATA Benth. Par Harbour, Cornwall, THURSTON & RILSTONE.

†1779. P. PARVIFLORA Pursh. St Philip's, Bristol, COBBE; Burton-on-Trent, Derby, CHIPPERFIELD.

†1787. LAPPULA ECHINATA Gilib. Lanarth, Cornwall, Miss WILLIAMS; Llanberris, Carnarvon, COBBE; N. Queensferry, Fife, TEMPLEMAN.

†1789 (2). BENTHAMIA ANGUSTIFOLIA Druce. Exmouth, S. Devon; Llanberris, Carnarvon, COBBE.

†1789 (3). B. LYCOPSIOIDES Lindl. Colchester, BROWN; Ware, Herts, KNOWLING; Kilsby, Northants, CUMMING; Narborough, Leics, WADE; N. Queensferry, Fife, TEMPLEMAN.

†1789 (5). B. INTERMEDIA Druce. Welbeck, Notts, GOULDING; Wells-on-Sea, Norfolk, 1916; Watton, W. Norfolk, ROBINSON.

*1790. SYMPHYTUM OFFICINALE L. Llanderfel, Merioneth, JONES.

†1800. ANCHUSA OFFICINALIS L. Barmouth, Merioneth, COBBE.

†1802. A. AZUREA Mill. Walton, S. Lancs, 1912, WHELDON.

†1808. PULMONARIA OFFICINALIS L. Baldon, Oxon, DRUCE.

†1817. MYOSOTIS SYLVATICA Hoffm. Donibristle, Fife, TEMPLEMAN.

*1821. M. VERSICOLOR Sm. Common at Harlech, Merioneth, JONES. Completes comital distribution. Var. LUTEA (Pers.). With bright golden flowers, Strathpeffer, E. Ross, DRUCE.

*1822. LITHOSPERMUM OFFICINALE L. Castle moat, Harlech, Merioneth, JONES.

1824. L. ARVENSE L. Llanderfel, Merioneth, RUDDY. Var. MEDIUM (Chev.). St Philip's, Bristol, COBBE.

1831. VOLVULUS SEPIUM Medic, var. COLORATUS Lange. Stow, W. Norfolk, DRUCE & ROBINSON.

†1831 (3). V. DAHURICUS (Sims) Druce. Grange-over-Sands, Lancs, 1895, ROPER, *in litt.*

†*1840. CUSCUTA TRIFOLII Bab. Pale, Merioneth, RUDDY.

†1843. C. SUAVEOLENS Mart. Near Cardiff, Glamorgan, perhaps introduced with Chilean red clover, PETTIGREW, ex Miss VACHELL.

†1848. SOLANUM ROSTRATUM Dunal. St Philip's, Bristol, COBBE & SANDWITH.

†1849. S. TRIFLORUM Nutt. Hertford, GRAVESON.

†1852. NICANDRA PHYSALOIDES Gaertn. Cornfield at Failand, N. Somerset, in quantity, SANDWITH, vide sp.

†1853. LYCIUM CHINENSE Mill. Newport, Pembroke, DRUCE.

†*1861. VERBASCUM THAPSIFORME Schrad. Near Holford, S. Somerset, Aug. 12, 1919, looking truly wild, but scarce and local, a much finer flowered plant than *Thapsus*, E. S. MARSHALL, *in litt.* See also *Journ. Bot.* 257, 1919.

†1864. V. BLATTARIA L. With yellow flowers, West Malling, Kent, 1919, H. GRAY.

1867. V. NIGRUM × THAPSUS = × V. COLLINUM Schrad. Between Hursley and Winchester, S. Hants, RAYNER.

†1868. V. AUSTRIACUM Schott. Woodhall, Lincs, ALSTON.

†1869. V. CHAIXII Vill. Ware, Herts, HIGGENS.

†1871. CELSIA CRETICA L. Dudbridge railway, W. Gloster, 1907, BAILEY.

†1877. LINARIA PURPUREA Mill. Kingsdown, E. Kent, MARRIOTT.

†1878. L. REPENS Mill. On the railway, Minffordd, Merioneth, COBBE; on railway, Hallend, Inverkeithing, Fife, TEMPLEMAN; Forres, Elgin, 1901, BAILEY, as *purpureum*. × VULGARIS. Eling, S. Hants, RAYNER; railway side, near Ruislip, Middlesex, DRUCE.

†1879. L. CHALEPENSIS Mill., f. CLEIOSTOGAMA Thell. Elland, York, PULLAN.

†1880. L. PELISSERIANA Mill. Swansea Dock, Glamorgan, SKERROW.

†1886. L. CYMBALARIA Mill. With white flowers, Brandon Bridge, W. Norfolk, W. G. CLARKE.

†1889. ANTIRRHINUM MAJUS L. Beaumaris, Anglesey, DRUCE.

†1891. SCROPHULARIA VERNALIS L. Den, Logie, Fife, TEMPLEMAN.

*1893. S. ALATA Gilib. Spittal Haugh, W. Linton, Peebles, 1914, TEMPLEMAN. Better specimens are desirable but I have little doubt it belongs to this species.

†1898. MIMULUS GUTTATUS DC. The yellow form of this species was specially abundant and in profuse flower in the dry sunny July of 1919 along the banks of the Eden, Don, Teith, Dee, Garry, Earn, Tay, Beauly, Tweed, Gala, Conan, etc., and in some places grew to four feet high. The shingle beds of the partly dried streams were

often a mass of gold from the profusion of the blossoms, influenced doubtless by the warm, sunny July, DRUCE.

†1904. ERINUS ALPINUS L. Strathblane, Stirling, GRIERSON.

*1905. VERONICA SPICATA L. Arnside, L. Lancs, PEARSALL. Determined as distinct from *hybrida* by Dr Thellung. In my judgment one should be placed as a variety of the other, DRUCE.

1915. V. ANAGALLIS-AQUATICA L. Hambledon, S. Hants, DRUCE.

*1915 (2). V. AQUATICA Bern. Swainsthorpe, W. Norfolk; Wisbech, Cambridge; Ramsey, Hunts, DRUCE.

*1926. V. HEDERIFOLIA L. Harlech, Merioneth, JONES.

1933. EUPHRASIA BREVIPILA B. & G. Morridge, N. Staffs, S. A. BENNETT.

1934. E. NEMOROSA H. Mart., var CILIATA Drabble. Between Cwm-y-Glo and Bangor, Carnarvon; Bodeilio, Anglesey, DRUCE.

1934 (2). E. CAMPESTRIS Jord. In two or three spots about Llanberris, Carnarvon, ARMITAGE & DRUCE; Blackdown, Mendip, W. Somerset (as near to *campestris* as we have in Britain, teste Bucknall), ROPER.

1936. E. OCCIDENTALIS Wettst., var. PRAECOX Buckn. Near Cardiff, Glamorgan, RICHARDS.

1940. E. SCOTICA Wettst. A form very nearly naked, Cwm Afon Las, Carnarvon, ARMITAGE; Tan-y-Bwlch, Merioneth, COBBE; Cnochan, W. Ross; Tongue, W. Sutherland, DRUCE.

1940 (2). E. MINIMA Fr. Cabrach, N. Aberdeen; Dornoch, E. Sutherland, DRUCE.

1941. E. ROSTKOVIANA Hayne. On Silurian slate, Bettws-y-Coed, BENNETT; Tan-y-Bwlch, Merioneth, COBBE.

1943. E. KERNERI Wettst. Mold, Flint, BENNETT; Southport, S.W. Lancs, 1892, BAILEY.

1954. RHINANTHUS STENOPHYLLUS Schur. Yate Lower Common, W. Gloster, ROPER.

1955. R. MONTICOLA Druce. At 1,100 feet, Glen More, Easterness, DRUCE.

1960. MELAMPYRUM PRATENSE L., var. SCOTIANUM (Beauv.). M. PRATENSE, var. ALPESTRE, sub-var. SCOTIANUM. *On moorland among *Sphagnum* and *Erica Tetralix* above Tongue, W. Sutherland, June, 1919, Mrs PAUL ASCHERSON, vide sp., growing scattered and in small quantity. Subsequently Mrs Wedgwood and I found it in similar association at Altnaharra, W. Sutherland. These were very beautiful plants in which a margin about 1-2 mm. wide of deep carmine edged the corolla, the throat of which was a rich yellow, the tube being very pale yellow. Smaller plants more diffused with purple occurred in *Sphagnum* on the north slopes of Cairngorm, Easterness, DRUCE. It is not gregarious as so many of its allies.

1974. LATHRAEA SQUAMARIA L. Introduced at Llanderfel, Merioneth, RUDDY.

†1974 (2). L. CLANDESTINA L. Near Coalhurst Pond, St Leonards Forest, Sussex, May 1919, Miss SOUNDY. In this station it was deliberately planted some time ago.

*1975. UTRICULARIA VULGARIS L. With *U. minor* near Barmouth, Merioneth, JONES.

1981. PINGUICULA ALPINA L. Now extinct at Avoch, E. Ross, owing to seedling conifers drying the bog in which it formerly grew. No actual habitat now known.

1982. P. LUSITANICA L. Still surviving near Aldershot, Hants, Mrs GIBSON.

1984. VERBENA OFFICINALIS L. Roadside near Beaumaris, in the locality mentioned by the Rev. H. Davies about 1810. For

twenty years Mr Griffith was unable to find it, when one year it suddenly reappeared in some quantity. In 1919 there were a few plants, DRUCE.

1988. MENTHA ROTUNDIFOLIA Huds. Harlech, Merioneth, DRUCE; on left bank of Dochart, Mid Perth, FRASER & HAGGART; Limpley Stoke, N. Wilts, BAILEY.

*1989. M. ALOPECUROIDES Hull. John o' Groats, Caithness, in some plenty by a stream, DRUCE.

1990. M. LONGIFOLIA Huds. †*Troedy Foel, Merioneth, JONES. Var. NICHOLSONIANA (Strail). *Garnant, Glamorgan, WEBB; Beaumaris, Anglesey, DRUCE. Var. MOLLISSIMA (Borck.). Lower Liberton, Edinburgh, FRASER, teste A. BENNETT. Var. VILLOSA (Huds.). Great Henny, N. Essex, HIGGENS; Bulls Green, Hertford, GRAVESON; Newland, Forest of Dean, W. Gloster, 1910, BAILEY, as *longifolia*.

†1991. M. SPICATA L. In some quantity, North Leigh Common, Oxon; Pyrford, Surrey, DRUCE; Llwyngwril, Merioneth, PERCIVAL.

1993. M. PIPERITA L. Quite naturalised at Boat of Garten, Easterness, a recent introduction; it was not there in 1886; Tongue, W. Sutherland, DRUCE.

1996 *h*. M. ACUTIFOLIA Sm. J.F. (*Gardener's Chronicle* ii., 264, 1919) asks what is it? He found it in the Medway Valley, Kent, its original habitat, and considers it "more distinct from the three segregates of *M. sativa* than they are from one another. All the three described forms of *M. sativa* lean towards the *hirsuta* parent in having broad leaves, rounded at the base, while the leaves of *acutifolia* taper to both ends, as in the *arvensis* parent, and that is the broad distinction. *M. acutifolia* runs through all the variations of *M. sativa* and perhaps more, for I have spicate, capitate, and sub-glabrous forms as well as many other variations. One so closely resembles *M. arvensis* in size and form that the chief distinction from the latter lies in the long teeth of the calyx. *M. acutifolia* is most often sub-glabrous or thinly hairy, but I have a form from Surrey that is as hairy as *sativa*, var. *rivalis*, and another from Bucks that has exceptionally narrow leaves."

†1997. M. GENTILIS L. Blackhills, Gower, Glamorgan, WEBB, better specimens desirable; Llwyngwril, Merioneth, PERCIVAL.

†1998. M. CARDIACA (Baker). Waste ground, Beaumaris, Anglesey, DRUCE.

†1999. M. RUBRA Sm. Dochart Bridge, Milton of Morenish, Craignavie, Mid Perth, FRASER & HAGGART.

2001. M. PULEGIUM L. *Llanderfel, Merioneth, on wet waste ground, RUDDY; Dean Clough, Halifax, York, HORRELL.

2003. LYCOPUS EUROPAEUS L., var. GLABRESCENS (Schm.). Baldon, Oxon; near Buckingham; Swainsthorpe, W. Norfolk; near Fishguard, Pembroke, DRUCE.

2007. THYMUS CHAMAEDRYS Fr. In splendid growth near Swaffham, W. Norfolk, DRUCE; Somersham, E. Suffolk, BROWN.

*2011. SATUREIA CALAMINTHA Scheele, and 2034. NEPETA CATARIA L. Between Cross Foxes and Dolgelly, IRVINE & PAMPLIN in *Phyt.* 1855. Confirmation desirable.

†2025. SALVIA NEMOROSA L. Port Talbot, Glamorgan, WAKEFIELD, ex WEBB; Goring, Oxford, established over 20 years. PARRY.

†2031. S. VERTICILLATA L. Warlingham, Surrey, P. GREENFIELD; West Kirby, Chester, COBBE.

†2039. DRACOCEPHALUM PARVIFLORUM Nutt. N. Queensferry, Fife, TEMPLEMAN.

†2041. LALLEMANTIA IBERICA F. & M. With small flowers, approaching *L. Royleanum*, at St Philip's, Bristol, COBBE, teste THELLUNG.

*2047. MELITTIS MELISSOPHYLLUM L. Estuary of the Mawddach, Merioneth, WARNER in *Science Gossip* 1878. Confirmation needed.

†2048. SIDERITIS MONTANA L. Elland, York, HORRELL; Beauly Abbey, S. Hants, MELVILLE, vide sp.

†2048 (2). S. ROMANA L. Kirkstall, York, PULLAN.

†2049. MARRUBIUM VULGARE L. Old race course, Morfa, Merioneth, JONES.

†2053. STACHYS ITALICA L. St Philip's, Bristol, DRUCE.

2056. S. SYLVATICA L., as a lusus. See *Rep. B.E.C.* 114, 1911. Sent from Tewkesbury, Gloster, by the Rev. F. A. STONE.

2056. × S. AMBIGUA Sm. *Near Cirencester, E. Gloster, GREENWOOD; Llanberris, Carnarvon, COBBE; Tongue, W. Sutherland, DRUCE, removes ? in *Top. Bot.* * Dolgelly, Merioneth, JONES.

2065. LEONURUS CARDIACA L. Aberdovy, Merioneth, JONES.

*2068. LAMIUM ALBUM L. Harlech, etc., rare, Merioneth, JONES.

2072. L. HYBRIDUM Vill. La Haule, Jersey, DRUCE.

*2075. L. GALEOBDOLON Crantz. Llanfedr. etc., Merioneth, locally common, JONES.

2083. AJUGA REPTANS L. By roadside near Sevenoaks, Kent, Dr GATES; near Greenham Common, Berks, Dr OLIVE C. RAYNER as var. or sub-var. PURPUREA; a long straggling plant with slender branches and small verticillasters sent from Edenbridge, Kent, by Mr G. TALBOT; as a very handsome form with dark blue flowers, near Long Melford, W. Suffolk, Miss STAFFORD ALLEN. The year 1919 was noticeable for the abundant and showy flowering of this species.

2091. PLANTAGO MARITIMA L., var. LATIFOLIA Syme. Fine examples by the tidal river, Beauly, Easterness, DRUCE.

†2095. P. LAGOPUS L. Llanberris, Carnarvon, COBBE.

†*2098. P. MEDIA L. Llanderfel, Merioneth, RUDDY.

†2100. P. VIRGINICA L. Greenham Common, Berks, 1915, V. MURRAY.

†*2102. ILLECEBRUM VERTICILLATUM L. Mysteriously introduced at Pale, Merioneth, since 1872, RUDDY.

2106. LITTORELLA UNIFLORA Asch. This, or *Lobelia Dortmanna*, is the *Isoetes* from Lough Magillie, Wigton, 1883, BAILEY.

†2112. AMARANTHUS RETROFLEXUS L. St Leonards, Bucks, GREGOR; Eton, Bucks; Abingdon, Berks; Hay, Brecon, DRUCE; Woodhall, Lincs, ALSTON; Leeds, HORRELL. Var. DELILEI Thell. Aldburgh, E. Suffolk; Acton, Middlesex, DRUCE; Clare, W. Suffolk, LITTLE; near Thetford, W. Norfolk, ROBINSON; Abbey Wood, W. Kent, MARRIOTT; Drayton, Bucks; Par, Cornwall, DRUCE; St Philip's, Bristol, COBBE; Bedminster, Bristol, SANDWITH; Aberdare, Glamorgan, RIDDELSDELL.

†2112 (2). A. ASCENDENS Lois. Chelsea, 1848, MOORE; Turnham Green, Middlesex, 1876, SIM.

†2113 (2). A. THUNBERGII Moq., f. MACULATUS. Langley, Bucks, COBBE.

†2114. A. ALBUS L. St Philip's, Bristol, DRUCE; Eastville, Bristol, SANDWITH; Pyrford, Surrey, Lady DAVY; Abbey Wood, W. Kent, MARRIOTT.

†2114 (2). A. DINTERI Schinz, var. UNCINATUS Thell. Guildford, Surrey, DRUCE; Galashiels, Selkirk, HAYWARD.

†2115. A. DEFLEXUS L. Port Talbot, Glamorgan, 1902, DRUCE.

2117. CHENOPODIUM RUBRUM L. *Barmouth, Merioneth, JONES. Var. PSEUDOBOTRYODES Wats. Gullane, Haddington, TEMPLEMAN.

2118. C. BOTRYODES Sm. Near North Hayling Station, S. Hants, in plenty, BURDON & EVANS.

2122. C. MURALE L., var. MICROPHYLLUM Gurke. Hertford, GRAVESON; type at Beaumaris, Anglesey, DRUCE.

†2123. C. OPULIFOLIUM Schrad. Wellingborough, Northants, DRUCE.

†2124 (2). C. LANCEOLATUM Mühl. Brocton, Staffs; Wellingborough, Northants, DRUCE.

†2125. C. LEPTOPHYLLUM Nutt. Hertford, GRAVESON; St Cyrus, Kincardine, DRUCE; Saltney Wharf, Flint, COBBE.

†2127. C. GLAUCUM L. Hertford, GRAVESON.

2129. C. POLYSPERMUM L., var. ACUTIFOLIUM Asch. By the heronry, Birch, N. Essex, BROWN.

†2131 (3). C. HIRCINUM Schrad. Drayton, Middlesex, COBBE.

†2131 (8). C. GRAVEOLENS Willd. St. Philip's, Bristol, SANDWITH.

†2133. C. CAPITATUM Asch. Among potatoes, Embley Court, Romsey, and Christchurch, S. Hants, RAYNER.

†2134. C. VIRGATUM Ambrosi. Old White Hill, Aberdeen, TEMPLEMAN.

†2135. (5). MONOLEPIS NUTTALIANA Engelm. Elland, York, HORRELL.

*2138. BETA MARITIMA L. Barmouth, Merioneth, RUDDY.

*2143. ATRIPLEX LITTORALIS L. Barmouth Junction, Merioneth, RUDDY.

2144. A. PATULA L., var. BRACTEATA Wester. Alphamstone, N. Essex, BROWN; Eye, Northants; Woking, Surrey; Botley, Oxford, DRUCE.

†2145. A. TATARICA L. Wakefield, Mirfield, York, HORRELL.

2147. A. HASTATA L., var. OPPOSITIFOLIA Moq. Walton on the Naze, S. Essex, BROWN. Var. MICROTHECA Rafn. Hitchen, Herts, LITTLEBURY.

2149. A. GLABRIUSCULA Edmonst. (VIRESCENS Lange). Mersea Island, N. Essex, BROWN.

*2150. A. MARITIMA Hall. (LACINIATA auct.). Barmouth, Towyn, Merioneth, JONES.

†2151. A. ROSEA L. See *Rep. B.E.C.* 368, 1915. Eastville, Bristol, WHITE & GREEN.

†2151 (10). AXYRIS AMARANTOIDES L. Uxbridge, Middlesex, B. REYNOLDS; Wellingborough, Northants; Brocton Camp, Staffs, DRUCE; Stalybridge, Cheshire, COLLIER, ex TRAVIS.

†2153 (20). BASSIA QUINQUECUSPIS Muell. Meanwood, York, HORRELL.

†2155. KOCHIA SCOPARIA Schrad. Llanfairfechan, Carnarvon, DRUCE.

2158 (2). SALICORNIA DOLICHOSTACHYA Moss. St Osyth, N. Essex, BROWN.

2160. S. RAMOSISSIMA Woods. Jersey, DRUCE.

2161 (3). S. DISARTICULATA Moss. Mersea Island, N. Essex, BROWN.

2176. POLYGONUM TOMENTOSUM Schrank. Gartcosh, Lanark, GRIERSON, robust specimen 3-4 feet high; Maentrog, Merioneth, LEY.

2179. P. MINUS Huds. Bala Lake, etc., Merioneth, JONES, confirmation desirable.

*2182. P. RAII Bab. (ROBERTI). Towyn, Barmouth, Merioneth, JONES.

†2183. P. PATULUM Bieb. Port Talbot, Glamorgan, 1904, DRUCE.

2184. P. AVICULARE L.—HETEROPHYLLUM Lindm. Gower, Glamorgan, WEBB.

†2186. P. COGNATUM Meisn., var. ALPESTRE Meisn. Bank of the Avon, in mowing grass, between Bath and Newton St. Loe, N. Somerset, T. H. GREEN.

†2191. P. CUSPIDATUM S. & Z. Railway bank, Wokingham, Berks; Beaumaris, Anglesey; Llanberris, Carnarvon; near Carmarthen; Monmouth, Pembroke; Brecon, DRUCE.

2195. RUMEX MAXIMUS Schreb. Shirehampton, W. Gloster, ROPER; Wilsford, S. Wilts, DRUCE.

†2199. R. ALPINUS L. Aberdour, Fife; Leadburn, Peebles, TEMPLEMAN.

2200. R. OBTUSIFOLIUS L. var. AGRESTIS Fries. Littleport, Cambridge, LITTLE.

†2201. R. SANGUINEUS L. *Raith, Fife, TEMPLEMAN; *Llanderfel, Merioneth, RUDDY.

*2205. R. PULCHER L. Llanderfel, Merioneth, RUDDY.

2206. R. LIMOSUS Thuill. Whittlesey, Hunts; still at Eye, Northants, DRUCE.

2207. R. MARITIMUS L. In Westwood Pool, Worcester, in great quantity, 1919, REA.

†2210 (2). R. SCUTATUS L. Aberdour Castle, Fife, TEMPLEMAN.

†2210 (6). R. SALICIFOLIUS Willd. St. Philip's, Bristol, SANDWITH; Dublin, GRIERSON.

†2211. EMEX SPINOSA Campd. Colchester, BROWN.

2214. DAPHNE LAUREOLA L. Ilston, Cwm, Glamorgan, WEBB.

*2227. EUPHORBIA AMYGDALOIDES L. Near Corris, Merioneth, JONES.

2229. E. VIRGATA W. & K. Hurstpierpoint, Sussex, Miss COUCHMAN; Helsby Station, Chester, WATERFALL. Var. ESULIFOLIA Thell. Ware, Herts, TROWER & DRUCE.

†2230. E. CYPARISSIAS L. Hertford, GRAVESON; near Welwyn, Herts, LITTLE; Wychwood, Oxon, Mrs CLARKE; Hardwick Park,

Oxon, MURRAY; Cole Close, Egremont, as *Pseudocyparissias*, ADAIR; Lytham, Lancs, MELVILL.

*2233. E. PORTLANDICA L. Mochras, Merioneth, JONES.

2238. E. PEPLIS L. In splendid condition near Torr Cross, S. Devon, the old habitat, FOGGITT, *in litt.*

2243. MERCURIALIS ANNUA L. Harlech, Merioneth; Beaumaris, Anglesey, DRUCE & JONES; N. Queensferry, Fife, TEMPLEMAN.

2244. ULMUS HOLLANDICA Mill. Abergavenny, Monmouth; Crickhowell, Brecon, DRUCE.

2245. U. CARPINIFOLIA Borck. (GLABRA Mill.). Swaffham, W. Norfolk; Ramsey, Hunts, DRUCE.

2245 (2). U. PLOTII Druce. Near Swaffham, W. Norfolk; Crickhowell, Brecon; near Lichfield, Staffs, DRUCE.

†2246. U. STRICTA Lindl. Crickhowell, Brecon, DRUCE.

†2248. CANNABIS SATIVA L. Beaumaris, Anglesey, DRUCE; Belfast, Clontarf and Dublin, GRIERSON.

2255. BETULA ALBA L. Near Tenby, Pembroke; Crickhowell, Brecon, DRUCE.

2256. B. PUBESCENS Ehrh. Narberth, Pembroke, DRUCE.

2258. ALNUS GLUTINOSA Gaertn., var. MACROCARPA Loudon. Near Fishbourne, LITTLE, vide sp.; Perryfield, Petworth, W. Sussex, BARTON.

2262. QUERCUS SESSILIFLORA Salisb. Cardigan, DRUCE; Chidingfield Green, Surrey, BISHOP; the last perhaps × ROBUR.

2269. SALIX VIRIDIS Fries. Between Crofton and E. Grafton, S. Wilts, HURST; Towyn, Merioneth, LEY.

*2269. S. ALBA L., var. VITELLINA (L.). Llanderfel, Merioneth, RUDDY.

2271. S. PURPUREA L. Moy, Easterness; Wilsford, S. Wilts, DRUCE.

2273. S. VIMINALIS L., var. LINEARIFOLIA W. & G. Wilsford, S. Wilts; Kidlington, Oxon, DRUCE; Caversham, Oxon, MURRAY.

2274. S. SMITHIANA Willd. Furze Hill, N. Wilts, HURST; Beauly, Easterness, DRUCE.

2276. S. AURITA L. With hermaphrodite flowers, Aldbourne, Wilts, TODD.

2278. S. REPENS L., var. ARGENTEA (Sm.). Near Carnarvon; Tenby, Pembroke, DRUCE.

†2289. POPULUS CANESCENS Sm. Tenby, Pembroke, DRUCE.

†2291. P. NIGRA L. Large tree, Swainsthorpe, W. Norfolk; Crickhowell, Brecon; near Harford, Staffs, DRUCE.

†2293. P. DELTOIDEA Marsh. Haverford West, Pembroke, DRUCE.

†2294. P. TACAMAHACCA Mill. Crickhowell, Brecon; Llandilo, Carmarthen, DRUCE.

*2299. HYDROCHARIS MORSUS-RANAE L. Ouaine, Jersey, ATTENBOROUGH.

2304. NEOTTIA NIDUS-AVIS Rich. Lochorne Burn, Blairadam, Fife, TEMPLEMAN; Maentwrog Valley, Merioneth, JONES.

2306. LISTERA CORDATA Br. Below W. Linton, Peebles, TEMPLEMAN.

K 1 *2312. CEPHALANTHERA RUBRA Rich. Near Wye, Kent, vouched for by T. ATTENBOROUGH. Confirmation is desirable.

*2315. HELLEBORINE PALUSTRIS Schrank. Pale, Merioneth, RUDDY; Harlech, Merioneth, JONES.

2316. H. VIRIDIFLORA Tr. & Wheld. Hambledon, Bucks, DRUCE.

2316. H. LATIFOLIA Druce, agg. Murrdean, Fordell, Fife, TEMPLEMAN; Llanderfel, etc., Merioneth, JONES. Var. ATROVIRIDIS (Linton) Druce. Lyndcombe Hill, N. Somerset, ROPER.

*2324. ORCHIS MORIO L. Harlech, etc., Merioneth, rather rare, JONES.

2329. O. MASCULA L. A lusus, with narrow division of perianth, Tenby, Pembroke, ARNETT.

2330. O. PYRAMIDALIS L. Sea sand, Quenvais, Jersey, ATTENBOROUGH; Tenby, Pembroke, ARNETT.

*2330. O. PYRAMIDALIS L. Harlech, near Barmouth, Merioneth, JONES.

2331. O. HIRCINA Crantz. Still at St. Ouen's, Jersey, ATTENBOROUGH; also seen in 1920!

*2334. OPHRYS SPHEGODES Mill. Quenvais, Jersey, ATTENBOROUGH!

2335 (2). O. TROLLII Heg. Nettlebed, STANSFIELD; Nuffield, Oxon, T. GREEN.

2338. HABENARIA GYMNADENIA Druce. Clova, Forfar; Strathpeffer, E. Ross; Cnochan, W. Ross; Inchnadamph, E. Sutherland, slightly smaller flower than those of the Rudley Marsh, S. Hants, specimens, but having the same slender spur, DRUCE. Var. DENSIFLORA (Wahl.). Shapwick Moor, N. Somerset, ROPER.

*2339. H. ALBIDA Br. Near Chandler's Ford, S. Hants, Major ROBERTSON.

2340. H. VIRIDIS Br. and var. BRACTEATA A. Gray. Shapwick Moor, N. Somerset, ROPER.

2349. IRIS BASTARDI Bor. Parkmill, Barland, Glamorgan, WEBB.

*2350. I. FOETIDISSIMA L. Barmouth, Merioneth, RUDDY.

2359. ROMULEA COLUMNAE S. & M. Salcombe, Devon, ATTENBOROUGH. Despite the golfers this is still quite plentiful in its old habitat.

†2363. TRITONIA CROCOSMIFOLIA Nichols. Beaumaris, Anglesey, DRUCE.

*2364. NARCISUS PSEUDO-NARCISSUS L. Dolgelly, etc., Merioneth, JONES.

†2382. RUSCUS ACULEATUS L. At Dirleton Castle, Haddington, planted, TEMPLEMAN.

*2385. POLYGONATUM MULTIFLORUM All. Between Machynlleth and Corris, Merioneth, JONES.

2396. ALLIUM VINEALE L., var. COMPACTUM (Thuill.). Traprain Law, Haddington; Aberdour, Fife. Var. BULBIFERUM Syme. Near St David's, Fife, TEMPLEMAN.

†2400 (2). A. NEAPOLITANUM Cyr. Hortal. Near Torquay, S. Devon, WATERFALL.

†*2401. A. TRIQUETRUM L. Cliffs, Sandown, Isle of Wight, Miss NEILL, vide sp.

2404. A. SIBIRICUM L. Collected at Mullion; cultivated at Cardiff, it has lost all its distinguishing characters and is indistinguishable from *Schoenoprasum*, PAUL W. RICHARDS. This note from our youngest member is worth testing.

†2407. MUSCARI RACEMOSUM Lam. & DC. Near N. Queensferry, Fife; naturalised by the Dour, Aberdour, Fife, TEMPLEMAN.

2413. ORNITHOGALUM UMBELLATUM L. Besilsleigh, Berks, in the greatest profusion. The dry summer of 1919 induced a most magnificent flowering, large patches of its white blossoms covering a large

extent of pasture, DRUCE; in a field near the Cherwell, near Oxford, HAYNES; plentiful in woods and warrens between Elvedon and Ickingham, W. Suffolk; Gogmagog, Cambridge, EVANS.

†*2415. LILIUM PYRENAICUM Gouan. Many plants on a grassy bank north of Tongue, W. Sutherland, of garden origin, DRUCE.

†2416. L. MARTAGON L. Hortal. Abundant at Baldon, Oxon, DRUCE.

2418. FRITILLARIA MELEAGRIS L. Near Wolseley Bridge, Staffs, all specimens pure white, with no sign of chequering, H. P. READER, *in litt.*

2420. GAGEA LUTEA Ker-Gawl. Near Birdlip, E. Gloster, Miss BUTLER; Forret Den, Logie, Fife, TEMPLEMAN, ? extinct in *Top. Bot.*

2422. COLCHICUM AUTUMNALE L., f. ALBUM. North Cadbury, N. Somerset, BOYS.

*2423. NARTHECIUM OSSIFRAGUM Huds. Near Macbie Hill, Peebles, TEMPLEMAN.

2431. JUNCUS BALTICUS Willd. Dornoch, E. Sutherland, dwarfed to a few inches high with the drought in July, DRUCE.

2435. J. ARTICULATUS L. Galled with *Livia juncorum*, Wyre Forest, Worcester, Sir R. CURTIS. Var. NIGRITELLUS Don. Black Loch, Cleish, Fife, TEMPLEMAN.

2439. J. COMPRESSUS Jacq. Bank of Kennet, Ramsbury, Wilts, HURST.

2442. J. BUFONIUS L., var. FASCICULATUS Koch. Pwlheli, Carnarvon; Moy, Easterness, DRUCE; Laleham, Middlesex, BRITTON.

†*2451. JUNCOIDES NIVEUM (L.) Druce. Moy, Easterness, DRUCE; still at Broomhall, Fife, TEMPLEMAN.

2454. J. MULTIFLORUM Druce. Watton, W. Norfolk, DRUCE. Var. UMBELLATUM Druce. Foxbury Wood, Wilts, HURST.

2455. J. PALLESCENS (Besser) Druce. *Pinus* Wood, Balmuto, Fife, probably planted; woods of Aghada, Killarney, RIDLEY in *Hb. Brit. Mus.*, teste A. B. Jackson. See *Rep. B.E.C.* 312, 1907. If correctly named Syme may have introduced it at Balmuto, as the place is full of plants he tried to naturalise. In the *Flora of Kerry* Scully put it as a variety of *erecta*, that is *pallescens* Hoppe, not of Besser. As Killarney is a long way out of its range, it is desirable to know which plant occurs.

†2459. PHOENIX DACTYLIFERA L. Pwlheli, Carnarvon, DRUCE; Belfast, GRIERSON. These seedling dates in most cases come from fruit condemned by the local Health Authorities. Carted away with street sweepings, the heat afforded by the fermentation induces germination. Of course, they are not permanent. The young plants have been mistaken for *Tritonia*.

2464. SPARGANIUM NEGLECTUM Beeby. Drumtuthie, Fife, TEMPLEMAN.

2465. S. NATANS L. (AFFINE). Near Ardgay, E. Ross, Mrs DRUMMOND; loch above Tongue, W. Sutherland, DRUCE; Craigluscar, Fife, TEMPLEMAN. *S. natans* L. is a nomen confusum.

2466. S. MINIMUM Fr. Craigluscar Hill, Fife, TEMPLEMAN.

2477. ECHINODORUS RANUNCULOIDES Eng. Crymyln Canal, Glamorgan, WEBB; Loch Leven, Kinross, TEMPLEMAN.

2480. DAMASONIUM ALISMA Mill. Brown's Green, Shinfield, Berks, Prof. D. MACLEAN & PERCIVAL, a most welcome reappearance in the county, the last certain record being nearly 80 years ago.

*2493. POTAMOGETON GRAMINEUS L. Bala, Merioneth, RUDDY.

*2515. RUPPIA SPIRALIS Dum. Barmouth, Merioneth, JONES.

*2518. ZANNICHELLIA GIBBEROSA Reichb. Swainsthorpe, Norfolk, 1919, DRUCE & WEDGWOOD.

2520. ZOSTERA MARINA × NANA. Distributed from Montrose Basin, Forfar, by R. & M. CORSTORPHINE as *Z. marina*, var. *steno-*

phylla. See *Rep. B.E.C.* 377, 1915. W. H. Pearsall sent a specimen to Dr J. O. Hagström who writes:—"I have worked much on this *Zostera* from Montrose Basin because it seems to be the hybrid *marinus* × *nana*. This was found near Kirkwall (Orkney) in 1886, by W. R. Linton, and in Northumberland in 1887, by H. E. Fox. Very beautiful examples. The Montrose plant has the sheaths connate (=*marinus*) but the ovary is even (*Z. nana*) and pollen infertile. No retiuncles are observed but the nervation reminds one of *Z. nana*. This hybrid may perhaps be not so rare along the Scotland coast if anybody took pains to look for it."

†2525. APONOGETON DISTACHYUM Thumb. Caldy Isle, Pembroke, ARNETT.

2529. ELEOCHARIS PALUSTRIS Br., var. MAJOR Sonder. In a deep pond at Tidcombe, S. Wilts, alt. 650 feet, plants 36 inches high, HURST.

2532. SCIRPUS SYLVATICUS L. Radnor, WATERFALL.

2560. CAREX ACUTIFORMIS Ehrh. Aberdour, Fife, TEMPLEMAN; Llanderfel, Merioneth, RUDDY.

2561. C. VESICARIA L. Brahan, E. Ross, DRUCE.

*2567. C. PENDULA Huds. Pembroke, DRUCE & ARNETT; near Llanfaer, Merioneth, JONES.

2570. C. HELODES Link. Newbridge, Radnor, TODD; *Earlston, Roxburgh, BAILEY.

2571. C. CAPILLARIS L. Very large specimens by the river near Inchnadamph, W. Sutherland, DRUCE.

2573. C. DISTANS L. Blackness, Linlithgow, TEMPLEMAN.

*2574. C. PUNCTATA Gaud. Near Barmouth Junction, in damp interstices of rocks, JONES; also subsequently at Minffordd Marshes, Merioneth, COBBE, vide sp. A welcome county addition.

2575. C. FULVA × FLAVA. Above Tan-y-Bwlch, Merioneth, COBBE.

2576. C. FLAVA L., var. OEDOCARPA And. Killarney, Kerry, Sir R. CURTIS. × OEDERI? Gullane, Haddington, TEMPLEMAN.

2576. C. LEPIDOCARPA Tausch. Pentlands, above Dolphinton, Peebles, TEMPLEMAN.

2577. C. OEDERI Retz. Harlech, Merioneth, DRUCE. A form approaching var. ELATIOR Schlecht., Shouldham, W. Norfolk, LITTLE.

2591. C. PANICEA L., var. TUMIDULA (Laest.). Stoke Ferry, W. Norfolk, LITTLE; Rudley, S. Hants; Scarmclett, Caithness, DRUCE.

2592. C. MAGELLANICA Lam. Lurg and Dow Lochs, Fife, TEMPLEMAN, teste A. BENNETT.

2593. C. LIMOSA L. Lurg and Dow Lochs, etc., alt. c. 900 feet, Cleish Hills, Fife, TEMPLEMAN; Alltnaharra, W. Sutherland, and there too as a form approaching *magellanica* in the more acute glumes and robust habit. It is worth further study.

2599. C. SALINA Wahl., var. KATTEGATENSIS. Still in small quantity in the Beauly Marsh, where it was originally seen by me in its second Scottish station, DRUCE.

2600. C. ELATA All. A small form at Rudley, S. Hants, DRUCE. × GOODENOWII Gay. Stow Bedon, W. Norfolk, 1918, DRUCE.

2602. C. AQUATILIS Wahl. Bletham Beck, Windermere, PEARSALL; Town Loch, Dunfermline, Fife, TEMPLEMAN.

2604. C. GOODENOWII Gay, var. JUNCELLA Asch. Glen Phee, Forfar; Moy, Easterness; Scarmclett, Caithness; Llanberris, Carnarvon; Bodeilio, Anglesey; Scoulton, Stow Bedon, W. Norfolk, DRUCE. Var. CHLOROSTACHYA Asch. Arthog, Mérioneth, COBBE; Scarmclett, Caithness; Golspie, E. Sutherland, DRUCE.

2608. C. LEPORINA L., var ARGYROLOCHIN Koch. Moy, Easterness, WEDGWOOD & DRUCE.

*2611. C. REMOTA L. Donibristle, Fife, TEMPLEMAN.

2612. C. CANESCENS L. *Macbie Hill, Peebles, TEMPLEMAN; Strathpeffer, E. Ross, DRUCE.

*2615. C. PAIRAEI F. Schultz. Rowney Warren, Beds, LITTLE; Elvedon, W. Suffolk, BROWN.

*2616. C. DIVULSA Stokes. Newport, Pembroke, DRUCE; Llanderfel, Merioneth, RUDDY.

2617. C. PANICULATA L. Bonar Bridge, E. Ross, DRUCE.

2619. C. DIANDRA Schrank. Otterston Loch, Black Loch, Fife, TEMPLEMAN; Llandrindod, Radnor, TODD. Var. TENELLA. Shapwick Peat Moor, N. Somerset, MARSHALL, *in litt.*

2624. C. CHORDORRHIZA L. Plentiful and in good fruit in the locality where Marshall found it at Alltnaharra, W. Sutherland, DRUCE.

2625. C. INCURVA Lightf. Dornoch, E. Sutherland, Mrs WRIGHT & DRUCE. Var. ERECTA Lange. Tentsmuir, Fife, TEMPLEMAN.

*2629. C. DIOICA L. Pentlands, above Dolphinton, Peebles, TEMPLEMAN.

†2632. PANICUM CRUS-GALLI L., var. HOSTII. Bathpool, N. Somerset, MARSHALL. Ref. No. 230 is the type only, teste THELLUNG. Var. BREVISETUM Doell. Chester, COBBE.

†2637 (2). P. LAEVIFOLIUM Hack., var. AMBOENSE Hack. Meanwood, York, HORRELL.

2643. SPARTINA TOWNSENDII Groves. Three specimens have established themselves at Pagham Harbour, Prof. F. W. OLIVER, *in*

litt. See also *Wats. B.E.C.* 79, 1918. A recent immigrant, I did not observe it in 1917.

†2653. PHALARIS MINOR Retz. and †2654. P. PARADOXA L. Llanberris, Carnarvon, COBBE & DRUCE.

2655. P. ARUNDINACEA L., var. PICTA L. In a marsh near Bonar Bridge, E. Ross, DRUCE.

2665. ALOPECURUS BULBOSUS Gouan. New to Hayling Island, S. Hants, DRUCE.

†2680. PHLEUM PANICULATUM Huds. Eriswell, W. Suffolk, 1848, TYACKE.

†2681. P. SUBULATUM A. & G. St Philip's, Bristol, COBBE.

2684. AGROSTIS ALBA L., var. COARCTATA Hoffm. Dornoch, E. Sutherland, DRUCE.

2687. A. CANINA L., var. STOLONIFERA Blytt. Wellington College, Berks, 1894, DRUCE.

†2690. POLYPOGON MONSPELIENSE Desf. Llanberris, Carnarvon, COBBE.

2693. CALAMAGROSTIS EPIGEIOS Roth. Near Pevensey, E. Sussex, HARRISON; Abersoch, Carnarvon, COBBE.

2698. GASTRIDIUM VENTRICOSUM Sch. & Th. Knap Cliff, Glamorgan, WEBB.

†2699. APERA SPICA-VENTI Beauv. On a thatched roof, in great plenty, at Killin, M. Perth, FRASER.

2710. DESCHAMPSIA ALPINA R. & S. The viviparous form from Lochnagar remains unchanged in my garden, DRUCE.

2717. AVENA FATUA L., var. INTERMEDIA and between INTERMEDIA and HYBRIDA (Peterm). St Philip's, Bristol, DRUCE.

2733. PHRAGMITES VULGARIS (Lam.) Druce, * var. FLAVESCENS (Cust.). Downham, W. Norfolk; Buckenham, E. Norfolk; Wisbeach, Cambridge; Whittlesey, Hunts; Peterborough, Northants, DRUCE; E. Mersea, N. Essex, BROWN. Var. VULNERANS (Asch.). Comiston Lake side, Lancs, PEARSALL; Wood Perry, Oxon, DRUCE.

*2735. ARRHENATHERUM TUBEROSUM (Gilib.) Druce. La Haule, Jersey, DRUCE.

†2737. CYNOSURUS ECHINATUS L. Salisbury, Wilts, GODDARD; Tower o' the Moor, N. Lincs, ALSTON; Glen More, Easterness, 100 feet, DRUCE.

2738. C. CRISTATUS L., f. CUPREA. Dornoch, E. Sutherland; Inchnadamph, W. Sutherland; Berriedale, Caithness, DRUCE.

2739. KOELERIA GRACILIS Pers. (chiefly as var. BRITANNICA). Beauly, Aviemore, Easterness; St Andrews, Fife; Bettyhill, W. Sutherland; * Cnochan, W. Ross; Dornoch, E. Sutherland; Berriedale, Caithness, DRUCE. Var. BRITANNICA (Domin). Pyle, Glamorgan, WEBB; Burntisland, Fife, TEMPLEMAN.

2742. K. ALBESCENS DC., var. GLABRA DC. Craig Buckley, Fife, TEMPLEMAN; * Cove, Kincardine, DRUCE.

2752. DESMAZERIA LOLIACEA Nym. Gimlet Rock, Carnarvon, COBBE.

†2758. POA CHAIXII Vill. Moy, Easterness, established in the beautiful grounds of The Mackintosh, DRUCE; N. Queensferry, Fife, TEMPLEMAN.

2759. P. IRRIGATA Lindm. *Cairngorm, Easterness; Dornoch, E. Sutherland; Caenlochan, Forfar; *Cnochan, W. Sutherland, DRUCE.

2759. P. NEMORALIS L. Weekley Hall Woods, Northants, CHESTER, not var. *uniflora*. See *Rep. B.E.C.* 595, 1916; Lomond Hill, Fife, TEMPLEMAN.

2769. P. ANNUA L. On the summit of Snowdon, Carnarvon, DRUCE, and as a perennial form. Var. EXILIS. St Ouen's Bay, Jersey; Petit Bo, Guernsey, DRUCE.

*2773. GLYCERIA PLICATA Fr. Near Newport, Pembroke, DRUCE.

2776. G. MARITIMA Wahl. Newport, Pembroke; Harlech, Merioneth; Dornoch, E. Sutherland, DRUCE. Var. HIBERNICA Druce. Egloshayle, E. Cornwall, THURSTON.

*2782. FESTUCA ELATIOR L. Harlech, etc., Merioneth, JONES.

*2784. F. HETEROPHYLLA Lam. Moy grounds, Easterness; Brahan Castle, E. Ross, in each case introduced probably with Rhododendrons, DRUCE.

2785. F. RUBRA L. On the summit of Snowdon, Carnarvon; Craig Cille, Brecon. Var. PRUINOSA (Hack.). Newport, Pembroke, DRUCE.

2787. F. OVINA L., var. VIVIPARA. On Carnedd Llewellyn, where Johnson observed it in 1641. He called it Grass upon grass.

2788. F. MEMBRANACEA Druce. Plentiful and in beautiful condition at Tenby, Pembroke (lacks pers. auth. in *Top. Bot.*), DRUCE.

2790. F. DANTHONII A. & G., var. AMBIGUA (Le Gall). Hayling Island, S. Hants, DRUCE.

*2800. BROMUS RAMOSUS Huds. Llanderfel, Merioneth, RUDDY.

*2801. B. ERECTUS Huds. Tenby, Pembroke, DRUCE.

†2802. B. INERMIS Leysser. Hardwick Park, Oxon, MURRAY.

†2803. B. UNIOLOIDES H.B.K. Didcot, Berks, PARRY.

*2807. B. COMMUTATUS Schrad. Llanderfel, Merioneth, RUDDY.

†2809. B. ARVENSIS L., var. VELUTINUS Duv. Jouve. Cardiff, Glamorgan, 1902, DRUCE.

2811. B. HORDEACEUS L., var. NANUS (Weig.). Coast Burrows, Glamorgan, WEBB.

2812. B. INTERRUPTUS Druce. Salisbury, Wilts, GODDARD.

†2816. B. SQUARROSUS L. Near Montrose, Forfar, c. 1800, DON, as *tectorum*, in *Hb. Palmer*.

†2823. LOLIUM BOUCHEANUM Kunth, var. RAMOSUM. Goring, Oxon, PARRY.

2827. AGROPYRON JUNCEUM Beauv. Tenby, Pembroke; Bettyhill, W. Sutherland; * Dornoch, E. Sutherland, DRUCE.

2828. A. PUNGENS R. & S., var. LITORALE (Reichb.). A probable hybrid of this with A. REPENS was sent by Mr B. Reynolds. The plant was five feet high and grew out of the stones of the embankment about two miles above Gravesend, Kent. It had a geniculate habit and the spike was abnormal, but there was not the slightest evidence of *Elymus* as a parent. DRUCE.

†2836. TRITICUM OVATUM Rasp. St Philip's, Bristol, with 2842. T. CYLINDRICUM C. P. & G., and 2842 (2). T. VENTRICOSUM Rasp., COBBE & DRUCE.

*2845. LEPTURUS FILIFORMIS Trin. Arthog, Merioneth, JONES.

†2846. L. INCURVUS (L.) Druce. Cornfields, Freshwater, Isle of Wight, STRATTON.

†2851. HORDEUM JUBATUM L. Railway, Delamere, Cheshire, COBBE.

2861. JUNIPERUS NANA Willd. Cabrach, N. Aberdeen, DRUCE.

2866. EQUISETUM MAXIMUM Lam., var. SEROTINUM (Braun) Milde. Andwell and Old Basing, N. Hants, July 3, 1919, D. H. SCOTT; The Moors, Alphamstone, N. Essex, BROWN. These specimens had nearly 160 secondary cones the 5 lowest nodes bearing barren branches only, the next 7 nodes mostly long branches terminated by

small cones followed by several whorls of short, simple branches with cones, the uppermost 4 nodes of complete whorls of sessile cones.

*2871. E. PALUSTRE L., var. POLYSTACHYUM. Llanderfel, Merioneth, RUDDY.

2872. E. HYEMALE L. Swaythling, S. Hants, Canon VAUGHAN; Boat of Garten, Easterness, where it has now extended its area since I saw it there in the eighties, DRUCE; Relty Mill, Durham City, EVANS.

2887. ASPLENIUM GERMANICUM Weiss. Near Dolgelly, Merioneth, pointed out by D. A. JONES.

*2892. POLYSTICHUM SETIFERUM Woyn. (ANGULARE). Harlech, etc., Merioneth, JONES.

2893. P. ACULEATUM Roth. A pretty, bifurcate form, Fordill and Inverkeithing, Fife, TEMPLEMAN. Var. LONCHITIOIDES. Talybont, Brecon, RICHARDS.

*2894. P. LONCHITIS Roth. Near Barmouth, Merioneth, JONES.

2896. DRYOPTERIS FILIX-MAS Schott. A beautiful form, with a ramose frond, from near Ludlow, Salop, WEDGWOOD, is referred to this species by Stansfield who does not consider it to be a hybrid. The facies suggested the presence of *aristata*. Var. PALEACEA DRUCE. Llanbedr, etc., Merioneth, JONES.

2900. D. AEMULA Kuntze. Recess, Galway, TRETHEWY. This had the hay-like scent, vide sp.

2906. CYSTOPTERIS FRAGILIS Bernh. Near Crabbe, Jersey, new to the Island, DRUCE & ATTENBOROUGH.

2908. PHEGOPTERIS POLYPODIOIDES Fée. N. side of Traprain Law, Haddington, TEMPLEMAN.

2915. TRICHOMANES RADICANS Sw. Shown to me near Harlech, Merioneth, by D. A. JONES.

*2919. BOTRYCHIUM LUNARIA Sw. Dolphinton, Peebles, TEMPLEMAN.

*2920. OPHIOGLOSSUM VULGATUM L. Morfa, etc., Merioneth, JONES; Summer Islands, W. Ross, Miss V. BUXTON. I have not seen the latter specimen. It may be the var. *polyphyllum*.

2922. PILULARIA GLOBULIFERA L. Culross Moor, Fife, TEMPLEMAN.

*2926. ISOETES HYSTRIX Dur. Near the Lizard, Cornwall, ROBINSON, vide sp. New to the Mainland and a very important discovery. It grew in a dry, exposed situation, but only a solitary corm was found. I suspected it might be *I. Duriaei* Bory but a microscopic examination shows that it is undoubtedly the same as the Guernsey one which there inhabits a moist peaty loam. Surely it will be found in Cork or Kerry. It occurs in Portugal and Spain as well as in S. W. France. Mr Robinson is much to be congratulated upon his important discovery.

*2931. LYCOPODIUM SELAGO L. Swallow Craig, Black Devon, Fife, TEMPLEMAN.

*2932. SELAGINELLA SELAGINOIDES Link. Pentlands, above Dolphinton, Peebles, TEMPLEMAN.

*2933 *a*. NITELLA SPANIOCLEMA Groves and Bullock-Webster. Lough Kindrum, Fanad Peninsula, W. Donegal, 1919, BULLOCK-WEBSTER. Lough Kindrum lies some 2 miles west of Lough Shannagh, the only lough in which, hitherto, this new *Nitella* has been found.

*2940. N. BATRACHOSPERMA Braun. Lough Keel, Achill Island, W. Mayo, 1919, BULLOCK-WEBSTER, *in litt*. An interesting extension in the distribution of this rare *Nitella* which so far has only been recorded from the Outer Hebrides, W. Donegal and S. Kerry.

*2950. N. TRANSLUCENS Ag. Glastonbury peat moor, N. Somerset, C. SANDWITH.

*2951 *e*. CHARA RUDIS Braun. In an inlet on the south side of Lower Lough Erne, Fermanagh, 1919, BULLOCK-WEBSTER.

*2958. C. DELICATULA Braun, var. BARBATA Groves. Strathpeffer, E. Ross, DRUCE.

GLECHOMA HEDERACEA L., AND ITS SUB-DIVISIONS.

BY W. B. TURRILL, B.Sc.

The name *Glechoma* was used by Linnaeus in his *Systema Naturae*, 1735, and the genus it represented was placed by him in the class *Didynamia*. In the *Genera Plantarum*, ed. 1, 1737, the spelling *Glechoma* is again adopted, but in ed. 5, 1754, p. 251, genus No. 634, the name is spelt *Glecoma*, although the index gives *Glechoma*. The same two modes of spelling occur in the *Species Plantarum*, ed. 1, 1753, p. 578 and index. The word comes from the Greek γλχηὼν —the herb pennyroyal—and the more correct translation is *Glechoma* which is adopted in this paper.

In the *Species Plantarum*, ed. 1, 1753, p. 578, three species are given under the genus *Glecoma* (*Glechoma*), namely *G. hederacea*, *G. arvensis*, and *G. belgica*. In the *Systema Naturae*, 1735, *Calamintha* Tourn., and *Chamaeclema* Boerh., are quoted as synonyms. The former includes *Glechoma hederacea* as we now understand it (*Calamintha humilior fol. rot.*) and the latter is founded on it alone. In the *Genera Plantarum* Rivinius is quoted in addition to Tournefort and his excellent figures of *Hedera terrestris* leave no doubt that this too is *Glechoma hederacea*. It seems clear, therefore, that the species *Glechoma hederacea* must be taken as the plant on which Linnaeus intended to base his genus *Glechoma*. *Glechoma arvensis* L. and *G. belgica* L. are both *Stachys arvensis* L.

Otto Kuntze in his *Revisio Generum Plantarum* takes the *Systema Naturae*, ed. 1, 1735, for the starting point of genera and like Bentham he unites *Glechoma* and *Nepeta*, but for all the species retains the former name (*l.c.* Pars ii., pp. 517-519). The Vienna

Rules, however, make the *Species Plantarum*, ed. 1, 1753, and the *Genera Plantarum*, ed. 5, 1754, the starting points for botanical nomenclature, and since in these two works the genera *Glechoma* and *Nepeta* are kept distinct and *Nepeta* stands first, Kuntze's change is not necessary even if the two genera are considered as one.

In common with most authors the writer separates *Glechoma* from *Nepeta* on the characters shown by the inflorescence and anthers. In *Glechoma* the flowers are borne in the axils of ordinary foliage leaves and the four lobes of each pair of anthers are arranged in the shape of a cross. The relatively dwarf stoloniferous habit usually enables one to distinguish at a glance a species of *Glechoma* from a species of *Nepeta*.

In addition to *Glechoma hederacea* as understood in this paper the following species are to be included in the same genus:—*Glechoma nivalis* Jacqm., *G. thibetica* Jacqm., *G. longibracteata* Briq., *G. decolorans* (Hemsl.) Turrill, comb. nov., *G. pharica* (Prain) Turrill, comb. nov., *G. complanata* (Dunn) Turrill, comb. nov. and possibly *G. rotundifolia* Briq.

Several of the pre-Linnean authors recognised that the Common Ground Ivy occurred in more than one form. Thus Caspar Bauhin in his *Pinax*, p. 306, 1623, has the two forms of *Hedera terrestris*—*major* and *minor*. He is followed by Rivinius, *Flore Irregulari Monopetalo*, p. 13, 1690, who has excellent figures of the two forms but states that they are not specifically distinct. Vaillant, *Botanicon Parisiense*, p. 33, t. vi., f. 4, 5, 6, 1727, records and figures three forms as *Chamaeclema*, *vulgare*, *majus*, *C. v. minus* and *C. v. medium*. Since Linnaeus a considerable number of names have been applied by different authors to sub-divisions of *Glechoma hederacea* and it has been the purpose of the present writer to trace as many of these as possible and to determine the value of the varieties or forms they are supposed to designate, so far as this can be done by the aid of original descriptions and herbarium material. Circumstances have not yet permitted either thorough work on this genus in the field, though some has been done in different parts of Europe, or cultural experiments, so that the results submitted here must be considered preliminary to more complete research.

GLECHOMA HEDERACEA L. *Sp. Pl.*, ed 1, p. 578, 1753. *Calamintha hederacea* Scop. *Fl. Carinth.* ii., p. 423, 1772. *Chamaeclema*

hederacea Moench *Meth. Pl. Hort. et Agri. Marb.* p. 393, 1794. *Glechoma borealis* Salisb. *Prod.* p. 81, 1796. *Nepeta hederacea* Trevisan *Prosp. Fl. Eug.* p. 26, 1842. *Nepeta Glechoma* Benth. *Lab. Gen. et Sp.* p. 485, 1834, et in *DC. Prod.* xii., p. 391, 1848.

Var. GENUINA Gren. et Godr. *Fl. de France*, ii., p. 678, 1850. Var. *typica* Rouy et Foucaud *Fl. de France*, xi., p. 270, 1909. Var. *vulgare* Hermann *Fl. v. Deutschl. u. Fennoskandinav.* p. 392, 1912. This is the common variety in the west of Europe and the only one at present known to occur in the British Isles. It is characterised by the triangular calyx-teeth which pass more or less suddenly into an acuminate apical portion. A large number of forms are known. Some of these probably have the value of Mendelian segregates while others have been produced by habitat conditions.

Forma GLABRATA Beck *Fl. von Nieder-Œsterreich* ii., p. 1003, 1893 (sub *Nepeta Glechoma*, var. *typica*); forma *borealis* Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 26, 1903. This is a form which is nearly or quite glabrous.

Forma PUBESCENS Ces. ex Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 26, 1903, is a more or less pubescent or even hirsute form of a rather obscure green colour. Many of the plants named var. *hirsuta* Benth., probably belong here. *G. hederacea*, subvar. *hirsuta* Coss. et Germ. *Fl. de Paris* p. 400, 1861, non *G. hirsuta* W.K., and *G. hederacea*, var. *villosa* A. Boreau *Fl. du Centre de la France* p. 533, 1857, non Koch, are probably synonymous with forma *pubescens* Ces.

Forma BREVIPETIOLATUM Petermann *Flora Lipsiensis Excursoria* p. 437, 1838; O. Kuntze *Fl. von Leipzig* p. 108, 1867. This is a form characterised by having very short petioles.

Forma ACUTILOBA Neuman ex Celakovsky *Prod. Fl. v. Bohm.* ii., p. 354, 1871, is a form with acute teeth to the leaves.

Forma LOBULATUM Kit. (pro sp.), in *Linnaea* xxxii., p. 434, 1863 (in a paper entitled *Additamenta ad Floram Hungaricam*), is said to have glabrous stems and leaves with the latter coarsely incised-crenate or lobulate.

Forma RENIFORMIS Schur *Enumer. Plant. Transsilvan.* p. 533, 1866, has all the leaves glabrous and exactly reniform in shape.

Forma PARVIFOLIA Turrill, forma nova, a planta typica foliis

8-9 mm. longis vix. 1 cm. latis differt. England. Newbury; near the London Road, fl. April 1893, A. Bruce Jackson.

Forma microcalyx O. Ktze. *Fl. von Leipzig* p. 108, 1867, is a form with the calyx ¼ as long as the corolla.

Forma rosea Neuman *Bot. Not.* 1896, p. 282, et *Sveriges Flora* p. 168, 1901, has the corolla rose-red with the exception of the lip and throat which are dull lilac in colour inside.

Forma micrantha Moric. (pro. var.) *Fl. Ven.* i., p. 433, 1820; Rouy et Foucaud *Fl. de France* xi., p. 270, 1909. *Glechoma micrantha* Boeng., ex Reichb. *Fl. Germ. Excurs.* p. 316, 1830-1832. *G. hederacea*, var. *parviflora* Sonder *Fl. Hamburgensis* p. 318, 1851; Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* vol. iii., p. 26, 1903. *Glechoma hederacea*, forma *parviflora* Neuman *Sveriges Flora* p. 168, 1901. *G. hederacea*, sub.-var. *breviflora* Coss. et Germ. *Fl. de Paris* p. 400, 1861. *G. hederacea*, var. *minor* Gilib. *Chloris Grodnensis* p. 28, 1785. *G. repens*, var. *minor* Gilib. *Plant. Lithuaniae* p. 15, 1785 et *Suppl. Syst. Pl. Eur.* (*Exerc. Bot.*) p. 89, 1792. Var. *praecox* Schur *Enumer. Plant. Transsilvan.* p. 532, 1866, and var. *parviflora* Schur, *l.c.*, probably both belong to this form. Bentham's var. *parviflora* is a mixture of forma *micrantha* and var. *heterophylla*. This form is distinguished by its smaller flowers and more or less aborted stamens. The entire plant has usually rather small proportions. The leaves are mostly reniform and about 1.5 cm. in length and 2 cm. in breadth or smaller. The degree of abortion of the stamens varies considerably but in typical examples of the form the writer has never observed seed to be produced in the absence of pollen derived from flowers of hermaphrodite varieties.

Forma magna Mérat (pro. sp.) *Flore des Envir. de Paris* p. 225, 1812; Lejeune *Fl. de Spa* pt. 2, ii., p. 20, 1813. Var. *major* Gaud. *Fl. Helv.* iv., p. 46, 1829; Koch *Syn. Fl. Germ. et Helv.* p. 563, 1837; Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 27, 1903; Rouy et Foucaud *Fl. de France* xi., p. 271, 1909. Var. *majus* Petermann *Fl. Lipsiensis Excursoria* p. 437, 1838; O. Ktze. *Fl. von Leipzig* p. 108, 1867. Var *grandiflora* Mart. *Fl. Mosq.* p. 101, 1817; Schur *Enumer. Plant. Transsilvan.* p. 533, 1866. Forma *grandiflora* Fr. ex Neuman *Sveriges Flora* p. 168, 1901. *Glechoma repens*, var. *major* Gilib. *Suppl. Sys. Plant. Eur.* (*Exerc. Bot.*) p.

89, 1792, is apparently a form of *G. hederacea* which cannot be identified from the description given. It may be the var. *genuina*, forma *magna* (Mérat). This form is distinguished from allied forms by being generally double in size in all its parts, by having one or two, rarely more, flowers in the axil of each leaf, and by having conspicuously large corollas and well developed stamens whose anthers bear a full amount of pollen.

Var. HETEROPHYLLA Opiz (pro sp.) in *Natur. Tausch.* vii., p. 61, 1824, et ex Reichb. *Fl. Germ. Excurs.* p. 316, 1831; Rouy et Foucaud *Fl. de France* xi., p. 270, 1909. Var. *intermedia* Schrad. ex Benth. *Lab. Gen. et Sp.* p. 485, 1834 et in DC. *Prod.* xii., p. 391, 1848. Var. *villosa* Koch *Syn.* ed. 1, p. 563, 1837; O. Kuntze *Fl. von Leipzig* p. 108, 1867. Var. *pauciflora* Ledeb. *Fl. Rossica* iii., p. 380, 1847-1849. *Nepeta Glechoma*, forma *heterophylla* Beck *Fl. von Nieder-Œsterreich* ii., p. 1003, 1893. This variety is distinguished by the teeth of the calyx being lanceolate-cuspidate, that is, the relatively broader base gradually narrows into a cuspidate apical portion. The variety is intermediate between var. *genuina* and var. *hirsuta*. The two forms named *G. heterophylla*, var. *latidens* Beg. *Fl. Ital. Exsicc.* 645a, and *G. heterophylla* var. *angustidens* Beg. *Fl. Ital. Exsicc.* 645b, link up respectively with var. *genuina*, forma *magna*, and var. *hirsuta*. It has a wide range in Europe and Asia, stretching as far east as Japan, but it has not yet been recorded in Britain so far as the writer is aware.

Var. SARDOA *Beg.* in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 25, 1903. *Glechoma sardoa* Beg. in *Nuov. Giorn. Bot. Ital.* n.s., xix., 1912, p. 578. This variety is limited to Sardinia. The following is a translation of the original description, which is in Italian: Calyx-teeth about 2 mm. broad at the base and rather long, from thence suddenly acuminate. Calyx-tube sprinkled with minute yellow-golden glands, shining. Leaves reniform, dentate, teeth broad and truncate, not very deep, generally larger than in the type. Plant glabrescent, more developed in all its parts.

Var. SERBICA Halacsy et Wettstein in *Verh. Zool.-Bot. Ges. in Wien*, Bd. 38, p. 71, 1888 (pro sp.), differs especially from all other varieties in having its leaves always with a sharply truncate base never cordate or reniform. Its calyx-teeth resemble those of the var.

heterophylla in gradually narrowing to an acuminate apex. Originally found in northern Serbia the plant is said to retain its characteristics under cultivation.

Var. BULGARICA Borb. in *Termész. Fuzét.*, xiv., p. 51, 1893. The only description the writer has seen of this plant is that given in Velen. *Fl. Bulg.*, Suppl. i., p. 233, 1898, where it is said to be separable from the typical plant (presumably var. *genuina*) by the following characters: Folia brevius petiolata, inferiora saepius trigona acuta et acutiuscule dentata, superne saepe mucronata, media et superna longiora ac lata, calyx longior, dentes calycini longius setaceo-acuminati, corolla longius exserta.

Var. HIRSUTA Baumg. *En. Stirp. Transs.* ii., p. 165, 1816. *Glechoma hirsuta* W. K. *Pl. Rar. Hung.* ii., p. 124, t. 119, 1805. *G. rigida* Kerner in *O.B.Z.* 1874, p. 215. *G. hederacea*, var. *rigida* Rochel *Exs.* nr. 93 ex Kerner, *l.c. Nepeta rigida* Beck *Fl. Nieder-Œsterreich* ii., p. 1004, 1893. Since nothing has been found to show that Rochel *Exs.* nr. 93 was accompanied by a diagnosis, as required by the Vienna rule 37 to make his name valid, the name *hirsuta* is retained for this variety. It includes all plants with long, narrow, nearly or quite subulate calyx-teeth. This characteristic calyx is generally accompanied by large leaves, large flowers and often (except in forma *meridionalis*) a more or less dense soft pubescence. It occurs as the common ground ivy in Eastern Europe being typically found in Hungary and Transsylvania. The writer has collected it as far south as Greek Macedonia (see *Kew Bulletin* 1918, p. 318), and it occurs in an extreme condition in Bosnia (*Herb. Kew*). In China it is apparently common. It does not reach Western Europe and no examples of it from France or England have been found in the numerous collections examined for the purposes of this paper. Although usually recorded in British floras as occurring in this country with the type none of the records seem reliable, either var. *genuina*, forma *pubescens* or var. *genuina*, forma *micrantha* appearing to be the plant intended. Thus in *Journ. Bot.* li., 1913, p. 253, Miss Armitage records a plant from the downs above Merrow, Surrey, as *Nepeta Glechoma*, var. *parviflora* Benth., and in the same periodical, p. 306 of the same volume, the Rev. E. S. Marshall changes the name to *Nepeta Glechoma*, var. *hirsuta* Benth. Specimens collected by Miss Armitage and preserved in *Herbs. G. C.*

Druce and *A. Bruce Jackson* show the plant is *Glechoma hederacea*, var. *genuina*, forma *micrantha* (Mérat).

To the variety *hirsuta* Baumg., belong the following forms:

Forma MERIDIONALIS Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 27, 1903, which has the entire plant including the leaves glabrescent.

Forma SUBULATA Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 27, 1903. *Glechoma subulata* Moric. *Fl. Ven.* i., p. 432, 1820. A plant with acutely toothed leaves.

Forma LAMIIFOLIA Schur in *Verh. Siebenb. Ver. Naturw.* iv., p. 58, 1853 (pro. sp.). *Glechoma hirsuta*, var. *maxima* Schur. *Enum. Plant. Transsilvan.* p. 533, 1866. This is a plant with large, very hirsute and coarsely crenate leaves, which are 15 lines long, and large, conspicuous, lilac corollas which are six times longer than the calyx.

Forma LONGIDENS Rohlena in *Sitz. K. Böhm Ges. d. Wiss.*, 1904, is distinguished by having extremely long and narrow calyx-teeth. It is known only from the Balkans.

Bentham's *Nepeta Glechoma*, var. *hirsuta* (*Lab. Gen. et Sp.* p. 485, 1834, et in DC. *Prod.* xii., p. 391, 1848) is a mixture of *G. hederacea*, var. *genuina*, forma *magna* and *G. hederacea*, var. *hirsuta*.

SPECIES EXCLUSAE VEL INDETERMINATAE.

Glechoma arvensis L. *Sp. Pl.* ed. 1, p. 578, 1753, is *Stachys arvensis* L.

Glechoma belgica L. *Sp. Pl.* ed. 1, p. 578, 1753, is *Stachys arvensis* L.

Glechoma grandiflora Lam. et A. P. DC. *Syn. Pl.* p. 223, 1811, et DC. *Flore Française* vi., p. 400, 1815, is *Stachys corsica* Pers.

Glechoma Marrubiastrum Vill. *Hist. Pl. Dauph.* ii., p. 371, 1787, is *Stachys arvensis* L.

Glechoma pannonica Borb. The description of this species has not been traced.

Glechoma rotundifolia Rafin. *Atl. Journ.* p. 177. This description has not been seen.

Glechoma urticaefolia Makino in *Bot. Mag. Tokyo*, xxvii., p. 153, 1913, is *Dracocephalum urticaefolium* Miq.

In conclusion, the writer desires to thank Dr G. C. Druce, M.A., F.L.S., and Mr A. Bruce Jackson, A.L.S., for much kind help and the loan of valuable material.

HAGSTROM'S CRITICAL RESEARCHES ON THE POTAMOGETONS,

By William Harrison Pearsall.

The publication of this fine monograph is a matter of considerable interest to all British botanists, and especially to those actively engaged in the systematic study of our submerged aquatics. In the genus *Potamogeton* Dr J. O. Hagström enumerates 138 species and 62 hybrids, and of these he describes, more or less fully, 106 species and 54 hybrids. The most prominent feature of his descriptions is that relating to the anatomical and histological structure of the plants, and while the morphological characters are not neglected, everywhere the emphasis is laid upon the evidence afforded by a study of plant sections. Hitherto in this country anatomical characters have received little attention and have been of slight value to the systematist, but on the Continent they have been more seriously studied and in this genus alone the splendid work of Dr C. Raunkiaer (*Pot. Stud.* 1903), and Dr J. O. Hagström has materially assisted the critical study of this difficult group. I am well aware that considerable divergence of opinion still exists as to the value of the conclusions arrived at from the study of these anatomical and histological characters. Wettstein remarked that he found greater anatomical differences in the same species of *Euphrasia* —when under different conditions of environment—than he found between different species; and even in the genus *Potamogeton*, Dr Graebner (*Lebensgesch.* 436, 1906) affirms that nearly all the commoner species can be divided into further species on account of their anatomical structure. On the contrary Hagström considers it proved that "the anatomical stem-diagram is so fixed that it is very little, if at all, influenced by the morphological variations

within the same species," and adduces abundant evidence to support his conclusion. His present monograph embodies the results of long and laborious effort and is far in advance of anything previously attempted in the same direction. Its chief merit lies in the fact that it is in no sense a mere compilation—on the contrary it assumes a knowledge of existing literature that few possess—but it gives conclusions arrived at after patient and persistent personal research. Synonymy receives adequate attention, the distinctive morphological characters are tersely enumerated and the anatomical structure of the various species is given in great detail. The figures in the text, though small, are of considerable value, the classification is exhaustive and the world distribution of much interest. Unfortunately, the British records are extremely meagre—as the following inclusive lists will show—but those of Scandinavia and adjacent countries are very numerous. Some few of Dr Hagström's conclusions about British plants will, perhaps, not be readily accepted by British botanists who have so much more knowledge of the living plants, but within the limits of this brief review it is impossible adequately to discuss them. My only present purpose is to stimulate the collection of these interesting plants and to thereby solve some of the problems they present.

P. FILIFORMIS Persoon. (*P. marinus* L., ex Fries). This is divided into 7 narrow-leaved 'forms' and 4 broad-leaved 'varieties.' The former have stem-leaves usually 0.5 to 0.75 mm. broad, and several of them are represented in this country. The only record, however, is f. *major* Tisel., Caithness, 85, (Grant).

P. FILIFORMIS Pers. × PECTINATUS L. This is divided into 4 groups according to the shape of the leaf-apex:—*acutus*, *intermedius*, *cuspidatus* and *obtusus*. Under the last, *obtusus* Hagstr., f. *Kerneri* n. nom. (=*P. juncifolius* Kerner, ap. Fritsch) no British stations are given, although such exist, I believe.

P. VAGINATUS Turcz. Dr Hagström states that the distribution of this species does not extend southward beyond the 60th parallel. He quotes the record from Shetland, 1887, W. H. Beeby (*Journ. Bot.* 1907, 192), and says that he is not fully convinced of its correctness. "If it were true it would be extraordinary that the species has not been found either in Norway, the great lakes of Swedish Lapland, Iceland, or Greenland. Consequently it should have been brought

direct from Canada or the Gulf of Bothnia to Shetland!" Personally, I see no insuperable difficulty in this.

P. PECTINATUS L. (*P. interruptus* Kitaibel. *P. flabellatus* Babington). This is divided into 2 varieties, according as the "leaf-apex is endowed with a conspicuous mucro or more slowly tapered." The British records given are:—

Var. *ungulatus* Hagstr. Wallasey, Cheshire, 86 (Lomax).

Var. *ungulatus* Hagstr., f. *subaequabilis* n.f. R. Leen (Mitchell). f. *latiusculus* n.f. Benwick, Cambs, 85 (Fryer).

Var. *diffusus* Hagstr., f. *laxus* Tisel. Hedge Court Mill Pond, Surrey, 83 (Beeby); Chatteris, Cambs., 84 (Fryer). f. *scoparius* Wallr. Warwick, 38 (Babington, labelled *P. flabellatus.*). f. *interruptus* (Kit.) Asch. (=*P. interruptus* Kitaibel=*P. flabellatus* Babington). Hull, Yorkshire, 61, 7th September 1853 (Babington); Stoke Heath, Warwick, 38, 1855 (T. Kirk).

P. CRISPUS L. Fieber classified this into 2 varieties characterised by a pointed or obtuse leaf-apex, var. *acutifolius* and var. *obtusifolius*. The five other varieties cited include var. *cornutus* Linton. No British stations are recorded for any form of this species, although its European distribution is admitted.

× P. COOPERI Fryer. (=*P. crispus* L. × *perfoliatus* L.) This is divided into 2 series of forms—one, *serrulatus*, having leaf-margins with one-celled denticles, like *P. perfoliatus*; the other, *serratus*, having real incisions in the margin, like *P. crispus*. Under the former, is f. *eu-Cooperi* Graebner. "A single station known, England, Leicestershire, Loughborough Canal. This plant might possibly be *P. crispus* × *praelongus*." The latter supposition is untenable, in my judgment. I have examined numbers of plants from this station, and in every case the distinctive denticles are readily seen. In the same series are f. *Jacksonii* (Lees), Chester, R. Dee, 91 (Billups); Parsonware Drove, Benwick, Cambs., 92 (Billups and Fryer); and f. *scoticus* n.f., Scotland, Stirling, Union Canal above Falkirk, 94 (Stirling and Kidston). No British stations are given for *serratus*, which is apparently only recorded from Bavaria.

P. CRISPUS L. × PRAELONGUS Wulf. (=*P. undulatus* Wolfg.). The only British record is Stirlingshire, Scotland (A. Bennett).

P. BENNETTII Fryer. This is shown to be *crispus* × *pusillus* rather than *crispus* × *obtusifolius*. The specimens examined are labelled Stirling, v.-c. 86, Wood Pond, Grangemouth, Aug. 24, 1894 (R. Kidston and Col. Stirling).

P. ZOSTERIFOLIUS Schum. (=*P. compressus* L. ap. Fries.) Dr Hagström gives a large number of Scandinavian stations for this, but only one reference to these islands. In describing a barren form, f. *abortivus*, which has shortened peduncles (15-25 mm.), undeveloped spike and barren floral parts, he suggests that these properties may derive their origin from *P. acutifolius*, and adds "a similar plant is also collected in Scotland by Babington, where *P. acutifolius* is not now met with. Nevertheless it is possible that it has occurred there in olden times."

P. ACUTIFOLIUS Link. The author alludes to the fact that in this genus "nearly allied species often appear in pairs," and gives instances of *P. polygonifolius* and *P. coloratus*; *P. gramineus* and *P. lucens*; *P. zosterifolius* and *P. acutifolius*. He gives an exhaustive and most valuable description of the differences between the species of the last-named pair and illustrates his points by three admirable figures. The British specimens seen are from Middlesex (Linton), and Norfolk (Bennett).

P. TRICHOIDES Cham. et Schlecht. Only two British stations are given for plants examined, Surrey (Beeby), and Norwich (Babington).

The treatment of the *Pusilli* is one of the most interesting in the entire work. The author states that "the stipular sheath behaves differently in this group. In some species we have not the usual, open, convolute ligule, but a connate, closed ocrea," which differs from that of *P. filiformis* by being non-plicate aback. This condition of the ligules has, therefore, a considerable systematic value and accounts for his division of the *pusillus*-group into two series.

Series A.—*Pusilli connati.* Vaginae stipulares connatae ochreatae, non plicatae. Folia acute ± longe cuspidata vel sensim attenuata ut plurimum ± rigida. To this belong the following British forms:—*P. rutilus* Wolfg., *P. mucronatus* Schrad. (*P. Friesii*), *P. panormitanus* Bivona Bernardi, and *P. dualis* Hagstr. (= *panormitanus* × *pusillus*).

Series B.—*Pusilli convoluti.* Vaginae stipulares fissae convolutae. Under this we find *P. obtusifolius* M. & K., *P. Sturrockii* Ar. Benn. (= *obtusifolius* × *panormitanus*), *P. pusillus*, and *P. franconicus* Fischer (= *pusillus* × *trichoides*).

P. RUTILUS Wolfgang. No British stations are given.

P. MUCRONATUS Schrader, ap. Reichenbach Icones Fl. Germ. et Helv. vii., 15, 1845. (*P. Friesii* Ruprecht.) Only a general reference, "England, in several stations," is given.

P. PANORMITANUS Bivona Bernardi. This species is treated very fully and the essential differences between it and *P. pusillus* pointed out at some length. "In the first place the very colour is different, *P. panormitanus* having a more light green, often yellowish tint, while *P. pusillus* has a darker colour inclining to brown. The mode of growth is also different, *P. panormitanus* stretches itself upwards elegantly *rutilus*-like, *P. pusillus* again expands like a bush with copious branches in the upper part. *P. panormitanus* stretches the upper internodes of the stem to the necessary length, but never prolongs by branches of several ranks, distichously, which is the characteristic of *P. pusillus* and *obtusifolius*." *P. panormitanus* has stiffer leaves, with a prominent midrib elevated below, and usually a longer and more acute leaf-apex. The mid-rib never has the large-celled lacunæ (characteristic of *P. pusillus*) on either side of it. The most important differences, however, "lie in the stipular sheaths" (already mentioned) "and in the shape and occurrence of the turios." The latter are small and slender (12-15 mm.), and "usually developed at the base of the spike-bearing long branches." "In *P. pusillus* the development is quite the contrary, the best developed buds occurring in the branch-tops. Moreover, they are considerably larger." The British stations recorded are Shropshire (Beckwith), Surrey (Bennett) and (Nicholson).

P. DUALIS Hagstr., n. hybr. (=*P. panormitanus* × *pusillus*). This is stated to be very rare and that probably accounts for its meagre treatment. There are specimens in *Hb. Stockholm* from England, ponds near York, 81 (Bennett), Shropshire, 86 (Beckwith).

P. OBTUSIFOLIUS M. & K. The European distribution of this species receives less attention than usual and the only British specimens noted are from England—Surrey and E. Norfolk; Scotland—

Thornhill and Balgavies Loch. No reference is made to the fact that this species fruits more freely than any other of the linear-leaved species. Not only so, but it frequently produces both fruit and turios abundantly at the same time, and as a consequence, under congenial conditions, spreads with great rapidity.

P. STURROCKII Ar. Benn. Dr Hagström considers this a hybrid of *P. obtusifolius* and *P. panormitanus*, but the reasons given are few and, in my opinion, quite insufficient. It is clear from the scanty reference to this plant that the author has seen but few specimens of it. Under "distribution," only Scotland, Marlee Loch, Perth (Sturrock), and Loch Schechernich, E. Perth (Marshall), are given, and Dr Hagström states finally, that "other specimens named *Sturrockii* are not identic with this rare plant." I consider our English Lake District plants are quite distinct.

P. PUSILLUS L. *P. Berchtoldi* Fieb., saltem pro parte (maxima parte ?). This species is very fully described and finely illustrated by carefully drawn figures. Further, the comparisons with *P. panormitanus* are of much value; the leaves of *pusillus* are more soft and flexible, have a more or less rounded apex and one or two rows of lacunae on either side the midrib. "The upper part of the turio presents, by the amassment of leaves and sheaths, a considerably incrassate and fusiform shape, and the sheaths embrace quite the inner obtuse leaves." Under classification are included 3 varieties, *major* M. & K., *tenuissimus* M. & K., and *Berchtoldi* (Fieb.) Asch. et Graebn., each with several forms. Distribution:—England, Anglesea, 86 (Griffith), labelled "sub. sp. ***Sturrockii*** **mihi, comm. Ar.** Bennett," is nearly identical with v. *polyphyllus* Mor.; Westmoreland, 74, Bailey, f. *ligulifolius* Fischer, by Ar. Bennett in *Journ. Bot.* 67, 1881, named "v. *panormitanus*." Ordinary form from other stations—Scotland, Stirling, 92 (Kidston and Stirling), is v. *Berchtoldi* (Fieb.).

Var. BERCHTOLDI (Fieb.) Asch. et Graebn. Dr Hagström considers that at least two separate forms—"by Fieber confounded with each other"—are included under this name. "I think it impossible now to state whether all that Fieber referred to his new species may be the hybrid—*P. pusilliformis* Hagstr. (*P. mucronatus* Sch. × *P. pusillus* L.)—or if not, partly pure *P. pusillus*, partly also the hybrid *P. dualis* Hagstr. (*panormitanus* × *pusillus*). The

latter is very likely to be the fact, and when the name *Berchtoldi* is already applied by Ascherson and Graebner to a true *pusillus*-form, we shall have to give new names to the hybrids included in *P. Berchtoldi* of Fieber."

P. FRANCONICUS Fischer. (= *P. pusillus* × *trichoides*). Under var. *spicosus* Hagstr.—with upper part of the stem as in *P. trichoides*—are given the following English stations:—Hedge Court Mill Pond, Surrey, 86 (Beeby); Glastonbury, Somerset, 82 (Rev. Murray).

P. ALPINUS Balbis. The author's "main-form" is the common one with leaves 15-20 mm. broad. All more narrow-leaved forms come under var. *linearifolius* Hagstr., with submerged leaves narrow linear-lanceolate, 100 x 5-8 mm. No British localities are mentioned for *P. alpinus*, nor for the following *P. venustus* Baagöe—see *Rep. B.E.C.* 376, 1916.

P. DRUCEI Fryer is considered to be *P. alpinus* × *natans*. Although this view has been often advanced, many botanists will accept it only with mental reservations. The texture of the leaves, their long petioles with absence of the *natans* "joint below the limb," the stout peduncles often narrowed near the junction with the stem, the absence of leaves rounded at the base, and the general habit, combine to leave one in doubt as to whether the plant is not entitled to the specific rank Fryer finally accorded it. The R. Loddon, Berkshire, is given as the only habitat.

P. GRIFFITHII Ar. Bennett. This is said to be *P. nerviger* Wolfg. ap. Schultes Mantissa iii., 359, 1827 (= *P. alpinus* × *praelongus*). Against the presumption that it is a sub-species or var. of *P. alpinus* is put the occurrence of cortical bast in the stem. "Its hybrid origin, however, is beyond all doubt and may nowadays be disputed in earnest by nobody." Only 2 stations are known, one in Lithuania and the other in England, Llyn-an-afon, near Aber, Carnarvon. (On the above, see *Journ. Bot.* 15, 1919.)

P. LANCEOLATUS Smith is regarded as the hybrid *P. alpinus* × *pusillus*. This also is open to considerable doubt (see *Journ. Bot.*, *l.c.*) I agree with Mr Bennett that the leaves are not "obtuse"—certainly not so obtuse as shown in the figure (68)—but sub-acute. The stations given are England, Anglesea, 1808 (Davies); R. Lligwy

(Bailey); Cambridgeshire, Burwell Fen (Bennett); and one station in France. No others are known.

P. POLYGONIFOLIUS Pourret. The author admits that "this species shows great affinity with *P. coloratus*. The styles and stigmas are quite the same, and the stem-anatomy is so near alike that it is practically useless for the distinction of the species." In regard to the variations of this polymorphic species Dr Hagström admits the vars. *cordifolius* and *lancifolius* Cham. and Sch.; *amphibius* Fries, "to which belong such forms as *ericetorum* Syme." He considers this last to be probably the same as f. *rotundifolius* Fischer; and f. *angustifolius* Fries, f. *largior* Tiselius and v. *pseudo-fluitans* Syme to be indistinguishable from v. *lancifolius* Cham. and Sch. The short-petioled submerged leaves of f. *cancellatus* Fryer "make it a more dubious form and if not a hybrid it may be considered a form of v. *lancifolius*." No British references are given under distribution.

P. COLORATUS Vahl. This species is briefly treated and the British stations recorded are:—England—Kent, Cambs, Norfolk, Yorkshire and westward in Herefordshire. A new hybrid *P. anglicus* Hagstr. (*P. coloratus* × *polygonifolius*) is created upon specimens from Woking Heath, Surrey, 1881 (Ar. Bennett). Considering the author's own opinion (quoted above) of the similarity between the two supposed parents this seems a somewhat hazardous proceeding, and there is nothing in the brief description given which seems to justify it.

P. BILLUPSII Fryer is considered to be the hybrid *P. coloratus* × *gramineus*. The short note on this hybrid is mainly concerned in showing that Fryer's presumed *P. coriaceus* × *coloratus* is untenable as the plant shows no trace of *lucens*. The only recorded stations are Parsonware Drove, Benwick, Cambs., and a rivulet in Gothland, Sweden.

P. NATANS L. Of this the writer says "terrestrial forms have the same anatomical stem-diagram as the forms of running water and investigations have proved that the anatomical conditions are fixed." He gives the following varieties:—*vulgaris* Koch et Tiz. with leaves broadly oval; *ovalifolius* Fieber with leaves ovate-oblong, about 110 x 30 mm.; *rotundifolius* Brébisson with leaves large and roundish; *prolixus* Koch with leaves oblong-lanceolate and inter-

nodes and petioles long; *pygmaeus* Gaudin, a small, shallow-water form; and *terrestris* Gray. No British stations are quoted.

P. GESSNACENSIS Fischer. (= *P. natans* × *polygonifolius*). Under var. *Richtsfeldii* Fisch. = f. *hibernicus* Hagstr., is included the plant gathered by R. M. Barrington in 1874 at Killarney—labelled *P. polygonifolius*, var. *linearis*—and probably also that gathered by R. W. Scully at Long Range, Killarney, in 1888. Fryer considered these merely states of *P. natans*.

P. GRAMINEUS L. The author's treatment of this extremely polymorphic species is eminently sound and convincing. In my experience, no genus is more highly sensitive to differences in environment than *Potamogeton*, and of its various species none more so than the one under notice. Mr Fryer used to say that with the rarer species he could often tell which particular station specimens had come from, by a study of their facies. Dr Hagström recognises this power of adaptation, and adopts habitat as the basis of his classification:—Long-leaved river forms—var. *fluvialis* (Fries); deep-water forms, with shorter leaves and more branched stems—var. *lacustris* (Fries), and shallow-water forms, under var. *heterophyllus* Fries. He emphasises the point that no change in the stem-anatomy results from these differences of environment. "It remains steadily the same under different external conditions." Botanists who have any extensive acquaintance with *P. gramineus* as a living species will endorse Hagström's final conclusion—"there are no reasons for taking out from the species such forms as *P. varians* Mor., *P. graminifolius* Fryer, or *P. nigrescens* Fries. The specific differences of these so-called "species" are not, in reality, so prominent as the descriptions suggest. They all belong to the varying power of the species and do not go above it." Numerous "forms" are included under each of the three varieties, *fluvialis*, *lacustris* and *heterophyllus*, and some of these are referred to in the author's notes on the distribution of British species. He considers that Fryer's Cambridgeshire and Huntingdonshire specimens, sometimes labelled *P. varians* Mor., sometimes as *P. falcatus* Fryer, are "mostly pure *P. gramineus*, f. *nigrescens* Fries." So also are specimens from Grunty Fen (Nos. 1732, 2243, 1277), likewise Nos. 2056, 2057 from Block Fen, Chatteris, and No. 2054 from Witcham Meadlands, Mepal. "Nos. 2156 and 2160 (same locality) are *P. Zizii*, or sooner, *gramineus* × *Zizii*."

Nos. 1265, 1275, 1086 from Stocking Fen, Ramsey, Hunts, are "true *P. gramineus* verging to f. *jemtlandicus* Tis., or f. *nigrescens* Fr." (For further notes on *P. falcatus*, see under × *P. nitens*.)

P. Zizii M. & K. (=*P. gramineus* × *lucens*). This hybrid assumes " all conceivable transitions from the most *gramineus*-like to the most *lucens*-like forms. Its fruiting faculty appears nearly undiminished or normal in some of the crosses, in most forms considerably reduced, and in many cases quite lacking." This seems a fair statement of the facts, and so we are surprised to find on the same page, " I am persuaded that *P. Zizii* very rarely, if ever, propagates itself by seeds." I cannot accept this conclusion—at any rate so far as the forms growing in the English Lakes are concerned. His classification consists of two varieties:—*validus* Fieber, with short internodes, and *elongatus* (Fieber) Reichenb., with long internodes, 10 cm. or more. Under the former are five " forms," one of which, f. *coriaceus* (M. & K.), is synonymous with *P. coriaceus* Fryer. The British stations cited are Cauldshields Loch, Melrose, Roxburgh; Coniston Lake, N. Lancs,—var. *elongatus* f. *foliosus* (Tis.) —; Fryer's specimens from Cambridgeshire (Doddington, Sutton, Chatteris and Mepal), " mostly var. *validus*, f. *coriaceus* (M. & K.), but the other forms are represented in typical specimens and transitions between them"; Huntingdonshire in several places; Llwidiard Lake, N. Wales; Kingham Loch, Scotland.

P. crassifolius Fryer. (=*P. gramineus* × *lucens* × *natans*). Little is said of this hybrid except that " the specimens from Westmoor, Doddington, Cambs, under No. 1668 must be considered to have the greatest probability for this descent; also Nos. 422 and 423 from Doddington."

P. Kirkii Syme. (= *P. gramineus* × *natans*) = *P. sparganifolius* Laestadius, ap. Fries. The author contends that as the name *P. nitens* Weber is used to cover all forms of the hybrid *P. gramineus* × *perfoliatus*, so that of *P. sparganifolius* should be applied to the hybrid here concerned. The British references are to specimens from Surrey (Bennett); R. Ure, Yorkshire (Nicholson as *P. polygonifolius*); Shobden Marsh, Herefordshire (A. Ley); Lough Corrib, Galway (Kirk); Maam, Galway (Linton); and " a dubious form from Caithness (Marshall)."

P. nitens Weber. (*P. curvifolius* Hartm. *P. salicifolius* Wolfg.

P. falcatus Fryer, and *P. salignus* Fryer). (= *P. gramineus* × *perfoliatus*). The long and detailed treatment of this polymorphic hybrid is one of the best in the monograph. The descriptions are concise, scholarly, and admirably illustrated. In regard to the vexed question of the fruiting faculty of the hybrid, Dr Hagström is clearly on safe ground when he states that " the greatest part by far (of all specimens) show partly complete sterility, partly a much reduced fruiting ability, and when the fruit production seems normal a great percentage of the fruits will be found to be more or less defectively developed." His classification is based on the upper portion of the stem with its involucral leaves and different habit. He gives three varieties:—(a) *subgramineus* (Raunkiaer) Hagstr., having primary involucral leaves narrowed at the base and ± petiolate; secondary often conspicuously petiolate, sub-coriaceous or coriaceous; (b) *subperfoliatus* (Raunkiaer) Hagstr., having both primary and secondary involucral leaves, cordate and sessile; (c) *subintermedius* Hagstr., an intermediate group. Under (a) are 7 forms, one of which is f. *involutus* Fryer; under (b) are 10 forms, and (c) includes a similar number. A very exhaustive list of specimens in the Swedish museums includes those from Surrey (Beeby), f. *typicus*; Cambs, Witcham Meadlands, Mepal, No. 492 (Fryer); Huntingdonshire, Stocking Fen, Ramsey, No. 1265 (lab. *P. falcatus*) Fryer is f. *typicus*, under (c) above; Aldershot Canal (Bennett) labelled " *P. heterophyllus* Schreb., var. *pseudo-nitens* mihi. *Journ. Bot.* 344, 1881," is " an unambiguous *P. nitens* with half-clasping leaves "; Scotland, White Loch, E. Perth (Sturrock)—similarly labelled—is a clear *P. nitens*; Kirbiston Loch, Orkney (Syme).

P. SEEMENII Asch. et Graeb. (= *P. gramineus* × *polygonifolius*). A dubious plant from Scotland, gathered by F. Coles, is possibly this hybrid.

P. LUCENS. The description of the morphological characters of this species contains little that is new and the only reference to Britain is that in the Swedish museums there are a great many specimens from England—among other countries.

P. STERILIS Hagstr. This is the *P. fluitans* Auctt. = *P. lucens* L. × *natans* L. The author admits the difficulty of distinguishing *P. sterilis* from *P. crassifolius*, but relies on " the influence from *P. gramineus* which is to be traced in the latter but not in *P. sterilis*."

The Fryer specimens of *P. crassifolius* from Horseload Fen Drain, Chatteris, and The Engine Drain, Mepal, are assigned to *P. sterilis* after " eager and careful investigation," but the Doddington plants are presumed to be *crassifolius*, " since they have something in their habit reminding of *gramineus* as well as of the two other species."

P. DECIPIENS Nolte. (= *P. lucens* L. × *perfoliatus* L.). After an exhaustive survey of the recent literature on the subject, Dr Hagström comes to the conclusion that " the Swedish forms under the names of *P. decipiens* and *P. upsaliensis*, and also those distributed by Tiselius under the Nos. 68-74, 77-84, belong to a single hybrid." He also holds that all the German forms he has seen, including those distributed by Nolte himself, named *P. decipiens* are the same hybrid, and contends that " the Noltean name of *P. decipiens* ought to be used of all forms " of it. His classification is based on the size and shape of the leaves :—(a) var. *latifolius* Hagstr., upper stem-leaves about 100 x 25-40 mm.; (b) var. *brevifolius* Hagstr., leaves shorter and narrower; (c) var. *longifolius* Hagstr., leaves 150-200 x ± 20 mm. The only British station cited is Cambridgeshire (Fryer).

P. BABINGTONII Ar. Benn. (= *P. lucens* × *praelongus*). The author admits that some Danish forms of this come very near *P. decipiens* but " having once seen a true *lucens* × *praelongus* and studied its peculiarities (the aspect of the leaf-margin, the very apex of the leaves, &c.) you will soon be able to distinguish between this very rare hybrid and the much commoner *P. decipiens* Nolte." His only British reference is to the Babington Irish plant from L. Corrib, figured in *E. B. Suppl.* t. 2847, of which he says " it is not known to me if this entirely coincides with the Danish form." He distinguishes the Irish form as f. *longifolius* (Bab.).

P. PRAELONGUS Wulfen. The description of this species is very short and the classification along recognised lines. The varieties are *latifolius* Alpers, *brevifolius* Celak., *angustifolius* Graebner, and *elegans* Tis., with elongated leaves 210-250 x 20 mm., and long upper internodes. The f. *curvatus* n.f. has strongly recurved leaves. Under Distribution are included British Isles and the Shetland Islands.

P. RICHARDSONII (Ar. Benn.) Rydb. Following Fernald, in *Gray's New Manual* 74, 1908, the author admits this as a valid

species and gives lengthy reasons for his belief. Briefly they include :—(a) both pollen and fruit relatively well developed; (b) marginal denticulation different from that of *P. perfoliatus*, leaves more recurved, ligules different, and stigma lower; (c) the presence of some (even though inconsiderable) independent properties; (d) its occurrence, not only on scattered stations, like a hybrid; and (e) the constancy of its properties. No British stations are given.

P. PERFOLIATUS L. The treatment of this extremely variable species is somewhat unexpectedly slight and contains little that is new. The classification, indeed, is that of nearly a century ago,—var. *ovatifolius* Wallr. (1823), var. *rotundifolius* Wallr. (1823), and var. *gracilis* Cham. et Sch. (1827), which includes forms with comparatively long and narrow leaves such as f. *lanceolatus* Blytt. There are no records of British stations given.

P. DENSUS L. The anatomical characters of this are very fully described but the distribution is only moderate—" in England at many stations, the most northerly known to me is Howden (Storey)."

Note.—Since the above review was written I have submitted a large number of sheets of doubtful plants of most of the British species to Dr Hagström, and will give his invaluable determinations and comments in a subsequent paper.—W. H. P.

POTAMOGETON DRUCEI FRYER IN FRYER'S CORRESPONDENCE.

By G. C. DRUCE.

Although in his *Potamogetons of the British Isles* 31, 1898, Fryer published this plant as a hybrid he subsequently (*Journ. Bot.* 524, 1899) definitely raised it to a species and whatever may have been his later views he never published any alteration. Speculations as to the grade of several Pondweeds, including this one, engrossed much of his time, and this speculative theorising led him to vary his views. In the last interview but one I had with him he suggested *lucens* × *polygonifolius* as a possible combination but then asked

"whence came the sub-crested keel to the fruit, and why if from *natans* × *lucens* has it no phyllodes?" At our next and last meeting in 1910 he said he felt very doubtful about it, but thought it must be a good species. He was then 84 years of age. As many know Fryer was an excellent letter writer and, apart from that side of his character, the following extracts from his letters regarding the Loddon Pondweed may be of interest as showing his way of working, his endeavours to unravel problems, and the ingenious methods of his speculative mind. The letters have been slightly condensed. Oct. 3, 1893. "Thanks for very interesting parcel. At a glance I think you are right in not naming the new form *fluitans* Roth. It seems away from that by the thick under midrib. Most likely it is as you say, *natans* × *alpinus*. [These two species grew with it.] I have continental forms, named *fluitans*, very like it, but will carefully compare it with my very large set of *fluitans* forms. Send me *lucens* from the same stream. Possibly the Berks plant may deserve a new name, in which case I hope you will name it, prefixing × to show it is a hybrid." Oct. 17, 1893. "Until to-night I have been unable to complete my examination of your remarkable form of *fluitans*. I think you may safely so name it, although some specimens resemble the fruiting American plant (*P. americanus*) more closely than any *fluitans* I have seen before. The *alpino-natans* has nothing to do with the Berks plant which is no doubt *lucens* × *natans* = *fluitans* Roth." [On this statement it was put under *fluitans*, as an untypical form, in the text of the *Fl. Berks* 1897.] Aug. 18, 1896. "Much regret you have not sent living roots of the Berkshire '*P. fluitans*.' It is a very doubtful plant and possibly may be only a form of *polygonifolius* or perhaps that species and *natans*. It is not like any other *fluitans*-form in my herbarium, yet to me it seems to fall under that segregate. Bennett, however, seems to doubt it." [In the Additions to *Fl. Berks*, inserted before publication, this is noted.] Sep. 1, 1898. "Your magnificent Pondweed arrived in perfect condition and the roots are all that can be desired. You will expect an 'opinion.' I cannot give you one off-hand; you shall, however, have my first impressions, which often are very suggestive, even if those of an inexperienced and non-botanical observer. Certainly I cannot refer this plant to any form known to me. The rootstock seems to remove it from typical

fluitans, though probably it will range itself in or near the *fluitans*-group. *P. polygonifolius* × *alpinus* is the × the rootstock suggests, also the structure and venation of the leaves. I am strongly tempted to give it a plate after *P. Griffithii* (a probable hybrid of *alpinus*) and call it × *P. Drucei* = *alpinus* × *polygonifolius*. It would then fall into its proper place in the part of the Pot.-Book I am now working at. . . . Here I broke off to have another look at this beautiful plant. The rootstock is the puzzle. It indicates *coloratus*, an improbable plant. Can it be an abnormally vigorous form of *polygonifolius*? I think not. I still cannot get away from the idea of an *alpinus* ×. As far as I can ascertain *alpinus* has no permanent rootstock, but rests in winter in the buds produced at the ends of the growing stolons and in the axils of the leaves. . . *Polygonifolius* rests in the two or three terminal joints of the stolons, all the rest of the rootstock decays, so does that of *perfoliatus*. The stipules and absence of phyllodes remove it from *fluitans*. What plants of this genus does it grow with? I can see nothing of *natans* in it, only *polygonifolius*, *coloratus* and *alpinus*, three closely allied forms." Sept. 3, 1898. "The Berkshire *fluitans* is, I fear, only *polygonifolius*, a most distinct form, however. Perhaps it would be better to consider it a state rather than a form. Certainly the most beautiful of the many Pondweeds I have seen. I would like to figure it for a frontispiece to our book, and perhaps I may be able to do so. After all the differences between the rootstock of *coloratus* and *polygonifolius* are in the continued growth of the former throughout the year, and the total decay of the part which has produced the growing annual stems in the latter, which rests in the two or three terminal joints, just as *perfoliatus* does. . . . The glass-like substance of the membranous part of the leaf between the mid-rib is the wonderful part of your plant. It gives the appearance of lace-work. If it is *polygonifolius*, the regular outline of the floating leaves will soon disappear under cultivation and they will assume the angular look of the species." Sept. 14, 1898. "*P. Drucei* is behaving in a most extraordinary manner! Instead of conducting itself properly, in the quiet manner of *polygonifolius*, it is occupied in the task of providing winter buds, more like *alpinus*. After all, first impressions were right. It is probably *polygonifolius* × *alpinus*, and I am trying to get it figured in the forthcoming part. . . .

Morgan has drawn it. . . To my great surprise the young shoots come totally unaltered, showing that the characters are no temporary modifications due to running water. [It grows not only in deep, slowly moving water, but also in rapid shallows]. The beauty of the young shoots is extreme. . . . For mere beauty alone it ought to be grown in every tank devoted to water-plants. Its young leaves are perfect lace-work, the interstices connected by a thin film of glass. This film can only be seen in certain lights, but gives a green look to the interstices. White upon green is the scheme of colour. The character of the plant has only become known by the rapid growth of last week. It is rapidly establishing itself, a thing I can never get *polygonifolius* to do, for physiological reasons. *Drucei* is evidently prepared to rest in winter buds like *alpinus*, only they are more slender and will root and grow at once, I think. If so, the plant is evergreen like some other hybrids." Oct. 10, 1898. "Kindly send transcript of account of Berks *fluitans* = *P. Drucei* with proper references for quotation in my book." Oct. 16, 1898. "I do think you may quite likely [have been] right in saying that [it] is = *natans-alpinus*. The *alpino-natans* I referred to is the plant of Billot and named "*P. spathulatus* Schrad." It is not your Berkshire plant. (1). I really think that if I had to give an opinion on your first sent specimens again it would exactly correspond with my first one, *i.e.*, *P. fluitans*, but too like *americanus*. (2). Flowering specimens having been obtained, it is evidently a hybrid, therefore not *americanus*, so it must be *fluitans*. (3). Better specimens with better lower leaves said clearly it was not Roth's *fluitans*. (4) The living plant, certainly quite new to me, then on growth, exactly the plant described by Syme as *pseudo-fluitans*—not matching the type or any other specimen of that form but yet exactly matching his description. (5). The plant showing difference in rootstock, resting buds, and autumnal growth which puts it quite away from *polygonifolius* (which Bennett and I for some years have suspected it to be) and which indicates hybridity to me and a cross with *alpinus*. Now comes the difficulty. *Alpinus* × ? In my book I analyse all possible crosses, *natans*, *polygonifolius*, *lucens*. One of the three it must be, if you have observed accurately and really exhausted the Loddon Pot. flora. Not one of the crosses holds good all through. To accept any one of them we must encounter (and not solve but cut)

some difficulty. You will see how I have tried to do this. To me the difficulty is not insuperable but, anarchist as I am, I am bound to respect the opinion of other and better botanists, though perhaps they may have had less experience of the life-history of Pots. than I, from my long residence in the fens, have been able to obtain. Therefore, clear as it may seem to me, I am compelled to feel a certain amount of doubt when I remember what other botanists think on these matters. You will, perhaps, wonder why I make this elaborate defence of my mistakes to you and do not make it to the public. . . . I take my own advice. . . . and leave my reputation as a Pot.-man to take care of itself. If it deserves to suffer, I am content. If it does not, and I think it does not, it will all come right in time. Those who take my writings in their hands and study with me, not merely accepting but testing in the field what I advance, will not require any defence of my opinions at my hands or those of another. You have spoken too generously of me both in your *Flora* and in your pamphlets. I am grateful, but should be more so if you will get me next year a full series of living specimens from deep, medium and shallow water of *Drucei* in flower and also the Loddon *polygonifolius*." Dec. 10, 1898. "I hope you admire Mr Morgan's beautiful drawing of *P. Drucei*. It has flowered most profusely. I am delighted with the plate of this part and the colourist has done his share of the work very well too." [It was published as a full species in *Journ. Bot.* 524, 1899] Nov. 24, 1899. "Have I not already told you about *P. Drucei*? It has flowered most profusely and produced a fair number of fruits on each spike. These Bennett cannot match with any known species. Nor are they of any European type; hardly like any others. Also the winter-buds now thrown out are unlike any known to me. So now I drop all × before it, and regard it as a full species, *i.e.*, *P. Drucei*. So, in our *Flora*, you may put one endemic Pot. (on present knowledge), and I shall feel delighted in seeing how you account for its presence in England." Sept. 17, 1900. "Thanks for the tins of *P. lanceolatus*. . . . It has grown splendidly, so has *Drucei*. The latter has fruited profusely and Morgan has made lovely drawings of it." July 6, 1909. "*P. Drucei* is magnificent with me this year, surely the most beautiful leaved water-plant. Can or will any one at Oxford examine the pollen to determine its claims to be a species,

rather than a hybrid. If so I should like to send a spike for examination. Pollen is produced abundantly this year." [This was examined in the Bot. Lab. at Oxford and found to be normal]. Oct. 5, 1909. "You got those wonderful leaves of *Drucei* I hope? E. was much pleased with the plant altogether, and it has perfect looking fruit." Thus ends the correspondence about it.

The plant has a restricted range of about a mile or two on the Loddon river in Berkshire. Recently it has been found in the Avon, near Bath, where *alpinus* has not been recorded. Allusion was made (*Journ. Bot.* 82, 1918) to the red coloration of the leaves of the Loddon plant, but that statement is imaginary. I have not noticed such nor mentioned it either in *Fl. Berks*, my pamphlets, or *Hayward's Pocket Book*. On the contrary the leaves have a most beautiful green, translucent tint. White upon green was Fryer's description of the colour scheme. Hagström (*Researches*) considers it to be *alpinus* × *natans* and he bases this on some structural characters which he says he has observed. Whether there are confined to these two species or peculiar to each I am not sure. With all deference to this critical student, the objections urged by Pearsall against it await refuting. It is curious that my first impression should be the one fixed upon by Hagström. Subsequent study of it in various conditions, the free-flowering, healthy pollen and free-fruiting seem to negative the combination of *natans* × *alpinus*, nor can one, in the living plant, find any trace of the distinguishing features of either species. It must be conceded that a hybrid is not necessarily a half-way house. That Mr Fryer's opinions about it were almost in a state of flux shows the difficulty of assigning it a definite parentage. The line of least resistance appears to be to leave it under the grade Mr Fryer's more matured experience led him to assign to it—a full species.

ADVENTIVE PLANTS ON WASTE GROUND, BRADFORD, YORK, 1919.

By JOHN CRYER.

90. *Glaucium corniculatum* Curt. 224. *Brassica incana* Schultz (*adpressa* Boiss). 339. *Silene conoidea* L. 461. *Hibiscus Trionum* L. 449 (21). *Monsonia biflora* DC. 491. *Erodium malachoides* Willd. 550. *Trigonella polycerata* L. 552. *T. corniculata* L. 665. *Scorpiurus subvillosa* L. 681. *Vicia villosa* L. 906. *Potentilla norvegica* L. 1045. *Lythrum Hyssopifolia* L. 1065. *Oenothera odorata* Jacq. 1157. *Coriandrum sativum* L. 1255. *Aster novi-belgii* L. 1273. *Gnaphalium luteo-album* L. 1297. *Rudbeckia laciniata* L. 1306. *Guizotia abyssinica* Cass. 1336. *Santolina Chamae-Cyparissus* L. 1363. *Matricaria suffruticulosa* Druce. 1380. *Artemisia biennis* Willd. 1463. *Centaurea melitensis* L. 1486. *Hedypnois cretica* Willd. 1742. *Anagallis femina* Mill. 1787. *Lappula echinata* Gilib. 1851. *Physalis peruviana* L. 2089. *Plantago indica* L. (*ramosa*). 2105. *Herniaria hirsuta* L. 2113 (2). *Amaranthus Thunbergii* Moq., f. *maculatus* Thell. 2114 (2). *A. Dinteri* Schinz, var. *uncinatus* Thell. 2116. *A. spinosus* L. 2130 (2). *Chenopodium paniculatum* Hook. 2131 (2). *C. striatum* Kras. × *album*. 2151. *Atriplex rosea* L. 2390. *Asphodelus fistulosus* L. 2680. *Phleum paniculatum* Huds. 2729 (2). *Chloris virgata* Sw. 2815. *Bromus macrostachys* Desf. (*oxyodon* Schrank).

ADVENTIVE PLANTS OF THE GLASGOW AREA.

In the counties of Renfrew (R.), Lanark (L.), Ayr, and a few from Belfast and Dublin, Ireland.

By R. GRIERSON.

61. *Delphinium orientale* J. Gay. 90. *Glaucium corniculatum* Curt., Possil (L.). 93. *Eschscholzia Douglasii* Walp., Glas-

gow, Dublin. 126. *Radicula islandica* Druce (*Nasturtium palustre*), as an abnormal form with small flowers. 131. *Arabis muralis* Bert., Anniesland (L.). 183. *Sisymbrium Sophia* L. 184. *S. altissimum* L., Anniesland, common (R. & L.), Belfast. 185. *S. orientale* L., Possil (L.), Troon, Ardrossan, Ayr. 198. *Erysimum repandum* L., Anniesland (L.). 200. *Conringia orientalis* Dum. 202. *Camelina sativa* Cr., Possil (L.). 217. *Brassica alba* Boiss. 219. *B. juncea* Coss. 222. *B. Pollichii* Druce, Newlands (L.), Ardrossan, Ayr. 227. *Diplotaxis muralis* DC., Ardrossan, Ayr. 238. *Eruca sativa* Mill., Possil (L.). 258. *Vogelia paniculata* Horn., Possil (L.). 262. *Bunias orientalis* L. 267. *Rapistrum orientale* DC., Possil (L.). 268. *R. rugosum* All., Ardrossan, Ayr. 283. *Reseda inodora* Reichb., Possil (L.). 286. *R. odorata* L. 331. *Saponaria Vaccaria* L. 341. *Silene dichotoma* Ehrh. (ex Mr Lee). 450. *Malva Alcea* L., Newlands (L.). 548. *Trigonella Foenum-graceum* L., Possil (L.). 554. *T. M. coerulea* (Ser.) Druce, Possil (L.). 595. *Melilotus alba* Desr. 596. *M. arvensis* Wallr., Newlands (L.). 597. *M. indica* All., Newlands (L.). 630. *Hosackia americana.* 655 (2). *Astragalus Cicer* L., Giffnock (R.). 666. *Coronilla varia* L., Gartcosh (L.). 676. *Cicer arietinum* L., Ibrox, Possil (L.), in two variations. 707. *Lens culinare* Med., Ibrox (L.). 722. *Lathyrus sativus* L., Ibrox (L.). 726. *L. Aphaca* L. 895. *Potentilla argentea* L., Anniesland (L.). 896. *P. intermedia* L., Gartcosh (L.). 906. *P. norvegica* L., Gartcosh (L.). 1061. *Oenothera biennis* L., Gartcosh (L.). 1182. *Symphoricarpos racemosus* Michx. 1262. *Erigeron canadense* L. 1291. *Ambrosia artemisifolia* L., Possil (L.). 1292. *A. trifida* L. and var. *integrifolia.* 1301. *Helianthus annuus* L., Possil (L.). 1302. *H. rigidus* Desf. = *scaberrimus* Elliot. 1303 (3). *H. debilis* Nutt., Possil (L.). 1314. *Madia sativa* Mol., Possil (L.). 1356 (6). *Chrysanthemum maximum* DC. 1362. *Matricaria discoidea* Buch., common. 1371. *Artemisia Abrotanum* L. 1380. *A. biennis* Willd., Gartcosh (L.). 1383. *A. gnaphalodes* Nutt., Tollcross. 1433. *Cirsium setosum* C. A. Mey. 1459. *Centaurea diffusa* Lam., Ardrossan, Ayr. 1363. *C. melitensis* L., Newlands, Possil (L.). 1465. *C. Calcitrapa* L., Possil (L.). 1477. *Carthamus tinctorius* L., Ibrox (L.), Ardrossan, Ayr and var. *inermis*

Schw., Ibrox (L.). 1489. *Picris hieracioides* L., Ardrossan, Ayr. 1649. *Lactuca Serriola* L., Ibrox (L.). 1673. *Campanula Trachelium* L. 1674. *C. Rapunculoides* L. 1729. *Androsace maxima* L., Possil (L.). 1768. *Collomia linearis* Nutt., Anniesland (L.). 1780. *Phacelia tanacetifolia* Benth., Anniesland, Possil (L.). 1787. *Lappula echinata* Gilib. 1789 (3). *Benthamia lycopsioides* Lindl. 1818. *Myosotis dissitiflora* Baker. 1849. *Solanum triflorum* Nutt. 1867. *Verbascum nigrum* L., Bowling. 1951. *Rhinanthus major* Ehrh., Possil (L.). 2031. *Salvia verticillata* L., Gartcosh quarry (L.). 2039. *Dracocephalum parviflorum* Nutt., Maryhill, Possil, Ibrox (L.), Giffnock (R.). 2048. *Sideritis montana* L., Possil (L.). 2110. *Amaranthus retroflexus* L., Newlands (L.). 2124. *C. lanceolatum* Mühl., Possil (L.). 2125. *Chenopodium leptophyllum* Nutt. 2129. *C. polyspermum* L., Possil (L.). 2153 (2). *Axyris amarantoides* L., Possil (L.), &c. 2192. *Fagopyrum sagittatum* Gilib. 2193. *F. tataricum* Gaertn. 2176. *Polygonum tomentosum* Schrank, Gartcosh (L.). 2207. *Rumex maritimus* L., Possil, Anniesland (L.). 2210 (6). *R. salicifolius* Weinm. 2210 (10). *R. magellanicus*. 2240. *Ricinus communis* L. 2248. *Cannabis sativa* L., Ibrox (L.). 2360. *Sisyrinchium angustifolium* Mill., ? Giffnock (R.). 2263 (3). *Tritonia crocosmiflora* Nich., Helensburgh, Dumbarton. 2390. *Asphodelus fistulosus* L., Possil (L). 2459. *Phoenix Dactylifera* L., Ibrox (L.), &c. 2639. *Setaria viridis* Beauv., Newlands (L.). 2645. *Zea Mays* L. 2849. *Hordeum murinum* L., Robroyston (L.). 2851. *H. jubatum* L., Newlands (L.).

PLANTS OF HARBURY CUTTING, WARWICKSHIRE.

By E. Marsden-Jones, F.L.S.

157 species were observed on the G.W.R. cutting and spoil banks and on the allotment ground known as Church Lands in June and July 1918. The localities are in District 5 of Bagnall's *Flora of Warwick*. The additional species to that district are given below, besides one or two others having some special point of interest.

Cotoneaster microphylla had not previously been recorded for the county. 217. *Brassica alba* Boiss. 226. *Diplotaxis tenuifolia* DC. [I have not seen this]. 285. *Reseda Luteola* L. 309. *Polygala vulgaris* L. 486. *Geranium pusillum* L. 972. *Cotoneaster microphylla* Wallich, naturalised. 1217. *Valeriana dioica* L. 1400. *Senecio sylvaticus* L. 1426. *Cirsium eriophorum* Scop., now spread to the cutting. 1502. *Crepis taraxacifolia* Thuill. 1657. *Sonchus asper* Hill, var. *glandulosus*. 2305. *Listera ovata* Br. 2342. *Habenaria virescens* Druce. 2920. *Ophioglossum vulgatum* L.

EDWARD MORGAN'S HORTUS SICCUS.

By G. Claridge Druce, LL.D.

In the Bodleian Library are three folio volumes (MSS. Ashmole 1797-9, which up to 1845 were kept in the Botanic Garden Library) bound in rough calf, each containing about 160 leaves, thus entitled in Bernard's Catalogue (1697), n. 6547 *Hortus Siccus sive Collectio Plantarum ab ipso Eduardo Morgano facta ordine alphabetico, bis mille circiter plantarum species exhibens*. This work seems to have been begun in 1672, since these words appear on the first page ' first great booke 72.' The names of some Plants found in North Wales are contained in the first volume, p. 12. There is a letter appended from Thomas Thornes to Edward Morgan, liveing att Bodesclen, offering anything in Leweny [Llewenny Hall, an ancient seat in Denbighshire, once the home in the eighth century of the chief of one of the fifteen tribes of North Wales]. The total number of plants in the *Hortus Siccus* is given as 2474. This collection, in which such authorities as Lobel, Parkinson, Gerard, Cornuti, Ray, Morison [*Hort. Blaes.*] are cited, consists of unlocalised plants. One however, ' Cardamine minus Oxford,' is *C. impatiens* and from the Oxford Physic Garden. Many are certainly native specimens, and twenty are said to come from North Wales which include *Cotylĕdon hirsuta* (*Saxifraga stellaris*), *Caryophyllata nutans* (*Geum rivale*). There is also a specimen of *Ulmus angustissima* which is *U. Plotii*, and another is the Red May or Hawthorn.

It is quite probable that this Edward Morgan is the same as the botanist of that name who is alluded to in Evelyn's Diary of 1658. Morison (*Plant. Umbellif.* 2, 1677) writes ' Dum haec scribo in Horto Edvardi Morgan, pone caenobium occidentale Westminster dictum, omnium hortulanorum Botanicorum quos unquam adii peritissimi,' and there are other references. Aiton (*Hort. Kew.* ii. 307, 1789) citing Plukenet (*Phyt.* t. 57, f. 6, 1691) ascribes the introduction of *Phlomis purpurea* which he had in cultivation in 1661 to Morgan, and adds ' ante triginta circiter annos in Horto D. Morgani luxuriantem observavimus.'

I am enabled to add a link to the chain of identification regarding Morgan, and also to identify the place where he lived in Wales, *i.e.* Bodesclan. This is now spelled Bodysgallan, and is about one mile from Llandudno towards Colwyn Bay. Thomas Johnson, the writer of the second edition of Gerard's *Herbal*, made a botanical expedition into North Wales in 1639. Of this journey he published an account under the title of *Mercurii Botanici pars altera* (1641), and from it we learn that he was accompanied by Edward Morgan, ' sed nobis antiquae Linguae Britannicae ignaris opus erat interprete, in quem finem Edoardum Morganum rei herbariae etiam studiosum nobis adiunximus, eique sumptus prebuimus ' (p. 4). They stayed the night at Bodskalan, ' Dum ad octavum lapidem progressi amnem ad Aberconway traiecturi sumus, adest famulus V. Cl. D. Thomae Glynnaei [to whom Johnson dedicates his *Mercurius*] et significat herum suum nos expectare non procul hinc. Sic divertimus ad Bodskalan aedes viri nobilis et antiquae hospitalitatis; D. Roberti Wynn; ibi reliquum diei sequentem noctem transegimus.' The family of Robert Wynn (a branch of the Gwydur family) intermarried (so the eminent Welsh archaeologist, Mr J. Griffith, tells me) with the Morgans of Golden Grove (seat about 4 miles from Rhuddlan), and there was a son of Golden Grove who became a bencher of the Middle Temple in 1597 and who died in 1611. He had a son, Edward Morgan, who died without issue, who doubtless was Johnson's companion on this journey and who afterwards resided at Bodesclan. Mr Griffith thinks that it was the bencher who had a Herbarium, and it may be that the other Hortus Siccus in Bodleian (Ashmole MS. 1502) of an earlier date (?), consisting of about 400 specimens, chiefly medicinal plants, was made by the Bencher of the Middle Temple.

The identification of this is conjectural; that of the former is satisfactorily proved by the references in the *Mercurius*, and the suggestion that the Bodesclan botanist and the Westminster gardener and physician are the same person seems very probable.

In addition to the two Horti Sicci (MSS. Ashmole 1502 and 1797-99), the Bodleian possesses at least seven similar collections :—

Pressmark.	*Provenance.*	*Date.*	*Collector.*
MS. Arch. Seld. B. 3	Holland ?	early 17th cent.	
MS. Ashmole 1465	England	17th cent.	
MS. Rawlinson C. 403	Barbadoes	early 18th cent.	
MSS. Ashmole 1800–1803	England	late 17th cent.	Sir Geo. Wheler.
MSS. Add. D. 94–97	England	17th cent.	Dr Wm. Howlet.
MS. Lat. misc. d. 26	Oxford	about 1710-15	Jacob Bobart ?
MS. Lat. misc. b. 11	Oxford	early 18th cent.	Jacob Bobart ?

—From the *Bodleian Quarterly Record*, 1919.

On GERANIUM PURPUREUM VILL. and G. ROBERTIANUM L.

By A. H. EVANS.

There has undoubtedly been considerable confusion in the minds of British Botanists with regard to the relation between *Geranium purpureum* and *G. Robertianum*, as may be seen by the examination of both public and private Herbaria. Most of the specimens referred to the former certainly belong to the sub-species of *G. Robertianum*, which Babington called *maritimum*; while Rouy's form *littorale* and Hornemann's *rubricaule*† are, on present evidence, synonymous (see below). This is a decumbent and less hairy form found in dry sunny spots, such as the shingle beaches of southern England; but it has none of the special characteristics of *G. purpureum* Vill.* which is not enamoured of arid localities, and is generally found with us in woodlands or on hedgebanks.

G. purpureum is decidedly taller than *G. Robertianum*, when grown by its side, and more upright; it is almost glabrous on the

† He says that it grows on shores.

* Villar writes "Geranium purpureum in silvalis rupestribus prope Pont-de Claix au Buis . . . a precedenti differt foliis simpliciter quinatis foliolis dentatis, nondum pinnatifidis, corolla kermesina minima."

stems and leaves, with no hairs on the nerves below in the latter; the segments of the leaves, moreover, are much more distant and often fold together when young. The flowers are small (as in *G. lucidum*), with yellow anthers in place of orange, the carpels not reticulated, but with comparatively broad ridges and narrow interspaces. In *G. Robertianum*, on the other hand, the so-called "ridges" are merely reticulations; and the carpels thus, perhaps, afford the most certain distinction between the forms. The name *purpureum* refers to the colour of the petals, and not to that of the stems, which are usually greener than in its congener. None of the forms of *G. purpureum* have the characteristic odour of *G. Robertianum* but wild specimens smell somewhat strongly. This plant, though closely allied to *G. Robertianum*, is certainly worthy of specific rank, as species are now understood in Botany, and can be distinguished at a glance under any of its forms in the fresh state, though not always in Herbaria, when lacking flower or fruit. Garden grown examples are even more characteristic. The confusion mentioned above is probably due in the main to Forster, who in the Supplement to *English Botany* described the plant from shingle beaches as *purpureum*, while he cited Villar in his synonymy. He figured a plant which appears to be a small-flowered form of *G. Robertianum*; but the whole matter is so doubtful that Forster's *purpureum* would be best entirely neglected.

The history of *G. purpureum* may, for our purpose, be taken to begin in the year 1785, when Villar in his *Flora Delphinalis* gave the name to a species, as he considered it, found at Pont-de-Claix, near Grenoble. Reichenbach gave a good figure (*Icon.* f. 4871 b.) shewing well the characteristics of the carpel, while other continental authors followed suit, as will be seen from the synonymy below.

In 1848 Jordan (*Adnot. Cat. Pl. Jard. Grenoble*) created two new species, *G. modestum*, and *G. Villarsianum* from Southern France, in addition to Villar's species. Later he described *G. semiglabrum*, *G. Mediterraneum*, *G. simile* and *G. minutiflorum*, as may be seen in the synonymy below.

We may now pass on to 1897 when Rouy in his *Flore de France* (vol. iv.) undertook to determine the status of each of these. He calls them varieties of *G. purpureum*, which he terms "une forme" of *G. Robertianum*, and adds to them *intricatum* of Grenier (*in litt.* et

Herb. Paris), *genuinum* Rouy and *littorale* Rouy. Of these *genuinum* is used for the typical *purpureum* of Villar.

In the *Flore de France* the forms of *G. purpureum* are primarily separated under two heads according to the appearance of the carpels—firstly, those with thick, membranous, rounded ridges thereon, and secondly, those with thinner and therefore more distant ridges. An examination of the fruits of specimens in the British Museum and elsewhere shews that this distinction holds well, and that we have three groups in the *Robertianum* section, though the two last are much more closely connected with each other than with the first.

(1) *G. Robertianum.* Carpels with distant reticulations which ought not to be called ridges.

(2) *G. purpureum.* (a) Carpels with thick, rounded, approximate ridges. (b) Carpels with more distant and much thinner ridges, yet distinctly not reticulations.

Under the first head (a) Rouy places Jordan's *Villarsianum*, with *semiglabrum* [if it be really distinguishable], *Mediterraneum* and *modestum*: under the second head (b) the remainder of the forms above mentioned. Here, however, our author makes a distinct slip, for not only do Museum types of Jordan's, but that botanist's own words (*rugis tenuibus*) in the original description, make it clear that *modestum* belongs to the second category. The creation of *genuinum* was quite unnecessary, as it is antedated by Villar's *purpureum*.

Rouy appears to be correct in subordinating *scopulicolum* to *genuinum* (= *purpureum*), though possibly it is hardly worthy of a special name, but we feel certain that his *littorale* is nothing but the shingle form of *Robertianum*. However, we must leave these points for further consideration when foreign specimens can be examined in a fresh state, and the same may be said of most of Jordan's "species." To recapitulate:—The low-growing, strong-smelling *Mediterraneum* and its very close ally *Villarsianum* (with *semiglabrum* if accepted) are in a "class by themselves," characterized by close broad ridges on the carpels; *purpureum* (=*genuinum* Rouy), *modestum*, *simile* and *minutiflorum* represent a second class with comparatively slender and distant ridges. In France the two first-named seem to occur only in the south.

It now remains to ascertain which of the above-mentioned plants have so far been found in Britain. With this object in view the writer has grown in his garden for several years examples of the various forms of *G. purpureum* that he has been able to obtain, and has found them all to be referable to *G. purpureum* Vill. They came from the undermentioned localities.

In 1837 Miss A. Carpenter, having noticed a curious *Geranium* in or near the Leigh Woods at Bristol, submitted specimens to the late Professor Babington. One of these is now in the Babington Herbarium at the School of Botany in Cambridge and is identical with others from the Leigh Woods where the plant was recognised (June 7, 1912) by Dr Moss, who grew it and compared it with other forms. His invaluable assistance in elucidating many points with regard to the *Geranium* here considered must be fully acknowledged by all who write on the subject, and by none less than the present author.

Previously to 1903, however, *G. purpureum* had been discovered by Mr Lester-Garland in Jersey, while in 1909 Mr C. Reid recorded it from Crantock and the neighbourhood in Cornwall.

A third locality at Torquay in Devon (Stewart *Handbook Torquay Flora* 26), where the plant occurs in at least two stations close to the town, dates back to 1860, while a possible fourth is near Plymouth whence the writer hopes soon to obtain examples which will definitely decide the question.

As above stated, all these localities must be assigned to *G. purpureum* Vill., unless the Plymouth form—not yet cultivated—proves to differ considerably. More doubt attaches to a *Geranium* collected by Mr J. E. Little on the coast near Bognor in Sussex. It does not appear to be the usual shingle form of *G. Robertianum* and may possibly be one of the other continental varieties. It must be seen *in situ*, and perhaps also cultivated, before a positive opinion can be risked.

Dr Druce has also a curious plant from the West of Ireland but the fruit in his specimens appears to shew that it is a form of *Robertianum*; and he tells me that Dr Ostenfeld has recently named it *celticum* (see present *Report* p. 551).

In conclusion the writer must offer his warmest thanks to the owners of Herbaria who have generously placed their specimens at

his disposal; to the authorities at various Museums and last, but not least, to Mr J. W. White, Mr A. Gepp, and Dr Moss for guidance and information, which has enabled him to visit the several localities where the different forms grow. Mr A. J. Wilmott was even of more assistance as regards the carpels.

I now invite criticism, as I hope to write a second paper on the same subject next year with corrections and additions.

PROVISIONAL SYNONYMY.

G. ROBERTIANUM L. Sp. Pl. p. 955 (1763); Eng. Bot. xxi., t. 1486 (1805); Eng. Bot. ed. 3, ii., t. 305, p. 203 (1863), &c.

Var. *rubricaule* Hornem. in Wilk. and Lange Prodr. Fl. Hisp. iii., p. 531 (1878); Forst. Eng. Bot. Suppl. t. 2648 (1831), partim (as *purpureum*); Bab. Man. ed. 3, p. 62 (1851), (as *maritimum*); Rouy Fl. France iv., p. 98 (1897), (as *littorale*).

[Var. *crassicaule* Rouy Fl. France iv., p. 95 (1897).]

[Var. *graniticarum* Martr.-Don. Pl. Crit. Tarn. p. 17, &c.]

G. PURPUREUM Vill. Fl. Delph. p. 72 (1785); Hist. Pl. Dauph. i., p. 272, iii., t. 40, p. 374 (1786, 1789); Reichb. Icon. f. 4871 b; Viv. Fl. Lyb. p. 39; Eng. Bot. Suppl. t. 2648, 1831, partim; Bor. Fl. du Centre de la France ed. 3, ii., p. 131 (1857), (as *modestum*); Jord. Bull. Soc. Bot. Fr. vii., p. 605 (1860); Stewart Handb. Torquay Fl. p. 26 (1860); Eng. Bot. ed. 3, ii., t. 306, p. 204 (1863), partim; Gren. et Godr. Fl. France i., p. 306 (1874), (as *parviflorum*); Briggs Fl. Plym. p. 74 (1880); Lester-Garland Fl. Jersey p. 103 (1903); Reid in Rep. B.E.C. p. 429 (1909); Druce, ibid. p. 550 (1910), partim; White, ibid. p. 241 (1912).

[Var. *Villarsianum* Jord. Adnot. Pl. Jard. Grenoble p. 3 (1849); Pugillus p. 38 (1852).]

[Var. *semiglabrum* Jord., ex Bor. Fl. du Centre de la France ed. 3, ii., p. 130.]

[Var. *Mediterraneum* Jord. Pugillus p. 40.]

Var. *purpureum* Vill., as above; Rouy Fl. France iv., p. 97, (as *genuinum*); Jord. Bull. Soc. Bot. Fr. vii., p. 605 (1860), (including *scopulicolum* Jord.).

[Var. *simile* Jord. Bull. Soc. Bot. Fr. vii., p. 606.]
[Var. *modestum* Jord. Adnot. Pl. Jard. Grenoble p. 3; Jord. Bull. Soc. Bot. Fr. vii., p. 605.]
[Var. *intricatum* Gren. in litt. et in Herb. Mus. Paris (ex Rouy Fl. France iv., p. 98.]
[Var. *minutiflorum* Jord. Pugillus p. 39.]
The square brackets shew that the varieties are not British.

MISCELLANEOUS NOTES.

Among the members who have changed their addresses recently are our very respected past secretary, Mr Charles Bailey, M.Sc., who has gone to Sandhurst, St Mary Church, Torquay; our Rose specialist, Lt.-Col. A. H. Wolley-Dod, whose address is now Glenrinnies, Tadworth, Surrey; Professor A. H. Trow, now Principal of the University College of Wales and Monmouth; Miss Ethel N. Thomas now Keeper of Botany in the Nat. Museum of Wales to which Mr A. E. Wade has also become attached. Lt. C. V. Marquand and Mr T. F. Jenkins have become part of the staff of the Agricultural College at Aberystwith. Our members, the Rev. A. E. Woodruffe-Peacock and the Rev. F. Alston, have changed their abode in Lincolnshire, a county which owes much to their patient investigations. Mr R. J. Lynch, M.A., has well earned his retirement from the curatorship of the Cambridge Botanic Garden where he has so distinguished himself.

Mr W. G. Craib of the Botanical Department at Edinburgh has our hearty congratulations upon his succeeding to the post of Professor of Botany at his own University of Aberdeen.

An excellent appointment has been made in selecting Dr S. F. Harmer as Keeper of the Natural History Museum, South Kensington.

Dr J. B. Hurry has generously increased the Michael-Foster Research studentship from 100 guineas to £200.

Sir David Prain is to be congratulated upon the erection of the mammoth flag-staff of Douglas pine, 225 feet high, at Kew without any accident or hitch. Long may it tower over him in the beautiful Gardens under his care.

The Rev. H. J. Riddelsdell, M.A., Wigginton Rectory, Banbury, will be glad if members will send him their desiderata of British Rubi, as he will be glad to supply such as he can with the *B.E.C.* Parcels.

BOOKS IN PREPARATION AND SHORTLY TO BE ISSUED.

Druce, George Claridge. Flora of Oxfordshire, Second Edition, rewritten. In the Press. Clarendon Press, Oxford.

Groves, James, and Bullock-Webster, Rev. Canon J. R. British Charophyta, Vol. i., Nitelleae. To be published by the Ray Society. [Published in 1920.]

Horwood, A. R. The Outdoor Botanist. T. Fisher Unwin.

Salmon, C. E., F.L.S. The Flora of Surrey.

Shoolbred, W. A. The Flora of Chepstow. Taylor & Francis, Red Lion Court, London. [Published in 1920.]

ADDENDA, 1920.

Orchis hircina has been found in Oxfordshire by Mr T. J. Wall and I have seen it *in situ*.

Carex riparia Curt., var. *gracilis* Coss. & Germ., has been detected by Mr W. B. Turrill in Mr Thurston's Cornish collection.

Lathyrus niger Bernh. has been found by Mr W. F. G. Seeley in a wood in Warwickshire, apparently native.

Veronica acinifolia L. has been found by Mrs C. H. Wilde and Mr E. B. Bishop in great quantity in a barley field near Milford, Surrey, where I have seen it under their guidance. A further note will appear in our next *Report*.

Illecebrum verticillatum L. Reported from New Forest, S. Hants, by J. F. Rayner.

Tolypella nidifica and *Chara canescens*. Found at Loch of Stennes, Orkney, by G. C. Druce.

SUPPLEMENT TO REPORT OF BOTANICAL SOCIETY AND EXCHANGE CLUB FOR 1919.

THE EXTINCT AND DUBIOUS PLANTS OF BRITAIN,

By G. CLARIDGE DRUCE, LL.D.

Requests have been made to me that a Supplement should be prepared showing what plants have become extinct during the last four centuries and that an account should be given of the somewhat numerous plants which have been wrongly reported as occurring in these Isles or as yet await confirmatory evidence. The following account, avowedly imperfect in many details, will, it is hoped, in some way answer this demand and be found useful to such members as are not in proximity to a large botanical library since the records are scattered through many volumes. It may also, perhaps, stimulate a spirit of research among the members which may lead to the discovery of a few of the plants which are treated of in the following pages.

The abbreviations as a rule speak for themselves but it may be stated that *Cyb. Brit.* or *Comp. Cyb.* refers to Watson's *Cybele Britannica* and its *Compendium*, and that Don *Life* refers to the *Life and Work of George Don*, by G. Claridge Druce in *Notes from the Royal Botanic Garden, Edinburgh*, N. xii., 53, 1904. Don *Account* refers to Don's *Account of the Native Plants in the County of Forfar* which is given in full in the preceding work.

Notwithstanding the enormous changes which have gone on in Britain during a period nearly as long as the Roman occupation it is a

matter for great congratulation that only about half-a-dozen species have actually ceased to exist and that these are the results of drainage, building operations, and perhaps natural change in the earth's surface. To these might possibly be added *Mentha pratensis*, but the indigenity of this is doubtful, and *Echinophora* and *Frankenia pulverulenta* which are treated in part ii. since they may have been wrongly identified. On the other hand *Elymus geniculatus* might well have been put in the Dubious Plants.

The next fateful years for Britain itself with all the unrest and emotional excitement which the Great War leaves as its aftermath —with every institution and every ancient usage threatened in the laudable desire to benefit everybody and everything but at other people's expense—are not the less fateful for the existence of our more local species. It is greatly to be desired that every power that can possibly be exerted be used to maintain and preserve the existing flora wherever it is threatened without in any way limiting our agricultural output or depriving anyone of his amenities. The native flora is the common possession of the British people and everyone should be educated to regard it as a valuable national asset.

During the period covered by these Notes the British flora has been largely augmented by emigrants from other shores—adventive species brought by varied means. The list would be a very long one and would negative a statement made by that illustrious botanist, Sir Joseph Hooker, that "he knew no example of a plant being completely established in Britain during the century." Examples of such additions to our flora are *Senebiera didyma*, *Lepidium Draba*, *Sisymbrium altissimum*, *Oxalis corniculata*, *O. stricta*, *Trifolium hybridum*, *Veronica Tournefortii*, *Petasites fragrans*, *Senecio squalidus*, *Matricaria suaveolens*, *Hydrilla*, *Elodea*, *Juncus tenuis*, *Spartina alterniflora*, *S. Townsendii* and *Azolla filiculoides*.

PART I.

PLANT EXTINCTIONS SINCE 1597.

693. VICIA LAEVIGATA Sm. *Eng. Bot.* t. 483, 1798.

"*V. hybrida* in pratis et pascuis circa Weymouth in agro Dorsetsiensi."—Huds. *Fl. Ang.* ed. 2, 320, 1778, not of L. "Gathered on the beach at Weymouth by the Rev. Mr Baker in August 1792."—

Sm. *Eng. Bot.* n. 483. "Authentic specimens prove this to be Mr Hudson's *hybrida*."—Sm. *Eng. Fl.* iii., 286. "About Weymouth, Portland Isle, Chesil Bank, etc."—With. *Nat. Arr.* ed. 7, iii., 846, 1830. "Now extinct."—*Cyb. Brit.* 319. "Ambiguity."—*Comp. Cyb*, 500. "Portland Island, among the shingles near Chesil Bank and even flowering under the stones, some depth, Sir T. G. Cullum; Lodmoor, [specimen ex Pulteney in *Hb. Brit. Mus.* where the locality is more definitely given as 'a little beyond the turnpike gate near the sea shore'] near Weymouth."—Huds. *Bot. Guide* 228, 1805. "I explored all the localities given in the *Botanist's Guide* and in the *English Flora*, a field half-way between Weymouth and Portland Ferry near the sea, without success."—G. S. Gibson in *Phyt.* 737, 1843.

There is no dubiousness about the occurrence of this plant. A specimen exists in *Herb. Smith* in the Linnean Society and also in *Herb. Banks.* As to its grade there seems a possibility that it was a hybrid of *V. lutea* and *V. angustifolia* or a mutant. Close search along the coast may yet be successful in rediscovering it; a most desirable thing as it is unknown elsewhere.

1155. TORDYLIUM MAXIMUM L. *Eng. Bot.* t. 1173.

Formerly about Oxford (where it was probably introduced); about London, Morison 1672; Twickenham, 1837, Isleworth, Middlesex; near Frilford, Berks, c. 1870; near Eton, Bucks, 1805; Esher, Surrey, 1871; Tilbury, Essex, 1877.

An adventive species.

[1220]. KENTRANTHUS CALCITRAPA (L.) Druce. *Eng. Bot.* iv., 234.

Formerly on a wall at Eltham, Kent. There in 1866, H. G. Fox in *Hb. Brit. Mus.* Enfield Palace, E. Forster, 1790; Chelsea Hospital, 1815, Royen.

Not the smallest right to be considered native.

1392. SENECIO PALUDOSUS L. Marsh Fleabane.

"*Conyza palustris*, in many places about the Fens, as by a great ditch near Streatham Ferry."—Ray *Cat. Cant.* 37, 1660. "Last seen in Cambridge, Wicken Fen, 1857."—Bab. *Journ.* 186, 1897; near Ely, 1833, last seen 1883, Chatteris; Padnal Fen, Bennett. Norfolk—Ranworth, Redmore Fen, 1835. Fen now turned into farm lands. Suffolk—Lakenheath, Wangford Fen, 1798, last seen, (?) 1829. "Lincolnshire—near Booth, on the Kesteven side of river Witham."

—Sir J. Banks. "Banks of ditches near Braford water half a mile from Lincoln." (!)—Wollaston in *Bot. Guide* 391, 1805. "Cheshire—by the eastern side of the Dee just above Eaton Boat, sparingly"—Waring in *Bot. Guide* 118, 1805.

A native, and like the following species, destroyed by drainage operations. It may yet reappear in some of the East Anglian Fens. The Cheshire locality was possibly a mistake for *S. sarracenicus*. Specimens from Lincoln and Wicken Fen are in my herbarium.

1405. SENECIO PALUSTRIS Hook. Fl. Am. Bor. i., 334.

Cineraria palustris L. *Othonna palustris* L.

First record: "*Conyza* foliis laciniatis. A stone's march from the east end of Shirley Poole near Rushie moor, belonging to Mr Darcey Washington. In Yorkeshire, Hoary Fleabane, Mr Heaton."—How *Phyt.* 30, 1650. The locality is about two miles from Askern. Sussex—Amberley Wild Brooks, Littleton Brown, about 1725. Suffolk—Crabbe. "In the way you come into Lovingland."—Sherard in *Ray*; Worlingham Common, Belton, 1834; *Bot. Guide* 1805; Geldeston Fen, Woodward; Lackford, Sir T. Cullum, 1774; Wangford, 1800; Brandon, 1800. Norfolk—"In the way from Norwich to Yarmouth a little before you come to Oakley Bridge [Acle?] Sherard in *Dill. Ray* 1724 and *Hb. Brit. Mus.* 1725; wet ditches at Halvergate, Caister-on-Sea, 1781, Winch; Redmore Fen, Marshall; Haddiscoe, 1791; Wroxham Broad, 1854; Potter Heigham, 1833; Ludham, Antingham, Bryant, 1781; Runham, Martham, Stalham, 1875; East Somerton, 1878; Rollesby, 1883, Trimmer; Ormesby, Filby, 1864-94; Flegg Burgh, 1898; Newton St Faiths, 1799; between Hingham and Watton, J. E. Smith; Scoulton, c. 1780, Crowe; Methwold Fen, 1832; Dersingham, 1899, Nicholson *Fl.* 101. Mr Arthur Bennett saw 30 fine specimens in full flower and over 50 that would have flowered the following year. He tells me that a man took away a basketful about 1890. Cambridgeshire—"About March and Chatteris in the Isle of Ely."—Ray *Cat. Cant.* 37, 1660. "In a ditch at the end of the moor near the park at Chippenham, Relhan *Fl.*, last seen 1820. [The West Fen, Ely, Marshall, is an error, Bennett.] Huntingdonshire—Hold Lade near Whittlesea; near Ramsey, *Bot. Guide* 1805. Glamorganshire — About Aberafan, Ray *Itin.* Merionethshire — About Aberafan, Ray *Itin.* Lincolnshire—"East Fen, near Revesby Abbey (!) In some years very abundant, in others very scarce."—Sir J. Banks. Great Stuston, last seen 1820. Yorkshire—Near

Askern, as above, 1650. Lancashire—"In the ditches about Pillin Moss, plentifully."—Ray, 1695. Westmorland—Hildverton Moss; near Burton, Lawson, 1680. The moss was drained in 1777.

This species requires an even greater amount of water than the preceding plant. A biennial species, one of the reasons of its extirpation was the cutting of the fen vegetation. I have spoken to a man who, as a boy, made whistles of the stems as *Angelica* and *Heracleum* are still used.

1756. CENTAURIUM LATIFOLIUM Druce in Ann. Scot. Nat. Hist. 242, 1907. Syme Eng. Bot. vi., 65, 907.

Erythraea latifolia Smith in Eng. Fl. i., 321, 1824, not of Eng. Bot. Suppl. n. 2719 which is a form of *C. umbellatum*. First found in 1803 by Dr Bostock and J. Shepherd. "On sandy ground near the sea near Aisdale [Ainsdale], three miles south of Liverpool." —F. M. Webb. Seaforth Common, 1854, 1874, north of Liverpool, Mr Fisher (!) and Bootle, Lancashire, Mr Bowman, Birkdale, Formby, near Freshfield railway station, 1871-2. My specimens from Fisher are dated 1874.

Mr Arthur Bennett has specimens from the Outer Hebrides of a *Centaurium* with broad leaves and short corolla tube which are worth further study. There is a possibility of *latifolium* being a hybrid.

1907. VERONICA OFFICINALIS L., var. HIRSUTA (Hobk.). *Eng. Bot. Suppl.* t. 2673.

V. hirsuta Hopkirk Fl. Glott. 9, 1813. Hook. Fl. Scotica 6, 1820. *V. setigera* D. Don Descr. Rare Pl. of Scotl. in Mem. Wern. Soc. (4) iii., 297, 1821.

In dry heathy places Carrick, Ayr, Mr James Smith, a very able and intelligent botanist of the Nursery ground, Monkswood Grove, Ayr.

I keep this distinct from the plants mentioned by Williams (*Prod.* 297) from Surrey, Wessex, Norfolk, and Clova. Smith's plant which was brought into cultivation does not seem to have been again gathered in a wild locality. My specimen was sent by Sir W. Hooker to W. Blake. The plant might be refound in very dry sandy districts. A plant somewhat approaching it was sent me from near Edinburgh by Lady Douie in 1918.

2541. SCIRPUS HOLOSCHOENUS L., var. ROMANUS (L.).

First record: "*S. romanus*. . . . Habitat in palustribus juxta Throgmorton in agro Worcesterensi."—Rev. D. Sheffield in Huds. *Fl Ang.* 19, 1762. See also Nash *Hist. Worc.* 1781. "Now extinct."—Amphlett and Rea *Fl. Worc.* 379, 1909.

It is scarcely likely that such a distinct looking plant could have been mistaken for anything else, and there is no absolute reason against its being native there. The type occurs on our coasts in three counties and has been reported from four others. The variety has a somewhat different distribution from the type.

2551. ERIOPHORUM ALPINUM L. Sm. *Eng. Bot.* n. 311, 1796. Trans. Linn. Soc. ii., 290, 1794.

"Discovered by Mr Brown and Mr Don in a moss about three miles east of Forfar."—*Trans. Linn. Soc.* ii., 290, 1794. First found by Robt. Brown and G. Don in Aug. 1791, see spec. Now destroyed by dredging for marl and subsequent flooding. "It lingered till 1813."—Arth. Bennett in lit. [? 1790 Teesdale in *Herb. J. Dalton.*] "A specimen of *E. alpinum* exhibited by Dr Balfour said to have been picked by him with Prof. Graham in Aug. 1827 at Durness, Sutherland. It had been put among specimens of *Scirpus caespitosus.*"—*Bot. Soc. of Edin.*, Jan. 10, 1850. See *Bot. Gaz.* ii., 52, 1850. Balfour was then only 19 years of age and evidently did not recognise it at the time and the specimens may have been accidentally mixed. North margin of Gurthambra Lake, three miles west of Mill Street, Co. Cork, H. J. Ryder. 1866, but A. G. More was unsuccessful in a search in 1868 and so was D. Moore in 1869. Baulinamoor, Ireland, Forbes Young in *Hb. Brit. Mus.* See Syme *Eng. Bot.* x., 71.

The neighbourhood of Blairgowrie or Rannoch Moor are possible places. It is not a high montane plant.

2630. CAREX DAVALLIANA Sm. in Trans. Linn. Soc. v., 266, 1800. *Fl. Brit.* ii., 964, 1084, exclusive of localities.

"Discovered in Mearnshire by Prof. J. Beattie, jun.", but his specimens are *dioica* as are all the records prior to 1810. Smith's early descriptions are scarcely tenable and must be cited "sine local." He perhaps had before him Davall's Swiss plant. First British record: "Mr Groult [1807] gathered it on Lansdowne, near Bath, from whence Mr E. Forster communicated a specimen, the ripe fruit only being added from one of Mr Davall's own. Mr Forster informs us it

grows on the rise of a hill on which there is a clump of firs about 1¼ miles from Bath. [First made known to me as a British plant by Prof. J. B. Beattie, who found it in Mearnshire. Mr Templeton has found it near Belfast]."—Smith *Eng. Bot.* t. 2123, 1810. The bracketted localities are errors for *C. dioica*. "Bath, 1809. I was lucky enough to find *C. Davalliana* which Dr Smith wanted for *English Botany*. I discovered it at Lansdowne but not in great plenty."—E. Forster *Corresp.* See *Phyt.* ii., 221, 1852. "Lansdowne, Bath, lost by drainage."—*Comp. Cyb.* 588, 1870. By error it has also been recorded for Haddington, Edinburgh, and York. My specimen was sent in 1810 by E. Forster to W. Blake. The latest specimen seems to be that gathered by J. Ward in 1831 (*Herb. Peete* at Dartford). Mr Arth. Bennett says there is a specimen dated 1790 in Rev. J. Dalton's herbarium gathered by J. E. Smith. This may be a foreign specimen or wrongly identified. It may yet be found in bogs on the Cotswolds or Mendips.

2858. ELYMUS GENICULATUS Curtis Obs. Brit. Grasses 46.

In littoribus maritimis. Near Gravesend, Mr Dickson, *l.c.*, and Sm. *Fl. Brit.* 152, 1800. *Eng. Bot.* t. 1586.

? Belgium, ? Holland, S. Sweden, Nyman *Syll.*

"Discovered in marshes near Gravesend by Mr Dickson. Mr Curtis first made it known to the Botanical world as distinct from *arenarius*; our specimen is from the Liverpool Garden."—Sm *Eng. Bot.* t. 1586, 1806. *E. retrofractus* Curt. Found in Norfolk, Hort. Curt. in *Hb. Brit. Mus.* "Incogn. Now known only in gardens. . . . How or where did it really originate? Has it ever been propagated by seeds . . . . or always by division only."—*Cyb. Brit.* iii., 1240." "Extinct."—*Comp. Cyb.* 597. "No doubt there is a well-known garden plant, whose native country is unknown, which was figured by Curtis as his *E. geniculatus*, but I have little doubt that Dickson saw nothing at Gravesend but the leaves of *Triticum pungens*, and distributed the garden plant under the belief that it was the same as he had seen growing wild, as he did with several other species."—Syme *Eng. Bot.* xi., 202. "Cultivated for many years in a garden this grass is little changed though the spikes are not always reflexed."—Sm. *Eng. Fl.* i., 178, 1824. "Probably its disappearance is due to the embankment of the Thames and the consequent drainage of the marshes, but we are not aware when this took place."—*Flora Kent* 420. According to a specimen in *Herb. York*, it was also gathered at

Gravesend by the Rev. J. Dalton, and Syme (*Phyt.* iv., 862, 1852) says A. Irvine pointed out the locality where he had found it about thirty years ago. Thus Syme's criticism is not fair. Dickson could hardly have mistaken the leaves of *Agropyron* for it. Was *Elymus geniculatus* a well-known garden plant when Curtis described it? If so, a garden outcast might well have appeared on the foreshore. This does not seem likely as Curtis would probably have alluded to its being in cultivation. My own suggestion is that it may have been a hybrid of *Agropyron* and *Elymus* which would explain its infertility and its dying out. Whether it originated in Kent or elsewhere is another point. Has it been found on the continent? Nyman omits habitats in the *Consp.*; nor does Lindman include it in the *Svensk Fl.* Mr W. B. Turrill agrees (having the material before him) as to its possible hybrid origin. He tells me there is a specimen in *Herb. Borrer* labelled "Dundee, Dr Hooker," which may be from a garden; and one from the Thames side, Sir J. E. Smith in *Hb. Kew.* *Elymus* is plentiful on that coast and a diligent search should be made for *geniculatus.*

PART II.

THE DUBIOUS PLANTS OF BRITAIN.

This group is made up of plants which have been reported as British. Some were of casual and adventive origin, many were wrongly identified, and some, it is afraid, were wilful impositions, but none have been recently observed except as adventives. The probability is that the majority were really erroneous, but there is a possibility that publishing these records together in an easily consultable form may, by directing attention to them, lead to one or two being rediscovered by our members.

In the following account it has been the aim to give the original record and source together with such comments as have induced the authors of our more recent floras, who have in the main exercised a wise discretion, to omit reference to the great mass of those included here.

19 (2). RANUNCULUS ALPESTRIS L. *Eng. Bot.* t. 2390, 1812.

Pyrenees, Jura, Alps, Carpathians.

"Gathered by Mr G. Don by the sides of little rills, and in other moist places, about two or three rocks on the mountains of Clova, Angusshire."—Smith in *Trans. Linn. Soc.* xii., 343, 1811. The paper was read in 1809. "Mr Don informs us it rarely produces flowers where he observed it, and that the plant itself is not plentiful, being, moreover, so like in foliage to many of its kindred, as to be easily overlooked."—Sm. *Eng. Bot.* t. 2390, 1812. *Eng. Fl.* iii., 49, 1825. "Can the Clova plant be *R. Traunfellneri* Hoppe, a specimen of which from Croatia in my herbarium is well represented by the *E.B.* plate."—Bab. *Man.* 6, 1847. "The specimen sent to Smith appears to have been from Don's garden."—Hook. and Arnott *Br. Fl.* ed. 6, 92, 1850. "A specimen from Don in *Herb. Brodie* which is marked 'on rocks near the head of Clova' has the aspect of a wild one, but we still consider it a very doubtful native."—Hook. and Arnott *Br. Fl.* 9, 1855. "Now generally excluded from our flora."—*Comp. Cyb.* 477, 1870. "Probably recorded through mistake."—Bab. *Man.* ed. 7, 10, 1874. "Though these mountains have been carefully examined, this conspicuous plant has been seen by no other collector."—Syme *Eng. Bot.* i., 170. "Incognita. The existence of a specimen in the Smithian herbarium, with a memorandum that it was collected in Forfarshire by Mr George Don, seems very good evidence in favour of its nativity; and yet no other botanist among the many who have searched the mountains of that county has ever detected an example of this species there. Moreover, its geographic distribution otherwise would not much incline us to expect the species in Scotland; since it is not found in Scandinavia, nor any of the arctic lands. At the time when Mr Don was a collector it was not the custom with botanists to be very particular in recording the locality and distribution of plants; and they might not always be sufficiently careful in keeping British and foreign, wild and garden examples of the same species, apart from each other."—*Cyb Brit.* i., 182, 1847. See Don *Life* 97, 1904.

Don's flowering specimen in *Herb. Smith* is dated April 3, which is very early. Prof. I. B. Balfour says it does not blossom in frames at Edinburgh till May. The plant was sent by Don when he was in full mental vigour. He localises it and speaks of its rarity, its sparse flowering, and of its being a "splendid" plant. The only explanation

would seem to be his gathering some species in a flowerless condition, bringing the roots to his garden, and then confusing it with *alpestris* which he might have there, or else that it still awaits rediscovery.

(24). RANUNCULUS GRAMINEUS L.

Portugal, Spain, France, S. Switzerland and Italy.

"From a garden specimen." — *Eng. Bot.* xxxiii., 2306, 1811. "Brought from North Wales by Mr Pritchard."—With. *Nat. Arr.* 505, 1796, and iii., 620, 1812. Repeated in Sm. *Fl. Brit.* ii., 589, 1800 and *Eng. Fl.* iii, 46, 1825. "The Rev. W. W. Newbould informs me there is an unlocalised specimen of this plant in Withering's herbarium, received from Pritchard."—*Comp. Cyb.* 477, 1870. I have been unable to trace it. "Reported from 'the neighbourhood of Llanroost.'"—*Cyb. Brit.* i., 85. "No doubt through mistaking *R. Flammula* for this species."—Syme *Eng. Bot.* i., 86. "Lundy Island, Mr Etheridge of Bristol."—*Phyt.* 120, 1855-56. Never confirmed. Specimens of the narrow-leaved form of *Flammula* are so named in many herbaria, *e.g.*, from Devonshire, Mrs Lightfoot, in *Herb. Druce.*

If it does occur in Britain it would be more likely to be found on the dry hills of Wales and elsewhere. Pritchard's specimen, being correctly named (teste Newbould), limits the question to whether he misreported its occurrence there, not to his having mistaken *Flammula* for it. When in flower it is a conspicuous species.

54. AQUILEGIA ALPINA L.

This has been found by Mr R. H. Corstorphine in Caenlochan Glen, Forfar, possibly from seeds sown there. See *Rep. B.E.C.* 399, 1916. The old records are mistakes arising from a variety of *A. vulgaris* being mistaken for the true *A. alpina.* These are discussed in the same *Report* when the writer named Miller's *A. alpina* as *A. vulgaris* L., var. *Milleriana.* It is to be hoped that some Yorkshire botanist may refind Miller's plant which was first recorded by him as "*Aquilegia montana. magno flore,* C.B. Mountain Columbine with large flowers . . . growing wild in the park of Robert Fenwick, Esq., near Ingleborough Hill, in Yorkshire."—*Abr. Gard. Dict.* i., 1754. "The flowers are much larger than those of the Garden Columbine, and the seeds which I sowed this year in the garden at Chelsea produced the same species without the least variation."—Miller *Gard. Dict.* 1768. In the interim, Hudson (*Fl.*

Ang. 208, 1762) recorded it as "*A. alpina.* In sylvis montosis in comitatu Westmorlandico," giving no reference to Miller. In the second edition, p. 236, he adds "nimis affinis praecedenti, an distincta?" Smith (*Fl. Brit.* ii., 579, 1800) has a var. b. of *vulgaris* *A. alpina* Huds., which he says "minus luxuriat, nectariis attenuatis, parum incurvis. Omnino distincta ab *A. alpina* L." Withering (*Nat. Arr.* iii., 608, 1812) says Hudson's *A. alpina* . . . mountainous woods of Westmorland [*sic*] is a lesser variety, with the nectary extended, and but little curved inwards." F. Arnold Lees (*Fl. W. Yorks*, 126, 1888) thus sums up the reference to the Yorkshire plant:—"A dwarfed but large flowered form of *A. vulgaris* such as grows in the fissures of the elevated limestone pavements, was intended by this, not the Linnean continental *alpina.*" Another claimant for the name however is made. "Var. b. *A. alpina* Huds. 235, excl. syn. In more mountainous situations. At Matlock Bath, Derbyshire. Has scarcely more than one flower on each stem, and the nectaries are rather less curved. The whole plant is less luxuriant and more elegant."—Sm. *Eng. Fl.* iii, 33. 1825.

These early records of *A. alpina* are therefore mere mistakes of identity and refer either to *A. vulgaris* L. or its var. *Milleriana* Druce.

85. PAPAVER NUDICAULE L. *Eng. Bot.* t. 2681.

First record: "Found by Professor Giesecke of Dublin. Growing singly among rocks and glens in the hills at Achill Head in the N.W. of Ireland. For the dried specimens which he had the kindness to communicate to us from the native station our present figure is made."—W. J. Hooker in *Eng. Bot.* t. 2681, 1831. See also W. J. Hooker in *Fl. Lond.* under n. 213. "Under a somewhat hasty confidence in the accuracy and scientific caution of a botanist, against all natural probabilities, this arctic species was figured in *English Botany* and duly described in the British Flora as a true native of the west of Ireland. It is now discarded by common consent."—*Cyb. Brit.* i., 106. "An arctic plant, said to have been found by Sir Charles Giesecke. . . . There can be no doubt that it never grew there."—Syme *Eng. Bot.* i., 115.

This appears to have been a gross and not a solitary imposition of the Dublin professor, who also recorded *Ledum palustre* from the same area which he did not see growing but only noticed in a fisherman's hat.

126. RADICULA ANCEPS (DC.). *Nasturtium anceps* Bab., non DC. Prod. i., 137.

England [*sic*], Denmark, Sweden, Finland, Silesia, etc., Nym. *Consp.* 35.

"A common and distinct species."—Babington in *Phyt.* 310, 1842. "Occurs at Berwick-upon-Tweed, Worcester, Newcastle-on-Tyne, etc."—Bab. *Man.* 20, 1847. "*N. patens* Bab. [*sic*] is not the *Sisym. anceps* (Wahl.). See Fries *Herb. Norm.* vi., 18, and is not separable from *N. sylvestre.*"—Bab. *Man.* 20, 1851.

This is therefore merely a mistake of identification. The true *Radicula anceps* (DC.) comb. nov., to which Nyman accords specific rank, may well be found in Britain. Rouy and Fouc. (*Fl. Fr.* ii., 196) treat it as a hybrid of *amphibia* and *terrestris* (= *Radicula amphibia* × *islandica*). The leaves are broad, large, obovate, incise-dentate or lyrate-pinnatifid, the lobes dentate or denticulate, the terminal larger, all more or less auriculate at the base; petals longer than the calyx; silicles elliptic, nearly twice as long as the style and three or four times shorter than the pedicel.

146 *b*. CARDAMINE BELLIDIFOLIA L. *Eng. Bot.* t. 2355, from a continental specimen.

Norway, Sweden, Finland, Iceland, etc., Nym. *Consp.* 37.

"*Cardamine pumila Bellidis folio, Alpina* Ger. Emac. 260. . . . found by Mr Newton on St Vincent's Rock, near Bristol [?*Arabis scabra*]. On the rock by the quarry by Bath [?*A. hirsuta*]: in variis locis juxta Rippon ad monasterium ejus et in Denbighshire."—Merrett *Pinax.* Ray *Syn.* 300, n. 5, 1724. "*C. bellidifolia* [localities given above repeated]."—Huds. *Fl. Ang.* 255, 1762. "St Vincent's Rock."—With. *Nat. Arr.* ii., 413, 1776. Stokes (With. *Nat. Arr.* ii., 685, 1787) cites the localities given by Merrett and Ray, but adds:—"Mr Curtis in his *Cat.* very justly doubts its being native. . . . Dr Broughton, in a letter dated November 15, 1783, informs me that, having repeatedly searched for it in company with Mr Ford on St. Vincent's Rocks. . . . but in vain, he was persuaded that either the *Turritis hirsuta* or *Arabis stricta* of Hudson, both of which grew there in profusion, had been mistaken for it." Withering says he had wild specimens gathered in Scotland from Mr Milne [formerly curator of the Oxford Garden]."—Sm. *Eng. Fl.* iii., 187. "*Turritis hirsuta* now grows in places near Denbigh where the *Cardamine* was

said to grow. . . . The specimens before me were gathered wild in Scotland and sent me by Mr Milne. Of these being genuine there can be no doubt."—With. *Nat. Arr.* iii., 714, 1812, and *l.c.* 767, 1830. "The only authority for this plant is Withering, in whose herbarium two examples of it are preserved, said to be from Scotland. The other stations recorded for it have been by mistaking *Arabis stricta* or *hirsuta*, and *Cochlearia alpina* for *Cardamine bellidifolia*, as shown by the Sloane Herbarium, etc."—Syme *Eng. Bot.* i., 224. "Reported on old authority from the counties of Somerset, Denbigh, and York, but since this species cannot be found in any of the alleged localities, while *Arabis hirsuta* does occur in most or all of them, there can be little question that the *Arabis* was mistaken for the *Cardamine*."—*Cyb. Brit.* i., 140. "Confounded with a form of *Cardamine hirsuta* [*sic*]."—Hook. *Stud. Fl.* 529.

231. CARRICHTERA ANNUA (L.) Prantl in Nat. Pflanz. iii.. 2, 173, 1891. *C. Vella* DC. *Vella annua* L. *Eng. Bot.* t. 1442, from a foreign specimen.

Portugal, Spain, Sardinia, Sicily, Greece, Nym. *Consp.* 58.

"*Nasturtium sylvestre Erucae affinis* C.B. Eruca Nasturtio cognato tenuifolia."—Ger. *Herb.* 247. "Found by Mr Lawson on Salisbury Plain not far from Stonehenge."—Ray *Syn.* 117, 1690. "*Vella annua*."—With. *Nat. Arr.* i., 392, 1776; ed. 5, iii., 697, etc. "We have heard of its being gathered [Salisbury Plain] at a more recent period."—*Eng. Bot.* n. 1442. "I have never heard of its being met with since."—Sm. *Eng. Fl.* iii., 156. "Neithrop, not uncommon."—Gulliver *List of Banbury Plants* [Error]. "Richmond, Surrey, 1846, perfectly naturalised, A. W. MacIvor, ex *Herb. E. Edwards*."—*Comp. Cyb.* 482, 1870; *Cyb. Brit.* i., 136. "Evidently originated from the siftings and sweepings of corn from the Distillery, situate at the water side, Wandsworth."—A. Irvine in *Flora of Surrey* 314, 1863.

It is probable that the Salisbury Plain plant was *Reseda lutea*, that plant representing it (teste Newbould) in *Herb. Sloane*. That, too, is Gulliver's Neithrop plant. The figure of *Vella* in Gerard's *Herbal* is not unlike *Reseda*. True *Carrichtera annua* occurs as a casual from time to time in many localities, but is not permanent.

245. LEPIDIUM HIRTUM emend. DC. Syst. ii., 536, 1821.

Thlaspi hirtum Mont. Cambrobr. Ray. (siliculis hirtis) Smith *Comp.* 93, 1800 and *Fl. Brit.* ii., 685. *Thlaspi hirtum*, Perthshire,

W. Miller, 1800. Sm. *Eng. Bot.* n. 1803, 1807, fruit only. Smith (*Eng. Fl.* iii., 167, 1825) confuses the true *hirtum* (with hairy pouch) and *Smithii*; his synonyms too are mixed, belonging to both species.

All the records of *L. hirtum* for Britain, save one, are errors for *L. Smithii* Hook., the exception being Miller's Perthshire specimen which was sent by Mackay to Smith. George Don first clearly showed that there were two species confused by Smith with *hirtum*. Don *Account* 221. True *L. hirtum* is not likely to be found native in Britain as it is limited to the south of France and Corsica.

255 (2). HUTCHINSIA ALPINA [Br.] in Ait. Hort. Kew. ed. 2, iv., 82.

Spain, Pyrenees, Alps, Juras, Apennines, Carpathians, Nym. *Consp.* 65.

First evidence: Two specimens in a collection of British plants, apparently the one bequeathed to Sir J. E. Smith in 1805 by Mr Arthur Bruce, of Ballochmyle, Ayrshire. They are labelled—"*Lepidium petraeum*, Ingleborrow, Mr M'R. [itchie]," and seem to have been gathered late in the eighteenth century. See note by the Rev. W. W. Newbould in Seeman *Journ. Bot.* i., 359, 1863. "Ambiguity."—*Comp. Cyb.* 481, 1870.

287 (2). HELIANTHEMUM LEDIFOLIUM Miller Gard. Dict. 1768.

Eng. Bot. t. 2414, 1812.

Spain, Portugal, S. France, S. Italy, Nym. *Consp.* 73.

First recorded as *Cistus salicifolius*. "In pratis et pascuis arenosis juxta Brean Down in Agr. Somersetiensi."—Huds. *Fl. Ang.* ed. 2, 233, 1778. "Petals yellow, smaller than the empalement. . . . nr. Brean Down."—With. ed. 2, 558, 1787. "*Cistus ledifolius*. Brent Down. . . . Mr Dickson and the late Mr Lightfoot communicated to me specimens raised from seed gathered by themselves at the place which determined the species to be *ledifolius* not *salicifolius* for which it was taken by its discoverer, Mr Hudson." *Eng. Bot.* under t. 2414, 1812. See also Sm. *Eng. Fl.* iii., 24, 1825. "*H. ledifolium* Willd. Incog. Hudson records it. . . . from near Brean Down, but possibly some error has occurred between this and *polifolium*. The Rev. J. C. Collins has sought the alleged locality year after year unsuccessfully." — *Cyb Brit.* i., 172. "The record of *H. ledifolium* in *Phyt.* 48, 1848, was a clerical error for *polifolium*." —*Comp. Cyb.* 486. "Doubtless introduced into the British flora through an error as to the species observed."—Syme *Eng. Bot.* ii.,

235, and Bab. *Man.* 42, 1904. "It is generally supposed that Hudson mistook *polifolium* for it."—Hook. and Arnott *Br. Fl.* 45, 1850. "Not found for many years."—Bab. *Man* 34, 1847. "Erroneously recorded in old books."—White *Fl. Bristol* 169.

It is quite possible that the hybrid of *polifolium* × *Chamaecistus* was the plant mistaken for *ledifolium* (*cf.* With., *l.c.*).

288. HELIANTHEMUM TOMENTOSUM S. F. Gray Nat. Arr. ii., 663. *Eng. Bot.* t. 2208.

Recorded as *Cistus tomentosus* Scop. "This has been communicated several times to us and to others by Mr G. Don from Scotland, and Mr Dickson has likewise gathered it there. Everybody considers that it is very different from [*H. Chamaecistus*], and indeed it proves to be Scopoli's *C. tomentosus*, of which we have an authentic specimen."—Sm. *Eng. Bot. l.c.* "On the Scotch mountains, G. Don."—Sm. *Eng. Fl.* 27, 1825. "When cultivated together the difference [of this and *Chamaecistus*] is striking. What such practical observers as Scopoli, G. Don, and our most acute, justly lamented Dickson have asserted, I would not hastily reject, nor can I, with my worthy friend, Prof. Hooker, think *C. tomentosus* not even a well marked variety. It merits at least some examination in its native places of growth."—Sm. *Eng. Fl.* iii., 27, 1825. "Scarcely separable even as a variety."—Syme *Eng. Bot.* ii., 11; Bab. *Man.* 42, 1904.

Included in the *British Plant List* as a variety. The only dubiety here is as to the grade. Cultural experiments are needed to discover if the characters attributed to it are genetic.

Var. SURREJANUM. *Eng. Bot.* t. 2207. Ray *Syn.* 341, 1724.

H. Surrejanum Miller Gard. Dict. 1769, based on *H. vulgare petalis florum perangustis.* Dill. *Hort. Elth.* 177, t. 145, 1732. Discovered by Mr E. Du Bois at Croydon. Found there also by Mr Christy. "Is a garden variety or monstrosity."—Syme *Eng. Bot.* ii., 11. See also note by C. E. Salmon in *Gard. Chron.* 1918.

There is no doubt as to the occurrence of the plant in Britain. The question is to refind it, and to ascertain whether it is a variety or monstrosity of the Common Rock-rose.

291. VIOLA STRICTA Hornemann Hort. Hafn. ii., 958.

Sweden, Denmark, Germany, Austria, etc., Nym. *Consp.* 77.

"In peaty ground in Garryland Wood, near Gort, gathered by Mr A. G. More."—*Bot. Soc. Edin.* 1851. "I regret that Mr Polwhele

has been in such haste to record the occurrence of *Viola stricta* in the fens. I believe the plant will not prove distinct from *V. stagnina*, and, moreover, I believe that the Irish plant will turn out to be the same."—Babington in *Phyt.* 649, 1852. "Error."—*Comp. Cyb.* 487.

The record is a mistake. The plant seen was either *V. stagnina* or a hybrid of it with *canina*, perhaps the plant recorded as *V. montana* L. in *British Violets*; in any case it is not the *V. stricta* Hornem.

301. VIOLA BIFLORA. (?)

"A violet with roundish, kidney-shaped leaves and yellow flowers was found on the wolds near North Dalton [Yorkshire] in the spring of 1834 by Mr Fenton of Londresbo."—Baines *Flora Yorks* 15. See *Comp. Cyb.* 486.

Requires refinding. It may have been only a form of *V. palustris* and is not likely to be the very distinct *V. biflora* of the mountainous parts of Europe, N. Asia, and America.

315. FRANKENIA PULVERULENTA L. *Eng. Bot.* t. 2222, from a garden specimen.

Portugal, Spain, S. France, Italy, Dalmatia, Greece, Nym. *Consp.* 85.

"Alsine maritima supina, foliis Chamaesices Inst. R.H. App. 665. Anthyllis maritima, Chamaecisae similia C.B. Pin. 282. Valentina. Clus. H. clxxxvi. Found on the coast of Sussex and sent by Mr Brower [Brewer]. Forte Tithymali marini species minima ex Cornubia Merr. Pin."—Dillenius in Ray *Syn.* 352, 1724. "Found on the coast of Sussex and sent by Mr Brewer."—Ray *Syn.* "In littore Sussexiae inter Bognor et Brightelmston inveni."—Huds. *Fl. Ang.* 138, 1778. "Marshes on the sea coast."—With. *Nat Arr.* i., 198, 1787. "Of late years we have no certain account of its having been observed there, nor has it been seen elsewhere in Britain. Our specimen came from Mr Dickson's garden."—*Eng. Bot.* t. 2322. "Nobody [since Hudson] has since found it, and we make certain that it would not have escaped Mr Borrer's eyes, if still existent on the coast between Bognor and Brighton."—*Cyb. Brit.* i., 187. See also Syme *Eng. Bot.* ii., 43 and *Comp. Cyb.* 488. "Formerly [*sic*] on the Sussex coast, now lost."—Bab. *Man.* 48, 1904. According to Watson (*Comp. Cyb.* 488) there is a specimen in *Brit. Herb. Linn. Soc.*, fide D. Oliver, but I am unable to find it. Not in the *Winch Herb.* at Newcastle-on-Tyne. The specimen in *Herb. Dill.* is *Polycarpon tetraphyllum* (!), and in connection with this must be taken the

suggestion of Dillenius referring to Merrett's Cornish plant. Brewer was a frequent correspondent of and contributor of plants to Dillenius. The record then simply rests on Hudson's statement which has never been confirmed.

345. SILENE RUPESTRIS L.

Scandinavia, Vosges, Pyrenees, Spain, France, Italy, etc., Nym. *Consp.* 92.

"The Rev. A. W. Donaldson, Strathaven, has this plant growing in his rockery. He told me he is confident he picked it during his holidays in the highlands of Scotland some years ago, he thinks in Glen Spean, and probably near Loch Gulbin. Not being a botanist he took no special notice of the locality at the time. He regarded it as a nice plant for his rockery."—Dr Craig in *Trans. Bot. Soc. Edin.* xvii., pt. 2, 1888, ex Mr Arth. Bennett.

This plant might well grow in Scotland, but despite its small flowers it is a conspicuous species and is scarcely likely to have been overlooked unless limited to one or two localities. The recent discovery of *Arabis alpina*, a more conspicuous species, makes it well for members to bear this in mind.

346. SILENE ALPESTRIS Jacq. Fl. Austr. i., 60, t. 96.

Heliosperma alpestre Reichb.

Austria, Styria, Carinthia, Tyrol, etc., Nym. *Consp.* 87.

"A specimen gathered by the late Mr G. Don 'on a rock on a mountain to the east of Clova, Angusshire' is in Mr Borrer's herbarium."—Bab. *Man.* 45, 1847. Omitted from the *Manual* in later editions. See Gardiner *Fl. Forf.* 27; *Cyb. Brit.* i., 203; *Comp. Cyb.* 490. "Certainly from a garden."—Hook. and Arnott *Br. Fl.* 59, 1850. See Syme *Eng. Bot.* ii., 134; Don *Life* 100. "One of Don's reputed discoveries."—Hook. *Stud. Fl.* 475, 1870.

Its geographical distribution renders its occurrence in Britain most unlikely. The specimen (in *Herb. Brodie*) is labelled in Don's writing "*Silene*, supposed *alpestre*, on rocks on mountains to the east of Clova. I discovered this several years ago but mislaid the specimens, and only found them lately," which suggests a trick of memory, not a wilful imposition.

357. CUCUBALUS BACCIFER L. Syme *Eng. Bot.* ii., 54, t. 198.

All Europe save ?Belgium, ?Britain, Scandinavia, N. Russia, Greece, Nym. *Consp.* 81.

"*Cucubalus Plinii* Lugd. 1429. In sepibus Insulae Monae collegit et mecum communicavit D. Fowlkes de Lhanbeder prope Ruthin: D. Richardson in Ray *Syn.* ed. 3, 267, 1724. Mr Foulkes only received an account of the *Cucubalus* 'from one who pretended to know plants very well,' but that he could never find it." See Linn. *Corresp.* ii., 171. There is little doubt that this early record was an error. "Collected in the August of 1837 in "the Isle of Dogs. . . . on the banks of the ditch on the left-hand of the road from Blackwall to the Ferry House; and there, if not truly indigenous, it is at least perfectly naturalised. I also feel convinced that I have met with it in similar situations in other parts of England; but the plant, not being in flower, I have passed it, as I did the first time I saw it in the Isle of Dogs, thinking it to be merely *Cerastium aquaticum*, which in that state it much resembles. George Luxford A.L.S."—*Phyt.* i., 255. See also *Minutes of the Linn. Soc.* Nov. 21, 1837. "In considerable abundance there in 1852."—*Phyt.* iv., 605.

There is no dubiousness about this record; the plant existed there up to 1853. There is, however, something dubious as to the grade of citizenship attributed to it in our Floras. All have treated its occurence in the Isle of Dogs as adventive. Considering its recent discovery in Norfolk by our member, Mr F. Robinson (*Rep. B.E.C.*, 127, 1914 and 188, 1915), it may well be that in each case the plant came by natural means (? bird-sown). In both cases the localities are similar to those in which it grows on the mainland of Europe, and its geographical distribution is entirely in favour of its being a British plant. This, too, was the opinion of the authors of the *Flora of Middlesex*. See p. 50, 1869.

357 (2). CUCUBALUS VISCOSUS With. Nat. Arr. i., 261, 1776, and Huds. Fl. Ang. 186, 1778, based on *Lychnis major noctiflora dubrensis perennis* Ray *Syn.* 340.

This is an error of identification, referring to the Dover Catchfly, which, in the *Flora of Kent* 55, is placed to *Silene nutans*. It is a question whether both *S. nutans* and *S. dubia* Herb. occur in Kent. The latter is the common shingle plant.

366 (2). CERASTIUM TOMENTOSUM L.

Italy, Dalmatia, Montenegro, Serbia, Herzegovina, Greece, Nym. *Consp.* 107.

"Ripton Wood, Hunts. Specimen gathered in Mr Whiterock's garden, who assured me that it was the individual plant he had found in Ripton Wood where he had found it growing wild."—Mr Woodward in Stokes *With. Nat. Arr.* i., 481, 1787. Redditch, Worcester, Don in *Herb. Druce* (!).

The plant may have occurred as an escape although not at all likely to be native in Britain. It is a frequent garden plant and has now become established in a few places in Britain as well as in France, Belgium, &c.

383 (2). STELLARIA SCAPIGERA Willd. *Eng. Bot.* t. 1269, 1804.

"Sides of rivulets on the mountains of Badenoch, between Loch Ereachd (Ericht) and Loch Laggan; and by the side of a rivulet on a mountain to the eastwards of Loch Nevis, Invernesshire."—Don *Herb. Brit.* No. 10, 1804. "Wild specimens of this new and curious *Stellaria* have been obligingly communicated to us by Mr G. Don, who gathered them at different times of the year 1794 to 1803. . . . The plant was received by the younger Linnaeus from the Kew garden . . . but its native country was altogether unknown till Mr Don's fortunate discovery."—Sm. *Eng. Bot.* t. 1269. *Eng. Fl.* ii., 304. "*S. graminea*, var. *scapigera* Hook. and Arnott. The locality is between Dalwhinnie Inn and the Old Kirk of Laggan . . . this is however of little consequence as we now believe that plant to exist nowhere in a wild state, but to be a mere cultivated form of *S. graminea*. Don cultivated it extensively in his garden at Forfar, from which we have specimens. It was originally described by Willdenow from a plant in the Berlin gardens . . . but it is not even conjectured to have come from Scotland, and has not been found anywhere else." — Hook. and Arnott *Br. Fl.* 69, 1850. "It is increased by division, but not by seed, although seed is produced sometimes freely. In the Glasgow Botanic Garden . . . *S. graminea* [springs] up in the vicinity of pots in which *scapigera* [has been] cultivated."—*l.c.* ed. vii., 70. "*S. scapigera* . . . is apparently a monstrosity of *S. graminea*, and probably from Don's garden; some plant he met with being mistaken by him for the same as the one he had in cultivation." — Syme *Eng. Bot.* ii., 99. "Incognit."—*Cyb. Brit.* i., 225. "Ambiguity."—*Comp. Cyb.* 492. "No wild specimens are known. I can scarcely believe that this is a state of *graminea*."—Bab. *Man.* 54, 1856. "There need be little doubt that Don found it in the wild state and brought it to his garden

. . . *S. scapigera* is, I believe, a monstrous condition of *S. graminea*, but it must have originated somewhere, and quite as likely on a highland moor as in a lowland garden."—Don *Life* 102.

A plant, whatever may be its grade, which is quite likely to be found. It may be a rare mutant. Don repeatedly alludes to it in his correspondence. *Life* 257, 263, 290. He says it is truly rare. The specimen in Lady Aylesford's collection appears a cultivated one. Her painting of it, dated 1804, was from a plant sent her by Dickson.

394 (2). ARENARIA FASTIGIATA Sm. Eng. Bot. t. 1744, 1807.

France, Germany, Switzerland, E. Europe.

A fasciculata Jacquin (not of L.) Fl. Austr. ii., 49, t. 182. *Alsine fastigiata* Bab. *Alsine Jacquini* Koch Syn Fl. Germ. ed. 2, 135, 1842. See Hook. *Fl. Scotica* 138; Sm. *Comp.* 70; Don *Life* 100.

First record: "It is several years since I first observed this plant . . . [in] Clova, but very rare, . . . I have likewise found it on some rocks in Fifeshire, but rare. My specimens are from Clova."—Don *Herb. Brit.* No. 136, 1806. "Mr George Don had the good fortune to discover this new British plant on rocks in the mountains of Clova, Angusshire and also in Fifeshire."—Sm. *l.c.*; *Eng. Fl.* ii., 310. "Clova specimens . . . we possess from Drummond as well as Don."—Hook. and Arnott *Br. Fl.* 66. "Incognit." — *Cyb. Brit.* 220. "Error? Dr Arnott intimated in the British Flora that he was in possession of Clova specimens from Drummond. Drummond may have got them from Don or from Don's garden."—*Comp. Cyb.* 491. "Though it has been found by no botanist at present living, it would scarcely be proper to omit it from the list of British plants. I have one of Don's specimens; this has no particles of mica adhering to the roots, as most frequently happens with plants gathered on the Clova mountains, where it purports to have been gathered."—Syme *Eng. Bot.* ii., 114, 5.

The only corroboration for its occurrence in Britain is Drummond who succeeded to Don's garden at Forfar, whence his specimens may have been gathered. Its rediscovery would be of great importance in establishing Don's bona fides. His statement is unambiguous and made at a period of his life when his memory was accurate. My specimen from Lady Aylesford, which she painted in 1812, is labelled "Mountains west of Clova, Don." The roots are quite free from soil.

396. ARENARIA LARICIFOLIA Huds. Fl. Ang. 168, 1762, not of L.

"In montibus Westmorlandicis passim." — Hudson, *l.c.* On mountains."—With. *Bot. Arr.* 257, 1776. "Upon Castle Hill, near Forfar, in the county of Angus."—Lightfoot *Fl. Scotica* ii., 232.

A misnomer for *Arenaria verna* L.

[398]. BUFFONIA TENUIFOLIA L. *Eng. Bot.* t. 1313, 1804.

S. France, Spain, Portugal, Nym. *Consp.* 120.

"*Alsine polygonoides tenuifolia flosculis ad longitudinem caulis velut in spicam dispositis.* In maritimis circa Bostoniam agri Lincoln." —Plukenet *Phyt.* t. 75, f. 3, 1691. Ray *Syn.* 210, 1696. Hounslow Heath, Doody, in Dill. *Ray Syn.* 346, 1724. "Sir J. Banks suspects that *Bupleurum tenuissimum* was mistaken for it."—Sm. *Eng. Bot.* n. 471 and 1313, 1804. "Yet Plukenet and Dillenius certainly knew [it] perfectly, and the original specimen in the Brit. Mus. is right."—Sm. *Eng. Fl.* i., 226, 1824. See *Bot. Guide* 387, 1805. "Little doubt that a mistake had been made in both instances."—Syme *Eng. Bot.* ii., 134. "We found it on Hounslow Heath where Mr Doody observed it."—Milne and Gordon *Indig. Fl.* 199, 1793. Trimen and Dyer (*Fl. Middlesex* 52) suggest that Doody "accidentally wrote his note of the locality against the wrong species," and they think "that Milne and Gordon may have mistaken a late-grown form of *Juncus bufonius* for it." An unlocalised specimen represents it in *Herb. Dill.* [See *Dill. Herb.* 106].

If it ever occurred it must have been as an adventive species.

404. SAGINA BOYDII Buch.-White in Trans. Bot. Soc. Edin. xvii., 32-5, 1887. *S. Linnaei*, var. *Boydii* Williams Mon. in Rep. B.E.C. 202, 1917.

Supposed to have been found in Braemar in 1878 by Mr W. B. Boyd. He does not remember gathering it, but he found it in his potting shed among other specimens he brought back from Braemar, and his impression is that he had gathered it on Ben A'an. But he had received about that time living plants from Switzerland for his garden, and there is the chance that it may have a foreign origin. In later years his memory rather crystallized upon Ben A'an; directly after his reporting it he was less certain. The plant is known from nowhere else. It does not perfect seed, but is propagated by cuttings. In order to check my remembrance of the details of its occurrence as given me by Mr Boyd (I had many talks with him about it as I was anxious to re-find it), my remarks were submitted to Prof. I. B.

Balfour, who kindly tells me that Mr Boyd in the early nineties on seeing his plant of *Boydii* at Edinburgh said—"I have no recollection of getting that plant. I believe it to be a Braemar plant, but when I was arranging for planting my Braemar collections I had also in hand some Swiss plants, and it may have been one of them." As Professor Balfour says:—"There is nothing in it—whether it be species or otherwise—to forbid its being a British plant; nothing in it to say nay to a continental origin. Re-finding is what is to be aimed at."

407 (2). SAGINA MARITIMA, var. ALPINA Syme Eng. Bot. ii., 117.

"Prov. 16. Summit of Ben Nevis; G. Don. Apparently not found by any living botanist, and the summit of Ben Nevis is almost destitute of phaenogamous plants."—*Comp. Cyb.* 490. "Top of Ben Nevis, Don."—Hook. *Stud. Fl.* 61, 1870 [as a variety of sub-sp. *S. maritima*]. "Don seems to have found it on Ben Nevis."—Bab. *Man.* ed. vii., 53. "Doubtless Don found this plant on Ben Nevis in 1794, for, as Mr Watson elsewhere asserts that with Don the 'summit of mountains' means 'declivities many feet below,' the fact that the summit of Ben Nevis is almost destitute of phaenogamous plants does not disprove Don's assertion. It was my good luck in company with Mr E. Robertson of Burnside, Forfar, to find a *Sagina* in the upper part of Corrie Sneachda, and on the high rocks between the head of Loch A'an and Ben Macdhui, which Mr Arth. Bennett says he cannot keep apart from Don's plant."—Don *Life* 101.

My specimen of Don's which is labelled "*S. maritima*, from summit of Ben Nevis, in 1794," belonged to the Countess of Aylesford. The leaves are bluntish, not mucronate, and rather broad. One specimen has the capsule longer than the sepals. There are particles of mica and quartz about the roots. They are different from any forms of *S. maritima* from Forfarshire, where I have gathered it in four stations, and are nearer specimens from the Caithness Coast. Dr Williams (*Mon. Sagina* in *Rep. B. E. C.* 193, 1917) removes my Glen A'an specimen (*Ann. Scot. Nat. Hist.* 273, 1894) from *maritima* to *procumbens* as f. *Druceana*, to which or more probably to *scotica* it may belong. I have repeatedly searched the upper plateau of Ben Nevis above 4,000 feet but failed to find any form of *maritima*, but I have not ascended the hill from the upper portion of Glen Nevis nor have I ever been able to find the *Poa* which Mackay and Don gathered on that hill. Dr. Williams, *l.c.*, puts Don's plant as var. *stricta* Clavaud of *S. maritima*. David Don said his father found it

still on Ben Nevis in 1803 (see *Herb. Smith*). Fries says his *S. stricta* occurs on mountains in Norway. See Bab. *Man.* ed. 9, p. 58.

410 (2). SPERGULA PENTANDRA L.

"*S. annua semine foliaceo nigro circulo membranaceo cincto.* In Hibernia locis arenosis observavit, Dr G. Sherard."—Dill. in Ray *Syn.* 351, 1724. This record is put under *Spergula pentandra* in Huds. *Fl. Ang.* 177, 1762 and reduced to var. *pentandra* of *S. arvensis* in Huds. *l.c.* ed. 2, 1778. In *Eng. Bot.* n. 1536, 1805, although the name *S. pentandra* is attached to the plate, the figure is *S. arvensis* L. Babington describes *S. pentandra* "said to have been found in Ireland" (*Man.* 40, 1843). *S. pentandra* is "said to have been gathered in Ireland by Sherrard [*sic*]; but the Rev. W. W. Newbould is inclined to think (from the reference in the old Herbarium) [whose?] that the plant under that name was really one of the pentandrous *Spergulariae.*"—Syme *Eng. Bot.* ii., 134. This opinion appears to have been adopted by Babington, ed. vii., 62, who says it was probably *Lepigonum neglectum*, by Moore and More (*Cybele Hibernica* 109), and Hooker (*Stud. Fl.* 530). All these suggestions were discussed in a paper the writer contributed to the *Annals of Botany* iv., 378. It may be added that the specimen in the Dillenian Herbarium at Oxford representing the plant described 351 n. 8 in Ray's *Synopsis* is *S. pentandra* L.; that it is labelled "collect. G. Sherard"; that it is preserved on the original numbered sheet; that it is in the sheet of the Dillenian Herbarium corresponding to his pagination of the *Synopsis*; that the number on it agrees with the especial paragraph where the plant is aptly described; that we know Sherard visited several parts of Ireland including Drogheda and the Mourne Mountains; and that he was in constant communication with Dillenius. The *Synopsis* was brought out under his watchful supervision, and it really is rather ridiculous to suggest that such eminent botanists as Dillenius, the authority for at least one genus of the Caryophyllaceae, or Sherard were likely to have confused plants so dissimilar as a *Spergula* and *Spergularia*, and the discovery of authentic specimens at once disproves it. There is no dubiousness as to the identification of the species. We are less fortunate in being able to fix the habitat of this unlocalised specimen. There is no reason to doubt that Sherard found it, and probably in Ireland, but where, and whether native or casual, we are unable to say.

429. HYPERICUM BARBATUM Jacquin Fl. Austr. iii., 33. Sm. *Eng. Bot.* t. 1986, 1809.

"By the side of a hedge near the wood of Aberdalgy, in Strathearn, Perthshire, but sparingly. Mr G. Don." –*Eng. Bot.* t. 1986, 1809, and *Eng. Fl.* iii., 329. "No other botanist having met with examples, we cannot suppose this easily seen species to have been either native or naturalised in the one locality; and in which it is now probably extinct."—*Cyb. Brit.* 254. "We do not believe that this species was ever found wild in Scotland."—Hook. and Arnott *Br. Fl.* 81, 1850. "No one has found it since; and if it ever occurred there it was doubtless an escape from cultivation. . . . Syme *Eng. Bot.* ii., 160. See Don *Life* 103.

There is a specimen in Lady Aylesford's collection labelled "in hedges near the wood of Aberdalgy," where Don no doubt found it as an adventive plant. Smith was to blame for inserting it in *English Botany* without expressing that fact, a carelessness followed by Hooker (*Flora Scotica* 272) where its locality is amplified to "Woods," and by Smith (*Eng. Fl.* iii., 328) to "bushy places in Scotland." It may be added that Don sent fresh specimens to Smith, which were used for the plate, and that on a specimen of *Glechoma* he says he found it near where the *Hypericum* grew.

579. MEDICAGO MURICATA All. Fl. Pedem. i., 316.

"*Trifolium cochleatum, modiolis spinosis.* At Orford, Suffolk, on sea-banks, plentifully."—Ray *Syn.* 197, 1696. Pluk. *Phyt.* t. 113, f. 6. "I have seen no native specimens and have doubts concerning this species, which I hope further enquiry may remove."—Sm. *Eng. Fl.* iii., 320, 1825. "The Rev. W. W. Newbould informs me that Ray's plant was *M. denticulata*, on the faith of specimens in the old Herbaria."—Syme *Eng. Bot.* iii., 112. "I have omitted *M. muricata*, being convinced from personal observation that no such plant now exists on the seabank at Orford."—Bab. *Man.* 71. *Comp. Cyb.* 498.

If it ever occurred there, which is unlikely, it was an alien of casual occurrence.

631. TRIFOLIUM PARVIFLORUM Ehrh. Beitr. vii., 165, 1792.

Spain, Germany, Bohemia, E. Europe, Nym. *Consp.* 179.

"Under the name of *T. maritimum* from near Kilbarrack Church, Co. Dublin, Dr Mackay. Mr A. G. More identifies it as above. As,

however, it is likely to be a casual introduction, it is considered best for the present to exclude it."—Syme *Eng. Bot.* iii., 113.

Alien, and, as such, has been found occasionally in Britain.

[880]. RUBUS ARCTICUS L. Sm. *Eng. Bot.* n. 1585, 1806.

Scotland [*sic*], Norway, Sweden, Finland, N. Russia, Nym. *Consp.* 222.

"The late Rev. Dr Walker, Professor of Natural History at Edinburgh, informs me in the year 1782 of his having gathered this beautiful plant in rocky mountainous parts of the Isle of Mull. Mr Sowerby has been favoured by Richard Cotton, Esq., with dry wild specimens from the high regions of Ben y Glo, Blair, in Scotland, which agree with that in our plate, procured from the choice garden of the Right Hon. Charles Greville."—Sm. *Eng. Bot.* n. 1585, 1806. "A specimen, too imperfect to decide, by J. Robertson, from head of Glen Tilt."—*Bot. Soc. Edin.* Nov. 11, 1841. See *Phyt.* 136, 1841. "Ben More, in the Isle of Mull, and on Ben-y-Glo, Perthshire; but recent search has failed to discover it. Mr Watson had a specimen which was said to have been gathered on a moor in Yorkshire, but he had reason to believe that the specimen was of garden origin. It appeared in the garden of the late Mr J. Irvine Boswell, Kingcausie, near Aberdeen, on a bank of peat mould brought from the neighbourhood in preparation for a rhododendron bed; but careful search failed to detect it growing on the spot whence the mould was brought, and after a few years the plant died out in the garden. It is not an unlikely plant to occur; the most probable place for it is the district near the Sow of Atholl."—Syme *Eng. Bot.* iii., 261. *Cyb. Brit.* i., 350. "Error."—*Comp. Cyb.* 501.

May the dwarf alpine one-flowered form of *Geum rivale* have been mistaken for it?

886. FRAGARIA VESCA L., var. ATROVIRENS Lindl. in Eng. Bot. Suppl. n. 2742, 1832. *F. calycina* Lindley Syn. 96, not of Loiseleur. See Wallis *Hist. Northumb.* i., 145.

"In the bottom of the wood at the ostium of Gostonburn. On the strand of the brook at Slatefield, by the path to Simon-burn."—L. Lindley in *Eng. Bot. Suppl.* n. 2742, 1832.

Leaflets sessile, hairy, roundish, wedge-shaped, coarsely toothed. Peduncles longer than scapes. Calyx as large as corolla. This should be sought for.

887. DRYAS PENTAPETALA Lightf. Fl. Scot. 275, 1777.

"*Caryophyllata Pentaphyllea* Ger. *alpina quinquefolia* in the Den of Bethaick and elsewhere."—Sibbald *Scot. Ill.* 15, 1684. "The *Dryas pentapetala* mentioned by Sibbald as growing in the Den of Bethaick, four miles from Perth, is not to be found there; possibly *Potentilla argentea* was mistaken for it."—Lightfoot, *l.c.*

No allusion is made to it in the *Flora of Perthshire*. Doubtless an error, possibly for the hybrid, *Geum intermedium*. *D. pentapetala* L. is *Geum anemonoides*.

896. POTENTILLA INTERMEDIA L.

P. opaca Sm. Eng. Bot. n. 2449, 1812.

"I discovered this plant some years ago on the mountains of Angusshire to the West of Clova. I likewise observed what I take to be the same plant on rocks opposite Dundee, in April, 1786."—G. Don *Herb. Brit.* n. 165. "Mr Donn of Cambridge. . . . has received from Scotland the true *opaca*."—Sm. *Eng. Bot.* t. 2449. "Said to have been found on the hills of Clova. . . . as well as in Perthshire."—Sm. *Eng. Fl.* ii., 421. "Hills of Clova and Braes of Balquhidder, G. Don. . . . not again found."—*Cyb. Brit.* i., 345; *Comp. Cyb.* 501. David Don says he saw the specimens brought home fresh by his father, and he is responsible for the locality of the Braes of Balquhidder. See D. Don *Mem. Wern. Soc.* iii., 305, 1821. See also Syme *Eng. Bot.* iii., 260, where "sea shore opposite Dundee" is added on Don's authority.

My specimen from Lady Aylesford's Herbarium from Don is labelled "Rocks to the west of Clova" and is *P. intermedia* L., "petalis paulo majoribus quam in typo," teste Th. Wolf, 1913. This is (Nym. *Consp.* 225) a northern species of Russia and Finland and adventive in Sweden and Prussia, but I have it as an adventive species from Dundee. *P. thuringiaca* Bernh. (*P. Nestleri* Tratt. = *P. intermedia* Nestl., non L.) has been found in Forfarshire by Mr R. H. Corstorphine but adventive, and some of Don's specimens may belong to it. Hudson's *P. opaca* was *verna*, teste Sm. *Eng. Bot.* t. 2449.

904. POTENTILLA ALBA L. Sm. *Eng. Bot.* t. 1384, 1804, from a garden specimen.

Pyrenees, France, Germany, Switzerland, N. Italy, Austria, etc., Nym. *Consp.* 227.

"*Quinquefolium album majus* Bauh. Pin. 325. *Q. sylvaticum majus flore albo* Gerard 987. Habitat in Wallia. D. Haviland."—Huds. *Fl. Ang.* 197, 1762. "The leaves grow by fives, approaching at the ends, serrated. Stems thread-shaped, trailing. Receptacle rough with hair."—With. *Nat. Arr.* i., 308, 1776. "In Wales, according to Mr Haviland (in Hudson), not observed by any other person."—Sm. *Eng. Fl.* ii., 423.

Not verified by recent observation. Probably *P. Fragariastrum* was mistaken for it. See *Cyb. Brit.* i., 347.

906 (2). POTENTILLA TRIDENTATA Ait. Hort. Kew. ed. i., ii., 216. Sm. *Eng. Bot.* n. 2389, 1812.

"Justly reckoned by Mr Don among the most beautiful of its genus, was gathered [by him] on a mountain called Werron in Angusshire."—Smith in *Trans. Linn. Soc.* x., 343, 1811. "This wild specimen was gathered on a mountain called Werron . . . by Mr Don, the only person who, to our knowledge, has observed [it] in Britain."—Sm. *Eng. Fl.* ii., 425. Hook. *Fl. Scotica* 163. "On mountains to the eastwards of Clova I discovered the beautiful *Potentilla* new to the British Flora."—Don. See *Life.* "Said to have been found by Mr G. Don on Werron Hill and East Rocks, Loch Brandy, Clova; but no doubt *Sibbaldia* has been mistaken for this American plant."—Syme *Eng. Bot.* iii., 260 and Bab. *Man.* ed 7, 103. "There is even a specimen in Smith's herbarium labelled as though actually collected on . . . Werron . . . by Don, dated April 3, 1809." — *Cyb. Brit.* i., 348, iii., 418; *Comp. Cyb.* 501. Gardiner (*Fl. Forf.* 61) says Werron "has since been searched by Mr Kerr and a party from Montrose, but without success. It may, however, have occurred only in one spot; and such a spot may elude again and again the keenest researches of the mountain rambler. An authentic specimen, gathered by Don, is in Mr Kerr's herbarium; and another in . . . Mr Douglas Gardiner's, which had been given to him by Don, as they were intimate friends." Don repeatedly alludes to it in his letters and in his *Account.* See *Life* 209, 290. His flowering specimen, sent to Lady Aylesford, has particles of mica on its root and is labelled "Mountain of Werron." There is another record which also awaits confirmation. *P. tridentata* was stated to have been discovered several years ago on Ben Wyvis by Westwood of Dollar (*Bot. Soc. Edin.* Jan. 10, 1850), and a dried specimen was

exhibited at the same Society on March 14, 1850 as part of a plant picked by Mr Westwood of the Botanical Garden, Dollar, and Mr C. Stewart on Ben Wyvis, Rosshire, about ten years ago. See *Bot. Gaz.* 52 and 133, 1850. Mr M'Nab promised to investigate the Ben Wyvis habitat but nothing seems to have transpired.

Don's statement is quite precise. It is curious that April 3, 1809 should have been the date when both this and *Ranunculus alpestris* were sent to Smith. Were they from the garden to which he had transported roots of what he thought were these species when he collected them out of flower? The example of *Alchemilla argentea*, however, still encourages one to hope for its rediscovery.

920 (2). SANGUISORBA MEDIA Sm. Eng. Fl. i., 219, not of L.

"In pastures, in the west of Scotland, Mr G. Don. Taller and larger than the foregoing, with a much longer and truly cylindric spike of rather paler flowers. Mr Don, who sent it, had scarcely an idea of its being more than a variety [of *S. officinalis*?], yet it is certainly the plant of the authors above quoted [Linnaeus, Willdenow, Aiton, etc.], and is found wild in Siberia as well as in Canada."—Smith *l.c.* "I have a specimen from G. Don of his [*sic*] *Sanguisorba media*. It is not the American species, but merely, I think, *S. officinalis* with a longer head than usual, such as I have found repeatedly in the Lake district."—H. C. Watson in *Bot. Gaz.* ii., 94, 1850. "Said to have been found by Mr George Don in the West of Scotland; but doubtless erroneously, as it is an American plant not occurring at all in Europe."—Syme *Eng. Bot.* iii., 260.

A misnomer of Sir J. E. Smith. A look-out should be kept for this form, which may prove to be a *variety* of the type.

944. ROSA POMIFERA Herrm., var. DICKSONIANA (Lindley Syn. Brit. 99).

R. Dicksoni Lindley in Eng. Bot. Suppl. n. 2707 and Trans. Hort. Soc. vii., 224.

"Said to have been found in Ireland by J. Drummond, but probably sent from the Cork Botanic Garden."—*Cyb. Hib.* 486. Syme *Eng. Bot.* iii., 261. Lindley *Syn.* 99, 1841.

950. ROSA RUBELLA Smith Eng. Bot. t. 2521.

"Found on the Durham coast by Mr Winch."—Syme *Eng. Bot.* iii., 204. Near Newcastle, Herb. Sowerby, N. J. Winch, 1823.

"Banks of the Dee about Abergeldy."—Hook. and Arnott *Br. Fl.* 129, 1850. Near Gateshead, near the Forty Bridge, Wolley-Dod, who refers it to *R. pimpinellifolia* × *alpina*.

This is dubious only as to its correct grade, but it may be extinct. Red-flowered forms of *R. spinosissima* have been confused with it.

981. SAXIFRAGA PEDATIFIDA Ehrh. ex Sm. in Trans. Linn. Soc. x., 340. *Eng. Bot.* t. 2278.

"Mr G. Don and the late Mr Mackay both gathered this plant in the Highlands, the former on the mountains of Clova, Angusshire. Our figure is unavoidably taken from a garden specimen."—*Eng. Bot.* t. 2278. "Said to have been found by Mr Don on rocks by the head of Clova; also reported to have been gathered in the Isle of Achill, by Mr J. Wynne; but there seems to be no satisfactory evidence of the latter being the true plant."—Syme *Eng. Bot.* iv., 87. "'Don does not pretend to have found it, but sends a garden specimen, saying he has heard it has been found in Scotland.' Boswell Syme letter."—*Comp. Cyb.* 518. Don's specimen sent in 1812 to Lady Aylesford is certainly the garden plant, *S. trifurcata* Schrader, and could never have been wild on the Clova mountains. "Achill Island."—Hook. *Stud. Fl.* 531, but the plants are also *S. trifurcata*. "Achill Island, Wynne."—Bab. *Man.* 129, 1847; Andrews 1853, ex Alf. W. Bennett in *Rep. B.E.C.* 72, 1882. Cf. *Journ. Bot.* 151, 1883. The specimen thought to be collected there was the "form *S. ceratophylla* Aiton, distinguished by its rosettes of somewhat rigid leaves," which is most unlikely to have been found in Ireland, having only a very limited distribution in the south of France. Mr T. H. Corry (*l.c.* 181) expressed his utmost disbelief in Andrews' specimens, which were known in many cases to have come from his garden.

As *pedatifida* we, therefore, have had recorded the common garden *trifurcata* representing the supposed wild specimens from Scotland and the equally dubious native, or rather the almost certainly hortal, *S. pedatifida* var. *ceratophylla* (Ait.) from Achill Island, Ireland.

981. SAXIFRAGA ELONGELLA Sm. Eng. Bot. t. 2277 and Trans. Linn. Soc. x., 340.

"On a rock by a river called Lintrathen, 1½ miles north of Airly Castle, Mr G. Don."—Sm. *Eng. Bot. l.c.* Sm. *Eng. Fl.* ii., 279. See also *Account* 208.

The specimen in the Countess of Aylesford's Herbarium is very scrappy. It seems to be a small form of *S. hypnoides*.

Don's *S. tectoria* from roofs of houses in Kirriemuir, Forfarshire, is *S. platypetala* Sm., as is his *S. pulchella* from Clova.

981. SAXIFRAGA MUSCOIDES Don in Trans. Linn. Soc. xiii., 437. Sm. *Eng. Fl.* ii., 272, 1824.

"? *S. caespitosa* in montibus supra Ambleside in com. Westmorlandico."—Huds. *Fl. Ang.* 158, 1762. *S. moschata* Sm. Fl. Brit. ii., 455, 1800. *Eng. Bot.* n. 2314, 1811. With. *Nat. Arr.* ii., 406, 1796, not of Wulf.

"Ambleside, Hudson, confirmed by specimens sent from thence, Mr D. Don. Cultivated in Kew Garden in 1781 as the true plant of Hudson."—Sm. *Eng. Fl.* 272, 1824. "Whether the plant found by Hudson on mountains above Ambleside (*S. caespitosa* [Huds. non L.] which spot we have examined in vain) be the *moschata*, as Withering supposed or not, we are now authorised in admitting this curious species as a British native, Mr Don [Donn] of Cambridge, having given us specimens from his garden, the parent roots of which he received from the Highlands of Scotland."—Sm. *Eng. Bot.* t. 2314. "Incognita. Probably some variety of *hypnoides* was thus named." —*Cyb. Brit.* i., 415. "Error."—*Comp. Cyb.* 517. Syme *Eng. Bot.* iv., 87. "One of Don's reputed discoveries, and reported from Westmorland by Hudson."—Hook. *Stud. Fl.* 531.

The only reference to such a plant by Don is in his *Account* 208, where he records "*Saxifraga*, nova species, which I believe to be the *S. muscoides* of Willdenow." Probably the correct statement would be that a form of the aggregate *S. hypnoides* L. from the hills above Ambleside was mistaken by Hudson for *S. caespitosa* and that a specimen from the Clova mountains was thought by Don to be *S. muscoides* Willd. Close attention to this extremely varied and puzzling group is asked for.

992. SAXIFRAGA COTYLEDON L.

Scandinavia, Lapland, Iceland, Pyrenees, Alps, Nym. *Consp.* 267.

"Mr Wright has seen another Saxifrage, allied to *S. Aizoon*, wild on rocks at Crossthwaite, Westmorland, for which he showed me as the same species, *S. Cotyledon*, planted on a wall by Troutbeck Bridge. We visited each of these places in vain."—Borrer in *Phyt.*, vol. ii.,

429, 1846. *Cyb. Brit.* i., 405. "Error, perhaps more truly an imposition."—*Comp. Cyb.* 517.

An imposition.

992. SAXIFRAGA ROTUNDIFOLIA L.

Alps, Central and Eastern Europe, Nym. *Consp.* 275.

"Was found a few years ago among the rocks in the vale of Newlands (Cumberland), but has since been searched for in vain."—G. S. Gibson in *Phyt.* vol. ii., 376, 1846. "Error."—*Comp. Cyb.* 517.

Planted or alien.

993 (3). SAXIFRAGA ANDREWSII Harvey in Lond. Journ. Bot. vii., 571, t. 19, 1848, and admitted to the *Bot. Soc. Lond. Cat.* ed. 3, 1850.

"Said to have been found at the head of Glen Curragh, Kerry, by Dr. W. Andrews, and there is a leaf in Mr Hewett Watson's herbarium sent by Dr. Andrews amongst a number of leaves to illustrate the variations in form of *S. umbrosa* in Ireland."—Syme *Eng. Bot.* iv., 71, t. 549; *Cyb. Hib.* 116. "Glen Caragh, Kerry, 1853, Andrews."—*Rep. B.E.C.* 72, 1882. "Stated by Andrews to have been gathered on damp cliffs in a gully near the head of Glen Caragh. He removed roots of the then flowerless plant to his garden, where after a lapse of nearly three years it produced flowers in June 1848."—Scully *Flora Kerry* 106.

As the plant is a hybrid of one of the *Aizoon* group with *umbrosa* it is most likely that some transposition of labels took place in Mr Andrews' garden. He also is the sole authority for *Carlina racemosa.* See also his mistake under *Saxifraga pedatifida.*

1008. COTYLEDON LUTEA Huds. Fl. Ang. 194, 1778. *Eng. Bot.* t. 1522, 1805, from a Chelsea garden specimen.

Spain, Italy, Dalmatia, Greece, etc.

"In muris et saxosis humidiusculis, in occidentali parte comitatus Eboracensis, D. Tofield in horto D. Clement, qui recepit ex agro Somersetsiensi."—Huds. *l.c.* 194. "Our knowledge of this fine plant as growing in Britain is entirely owing to Mr Hudson. Plants communicated by Mr Hudson from Somerset to Chelsea Garden. From one of these our figure was taken."—Sm. *Eng. Bot.* 1522, 1805. "Said to have been found in the West Riding of Yorkshire by Tofield; and Mr Hudson says he saw it himself in Mr Clement's garden, to

which it was alleged to have been brought from Somersetshire. No doubt the first was an error for *C. Umbilicus*, and the second a mistake as to the place from whence the garden plant had been obtained. Rev. W. W. Newbould informs me that there is no specimen of *C. lutea* in Tofield's herbarium."—Syme *Eng. Bot.* iv., 63. "Error."—*Comp. Cyb.* 517. Ashtead Park wall near Epsom. Vide *Hist. Epsom* app. 1824, cited in *Phyt.* 713, 1843. "Blackdown Hill, three miles from Wellington, Somerset, ex G. S. Gibson."—*Phyt. l.c.*

Hortal or error. Immature *Umbilicus* bears a superficial resemblance to *lutea*.

1011 (2). SEDUM ANOPETALUM DC. Rapp. Voy. ii., 80.

Native of South France, S. Switzerland, Dalmatia, Hungary, Greece, etc., Nym. *Consp.* 261.

"A *Sedum* sent to Mr H. C. Watson by Mr Borrer as *S. elegans* from Jersey appears to belong to this species; but the plant is now dead, and only a dried specimen remains. Possibly there may have been some mistake about the locality of this, as Mr Borrer mentions (*Phyt.* v., 47, 1854) that he had what he believed to be *S. anopetalum* from Devonshire, and that the Jersey *Sedum* was different."—Syme *Eng. Bot.* iv., 63. Borrer (*l.c.*) alluding to the Devon plant says that it has narrow, upright, pale yellow petals and gray leaves remarkably imbricated in rows.

Possibly this is *S. reflexum*, var. *albescens*.

1046 (2). EPILOBIUM DODONAEI Vill. Prosp. 45. Syme *Eng. Bot.* t. 494. *E. rosmarinifolia* Haenke in Jacq. Coll. ii., 50. *E. angustissimum* Curt.

Iceland, Scotland (rare), Central and West Germany, etc., Nym. *Consp.* 246.

"On almost inaccessible rocks that overhang the Tarf, a mountain stream in Glen Tilt. . . . It may be readily overlooked from the frequent nibbling of sheep and other animals. . . . It has also been observed in one or two situations by the Tay, where doubtless it has been carried . . . by the impetuosity of the mountain torrents. John Robertson. We possess specimens . . . said to be collected in Glen Tilt by Mr Robertson; if this be verified."—Hook. and Arnott *Br. Fl.* 144, 1855. "I have only seen a few fragmentary specimens . . . in Borrer's herbarium."—Syme *Eng. Bot.* iv., 7. "Error?"—*Comp. Cyb.* 512. "Probably a mistake, a small alpine form of *E. angustifolium* being taken for it."—Bab. *Man.* 145, 1904. "There

is another suggested locality which has been overlooked. *E. angustissimum.* Rocks near Twl Du in Cwm Idwal. I have subjoined a mark of doubt as to this plant, having never found it in flower, but I have been informed by my friend, Dr. Smith, that *E. angustissimum* grows in similar situations abroad. This note may be productive of further investigation. . . . I think it very likely to prove *angustissimum.* This is the *angustifolium* of Bingley's tour which he mentions to grow on the rocks of Hysva Bengam . . . which are in fact the upper part of Cwm Idwal close to Twl Du."—Griffith in *Bot. Guide* i., 82, 1805. The habitat is not mentioned for either species in the *Flora of Carnarvonshire.*

Doubtless the above are forms of *E. angustifolium*, not *Dodonaei*, which, although so named by Villars from the figure in the *Pemptades*, had previously done duty in Lobelius' *Stirpium* p. 326.

1054. EPILOBIUM COLLINUM Gmel. Fl. Badensis iv., 265, 1826. *E. montanum*, sub-sp. *collinum* Nyman *Consp.* 248.

Almost the whole of Europe, Iceland, Greenland, Rouy & Fouc. *Fl. Fr.* vii., 190.

First record: Druce in *Scot. Nat.* 330, 1887. Two sheets of "*E. roseum*? to be examined. Scotland. Dr. Power," in the Herbarium of the Holmesdale Nat. Hist. Club Mus. at Reigate. See C. E. Salmon in *Journ. Bot.* 110, 1904, where he identifies them as *collinum.* My own specimen was gathered in 1876 in Strath Tay and was sent with others to Prof. Haussknecht, the author of the Monograph on *Epilobium.* He named it *E. collinum.* To my eyes it looks only *E. montanum*, forma *minor*, nor have several subsequent visits to the district afforded *collinum.* At present, therefore, its occurrence in Britain is dubious, but it may quite well be found in Perth, Forfar, or the lowlands of Scotland, and in northern England, Derbyshire, or Wales.

1085. ECHINOPHORA SPINOSA L. Sm. *Eng. Bot.* t. 2413, 1812, from an exotic specimen.

Lancashire (now extinct), France, Spain, Italy, Dalmatia, Albania, Greece (rare), Nym. *Consp.* 261.

"*Crithmum Spinosum.* Thornie Samphire. Neere the Sea upon the sands, and Bayche between Whitstable and the Isle of Thanet, by Sandwich, and by the sea neere Westchester."—Gerard *Herbal* 533-4, 1633. Below Faversham. Merrett *Pinax* 31, 1666. *Crithmum*

spinosum Ger. Prickly Sampire or Sea Parsnep. Observed by Mr Lawson at Roosbeck in Low-Fourneis, Lancashire."—Ray *Syn.* 72, 1690. "*Echinophora maritima spinosa.*—Prickly Sampire or Sea Parsnep. On the Sea-Beach in the way from Feversham to Sea-Salter." —[Bateman] *Cat. Fevers.* Blackstone *Specimen Botanicum* 18, 1746. "Near Weymouth, on the Chesil Beach, between the Ferry and Portland; and on the cliff between Weymouth and Landsford Castle, Aug. 1837."—Rev. A. Bloxam in Baxter *Phaen. Bot.*, under t. 478, 1842. "On the shores at Sandside near Ulverston, and near Winder Hall, Cartmell."—Aiton in Topling's *Sketch of Furness and Cartmell.* Dillwyn unsuccessfully searched for it in the Kentish localities. See *Bot. Guide* 1805. "Nobody can meet with it now." —Sm. *Eng. Bot.* n. 2413, 1812. "Extinct, casual?"—*Comp. Cyb.* 518. "Incog."—*Cyb. Brit.* i., 464. "Lanc. and Kent, sed nunc extincta."—Nym. *Consp.* 299. "Reported from Dorset, etc., not confirmed."—Hook. *Stud. Fl.* 531, 1884. "This [Kentish] evidence is too strong to be set aside altogether; it is, however, quite certain that the plant has been extinct in both stations for a long time past. We suspect that it was introduced with ballast from southern Europe, as it does not grow wild north of the Gironde."—*Fl. Kent.* 160, 1899.

The Rev. A. Bloxam mistook *Crithmum maritimum* for it, and this is not unlikely the case in other instances, since the shingle form differs somewhat from the cliff plant. Its continental distribution, south and west France, Spain, Italy, etc., would render its occurrence on the south and south-west coasts not improbable.

1096. APINELLA KITAIBELII (Bieb.).

Native of the extreme east of Europe, extending westwards to Vienna.

"*Trinia Kitaibelii* Bieb. The late Mr J. Woods believed he had a specimen of this species from Uphill, Somerset; but probably he mistook *T. vulgaris* [*Apinella glauca*] for it."—Syme *Eng. Bot.* iv., 179

Unlikely to be native, or even to have occurred in Britain.

1117. CHAEROPHYLLUM AROMATICUM L. *Eng. Bot. Suppl.* t. 2636, 1830.

E. Europe, reaching to West Prussia.

"I discovered this in 1810, by the side of the river called Lunan and Vennie, not far from Guthrie, in a truly wild state, G. Don."—Gard. *Fl. Forf.* 85. See Don *Account* 219. "Near Guthrie, about

seven miles east of Forfar, near the margin of the road leading from Forfar to Arbroath, G. Don."—See D. Don in *Trans. Wern. Soc.* iii., 300, 1821. "Error."—*Cyb. Brit.* i., 463; *Comp. Cyb.* 520. David Don said he saw it growing there.

Not an error. Don found it, but as an adventive species, and it is now extinct in that locality, which has been repeatedly searched by myself and others. There is a specimen in Lady Aylesford's Herbarium from Lunan, Don, from which she made her painting of the plant, and one from Vennie, Don, in *Hb. Druce.*

1130 (2). FOENICULUM PIPERITUM Sweet.

Portugal, Spain, France, and S. Europe.

"*F. piperitum* Tenore. St Aubin's Bay, Jersey, Rev. W. W. Newbould."—Bab. *Man.* ed. 2, 142, 1847. Babington, in his third edition, 141, 1851, rather begs the question by saying he puts *F. piperitum* under *officinale*, and in the fourth edition omits all reference to it. He is doubtless quite correct in putting the Jersey plant to *officinale*, since it was doubtless only a form of that species which Newbould saw.

True *F. piperitum* Sweet has occurred as an alien at Bristol. It is not likely to be native in the Channel Isles.

1155 (2). TORDYLIUM OFFICINALE L. Sm. *Eng. Bot.* t. 2440, 1812, from an exotic specimen.

S. Italy and South Eastern Europe.

"Found by Mr Doody about Thistleworth."—Ray *Syn.* 206. "About London, Petiver *Hort. Brit.* t. 24, f. 6. In arvis rarius, dubia civis."—Sm. *Fl. Brit.* i., 295, 1800. Smith has misinterpreted both records which refer to the adventive *T. maximum.* See *Fl. Middlesex* 132. "Incogn."—*Cyb. Brit.* i., 454. "Essex, Rev. S. Palmer. Error."—*Comp. Cyb.* 520. "Confounded with *T. maximum.*"—Hook. *Stud. Fl.* 531. The Essex locality, recorded by the Rev. S. Palmer, was "In a field by the lane leading from Thoydon to Loughton."—Loud. *Mag. N. H.* ii., 285, 1829, but Palmer was not a critical botanist and probably mistook it.

1194. GALIUM CINEREUM All. Fl. Pedem. i., t. 77. *Eng. Bot. Suppl.* n. 2783, 1834.

G. diffusum D. Don ex Hook. Fl. Scotica 52, 1821.

S. Spain, France, Italy, etc., Nym. *Consp.* 325.

"Near Kinnaird, Angusshire."—G. Don. In his *Account* he says it is near *G. austriacum* Jacq. "On the banks of the river Leith, near Slateford, three miles from Edinburgh, G. Don."—Smith in *E.B. Suppl.* t. 2783, 1834, figured from a dried specimen. "I have a wild specimen from the late George Don, sent as a new species, exactly agreeing with the specimen of *G. cinereum* DC. sent by M. Thouin."—Sm. *Eng. Fl.* i., 203, 1824. Retained as a distinct species by Syme (*Eng. Bot.* iv., 215, t. 648 bis) as *G. diffusum* D. Don, "found only by G. Don."

This plant is put as a variety of *G. erectum* Huds. in the *British Plant List*, n. 1194. There is no doubt about Don's finding it. The grade of citizenship is dubious. It is almost certainly adventive.

1194. GALIUM ARISTATUM Sm. Eng. Fl. i., 203, 1824. *Eng. Bot. Suppl.* t. 2784, 1834.

G. aristatum L., teste Sm. "In Angusshire but not common, Mr G. Don."—Sm. *l.c.* "This new addition to our Flora, sent by the late Mr Don as *G. erectum*, is undoubtedly the original *G. aristatum* described by Linnaeus."—Sm. *Eng. Fl.* i., 203, 1824. "Probably a state of *erectum*."—Bab. *Man.* ed. 7, 170. As a synonym of *G. erectum* in Hook. *Stud. Fl.* 178, 1870. "Evidently one of the intermediate forms which connect the two sub-species."—Syme *Eng. Bot.* iv., 217, t. 649 bis. See *Comp. Cyb.* 522.

Don was correct in putting it to *erectum*. Smith erroneously identified it with the Linnean species. It will probably reward the careful searcher.

1200. GALIUM VALANTIA Web. ap. Wigg. Prim. Fl. Holsat. 13, 1780. *G. saccharatum* All. Fl. Pedem. i., 9, 1785. *G. verrucosum* Sm. Eng. Bot. t. 2173, 1810. *G. tricorne* Don Herb. Brit. n. 103, not of Stokes.

First record: "*G. tricorne*. In cornfields, but rare. I have observed it in the Carse of Gowrie. It has likewise been observed in cornfields near Malton, in Yorkshire, by . . . Mr R. Miller."—Don *Herb. Brit.* fasc. v., n. 103, 1806. "*G. verrucosum* . . . Carse of Gowrie . . . Don."—Sm. *Eng. Bot.* n. 2173, 1810. "Probably introduced with seed-corn."—Hook. and Arnott *Br. Fl.* ed. 7, 198. "Mr Borrer writes that his 'specimen from G. Don is like that figured in *Eng. Bot.* as *G. verrucosum*.' And as that figure appears to have been taken from a true example of *G. saccharatum*, it would

seem that the species had been really found in Britain; though if so, it was doubtless as a casual introduction only."—*Cyb. Brit.* iii., 449; ii., 19; *Comp. Cyb.* 522. See Syme *Eng. Bot.* iv., 232.

Not dubious, but an adventive species. The Yorkshire plant may have been *G. tricorne.*

1203. GALIUM SPURIUM L. Sm. *Eng. Bot.* n. 1871, 1808.

Scotland, England, Scandinavia, Germany, Belgium, France, Switzerlaud, Italy, Tyrol, Austria, etc., Nym. *Consp.* 330.

"I first observed this plant in 1784, in cornfields near the village of Redditch in Worcestershire. I next observed it in 1801, in cornfields near the village called Loch-head, about two miles from Forfar, but not common. Dr. Smith . . . found that my plants agreed in every respect with the Linnean specimen."—Don *Herb. Brit.* n. 104, 1806. See also Sm. *Eng. Bot.* under t. 1641, 1806; Gardiner *Fl. Forf.* 93; Hook. *Fl. Scotica* 52; *Cyb. Brit.* ii., 20. "Casual."—*Comp. Cyb.* 522. "It was probably an accidental straggler."—Syme *Eng. Bot.* iv., 232.

The Warwickshire record in Bab. *Man.* ed. 9, 186 is an error. It should be Worcestershire. *G. spurium* Huds. Fl. Ang. 57 is *tricorne. G. spurium* is given by Nyman (*Consp.* 330) as a native of Scotland (r.) and England, but under this he also includes *G. Vaillantii* DC. Lady Aylesford's specimen is labelled "Cornfields about Forfar, G. Don."

1212. ASPERULA NITIDA Sibth. & Sm. Fl. Graec. Prod. i., 89.

"Between 3000 and 4000 feet on Ben Nevis as a tiny patch of a very dwarf-growing plant. A part of this root was brought to a rock-garden in Kent. It flowered next year, and was named at Kew as *A. nitida.*"—K. E. Styan in *Selborne Mag.* 153, 1914.

This species of Greece or Asia Minor must have been either intentionally planted on Ben Nevis or the specimen may have been confused with another in the rock-garden. I kept a special look-out for it in August last but saw neither that or anything like it. Error, and scarcely worth wasting space upon.

1260. ERIGERON UNIFLORUS L. Sm. *Eng. Bot.* t. 2416, 1812.

Iceland, Lapland, Scandinavia, Pyrenees, Alps, Tyrol, etc.

"Gathered on Ben Lawers, as well as on rocks by the river Almond, near Lindoch [Lynedoch], seven miles from Perth, by Mr G.

Don, who justly distinguished this species from *E. alpinum*, with which even Linnaeus at one time confounded it."—Sm. *l.c.* See also *Trans. Linn. Soc.* x., 346, 1811, and *Eng. Fl.* iii., 423. "Error, a misnomer of *E. alpinus*, single-headed."—*Comp. Cyb.* 533.

Yes, a single-headed state of *E. alpinus* L. = *E. borealis* (Simmons). The true *uniflorus* has not yet been found in Britain. Don sent his plant as a form or new species, and it was Smith, not Don, who misnamed it. The above plate is combined with *Eng. Bot.* plate t. 464 in the plate of 775 Syme *Eng. Bot.* The two plants are not identical, and are worth further study. Lady Aylesford's plant from Ben Lawers from Don is the ordinary form of that mountain.

1270. ANTENNARIA DIOICA Gaertn., var. HYPERBOREA DC. Prod. vi., 270, 1837.

A. hyperborea D. Don. *Eng. Bot. Suppl.* t. 2640, 1830.

"Found by Mackay on dry rocky ground on Little Breeze Hill, Skye, Sep. 1, 1794."—*Eng. Bot. Suppl. l.c.* There is an excellent specimen from Isle of Skye, Don, in Lady Aylesford's Herbarium. It was refound on the Cuchullins by Dr Tyacke about 1840. See specimen in *Hb. Druce.*

It is therefore scarcely dubious, but it is worth rediscovering.

1332. ACHILLEA DECOLORANS Schrad. in Willd. Enum. Hort. Berol. 913.

A. serrata Sm. *Eng. Bot.* t. 2531, 1813.

On the road to Mr Selby's house near the turnpike house, Matlock, Derbyshire, 1802. "Incogn. Reported from Somerset (Flower); Derby (Rupp in *Eng. Bot.*); York (Mann in *Bot. Soc. Edin.*)."—*Cyb. Brit.*, suggested by Watson (*l.c.*) to have been either garden plants or yellowish-flowered *Ptarmica.* Nyman remarks "olim Angliae indicata (*A. serrata* Sm.), ibi tantum culta occurrit."—*Consp.* 367. Linton (*Fl. Derbyshire* 182) cites the Matlock locality from *Phyt.* 383, 1861 [*sic*]. See Garry *Notes* 101; Syme *Eng. Bot.* v., 59, t. 729; *Comp. Cyb.* 535.

Doubtless the plant occurred there as a garden straggler, now extinct.

1343. ANTHEMIS ANGLICA Sprengel Syst. iii., 344.

Chamaemelum maritimum latifolium ramosissimum flore albo. Dill.

Ray Syn. 186, 1724. *Angliae nostra alunna est* Pluk. Alm. 97. *A. maritima* Sm. Eng. Bot. t. 2370, 1812, not of L. *A. arvensis*, var. *anglica* (Sprengel).

"Mr Robson favoured us with a wild specimen from Sunderland, Durham, and our figure has been assisted by one from a garden."—Smith, *l.c.* Winch (*Bot. Guide* 256, 1805) says this Sunderland habitat is an error of Mr Robson's. "The specimen in *Herb. Sowerby*, apparently used for figure, is *Matricaria inodora* L."—Garry *Notes* 100. "Incogn. Something has been reported under the names of *A. maritima* and *anglica* from Sussex, Glamorgan, Pembroke, Durham, Kirkcudbright, and the N.E. of Scotland. It is probable that these are mostly *Pyrethrum maritimum*. Babington however considers a plant found at Sunderland by Mr J. Backhouse in 1844 to be the *A. maritima* of Sm., corresponding with the *A. anglica* of Sprengel and very different from the *A. maritima* L."—*Cyb. Brit.* ii., 129 (condensed). "Probably a maritime form of *A. arvensis*. Sunderland. Not recently found."—Bab. *Man.* 208, 1904. "Leaves fleshy, pinnatifid, pinnules deeply serrate, receptacle flat. Formerly found in Durham."—Hook. *Stud. Fl.* 212. "*A. maritima*. Fields by the sea."—Robson *Brit. Fl.* 167, 1777. Williams (*Prod.* 28) does not consider the characters sufficiently marked to be considered perhaps even as a variety. "With *A. anglica* I am unacquainted except from the specimens in the Smithian Herbarium, where there are two wild specimens from Sunderland and a cultivated one from Mr Robson's garden, the latter scarcely differing from the normal state of *A. arvensis*."—Syme *Eng. Bot.* v., 52. There is said to be a specimen from Burrowstowness, Scotland, in *Herb. Brit. Mus.* 1766. The Dunboy Quay, Berehaven, *A. anglica* proved to be *Anacyclus radiatus*. *A. anglica* Sprengel is referred to *A. arvensis* by Nyman (*Consp.* 361.) What is Plukenet's plant?

1373. ARTEMISIA CAERULESCENS L. Sm. *Eng. Bot.* t. 2426, 1812, from a garden specimen.

"In littoribus maritimis, prope Boston in comitatu Lincolniensi, D. Tofield."—Huds. *Fl. Ang.* 359, 1778, who cites Gerard *Emac.* p. 1104 for it. "No other person has met with it, and the late Sir Joseph Banks repeatedly searched the neighbourhood of Boston in vain. In the Isle of Wight, Gerard, but it has not been found by recent botanists."—Sm. *Eng. Fl.* iii., 410, 1825. "Not found for many

years."—Bab. *Man.* 175, 1847 [a profoundly true remark]. "Incogn. Said to have been found at Portsmouth, Boston and Isle of Wight, but probably all three erroneous."—*Cyb Brit.* ii., 99. "Coast of Brading Harbour, near Broadstone, W. D. Snooke (*Fl. Vect.* 1823), but Snooke cannot now account for its insertion."—Bromfield in *Phyt.* iii., 491, 1848. "*A. maritima*, not proper specimens, Aug. 30, 1792, a sketch by J. Sowerby from my Lord Lewisham, Woldham Marsh. Also L. Wigg, agreeing most with the other sketch. Been found by the side of the canal in the park of Natl. Lee-Acton Esqre., at Livermere, near Bury, Suffolk."—Garry *Notes* 101. In this latter place the lavender-leaved *Artemisia* was doubtless planted.

The confusion as to its occurrence in Britain is explainable owing to there being in addition to the two named forms (type and *gallica*) of *A. maritima*, plants with a whitish downy leaf, and others which are less hairy and of a bluish green tint. Such attracted the attention of those who took part in the Phyto-geographic excursion at Blakeney and elsewhere in 1911. Gerard distinguished the first as the White Sea Wormwood, the other he mistook, and inserted the nearest figure obtainable—that which serves as *A. marina* 1104, which he says grows at Rie, Winchelsea and Portsmouth by [not in] the Isle of Wight. It was Smith who transferred the last locality to the island, and led to a long series of errors. There is, however, another record for *caerulescens*, that of Merrett (*Pinax* 11, 1666) who, citing Gerard's figure, says it grows betwixt Deal and Dover, and marks it with an asterisk as having been seen by himself, but this locality is no doubt correctly put under *A. maritima* in the *Flora of Kent* 199. In the Dillenian *Ray Syn.* 188, n. 3 and 189, n. 4 two forms of *A. maritima* with broader leaves are given, *i.e.*, Sheerness, Sherard and near Colchester, D. Dale. This latter specimen is in Dillenius' Herbarium at Oxford and is an *A. maritima* form. The occurrence of the true *A. caerulescens* L. in Britain is more than doubtful, and this was the opinion of Syme (*Eng. Bot.* v., 216). See *Fl. Hants* 218. It is a South-European species extending into Portugal, but is not found on the mainland of France. I have seen it in sea marshes near Biguglia in Corsica.

1384. HOMOGYNE ALPINA Cass. in Bull. Soc. Phil. 198, 1876.

Pyrenees, Alps, and mountains of Central and Eastern Europe, Nym. *Consp.* 397.

"*Tussilago alpina*. Rocks among the Clova mountains."—Don *Account* 209. "On rocks by the side of rivulets on the high mountains of Clova, as on a rock called Garrybarns, . . . but we are not on that account prepared to admit the plant as indigenous."—Hook. and Arnott *Br. Fl.* 234, 1850. "Mr G. Don mentions *T. alpina*. . . . May his plant not be the *Erigeron alpinus*, which he has not enumerated?"—Gardiner *Fl. Forf.* 110. "Mr Borrer says of this, 'My specimen . . . is the true plant.' Such being the case I do not understand why the *Homogyne alpina* should be totally excluded from British Floras (*e.g.* Bab. *Man.*), while plants less likely to occur in Britain which rest on no safer authority are admitted even as genuine natives (*e.g. Potentilla tridentata*). I do not, however, believe this to be a British species."—*Cyb. Brit.* iii., 459. "Found by no one else."—Syme *Eng. Bot.* v., 217. "One of Don's reputed discoveries."—Hook. *Stud. Fl.* 477, 1870.

Gardiner's suggestion is untenable. Don's specimens are correctly named. That in Lady Aylesford's collection, which she has painted, is labelled "Moist rocks on the Clova mountains." Don, moreover, in his correspondence alludes to having found *Erigeron alpinus* in Perth. *Homogyne* does not occur in Scandinavia. In the *Life* (*l.c.*) I suggested that some young leaf-specimens of *Tussilago Farfara*, which becomes very dwarfed in the alpine districts—and I have seen it at nearly 3000 feet—may have been thought by Don to differ from the lowland Coltsfoot. Planted in his garden he may have afterwards confused it with the continental plant. This seems to be a likely source of confusion, and one not confined to Don. *Cf. Saxifraga Andrewsii*, *Stipa pennata*, etc.

1393. SENECIO ERRATICUS Bert. Rar. Ital. Pl. Dec. iii., 62. Put under *S. barbaraefolius* Krock.

Spain, France, Belgium (r.), Holland, Central and E. Europe, Nym. *Consp.* 358.

First record: Between Cobo and Vale, Guernsey, M. Jacques Gay, Aug. 10, 1832. See *Rep. B.E.C.* 35, 1917. Jersey, La Gasca; marshes behind Ivy Castle, Guernsey; Buttington, Montgomery, Bab. *Prim. Fl. Sarn.* 53, 1839. Babington gradually withdrew these records until in the *Manual* of 1851 he leaves out any reference to Bertoloni's plant. He refers, however, to a larger, much branched form, leaves all lyrate, terminal lobe truncate or subcordate below, segments subspathulate, which in the *Manual*, ninth edition, 214,

1904 "was [once] supposed to be *erraticus* Bert." Leighton (*Flora Shropshire* 412, 1841), omitting *S. aquaticus*, describes *erraticus* as frequent, *i.e.*, lane leading from Longden to Oaks Hall; banks of river Severn about Shrewsbury, etc. Again (*Charlesworth Mag. Nat. Hist.* iii., 563, 1839) T. Bruges Flowers says it is frequent about Singleton, Glamorganshire. He says it is quite distinct from *S. aquaticus* and well deserving of attention. In the *Edin. Bot. Soc. Cat.* it appears as a variety of *aquaticus*. The claim for its correct identification was challenged by Watson, who designates it "Incogn.," and "supposes Mr Babington mistook it for some form of *aquaticus*." —*Cyb. Br.* ii., 118. Babington acknowledges his error, and says:— "*S. barbaraefolius* Reich., I believe with Koch to be the large form of *aquaticus* which I formerly mistook for the *erraticus* Bert., but do not now distinguish specifically from *aquaticus*. I have never seen the true *S. erraticus* in Britain."—*Bot. Gaz.* ii., 9, 1850. This admission therefore covers another locality, that quoted by Garry (*Notes* 105) on a sketch by J. W. Salter—"Near Callington, Cornwall, July, 1839," where Babington and Borrer reported it as abundant. It is called "a large state of *aquaticus*" in Hook. *Stud. Fl.* 532, and "a mistake for *aquaticus*" in Syme *Eng. Bot.* v., 217. See *Bot. Gaz.* ii., 9, and *Mag. Nat. Hist.* iii., 563.

These numerous references, destructive as they are of the accuracy of the British records, suggest that there is a form of *aquaticus* separable from the type as a variety which awaits further investigation. These criticisms, however, do not touch the high authority of Jacques Gay, whose MS. at Kew has so long escaped attention, and for the knowledge of the existence of which I am indebted to Mr F. N. Williams. The great alterations which have gone on at Vale in Guernsey may have destroyed the plant in its old locality, yet there is little reason to doubt that Gay found it there. It may still reward the persistent searcher in that or the adjacent islands.

1414. CARLINA RACEMOSA L.

Portugal, Spain, Sardinia, Nym. *Consp.* 400.

First recorded at a meeting of the Botanical Society of London, Nov. 7, 1845—Notice of the Discovery of *Carlina racemosa* in Arran Island, Galway Bay, Ireland, in Aug. 1844, by W. Andrews M.R.I.A. A specimen was exhibited. "A single specimen was found in Great Island of Arran, where the plant was no doubt introduced."—*Lond.*

Journ. Bot. iv., 569. See *Cyb. Hib.* 160. Omitted from the second edition. Syme *Eng. Bot.* v., 215.

The question arises—Was it ever found there? The specimen may have been wrongly identified. *C. vulgaris* by the sea becomes strangely altered, and a luxuriant specimen looks quite unlike the chalk-down plant.

1417. ARCTIUM TOMENTOSUM Miller Gard. Dict. 1768.

Widely spread in Europe, not in Britain, Spain, Portugal, etc., Nym. *Consp.* 402.

"East of England."—Bab. *Man.* 184, 1856, but as Babington himself admitted (*Man.* 196, 1874) the true *tomentosum* was not a native of Britain, and his *tomentosum* "common near Cambridge" was a variety of *A. majus.* There is another claimant. *A. tomentosum* near Winchelsea, 1866 and in *Herb. Borrer* from Newhaven Bridge (both unnoticed in the *Flora of Sussex*), W. B. Hemsley in Seeman *Journ. Bot.* 263, 1868. Coming from that botanist these records ought to be worth consideration. There is still a third record. "Oxford Botanic Gardens, 1867, to which Mr Baxter says he brought it from Bagley Wood many years before."—*Comp. Cyb.* 530. See *Fl. Berks.* 297. I have been unable to verify Baxter's record for Bagley, which is in Berks., not Oxford, as stated in the *Compendium.*

This is well worth the attention of an investigator. At present it cannot be claimed as a native species on the evidence quoted above.

1498. CREPIS PULCHRA L. Sm. *Eng. Bot.* t. 2325, 1811.

France, W. Germany, ? Belgium, Spain, E. Europe, Nym. *Consp.* 457.

"Amongst crumbling rocks on the hill of Turin, near Forfar, 1796, G. Don, and from seed communicated by him our specimen was raised."—Smith *l.c.* "Not at present known in our gardens, though said to have been cultivated at Chelsea in Rand's time. Mr Don rightly determines it to be a *Crepis.*"—Sm. in *Trans. Linn. Soc.* x., 345, 1811. "Incogn. G. Don stated that he had found this plant. . . . . [on] the hills of Turin and Pitscandly in Forfarshire, but very rare."—*Account* 222. "On the hill of Turin it was sought unsuccessfully by Mr Gardiner in 1845, who says (*Fl. Forf.* 99) that a turnip field now occupies the spot."—*Cyb. Brit.* ii., 49. "Error."—*Comp. Cyb.* 525. See also Hook. *Fl. Scotica* 233 and Bab. *Man.* 198, 1862. "One of Don's reputed discoveries."—Hook. *Stud. Fl.* 532.

"The very few specimens from Don, which we have seen, are more luxuriant than Smith's acknowledged cultivated one, from which the figure in *Eng. Bot.* was made. Not now found."—Hook. & Arnott *Br. Fl.* 207, 1850. See Syme *Eng. Bot.* v., 217.

Don doubtless found it as an adventive casual, now lost. Its continental distribution is such as to render it a possible native of Britain. The specimen in Lady Aylesford's Herbarium, about 14 inches high, is not luxuriant. It came from the hill of Turin where I have vainly sought it. A specimen in my herbarium from W. Blake has this note by G. Don :—"Dr Smith says that he considers this a very interesting discovery, as few know the plant. Among the debris of rocks on the hills of Turin and Pitscandly."

1508. HIERACIUM AURICULA Sm. *Eng. Bot.* t. 2368, 1812.

Widely spread in Europe but absent from Britain, Lapland, N. Norway, etc., Nym *Consp.* 453.

The specimen figured as above is said by Syme *Eng. Bot.* v., 218 to be *H. glaciale* Lachn., from a specimen from Mont Cenis. The old locality of *H. Auricula*, "in pratis montosis supra Dalehead, non longe a Grasmere in Westmorlandia, sed sparsim," Huds. *Fl. Ang.* 299, 1762, has never been verified, and its identification is only conjectural. Borrer (*Phyt.* ii., 433) reports his want of success. He suggests the locality is above Easedale, between the High Raise and Steel Fell mountains, where are some small pools almost filled up, one or other of which is the Dalehead Tarn of some of the maps, and whence the waters fall into Cumberland N. and Westmorland S. He ascended to this place both from Wythburn and from Grasmere and sought for *H. Auricula.* "Incogn."—*Cyb. Brit.* ii., 52. "Ambiguity."—*Comp. Cyb.* 525.

The true *H. Auricula* has been found by the Rev. E. S. Marshall as a casual at Keevil, Wilts, and Mr Stewart showed it me in a quarry at Cave Hill, Belfast.

1509. HIERACIUM DUBIUM Sm. *Eng. Bot.* t. 2332, 1811.

"We have lately verified this as a British native, by living specimens from the Cambridge garden received from Scotland by its excellent curator, confirming the authority on which we depended in *Fl. Brit.* Our garden specimen is probably more luxuriant than wild ones."—Sm. *Eng. Bot., l.c.* "On Fairfield mountain, near Rydall, Westmorland, Hudson; N. England, Mr Woodward."—Sm. *Fl. Brit.*

829, 1800. "*H. dubium* Huds. Fl. Ang. 298, 1762. Keswick, Patterdale, Cumberland; Coxbench Wood, Derbyshire."—*Bot. Guide* 1805. "Incogn."—*Cyb. Brit.* ii., 52. "Mr Backhouse states that the figure of *dubium*. t. 2332, was taken from garden specimens of *H. stoloniferum* Fries, while Smith's description in the *English Flora* was made from *H. Auricula* L."—*Comp. Cyb.* 525.

1509. HIERACIUM COLLINUM Fries Symb. ad Hist. Hierac. 29, recte *H. pratense* Fries.

"Along the sandy bank of the Ettrick between Selkirk and Philiphaugh, June 27, 1868, J. H. Balfour."—Seeman *Journ. Bot.* 353, 1868. "I am not aware whether the name has been confirmed by Syme or Babington; nor whether the locality can be relied upon as a native one, if assuming the name to have been correctly applied."—*Comp. Cyb.* 525. This is made synonymous with *H. dubium* by Nyman (*Consp.* 451). "Probably the *H. Auricula* L., stated to be found in Westmorland by Hudson (*H. dubium* Fl. Dan. t. 1044)."—Hook. *Stud. Fl.* 532. Put under *H. pratense* Fr. in Bab. *Man.* 232, 1904.

Not dubious as there is little doubt that the Selkirk plant is properly referred to *pratense*. The original locality in Selkirk, where it was adventive, no longer yields it, but it still occurs on railway banks near Edinburgh and in other places in Britain.

1513. HIERACIUM VILLOSUM L.

Alps and mountains of East of Europe, Nym. *Consp.* 450.

"Rocks near Loch Callater, north of Clova."—W. Robertson of Newcastle-on-Tyne in *Herb. Newcastle Museum*, teste J. G. Baker in Seeman *Journ. Bot.* 91, 1865. Specimens are also in Smith's Herbarium, collected by Robertson. "Incogn. The real question seems thus narrowed into a single one, whether Thomas Drummond or any botanist ever collected the true *villosum* on Lochnagar, or on the rocks above Loch Callater (?) or whether *H. Lawsoni* was collected in those places, and cultivated, or foreign specimens of *H. villosum* erroneously substituted for it in Herbaria?"—*Cyb. Brit.* ii., 60. "Error."—*Comp. Cyb.* 527.

A plant not in the least likely to have occurred on the Scottish mountains, but it is included in *Eng. Bot.* by Syme who admits there is considerable doubt if it has occurred in Britain. It is figured, t. 839, from a dried specimen (the origin of which is quite uncertain)

from Smith's herbarium. See Syme *Eng. Bot.* v., 183. It is bracketted in Bab. *Man.* 243, 1904, and there it is suggested that "cultivated specimens of *H. villosum* were circulated by mistake, instead of some of the very hairy alpine forms which occur in the Clova district. Nothing approaching *H. villosum* has been found during the past 50 years." It might have been safely added "or at any time in Britain."

1540. HIERACIUM PLUMBEUM Fries.

Under *H. bifidum* Kit., Nym. *Consp.* 444.

Given as British by Fries. See *Bot. Gaz.* iii., 134. "As no native locality is known I omit it"—Backhouse *Mon.* 64. See Syme *Eng. Bot.* v., 218.

1632. HIERACIUM BORRERI Syme Eng. Bot. v., 212, t. 859.

H. denticulatum Borrer MS., not of Smith.

Differs from *prenanthoides* in having fewer leaves, the lower abruptly contracted into long petioles; intermediate leaves regularly oval, not pinched above the base; styles yellow. Harehead Wood, near Selkirk, Dickson. Its history is dubious. Borrer had it from E. Forster, who told him he had it from Dickson, who said he found it in Harehead Wood.

Well worth searching for.

1670. CAMPANULA UNIFLORA Vill.

"The stem solitary, upright, supporting only one flower. Cup as large as the blossom. On mountains in the north and in Wales. P. July-Aug."—With. *Nat. Arr.* i., 128, 1776.

Doubtless a solitary flowered form of *rotundifolia*, not the *C. uniflora* L., which is confined to Norway and Arctic stations.

1700. ERICA CARNEA L.

"In the month of June, 1852, I gathered on a heath near Newton Abbot, South Devon, an *Erica*, which I determined at the time, merely from the characters given in the 'British Flora,' as *E. mediterranea* L. [Subsequently] . . . on comparing [it] with the Irish one [*mediterranea*] and with a Tyrolese specimen . . . and a Savoy one . . . of *E. carnea*, it is evident that it agrees with the latter. . . . I have unfortunately only preserved a single specimen, though my impression is it was not particularly rare . . . and this specimen is marked as decidedly wild. . . . I wish distinctly to disclaim attaching any importance to my memorandum

of spontaneity, my object in writing this paper being to induce search in the locality."—Dr. H. F. Hance in Seeman *Journ. Bot.* 136, 1867. "Alien or error?"—*Comp. Cyb.* 536.

1700. ERICA MULTIFLORA (VAGANS?).

Ashover, Derbyshire, Pilkington in *Bot. Guide* 185, 1805. "Error."—*Comp. Cyb.* 536. Unnoticed in *Fl. Derbyshire.*

1760. GENTIANA ACAULIS L. *Eng. Bot.* t. 1594, 1806.

Cantabria, Pyrenees, Alps, Juras eastwards, Nym. *Consp.* 498.

"Wales, C. Konig, who received it from M. St. Amans, the specimen is in J. Banks' Herbarium. Drawn from original specimen gathered near Haverford West in S. Wales."—Sm. *Eng. Bot., l.c.* Near Haverford West, M. de St. Amans in Konig & Sims *Ann. Bot.* ii., 190. See *Bot. Guide* 504, 1800. "Mr Townley, of Manchester, gathered this plant several times on sand-hills near Liverpool, where he described it as growing in abundance, far apart from any cultivation. I have seen and possess some of his specimens, which were brought in a living state to the late Mr Crozier."—J. Sidebotham in *Phyt.* iii., 71, 1848. "It is difficult to imagine so showy a plant remaining unseen on a frequented track of land . . . and as three other species of the genus — *Pneumonanthe*, *Amarella*, and *campestris* — have undoubtedly been collected there, it is likely enough that one of these three has been mistaken for *G. acaulis.*"—Watson in *Phyt.* 84, 1848. "Doubtless this plant of the Alps has either escaped from cultivation in these stations, or *G. Pneumonanthe* was mistaken for it."—Syme *Eng. Bot.* vi., 81. "Occurring frequently in fine down grass, round by a small headland of Knoydart, up Loch Hourn, Inverness, near the point at which one lands to cross to Barriscale. Blooming between June and September, James Baird."—Reg. Farrer in *Rep B.E.C.* 421, 1916.

G. Pneumonanthe is not reported either for Pembroke or Inverness-shire. The *G. acaulis* of the Chilterns was a condensed state of *Campanula glomerata.* If it is true that the *Eng. Bot.* drawing was made from one of St. Amans' plants, the suggestion of mistaking *Pneumonanthe* for it falls to the ground. He wrote a short account in French of his discovery of it. It seems scarcely possible to imagine he was not writing seriously. See also *Cyb. Brit.* ii., 168; *Comp. Cyb.* 537.

1765. SWERTIA PERENNIS L. *Eng. Bot.* t. 1441, 1806, from a continental specimen.

Pyrenees, Alps, Central and Eastern Europe, Nym. *Consp.* 501.

"Habitat in Wallia. D. Richardson invenit."—Huds. *Fl. Ang.* 87, 1762. "Incogn. Some mistake . . . . luxuriant examples of *Gentiana Pneumonanthe* might be thus misnamed."—*Cyb. Brit.* ii., 177. "No one else has met with it, and there are no British specimens to vouch for its occurrence there."—Syme *Eng. Bot.* vi., 81.

I have been unable to find any reference to this either in the published or unpublished correspondence of Richardson. I suspect a misinterpretation of one of Richardson's records by Hudson. Its continental distribution is against its occurrence in Wales.

1907. VERONICA ALLIONII Hook. Fl. Scotica 8, 1820, not of Villars.

"Mountains in Angusshire, G. Don."—ex D. Don MSS., ined.

This is the glabrous form of *V. officinalis* which is not unfrequent in the Scottish hills. It occurs in Caenlochan. See Syme *Eng. Bot.* vi., 163; Gardiner *Fl. Forf.* 136 and Edmonston *Fl. Shetland.* The true *Allionii* of Villars is limited to the Dauphiny, Savoy, and Piedmontese Alps.

1917. VERONICA FRUTICULOSA Jacq. Sm. *Eng. Bot.* 1028, 1802.

Pyrenees, Sierra Nevada, Alps, Jura, Monte Baldo.

"Seems a garden specm., and too luxuriant, yet the sketch is excellent. Communicated by Dr. Walker in 1782."—Garry *Notes* 132. "Gathered on Ben Cruachan by Dr. Walker from whose original plants, cultivated in his garden, I have specimens. Mr R. Brown, whose accuracy is also beyond all doubt or 'supposition,' told me he found this plant on Ben Lawers."—Sm. *Eng. Fl.* i., 18, 1824 and *Eng. Bot.* n. 1028. "My specimens are from the garden wall at Colinton, where it was planted by the late Reverend Dr. Walker, who, we understand, brought it from Ben Cruachan. . . . I have never seen it on Ben Lawers, and I have no doubt but the *V. saxatilis* has been mistaken for it."—Don *Herb. Brit.* n. 202. "*V. suffruticosa* Sm. [*sic*] is probably a mistake."—Bab. *Man.* 319, 1904. "Said to have been found in Ben Cruachan by Rev. Dr. Walker and by Dr. [*sic*] Robert Brown on Ben Lomond [*sic*]. No doubt a mistake."—Syme *Eng. Bot.* vi., 188. "Reported from Scotland. Never confirmed."—Hook. *Stud. Fl.* 533. *V. fruticans* Jacq., var. *viscosa* Williams. Localities as above, but adds Craig Mohr, Glen Lochay,

Perth, W. B. Boyd.—Williams *Prod.* 286. There appears to be doubt as to the identity of Boyd's plant with the true *fruticulosa*. He told me he had only gathered pink *saxatilis*. "On a wall near Edinburgh."—H. M. Balfour in *Cyb. Brit.* ii., 198. Alien here and error of identification elsewhere. It is suggested that a pinkish-flowered form of *V. fruticans* was mistaken for it.

1948. BARTSIA ODONTITES Huds., var. ROTUNDATA Ball in Ann. Nat. Hist. ser. 2, iv., 30, 1849.

Bepton Common, Sussex, Miss Plowden. Cambridgeshire, J. Ball, *l.c.* Introduced into the third edition of *Bot. Soc. Lond. Cat.* 1850. Ball founded his *rotundata* on the Bepton plant. It should be refound, to see whether it is worth varietal rank. See Syme *Eng. Bot.* vi., 174. Omitted from the *Manual*. "Unknown to me."—*Comp. Cyb.* 540. A search in 1920 was unsuccessful.

1966. OROBANCHE LUCORUM A. Br., ex F. Schultz in Flora xxvi., 504, 1843.

Bavaria, Carinthia, Carniola, Tyrol, Switzerland, Nym. *Consp.* 558.

"Found near Epsom. From the back of the grand stand on Epsom race-course, proceed through the fields to the town of Epsom, and the plant will be found amongst clover, rarely among wheat, on the right hand side on the back of the hill. July 1846. Mr Williamson."—*Cyb. Brit.* ii., 226. Placed under *O. major* L. = *elatior* by Syme *Eng. Bot.* vi., 197, but he says the upper segments of the sepals are much broader and more acuminated.

The specimen in *Herb. Watson* I should refer to *O. major*.

1972. OROBANCHE ARENARIA Bab. Man. 229, 1847, not of Borkhausen.

Spain, France, Italy, Germany, etc., Nym. *Consp.* 557.

"On *Achillea Millefolium* in the Channel Isles."—Bab. *Man.* 229, 1847. "Alderney. The Jersey plant is *O. caerulea*."—Bab. *Man.* 251, 1874.

Identity doubtful. All the specimens of the blue *Orobanche* I collected in Alderney are referred by Beck to *O. purpurea*. The plate in *Eng. Bot.* vi., 1008 is copied from Reichenbach's continental figure.

1980. PINGUICULA LONGICORNIS Gay.

"In a valley near Helvellyn, J. Woods."—Babington in *Phyt.* 310, 1842. "The plant of Mr Woods was an unusually wide-flowering variety of *P. vulgaris* which I have seen growing in the same place.

Living specimens were exhibited at the Linnean Society when some one suggested that it might be Gay's species, hence the error."—W. Borrer in *Bot. Gaz.* ii., 95, 1850. "*P. longicornis* must be erased."—Bab. *Man.* 1843. See *Cyb. Brit.* ii., 287; iii., 488.

Search might well be made to see if it is not the same plant as I found in Kintail, i.e., the var. *alpicola* Reichb. Was Gay's species ever published? There is no evidence to connect the Helvellyn plant with it.

1997. MENTHA PRATENSIS Sole Brit. Menth. 39, t. 77.

M. gracilis, var. b. Smith Eng. Fl. ii., 84. *M. sativa*, var. *pratensis* Bab. Man.

"In wet places in the New Forest, Hants., particularly in a Common (Alderbury Common) near the 'Roebuck,' between Salisbury and Romsey in 1789. It has not varied in the least by cultivation."—Sole *Brit. Menth.* See *Fl. Hants.* 296. In my copy, which belonged to Sole, he has added in writing—"Dr. Smith makes this new mint first a variety of the following (*rubra-gentilis*), and soon after, in a future observation, he chooses it shall be a variety of my *sativa*, t. 21. Quaere, is not the Dr. full as ardent for varieties as he says I am for species? The Dr. has in his last Fl. [*Eng. Fl.* iii., 85] made it a *gracilis*."—W. Sole. Hooker (*Stud. Fl.* 317) puts it under *sativa*. Syme (*Eng. Bot.* vii., 18, t. 1036) keeps it as a distinct species. In the *British Plant List* I place it under *gentilis* L.

This is not a dubious plant. Its grade may be doubtful, and perhaps it should have been put under the extinct species. Probably it was originally a cultivated mint which had escaped, but this is conjectural. Search in some of the old gardens or even in wild situations might reward the worker.

2005. ORIGANUM ONITES L.

Asia Minor, Syria, Sicily, Greece, etc., Nym. *Consp.* 592.

"Recorded as *O. Onites* C.B. Pinax 223, on the left hand of the road from Braintree to Raine beyond the bridge. Mr Dale."—Ray *Syn.* 237, 1724. With. *Bot. Arr.* 365, 1776. "Our claim to this seems rather less than dubious."—Stokes *With. Nat. Arr.* ii., 1, 1787. "A misnomer of *O. vulgare*. ? Error."—*Comp. Cyb.* 545. "Incogn."—*Cyb. Brit.* ii., 243. "A mistake for *vulgare*."—Syme *Eng. Bot.* vii., 86.

2005. ORIGANUM VIRENS J. E. Gray, not of Hoffmg. & Link Fl. Port. i., 119. Syme *Eng. Bot.* vii., 86.

The true *virens* is confined to Spain and Portugal, Nym. *Consp.* 592.

The *O. virens* (*Lond. Cat.* ed. 6, 29, 1867, ambiguity; on the authority of a specimen found in the Isle of Wight by Dr J. E. Gray) is a form of *O. vulgare*, which appears to be a hybrid of the white-flowered *vulgare* with the type. I saw it in some quantity near Apes Down.

2026. SALVIA CLANDESTINA Bab., non L.

Lizard Point, Cornwall, Bab. *Man.* 245, 1847. ? Near Pontac and St. Clements, Jersey; Guernsey, Bab. *Prim. Fl. Sarn.* 71, 1839. Kennack, J. Cunnack in *Herb. Bab.* It is a very poor shrivelled specimen which Salmon refers to *S. Verbenaca*. "No specimens of true *clandestina* from Britain are contained in the *Bab. Herb.* at Cambridge . . . this was Syme's view."—Druce, quoted in *Flora of Cornwall* 360. "*Clandestina* does not occur in Britain."—Pugsley. See *Journ. Bot.* 97-106, 141-151, 1908. "All the specimens . . . from Cornwall labelled '*S. clandestina*' are only *Verbenaca*, to which also a plant from Vale Church, Guernsey, must be referred. About Pontac and St. Clements [Babington's locality for *clandestina*], after a most careful search, I could find nothing but *Verbenaca*."—Syme *Eng. Bot.* vii., 44. Piquet's Jersey specimens are *Verbenaca*.

S. clandestina, Guernsey, Mr Borrer, in Syme *Eng. Bot.* vii., 43, t. 1057, queried by Syme as of Linn. This is the plant which I have named *S. Marquandii*, differing as it does from the true *clandestina* which is given in error for England S. & W. in Nym. *Consp.* 570 and correctly there for France, Spain, Italy, etc. Babington dwelt upon the character of the longer corolla-tube which is not the essential feature. *Verbenaca* has two forms, one with a short, the other with a long corolla-tube. *S. clandestina* is unlikely to occur in Britain other than adventive.

2085. AJUGA ALPINA Sm. Eng. Bot. t. 477, 1790.

"We have received a specimen from Durham by favour of Mr Robson, and another gathered by Mr Dawson Turner in July 1795 on the summit of a mountain near Castleton, Derby. There is no doubt as to its being the *alpina* L."—Smith *l.c.* "'June 24, 1897, Robson.' Smith, referring to outline of single leaf at bottom of plate 477: 'A leaf from near the root, traced from an English specimen;

this ought to be engraved'."—Garry *Notes* 144. "It is erroneously stated in *Eng. Bot.* that this plant has been found in Durham by Mr Robson, for the specimen he sent to Sowerby was from his garden."—Winch. in *Bot. Guide* 251. "On the mountain that leads from Matlock into the town of Castleton, on the left hand side, immediately adjoining the road."—Dillwyn Turner in *Bot. Guide* 188, 1805. It may be added that the figure in *Eng. Bot.* t. 477 does not represent true *alpina* but a garden hybrid of *alpina* and *vulgaris* = × *A. Knafii*, var. *Smithiana* Rouy. "*A. alpina* has been said to grow in Carnarvon, Derby, Durham, ? Westmorland, Forfar, Aberdeen . . . the only examples of so-called *alpina*, which I have seen, were the two specimens reported by the late Prof. Graham (*Excursions* 1831) and referred to in Gardiner *Fl. Forf.* 144. I was with Dr. Graham when he picked those specimens and one of them is now in my herbarium, undistinguishable from *A. reptans*, according to my eyes."—*Cyb. Brit.* ii., 250. This specimen is in *Herb. Wats.* and is merely stolonless *reptans*. "Stream falling into the White Water, Clova, above the falls: only two specimens found, Prof. Graham."—Gardiner *Fl. Forf.* 144. There is a doubtful specimen gathered in Blair Athol by W. Christy. See *Bot. Mag.* ii., 9. 1850. In Syme *Eng. Bot.* vii., 87, the localities of *A. alpina*, *genevensis*, and perhaps *pyramidalis* are inextricably mingled. There is another record which may be cited as possibly referring to *A. alpina*—"Consolidam mediam flore caeruleo Alpinam invenimus. On Carnedh Llewellyn."—See Johnson *Mercurii Botanici* ii., 1641.

This locality, which I vainly explored in 1919, and the Derbyshire one are well worth systematic search.

2043. SCUTELLARIA HASTIFOLIA L.

Sweden, Finland, Germany, Holland, Belgium, France, etc., Nym. *Consp.* 573.

"Two specimens came to the Botanical Society of London labelled Ickleford Common, Hertfordshire, under the name *S. galericulata*. No additional information could be obtained."—*Cyb. Brit.* ii., 268. The specimens were sent by Mr S. Warner, but on being applied to he was unable to give any information. See *Fl. Herts.* 320. "What seems a morsel of this species was given me by the late T. F. Bree as gathered by himself near Tintagel, but I could not find any *Scutellaria* in the place to which he directed me."—W. Borrer in *Bot. Gaz.* ii., 97,

1850. "Error."—*Comp. Cyb.* 547. Unnoticed in the *Flora of Cornwall.*

The continental distribution favours its occurrence in Britain of which as yet we have no sure evidence.

2080. TEUCRIUM SCORDIOIDES Bab. Man. 253, 1847, not of Schreber.

This is an error of Babington's. The Braunton Burrows' plant is a form or var. of *Scordium* not the *scordioides* of Schreber which occurs (Nym. *Consp.* 565) in France, Portugal, Spain, etc.

2082. TEUCRIUM REGIUM Schreber Pl. Unilab. 35.

Spain, *Ind. Kew.* 1056.

On the slope of Blorenge, Mr E. Y. Steele. See *Ann. Nat. Hist.* v., 377. "It is to be much feared that some mistake has occurred in stating this plant grows on the Blorenge, near Abergavenny, as the exact spot on which it is believed to have been gathered has been examined carefully by a distinguished botanist but without success." —Babington in *Phyt.* i., 310, 1841, and *Man.* 253, 1847.

2105. HERNIARIA HIRSUTA L.

Sm. *Eng. Bot.* t. 1379. The specimen figured is from Curtis' garden. "An 2 *Herniaria hirsuta* in Hort. Sicc. Buddlejano habetur sed locus non additur, Petiver; in arenoso nascisit, ubi vero tacet."—Dill. *Ray. Syn.* 161, 1724. Colney Hatch, near Barnet, Huds. *Fl. Ang.* 94, 1762. Finchley Common, 1795, Mr Dickson, but Babington (*Eng. Bot. Suppl.* 2857) says it is *H. glabra.* "Cornwall, Stackhouse," Sm. *Eng. Fl.* ii., 9, 1824. This is *ciliata.* "Incogn. The true *hirsuta* has probably never occurred in Britain."—*Cyb. Brit.* i., 389. "Wild in Cornwall, from whence we have received specimens."—Garry *Notes* 153. An error for *H. ciliata.*

H. hirsuta has a wide range on the continent—Holland, Belgium, W. Germany, France, Portugal, Spain, Italy, etc., and is not an improbable plant to be native in England. It has occurred as an adventive species abundantly near Christchurch, Hants, in 1879 and 1881, but it soon disappeared. Par, Cornwall. Yorks, adventive.

2215 (2). DAPHNE CNEORUM L.

Pyrenees, Alps, Spain, etc., Nym. *Consp.* 641.

"Said to have been found by Mr Meyrick . . . about two miles from Beddgelert, by the road side leading to Carnarvon, just at the place where the ascent to Snowden begins. It has since been

sought for in vain by many botanists. Bingley."—*Bot. Guide* 83, 1805. "Incogn. No doubt erroneously reported.'—*Cyb. Brit.* ii., 353. "Error."—*Comp. Cyb.* 557.

2218. THESIUM INTERMEDIUM Schrader Spicil. Fl. Germ. 27, 1806.

Germany, Austria, Switzerland, E. Europe, Nym. *Consp.* 643.

"Said to be a native of Britain but all the specimens which I have seen belong to *humifusum*."—Bab. *Man.* 278, 1847.

What is Babington's authority for the record?

2218 (2). THESIUM HUMILE Vahl Symb. Bot. iii., 43.

"I gathered two specimens of this plant somewhere near Dawlish, Devon, in 1829."—Bab. *Man.* 278, 1847. "It was probably not indigenous."—Bab. *Man.* 228, 1856. "Error. Not verified."—*Comp. Cyb.* 557. See Syme *Eng. Bot.* viii., 89.

Never gathered again and therefore unworthy of a place in British Floras being a native of Spain (not France), Greece, and E. Europe. Nyman (*Consp.* 644), on Babington's authority, cites it for "Ang. mer.-occ. lectum" on the faith of two specimens gathered in an unknown place and never refound; probably from a garden. Babington was then only 21 years of age and probably not versed in the importance of noting habitats. No allusion is made in his *Journal* to any plant except the Bee Orchis till 1830. Evidently he had no recollection of its place of growth nor is there any likelihood of seeing it except planted in Britain. It is therefore scarcely worth insertion in the *Camb. Fl.*

2226. EUPHORBIA CHARACIAS L. Sm. *Eng. Bot.* t. 442, 1797.

Portugal, Spain, S. France, Italy, Crete, Nym. *Consp.* 651.

"*Tithymalus characias Monspeliensium.*" Ger. *Herb.* 403. "On the paper-mill pool dam in Heywood Park, Staffordshire, Dr. Plot."—Ray *Syn.* 312, 1724. *E. Characias.* Huds. *Fl. Ang.* 185, 1762, same locality. "I have searched for it without success. Said to have been found in Needwood Forest."—Stokes *With. Nat. Arr.* ii., 501, 1787. "Observed in the forest of Needwood, Staffs, in great plenty, undoubtedly wild, by Mr Whately, Surgeon in the old Jewry. . . . The root from which our specimen was taken was found wild two years since."—Sm. *Eng. Bot.* t. 442, 1797. "Mr Lambert will tell the habitat exactly who gave the plant this grew from two years ago to Mr Forster—from Portland Island. Specimen in *Herb. Sowerby*

from which figure was drawn is labelled, on a separate slip from that giving the name and number of plate in *E.B.*, 'Bow and Arrow Castle, Portland Island, gathered by J.S.' "—See Garry *Notes* 166. "Needwood Forest [only]."—Sm. *Eng. Fl.* iv., 68. "Has no claim to be considered native"—Bab. *Man.* 1847. "Incogn. *E. amygdaloides* appears to have been occasionally mistaken for *Characias* which has never been found wild in England, and which it is said would not bear the climate . . . without protection in winter."—*Cyb. Brit.* 365. "Error."—*Comp. Cyb.* 558. "Worcestershire, but no doubt *amygdaloides* was mistaken for it."—Syme *Eng. Bot.* viii., 117.

2273. SALIX ROSMARINIFOLIA L. Sm. *Eng. Bot.* t. 1365, 1804.

S. Scandinavia, E. Denmark, Germany, ? France, Central Europe, etc., Nym. *Consp.* 668.

"*S. pumila Rhamni secundi Clusii folio.* Found amongst Mr J. Sherard's dried plants, the place not stated."—Dill. *Ray Syn.* 447, 1724. The specimen is a form of *S. viminalis*, wrongly identified by Smith. See Druce and Vines *Dill. Herb.* 126. "Sent by Mr Dickson, probably from Scotland, to Mr Crowe."—Sm. *Eng. Bot., l.c.*; *Eng. Fl.* iv., 214. [On such slender evidence it was admitted to our Floras]. "In Eridge Park, Sussex, Forster. Edge of a rivulet which runs into Semer Water, Wensley Dale, Curtis. Banks of the Derwent near Ebchester, Westmorland, Mr Thornhill."—*Bot. Guide* 259, 1805, but Smith cites none of these in *Eng. Fl.* 214. Moss (*Camb. Fl.* ii., 49) says there is a specimen in *Herb. Mus. Brit.* from the banks of the Derwent, Durham, from Winch, who records it in *Fl. North. and Durh.* 63, 1831. The "var. *angustifolia*" which is figured in *Eng. Bot.* t. 1366 as *S. Arbuscula* is said to have been gathered in the Highlands of Scotland by Mr Dickson and to have occurred on the Clova mountains and on the banks of the Nith, twenty miles from Dumfries. See Syme *Eng. Bot.* viii., 249. "Within thirty miles from Poole in Dorset. Dr. Salter *Cat.*" — *Cyb. Brit.* ii., 401. "Ambiguity, Sussex, Suffolk, Monmouth, York, Tyne, Islay, Balf. *Cat.*"—*Comp. Cyb.* 575. "Clova, Dumfries."—Bab. *Man.* 56, 1847, and no further information is given on 383, 1904. "Cannot be admitted to a place in the British Flora."—Buch.-White *Revision of the British Willows* in *Journ. Linn. Soc.* 391, 1890. "*S. repens*, var. *rosmarinifolius*. There is much doubt whether this form was ever a plant of British origin. It is known only in gardens at the present

time, and for a long while back."—Linton *British Willows* 60, 1913, and with this citation from one best qualified to judge the matter may be left. There is, however, nothing in its continental distribution adverse to its being a native of the north of Britain and the matter should be borne in mind by workers there.

2275. SALIX GRANDIFOLIA Seringe Ess. Saul. 20, 1815.

Alps, Juras, Baden, Bavaria, Switzerland, E. Europe, Nym. *Consp.* 667.

Near Queensferry, Linlithgow, H. C. Watson. Dr. Andersson says "Folia *S. grandifoliam* valde emulant—quare haec species adhinc Britanniae dubia civis."—*Bot. Gaz.* 62, 1851. See Syme *Eng. Bot.* viii., 262.

2278. SALIX INCANA Schrank Baier Fl. i., 230, 1789.

N. Spain, France, Italy, S. Germany, Austria, Hungary, E. Europe, Nym. *Consp.* 666.

"Ambleside, Cumberland [*sic*], Rev. Dr. F. R. Tennant, 1894."—*Camb. Fl.* ii., 60. "I am almost certain the bush grew on the edge of a stream, either the Rothay or a tributary, and quite close to the town."—Tennant, *l.c.*

But Ambleside is in Westmorland not Cumberland, and *incana* is no more likely to be indigenous by a stream there than it would be in Hyde Park. An alien, one bush alone noticed.

2279. SALIX HASTATA L. *S. malifolia* Sm. *Eng. Bot.* t. 1617, 1806.

Scandinavia, Denmark, Germany, France, Central Europe, Spain, Nym. *Consp.* 669.

"Mr Crowe collected it but cannot now recollect its present place of growth, but is persuaded he found it wild in some part of Norfolk, and from the habit one would suppose it an upland species."—Sm., *l.c.* "Perhaps originally sent [from Scotland] by Dickson."—Sm. *Eng. Fl.* iv., 180. "Sands of Barrie, Mr G. Don [*sic*]."—Gardiner *Fl. Forf.* 169. "It is most improbable that this plant which is truly alpine on the continent, growing in Switzerland only at great elevations, should be even naturalised on the Sands of Barrie where Drummond (sp. in *Herb. Brit. Mus.*) [says he] met with it."—Hook. and Arnott *Br. Fl.* ed. 6, 433, 1830. Hollick Wood, at Colney Hatch Middlesex, Mr J. Woods, Jun. in *Bot. Guide* 413, 1805. "Not at all likely to occur either wild or cultivated."—*Fl. Middlesex* 260. "No evidence to show that

S. hastata has ever occurred in this country as an indigenous plant." —*Camb. Fl.* 39. "An alpine species, which cannot have been native, if indeed it were ever found."—Syme *Eng. Bot.* viii., 262. "Probably ought to be expunged."—*Cyb. Brit.* ii., 397; iii., 509. "Error?"—*Comp. Cyb.* 575.

2283. SALIX HELVETICA Villars Hist. Pl. Dauph. iii., 783, 1789.

Alps, Switzerland, France, Italy, Austria, Nym. *Consp.* 670.

Ben Lawers, as *S. glauca*, Winch in *Herb. Edin. Univ.*, teste Buch.-White in *Revision of the British Willows* in *Journ. Linn. Soc.* 499, 1890. Never confirmed.

2284. SALIX RETUSA L.

Pyrenees, Alps, Apennines, E. Europe, Nym. *Consp.* 670.

"Gathered on Ben Lawers by a friend of Wyville T. C. Thomson." —*Trans. Bot. Soc. Edin.* Jan. 10, 1850, and mentioned in *Bot. Gaz.* ii., 52, 1850. See Syme *Eng. Bot.* viii., 263. "Error."—*Comp. Cyb.* 576. Not mentioned in *Camb. Fl.*

Error. Dickson's *S. retusa* (*Trans. Linn. Soc.* ii., 288, 1794) is *S. Myrsinites.*

2304. LIMODORUM ABORTIVUM Swartz in Nov. Act. Soc. Sc. Upsala vi., 80, 1799.

Portugal, Spain, France, Alsace, Lorraine, Luxembourg, Baden, Central Europe, Nym. *Consp.* 687.

"*Nidus avis flore et caule violaceo purpureo colore*: an *Pseudoleimodoron* Clus. Hist. Rar. Plant, p. 270. This riseth vp with a stalke about nine inches high, with a few smal, narrow, sharpe pointed, short, skinny leaues, set without order, very little or nothing at al wrapping or inclosing the stalke: hauing a spike of floures like those of *Orobanche*, without tailes or leaues growing amongst them: which fallen, there succeed small seed-vessels. The lower part of the stalke within the ground is not round like an *Orobanche* but slender or long and of a yellowish-white colour, with very many smal brittle roots growing vnderneath confusedly, wrapt or folded together like those of the common *Nidus auis*. The whole plant as it appeareth above ground, both stalkes, leaues, and floures, is of a violet or deepe purple colour. This I found wilde in the border of a field called Marborne, neere Habridge in Haliborne, a mile from a towne called Alton in

Hampshire, John Goodyer, 29 June 1621, with *Corona fratrum* [*Cirsium eriophorum*]."—Gerard *Herb.* 228, 1633.

With Smith (*Trans. Linn. Soc.* iv., 1764) and Bromfield (*Phyt.* 608, 1849) I have little doubt in referring it to *Orobanche purpurea*. Ray (*Cat. Pl. Angl.* 224, 1670) took a different, and I think, a mistaken view, for he identifies Goodyer's plant with *Orchis abortiva 2 sive violacea* C.B., and he was followed by Bobart who while citing C.B.P. gave it a new name *19 Orobanche radice compacta major flore violacea.* C.B.P. (*Hist. Oxon.* ii., 503-4, 1699), as was done by Dillenius who also thought it to be *Limodorum* (*Syn.* 383, 1724). Hudson took the same view and called it *Orchis abortiva*, quoting the same locality (*Fl. Ang.* 336, 1762, ed. 2, 386, 1778, and ed. 3, 1798). Townsend (*Fl. Hants.* 642) suggests that Goodyer's plant was *Epipactis violacea* (*Helleborine purpurata*), but this is quite untenable. An open field with *Cirsium eriophorum* is not the habitat for *Helleborine purpurata*, the description is not applicable, and in England the plant does not flower so early as June 29. A writer in a note in a copy of the Dillenian *Ray*, probably Yalden, suggests *Lathraea Squamaria* which does not in the least answer the description, the habitat, or the time of flowering.

Goodyer's plant was doubtless *Orobanche purpurea* which is usually without the thickened base so pronounced in the common Orobanches. It agrees with the description, habitat, and time of flowering, and Goodyer was its first recorder in Britain. As to its being *Limodorum abortivum* one need scarcely waste a sentence in negativing it. Ray probably did not notice the word "an" before its name in Gerard. Its flowers are bracteate, the flowers are not wholly blue or violet but have brilliant yellow markings, and its height is usually above nine inches. I have repeatedly on June 29 searched the field, now called Narborne, unsuccessfully. There is an abundance of Yarrow still there on which *Orobanche purpurea* is parasitic.

2338. HABENARIA ODORATISSIMA Franchet Fl. Loir-et-Cher 578.

Gymnadenia odoratissima A. Rich. in Mém. Mus. Paris iv., 57, 1818.

Sweden, Luxembourg, France, Germany, N. Italy, Austria, Hungary, etc., Nym. *Consp.* 695.

"Between Juniper Hill and Box Hill, Surrey, June 28, 1833."—W. Pamplin and A. Irvine in *Mag. Nat. Hist.* ix., 475, 1836. A solitary plant only was found. The finders compared it with the description in Persoon *Syn.* and the fig. in Bauhin's *Prod.*

Unfortunately they make no mention of the leaves. "A second species has been supposed to occur in the South of England but some error may have arisen through the circumstance of *Conopsea* differing much in scent according to soil or humidity."—*Cyb. Brit.* ii., 429; *Comp. Cyb.* 578. Dr Heslop-Harrison says he found a single specimen on the Magnesian Limestone in E. Durham. See *Rep. B.E.C.* 429, 1916.

It may well occur in Britain.

2345. IRIS XIPHIUM L.

Portugal, Spain, S. France, etc., Nym. *Consp.* 699.

"By the river's side near Fladbury and some other places in this county; first discovered by the Duchess Dowager of Portland."—Nash *Hist. Worc. Int.* lxxxix, 1781. Stokes in With. *Nat. Arr.* i., 41, 1787. Cited in *Bot. Guide* ii., 656, 1805. "The introduction of this as a Worcestershire plant is said to be an error."—*New Bot. Guide* 205, 1835. See Syme *Eng. Bot.* ix., 155.

2346. IRIS XIPHIOIDES Ehrh. Beitr. vii., 140. Curt. *Bot. Mag.* t. 670.

Pyrenees, Asturias, Nym. *Consp.* 700.

"In a marsh near Colonel Kinloch's of Logie, Forfar, in 1810, among Carices and Junci in a situation where it had never been cultivated, George Don. See *Account* 217. There is a specimen in Lady Aylesford's Herbarium. "At Gelly Evan, near Penllergare, for upwards of 40 years."—Dillwyn *Mat. for a Fauna and Flora of Swansea.* See *Cyb. Brit.* ii., 440; *Comp. Cyb.* 579, and Syme *Eng. Bot.* ix., 155.

Of garden origin.

2409. SCILLA BIFOLIA L. Sm. *Eng. Bot.* n. 24, 1791, from a garden specimen.

Holland, Belgium, France, Germany, Austria, Switzerland, Italy, etc., Nym. *Consp.* 730.

Teignmouth, Devon, Mrs Gulson who "found only a few specimens which she brought into her garden, and that the plant was not now to be found in the neighbourhood." — Syme *Eng. Bot.* ix., 226. "Received from the west of England by Mr Sims, druggist, of Norwich. It is also in Buddle's herbarium (containing native species only)."—Sm. *Fl. Brit.* 365, 1800, and *Eng. Fl., l.c.* The *Scilla bifolia* in Huds. *Fl. Ang.* 123, 1762 is *S. verna.* Hudson (*Fl. Ang.*

ed. 2, 142, 1778) says "planta ex Scotia sub nomine *Scillae bifoliae* accepi quae Scotiae nec Angliae indigena est."

2461. TYPHA MINIMA L. Sm. *Eng. Bot.* t. 1457, 1805.

France. S. and E. Italy, Switzerland, Alsace, Baden, Bavaria, Austria, Hungary, etc., Nym. *Consp.* 757.

Typha palustris minor C. B. Pin. Found by Mr Dandridge on Hounslow Heath where the *Sium alterum Olusatri facie* grows."—Dill. *Ray Syn.* 436, 1724. "An error for *angustifolia.*"—Trim. and Dyer *Fl. Middlesex* 287. "As the plant was well known and distinguished by the botanists (Dillenius, etc.) of that time . . . we presume there could be no mistake about it. The specimen figured is from Geneva."—Sm. *Eng. Bot., l.c.* "From a marl-pit north of Little Crosby on the Lancashire coast, 1801."—Hall's *Flora of Liverpool* 1865. "There are specimens in the herbarium, Wavertree Bot. Gard., of *T. minor* Sm. from a large marl-pit north of Little Crosby and gathered in 1801 by J. S [hepherd]. We have no information to give concerning the plant, other than that no one has met with it since Mr Shepherd."—*Fl. Liverpool.* 137, 1872. "*T. minor* grows with *T. latifolia* in a dyke at West Hythe."—G. E. Smith *Cat. Pl. S. Kent* 60. "I have myself a distinct recollection of having seen examples some years ago collected I believe in Kent and sent to the late Mr David Don, in whose possession I feel pretty sure they were when I saw them."—Bromfield in *Phyt.* iii., 1007, 1848. Not noticed in *Fl. Kent.* "Mr T. Flower wrote to me—'This is an error and ought to be corrected. Prof. Don showed me the specimen which he had supposed to be *T. minor* but afterwards altered his opinion and believed it a small form of *T. angustifolia.*'"—*Cyb. Brit.* iii., 36. "Error. Apparently through misnomers. The Liverpool example was *angustifolia.*"—*Comp. Cyb.* 586. Syme *Eng. Bot.* ix., 9. There is a reference to the Kentish specimen of small size and with short female catkins in the marshes between Sandwich and Deal, Rev. W. Wood in *Trans. Linn. Soc.* Nov. 5, and *Ann. Nat. Hist.* 279, 1840.

2550. ERIOPHORUM CAPITATUM Sm. Eng. Bot. t. 2387, not of Host.

"Discovered by Mr Geo. Don, Aug. 12, 1810, by the side of a rivulet on Ben Lawers, near the limits of perpetual snow. The plants were rooted in a sandbank and appeared to have been brought by alpine torrents from some still more inaccessible part of the mountain. His specimen agrees exactly with those sent by Prof. Schrader, and

from Switzerland."—Smith, *l.c.* See Hook. *Fl. Scotica* 20, 1820, and Smith *Eng. Fl.* i., 66, 1824. "We fear that Mr Don has mixed, by mistake, some foreign specimen in his possession with the *E. vaginatum*, which is very common on Ben Lawers, and which alone we have found there; most [*sic*] specimens distributed by him belong to *E. vaginatum*."—Hook. and Arnott *Br. Fl.* 498, 1850. "Mr Don's authentic specimen (*Herb. Hook.*) resembles *capitatum*, but the upper part of the stem is triangular."—Bab. *Man.* ed. 3, 352, 1851. "*E. polystachion* (L.), b. *minus*. An alpine form, has but one nearly sessile spike = *E. capitatum* Don?"—Bab. *Man.* 385, 1874, a mistake which is continued in the ninth edition of 1904. "Incogn."—*Cyb. Brit.* iii., 82. "Error."—*Comp. Cyb.* 587. "The figure in *Eng. Bot.* t. 2387 is certainly nothing more than *E. vaginatum*, and the only specimen of Don's supposed *capitatum* which I ever saw (*Herb. Bot. Soc. of London*) belonged without doubt to the same species."—Syme *Eng. Bot.* x., 174.

There is in Don's own herbarium a specimen labelled "*E. capitatum*. On Ben Lawers and Clova mountains. I discovered this in 1810." It is a small alpine form of *E. vaginatum* L., not the *E. capitatum* Host, which is synonymous with *E. Scheuchzeri* Hoppe, as the stems are decidedly trigonous, not cylindric, and the bracts are greyish-green, not black. The correct reading should be:—An alpine form of *E. vaginatum* gathered by Don on Ben Lawers and Clova was mistaken by Smith for *E. capitatum* Host. See Don *Life* 118.

2566. CAREX HORDEISTICHOS Vill. Prosp. 18, 1779.

C. secalina Sm. Eng. Bot. iv., 126. *C. hordeiformis* Wahl.

Holland, Alsace, Central France, Spain, Bavaria, E. Europe, Nym. *Consp.* 769.

"In a Den near Panmure, about nine miles south-east of Forfar, Mr T. Drummond. My friend, Mr W. Robertson of Newcastle, favoured me with specimens of this among Mr Drummond's Scottish discoveries."—Sm. *Eng. Fl.*, *l.c.* "Amongst some bushes near a spring, rare, in a small valley about three miles west of Panmure, T. Drummond *Brit. Flora* 1830, but in 1827 we had received a specimen from Drummond from the Sidlaw Hills . . . there seems no doubt that they were obtained from his own garden, and were among the curiosities which the late Mr Don had amassed there; so that the species ought to be expunged from our Flora."—Hook. and Arnott *Br. Fl.* 506, 1850. "Small valley about three miles west of

Panmure, T. Drummond. A day in June, 1846, was entirely devoted to searching for the locality of this rare plant, without success. Every little hollow, nook, and crannie . . . was carefully examined, enquiries made about such a spot at many residents of the district, and the Den of Pitairlie explored from one end to the other, but no trace of the Barley Carex met with."—Gardiner *Fl. Forf.* 217. "Error."—*Comp. Cyb.* 591. "One of Don's reputed discoveries."—Hook. *Stud. Fl.* 535, a statement which might be correct if Don had ever reported it, but he had not.

2566. CAREX ANGUSTIFOLIA Sm. Eng. Fl. iv., 127, 1828.

"In a marsh in Angusshire, Mr G. Don. Of this I have seen but one specimen and that none of the best. I cannot refer it to any described species, though in many particulars it is not very remote from *C. filiformis.*"—Smith, *l.c.* "Ambiguity."—*Comp. Cyb.* 591.

2593. CAREX LAXA Wahlenberg in Vet. Acad. Nya Hand. Stockh. 156, 1803.

"Rocks among the Clova mountains."—Don *Account.* 209, 1813. "Error."—*Comp. Cyb.* 591.

Probably a mistake since *C. laxa* is only known for Lapland, N. Sweden, and Arctic Norway (Nym. *Consp.* 775). It is allied to *C. limosa.*

2604. CAREX GIBSONI Bab. in Bot. Soc. Edinb. Jan. 12, 1843.

Near Hebden Bridge, Yorkshire, S. Gibson. See *Phyt.* 493, 1843. "Said to be now lost by drainage."—Bab. *Man.* 362, 1847. "Incogn. or extinct."—*Cyb. Brit.* iii., 111. "Ambiguity."—*Comp. Cyb.* 589. "A variety of *C. vulgaris* with enlarged perigynia."—Syme *Eng. Bot.* x., 115.

Awaits rediscovery.

2607. CAREX GEBHARDI Willd. Sp. Pl. iv., 240.

Given without locality as a var. of *elongata* in Bab. *Man.* 358, 1851. "I have seen no British specimens."—Syme *Eng. Bot.* x., 100.

2610. CAREX BRIZOIDES L.

Holland, Belgium, Germany, Schleswig, France, Switzerland, N. Italy, etc., Nym. *Consp.* 779.

"Studley Wood, Yorkshire, Mr W. MacIvor."—Bab. *Man.* 339, 1851. "Not found lately. Introduced?"—Bab. *Man.* 389, 1874.

If it really were found there it has probably been planted."—Syme *Eng. Bot.* x., 175. See Lees *Fl. W. Yorks*, 461.

2622. CAREX LIGERICA Gay in Ann. Sc. Nat. 2, ser. x., 360, 1838.

"St. Mary's, Scilly Isles, J. Cunnack, 1878."—Arth. Bennett in Kükenthal *Mon.* 139 and *Journ. Bot.* 27, 1884. Named by Boeckler.

The specimens in my herbarium are *C. arenaria*, var. *remota* Marss.

2630. CAREX CAESPITOSA L.

C. Drejeri Lange.

S. Norway, Sweden, Denmark, Finland, Germany, Holland, Bohemia, Silesia, Galicia, Transylvania, Montenegro, Russia, Nym. *Consp.* 777.

Owing to mistakes in synonymy this plant was included in our Floras, but it may be referred to *C. Goodenowii* Gay. "Incogn. Though one [specimen] alleged by Fries to have been received as British—indirectly I presume through the Bot. Soc. of Edinburgh; and if so, of course, liable to the suspicion which unfortunately must be attached on no slender grounds to labels issued from that society."—*Cyb. Brit.* iii., 112. "Probably a mistake."—*Comp. Cyb.* 589. See Syme *Eng. Bot.* x., 175. "I have this year gathered *C. caespitosa* in Shetland."—W. H. Beeby in *Scot. Nat.* 184, 1887. "W. side of the loch of Cliff, 'is, as I think, rightly named,' Dr. Lange."—Beeby, *l.c.*, 217, 1887. Yorkshire, Mr J. Pickard, teste Mr Arth. Bennett.

Both require confirmation, as the Shetland specimens are said to be a form of *C. Goodenowii* and the Yorkshire ones are to be refound.

2669. STIPA PENNATA L. *Eng. Bot.* t. 1356, 1804, from a garden specimen.

Spain, France, Germany, Switzerland, Italy, etc., Nym. *Consp.* 805.

"*Gramen sparteum pennatum.* C. B. Pin. 5. Found by Dr Richardson, in company with Tho. Lawson, on the Limestone Rocks hanging over a little valley call'd Long Sleadale, about six miles north of Kendale in Westmorland."—Ray *Syn.* ed. 3, 393. *Stipa pennata*, as above. Huds. *Fl. Ang.* 24, 1762. "Rombalds Moor, York, S. Gibson 1839."—Baines *Flora* 1842. "I have wild specimens gathered in Westmorland by the late J. Gough, of Kendal; and having these I did not keep, but gave away the specimens I had sent me from Rumbolds Moor by S. Gibson; it grew near the pathway between Ilkley and Keighley, and I have no reason to doubt its

mountains," is *A. alpina*. The *Eng. Bot.* plate is from a garden specimen.

2766. Poa stricta Lindberg in Bot. Not. 10, 1856.

P. laxa, sub-sp. *stricta* Syme Eng. Bot. xi., 116, t. 1763.

Lochnagar, Lochan-an-ean, Ben Nevis. Babington. I refer the Lochnagar plants, with Professor Hackel's approval, to *P. alpina*, var. *acutifolia*.

P. stricta Lindenberg yet awaits discovery in Britain. It is a very northern species, Jemtra, Dovrefeld and Spitzbergen.

2787. Festuca amethystina L.

"In Italia, Gallia, Anglia."—L. *Sp. Pl.* 109, 1763.

Nothing further is known. Not likely to be British as it is a plant of Eastern Europe with its western limit in Switzerland.

2833. Agropyron cristatum J. Gaertn. in Nov. Comm. Petrop. xiv., 540, 1770.

Triticum cristatum Eng. Bot. t. 2267, 1811.

Russia, Bulgaria, Thracia, Roumania, Hungary, E. Europe, etc., Nym. *Consp.* 842.

"Discovered on steep banks and rocks by the sea-side between Arbroath and Montrose, flowering very sparingly."—*Eng. Bot., l.c.* "Incogn. Mr N. J. Winch gave me a specimen said to have been received from Don, and localised by its label, on the sands of Barrie. In a letter from Sir W. C. Trevelyan, dated Aug. 19, 1839, he remarks that *T. cristatum* was then 'abundant in Lunan Bay, near Arbroath' [which is between that town and Montrose], but in 1848 Mr Gardiner asserted in his *Flora of Forfarshire* that Don 'alone has found it.' On which side is the error?"—*Cyb. Brit.* iii., 237. "Ambiguity. Specimens from Don are in Herbaria."—*Comp. Cyb.* 597.

Lady Aylesford painted one of Don's dried specimens, which is now in my Herbarium. It is localised as above. Probably it was originally introduced with eastern grain. As an adventive plant it has recently occurred in Britain.

2860. Juniperus Sabina L.

Spain, France, Switzerland, Italy, Tyrol, etc., Nym. *Consp.* 676.

Recorded by Dr. Molyneux (*Phil. Trans.* n. 227) to have been found by an apothecary on one of the islands of Lough Lane, Killarney. See *Cyb. Hib.* 276. Edward Lhwyd, writing to Tancred

Robinson in 1699, says "I doubt my friend, whom I sent to Kerie, will bring me no news of it," so that he had a pretty shrewd idea that a mistake had been made. "Doubtless it was a form of *Juniperus communis*."—Syme *Eng. Bot.* viii., 285.

2874. EQUISETUM RAMOSISSIMUM Desf. Fl. Atl. ii., 398, 1800.
E. ramosum DC.

Portugal, Spain, France, Germany, Switzerland, Italy, E. Europe, etc., Nym. *Consp.* 860.

"Said by Schkuhr to grow in Wales, but no authority is given. It occurs in the west of France, as far north as the valley of the Loire."—Syme *Eng. Bot.* xii., 172.

2878. LOMARIA ALPINA Sprengel = *Blechnum alpinum.*

"In the crevices of an old stone wall, by the side of a mountain torrent not far from Loch Tay, Perthshire, 1856."—G. B. Wollaston in *Phyt.* 157, 1859. "Doubtless an error."—Syme *Eng. Bot.* xii., 148. But Mr Wollaston only saw a single specimen growing in a garden to which its owner said she had brought the fern from the locality mentioned. Doubtless a confusion with a garden plant.

2880. ASPLENIUM REFRACTUM Moore Nat. Print. Brit. Ferns, 8vo. ed., ii., 66.

Only known in cultivation. First observed at Peper-Harrow Park, in the gardens, 1851. The three roots were said to have been found in Scotland a few years previously. See Syme *Eng. Bot.* xii., 148.

2918. BOTRYCHIUM RUTACEUM Sw. in Schrad. Journ. ii., 110, 1800.
B. matricariaefolium A. Br.

Scandinavia, Germany, Switzerland, Italy, E. Europe. See Nym. *Consp.* See Doody *Syn.* ii., *App.* 340.

"*Lunaria botrytis minor pinnulis laciniatis.* Westmorland. Dr. Lawson?"—Ray *Syn.* 129, 1724. Sandy sea-shore, Stevenston, Ayrshire, Dr. O. St. Brody, ex W. Whitwell in *Journ. Bot.* 291, 1898. See Syme *Eng. Bot.* xii., 27. See also Sm. *Eng. Fl.* iv., 329.

Confirmation is highly desirable.

2918. BOTRYCHIUM LANCEOLATUM Angstrom.

Norway, Sweden, Arctic region.

"*L. minor foliis dissectis.*"—Ray *Syn.* ? Westmorland, D. Lawson, Doody in Ray *Syn. App.* 340, 1696. Sands of Barry, Forfar, Cruick-

shank, 1839. "Three specimens all exactly alike except a small difference in size and I could find none of the other sort growing near them."—Newman *Hist. of Brit. Ferns* 347, 1844 and ed. 3, 320-4, 1854, as *B. rutaceum*. "Side of the lake at Hornsea [Mere, Yorks], Mr. Teesdale."—*Bot. Guide*, ii., 720, 1805. See Syme *Eng. Bot.* xii., 28. This or *B. Lunaria*, var. *incisum* is said to have been gathered near St. Mary's Loch, Selkirk. I have made three unsuccessful searches.

The synonymy of the two species is very confused.

2927. LYCOPODIUM CHAMAECYPARISSUS A. Braun.

L. complanatum, var. *Chamaecyparissus* Döll Fl. Bad. 80. *L. complanatum*, sub-sp. *Chamaecyparissus* A. and G. Fl. Mitt.-Eur. i., 156.

Denmark, Sweden, N. and W. Germany, Holland, Belgium, France, Switzerland, etc.

Ingleborough Hill, 1816, H.S. in *Herb. Charles Bailey*. See Druce in *Rep. B.E.C.* 222, 1915.

2929. AZOLLA CAROLINIANA Willd. Sp. Pl. v., 541, 1810.

Central America, etc.

First record: Pindon, Middlesex, *Science Gossip* 1883. Since reported from Norfolk, Bucks, Berks, Oxon, Co. Cork, etc. All the specimens which have reached the fruiting stage in Britain appear to be *A. filiculoides*. Therefore the occurrence of *A. caroliniana* in Britain is at present dubious.

2932. SELAGINELLA HELVETICA Link Sp. Hort. Berol. 159.

Belgium, Germany, France, N. Italy, etc.

"Lycopodioides simili ratione differt a Lycopodio, qua Selaginoides a Selagine. Hujus una tantum species adhuc innotuit, nempe Muscus denticulatus major C.B. cum quo idem est Muscus denticulatus mino ejusd. Quem licet Lobelius Somersetiae sterilibus montibus, Mendip vocatis, ubi plumbum effoditur, nonnumquam magna copia provenire memoriae proditum reliquerit, nemo tamen post eum nec ibi, nec aliis locis hunc Muscum in Anglia adhuc observavit. Nec loca a Merreto in Pina. p. 80 memorata huic Musco competunt, sed alii procul dubio speciei, quam pro hac perperam habuit. *Lobel* 1570."—Ray *Syn.* 21, 332, 1696. "July 15, 1726. About the lead mines on Mendipp Hill we searched for the Muscus denticulatus Clusii mentioned by Lobel to grow there, but found nothing more than common Mosses,

vis. *Hypnum* foliis triangulis majoribus et minoribus, which its likely Lobelius mistook for Clusius his, the Mendipp Hills being of a large extent we might not hit on the true place and perhaps the ground hath been alter'd since that time, so that I would not deny Lobel's veracity."—Dillenius MS. See *Dill. Herb.* xiv., and *Hist. Musc.* 464, 1741. "Thames side at the Neathouses and Kingsbridge, Middlesex."—Merrett *Pinax* 1666. Error. See note by Rev. W. W. Spicer in *Phyt.* iv., 384, 1851 and *Cyb. Brit.* iii., 298, but it may be added there is not the slightest evidence to show that any of the specimens he referred to were gathered in Britain. See also *Corresp. of Linneaus and other Naturalists* ii., 134; *Cyb. Brit.* iii., 298.

The foregoing account of the Dubious Plants is avowedly incomplete, and additional information will be gladly welcomed.