

THE BOTANICAL SOCIETY  
AND EXCHANGE CLUB  
OF THE BRITISH ISLES.

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REPORT FOR 1924

(WITH BALANCE SHEET FOR 1923)

BY THE

SECRETARY,

G. CLARIDGE DRUCE, D.Sc., LL.D.

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VOL. VII. PART III.

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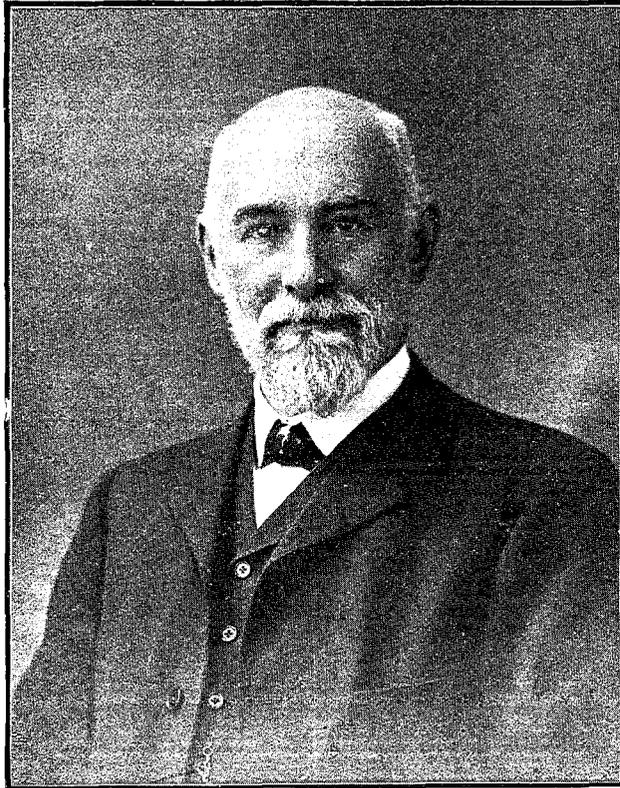
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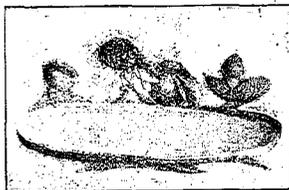
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CHARLES BAILEY

THE BOTANICAL SOCIETY  
AND EXCHANGE CLUB  
OF THE BRITISH ISLES.  
(VOL. VII. PART III.)

Victoria Regina.



Floreat flora.

REPORT FOR 1924

BY THE  
SECRETARY,

G. CLARIDGE DRUCE,

to whom, at YARDLEY LODGE, 9 CRICK ROAD, OXFORD, the Subscription,  
12s 6d per annum, and Non-Contributing Members' Subscription of 10s per  
annum, should be paid on and after January 1, 1925.

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Exchange Club Parcels for 1925 should be sent, post paid, on or before  
15th December 1925, to

H. DOWNES, Esq., M.B., F.L.S., F.G.S.,  
The Grange,  
MARTOCK, SOMERSET,

who will act as Distributor and Editor of the B.E.C. Report.

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SEPTEMBER 1925.

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PRICE 10-/.  

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## CONTENTS.

BALANCE-SHEET FOR 1923, . . . . .	419
SECRETARY'S REPORT FOR 1924, . . . . .	419
PLANT NOTES FOR 1924, . . . . .	431
<i>Galium debile</i> Desv., . . . . .	438
<i>Taraxacum glaucinum</i> , . . . . .	440
<i>Taraxacum ancistrolobum</i> , <i>cyanolepis</i> , etc., . . . . .	441
<i>Mentha</i> vars., . . . . .	448
NOTES ON PUBLICATIONS, NEW BOOKS, ETC., . . . . .	458
OBITUARIES, . . . . .	526
C. Bailey.	Miss Hillard.
Prince Roland Couaparte.	Robert Kidston.
James Britten.	R. Irwin Lynch.
Robert Page Brotherston.	Prof. A. M'Alpine.
Hinnolyte Coste.	Prof. Carl Nordstedt.
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Prof. M. Hartog.	Prof. J. E. B. Warmin.
Robert Hellon.	George Webster.
W. Botting Hemsley.	James Alfred Wheldon.
NEW COUNTY AND OTHER RECORDS, . . . . .	552
THE VISIT TO NORTH WALES IN 1924, by Miss Vachell, . . . . .	606
MY FAVOURITE WILDFLOWER, by Henry S. Salt, . . . . .	610
FLORA LONDINENSIS (By permission of the Proprietors of " Punch "), . . . . .	612
MENTHAE BRIQUETIANAE, by John Fraser, . . . . .	613
ADDITIONS TO THE FLORA ZETLANDICA, by G. C. Druce, . . . . .	628
AN IMPORTANT QUESTION, by E. Almquist, . . . . .	557
POTAMOGETON LANCEOLATUS Sm., by Arthur Bennett, . . . . .	658
CANON JOHN VAUGHAN AND HIS HERBARIUM, by G. C. Druce, . . . . .	661

CORRECTED NAMES OF ROSES DISTRIBUTED THROUGH THE B.E.C., by Lt.-Col. Wolley-Dod. ... ..	667
DUPLICATED BINOMIALS, by G. C. Druce, ... ..	684
ARCTIUM VULGARE, by A. H. Evans, ... ..	690
MRS DELANY AND BUCKS PLANTS, by G. C. Druce, ... ..	691
NOMENCLATORIAL NOTE, by G. C. Druce, ... ..	694
PERSONAL NOTES, ... ..	695
VARIOUS NOTES, ... ..	703
ADDITIONS AND CORRECTIONS, ... ..	702

THE  
BOTANICAL SOCIETY & EXCHANGE CLUB  
OF THE BRITISH ISLES.

THE REPORT OF THE SECRETARY & TREASURER,  
G. CLARIDGE DRUCE, YARDLEY LODGE, OXFORD,  
FOR 1924.

*BALANCE-SHEET FOR 1923.*

Subscriptions received, - £235 14 0 Sales of Reports and Ad- vertisements, - - 18 12 0 Balance from 1921, - - 24 0 0  <hr style="width: 100%;"/> £278 6 0 <hr style="width: 100%;"/>	Printing Reports, - - £198 13 3 Distributor's Expenses, - - 2 18 6 Postages, Carriages, Binding, Stationery, Experts, &c., 31 19 7 Towards List, - - 20 0 0 Balance carried forward, - 24 14 8  <hr style="width: 100%;"/> £278 6 0 <hr style="width: 100%;"/>
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Towards List, - - - - -	£90 0 0
Donation towards List, R. H. Williamson, Esq., - -	25 0 0
Orders for List, - - - - -	8 16 6
	£123 16 6

Audited and found correct, January 20, 1925.—F. TWINING.

The subscriptions—Ordinary Members, 10/-; Exchange Members, 12/6—are due, and should be paid on the first of January each year to G. C. Druce at the above address. Payment in advance for two or more years saves trouble and expense. Entrance fee for New Members, 5/-.

Mr C. V. B. Marquand acted as Distributor and Editor of the Exchange Club Report for 1923, the publication of which, owing to various reasons, was much delayed. The members are grateful to him for the toilsome task of sending out 5148 specimens. It con-

tained several points of interest. A large number of Rubi were included and there were also some well-preserved Salices from Mr J. E. Little.

The year 1924 was, like its predecessor, dull, exceptionally rainy and with a low temperature. The result was that there was no blaze of blossom, but the flowering period was spread over a longer time than usual. Despite the comparative paucity of hawthorn blossom rarely has there been a more conspicuous and attractive display of "haws" than was to be seen last autumn. In Wales and Scotland the rainfall was unusually heavy and well nigh continuous so that the Hieracia and other alpine had few blossoms, yet in Zetland the Eyebrights afforded a magnificent show. Wind and rain were, however, almost world-spread—though Barcelona and the Balearics had an exceptionally dry season.

Among the discoveries of first published records in Britain during the year may be mentioned a *Limonium* of the Binervosum group which Mr Pugsley found in Pembrokeshire. He has named it *transwallianum*. Canon G. R. Bullock-Webster and Mr J. Groves have completed a splendid work on the Charophyta; and *Chara muscosa*, a new species from Ireland, as well as some new varieties, have been described. The year was marked by a find of special interest made by a girl of Henley, who discovered specimens of the leafless *Epipogon* in a South Oxfordshire Wood. An account appeared on p. 330 of our *Report* issued in November 1924. Mr C. E. Salmon found a new hybrid Sedge in Surrey, its parents being *C. remota* and *divulsa*. Mr D. Lumb discovered a beautiful alien, the South European *Linaria pallida* completely naturalised on the shingle at Bardsey, Lancashire. In Jersey, etc., I found *Galium debile*, a plant belonging to the Palustre section. Dr Almquist has identified some Shepherd's Purses found by me as *B. sinuosa*, *B. odontophylla*, *B. lutetiana*, and *B. robusta*, while H. Dahlstedt has also named the following Taraxaca new to Britain:—*T. glaucinum* Dahlst., Sussex, *T. aloniense* Dahlst., Wales, Bucks, etc., *T. ancistrolobum* Dahlst., *T. cyanolepis* Dahlst., Oxon, Bucks, *T. mucronatum* Lindb. f., Oxon, *T. triangulare* Dahlst., Oxon, collected by myself, and *T. laetifrons* Dahlst. from Orkney gathered by Col. H. H. Johnston. A hybrid Rumex from Blackheath, Kent, is named by Professor Danser as a hybrid of *maritimus* with *dentatus* =  $\times R.$  *Kloosii* Danser, which

first originated in his garden at Amsterdam and has thus appeared for the first time in the wild state in Britain.

Among the New County Records the discovery in Oxfordshire of *Epipogon* is the most important. This was dealt with in the last Report. Mr Templeman has added *Salix herbacea* to the flora of the Isle of Man. *Epilobium Lamyi* was detected by Mr C. E. Salmon in the Herbarium of A. Wallis from near Reading. I have seen it near Henley in Oxfordshire and Mr J. S. L. Gilmour has recently found it near Uppingham. *Alchemilla glomerulans* was found by the writer on Lochnagar. Mr Trapnell obtained *Euphrasia salisburgensis* on Ben Evenagh in Londonderry, a considerable extension of its range. Many new records to the Irish vice-counties have been made in the *Irish Naturalist*, now, alas, defunct. Mr J. Fraser has gathered *Orchis O'Kellyi* in Surrey growing with, but keeping distinct, from *O. Fuchsii*. That is the opinion of Mr Stelfox and other Irish botanists.

Death has robbed us this year of several most valued members. We have lost our old Secretary, Mr Charles Bailey, who for twenty-two years (1879-1902) well served the Club and most generously supplied the continued deficits which the small amount of realised subscriptions annually involved, and who liberally sent to the Exchange Club large numbers of well-preserved and carefully collected specimens. His years of retirement were happy, as he had the record of a life well-spent behind him and all the comforts of a beautiful home at Torquay and the inexpressible joy of happy marital relationships. Another of our senior members, Mr George Webster, with whom I exchanged specimens in the seventies, died at York, in a district which at one time he assiduously worked, and where he was greatly respected. At one time he was a representative of Messrs Backhouse of horticultural and botanical fame. Miss Hillard, of Hayling Island, has also passed away. Despite the well nigh impossibility of movement due to severe arthritis, but aided by an indomitable perseverance and the kindly help of a most devoted attendant, she was able to explore minutely the district, and the knowledge of that interesting botanical area of Hayling Island was greatly advanced by her painstaking work. She gave much to botanical study and received in return some solace from the almost ceaseless agony which she bore with such fortitude. Prince Roland

Bonaparte of Paris, a more than princely patron of science, a great traveller, the owner of the largest fern herbarium in the world, has died comparatively young and left not only France but the world the poorer for his death. Dr Hellon, of Seascale, a distinguished scientist—a somewhat recent devotee of Botany, was one of those kindly souls who lived to help others along the paths of knowledge. He will be sadly missed by a wide circle of correspondents and friends, and his death shatters the hope one had that from his pen might have appeared a new Flora of Cumberland which is so much needed. Another loss is that of Sir Harry Veitch, the distinguished horticulturist, who added lustre to the name of his firm, and was not less conspicuous for his active benevolence. Another of our most valued members, one of our best field botanists, a past Distributor and Editor of the Exchange Club Report, and one of our most loyal members, Mr J. A. Wheldon of Liverpool, who was a recognised authority on Mosses, Hepatics and Lichens, was taken away late in the year after dark hours of agony. Yet in the intervals of comparative ease, he kept up his interest in our Society to the last. He was a ready helper, a generous contributor of plants, and the University of Oxford owes him a great debt for the pains he took to name its great collection of Lichens and Sphagna. British Botanists are indebted to him and to his colleague, Mr A. Wilson, for that most excellent *Flora of West Lancashire*, which is a fitting testimony to their industry and ability. Of quite a different type was Mr W. Harford, of Petty France—that splendid centaur, one of the hardest of hard riders, who by the irony of fate was killed on opening a gate while riding. So passed he who jumped half the fences in England, and was horse-wise and hound-wise. Few had a keener love for the flowers of the field than Willy Harford, and he ran a rarity to earth with just as much persistence and painstaking zeal as he did the Badminton hounds to their quest. His cheery voice and kindly greeting still ring in one's ear. The Curator of the Cambridge Botanical Garden, R. Irwin Lynch, who had a good knowledge of and liking for British species, died at Torquay soon after his retirement. His inspiring Curatorship was recognised—not too precipitately—by his University who conferred on him the degree of M.A. Robert Kidston, of Stirling, was a distinguished worker at fossil plants in which he made highly im-

portant discoveries while the flora of his own district was materially increased by his investigations. Among the foreign friends we have lost the distinguished mentor in French Botany, the Abbé Coste, a household name with those who study the French Flora. The three volumes, with 4500 figures, which we owe to his untiring zeal, are the best guide to the treasures of that important area. These deaths are serious losses to our Society. It is difficult to replace them, as such a small percentage of the young take up scientific work in their leisure hours. The intense and growing love of games and pleasure proves too formidable a competitor. With the greater remuneration of the school teachers we should obtain many recruits from that section of society.

For literary assistance we are again indebted to Dr S. H. Vines, F.R.S., to the Rev. F. Bennett, M.A., to Mr T. R. Gambier-Parry, M.A., and to Mr R. H. Corstorphine. Colonel A. H. Wolley-Dod has given us a laborious piece of work on the names of the Roses mentioned in our Reports, and we congratulate him upon the completion of his own revision of that difficult genus. We have to thank most warmly Dr A. Thellung for naming so many of our adventive species. We heartily rejoice at his restoration to health. Gratitude is due to Dr Karl Ronniger for naming the Thymes, to H. Dahlstedt for identifying the Taraxaca, to Dr E. Almquist for determining the Shepherd's Purses, to Professor Danser for examining the Docks, and to Dr J. Murr for naming the Goosefoots. Thanks are due to the Rev. F. Bennett for bringing back from Switzerland a large number of Mints which I had sent in 1892 to Dr Briquet for his determination. He had handed them on to another botanist to return them with some Alchemillas—and there they stayed for over thirty years. They include several new varieties to science and many new to Britain. We have to thank Mr J. Fraser for kindly examining them and for his useful notes which are published in this *Report*. So now the Alchemillas, which went with the Mints, are not despaired of, and even the Veronicas from Billot's Exsiccata, which Mr Stratton lent to a continental worker many years ago, may yet be returned.

The beautiful photo-blocks which illustrated the article in our Report of 1924 on the Botanic Garden Tercentenary at Oxford in 1923 were kindly lent by the proprietors of the *Chemist and Drug-*

gist, 42 Cannon Street, London, and our grateful thanks are due to their courtesy.

Our new members for 1924 include Miss Dorothy Meynell, Mrs Brown, Mr R. R. Hutchinson, Mr W. A. Sledge, Rev. D. P. Murray, The Hon. Mrs C. Rothschild, Mrs J. Buchan, Lady Margaret Watney, Mr H. B. Guppy, F.R.S., Prof. J. P. Lotsy, Ph.D., Mrs Hugh Willan, Mr Melville, Mr C. W. James, Mr H. Britten, Mr Paul Furse, the Leicester Museum, Col. J. Saunderson, Miss R. Mason, Mrs M'Crea, Miss King, Mrs Guthrie, Mr J. R. Matheson, Mr H. B. Willoughby Smith, Mr A. Beadell, Mr H. M. Hirst, Mr F. W. Sansome, Miss V. Keppel, Lady Gwendolen Churchill, Mrs Campbell, and Mrs Smyth-Pigott.

My own field work during the year was not marked with great success. In May a delightful visit was made to Patshull when Lady Dartmouth motored me over Wenlock Edge on the top of which we saw *Cerastium vulgatum*, var. *serpentini* and *Taraxacum decipiens*. Thence we joined the Botanical party at Llanberris, of which Miss Vachell and Mrs Baring have contributed notes. Despite the season's retardation, the party saw most of the characteristic plants of that area, including *Lloydia*, to which Mr T. J. Foggitt conducted the members up a steep scramble on the Glydyr. In the pastures of Snowden and in Nant Gwynnant the abundance of true *Orchis maculata* was a very conspicuous feature. There it agreed excellently with Mr Webster's description of his *praecox*, and was in beautiful flower before *O. Fuchsii* was in blossom. We added *Viola rupestris* to Carnarvonshire, a new Shepherd's Purse, *Bursa odontophylla*, from the railway near Llanberris, and a new *Taraxacum*—*aloniense* and its f. *recurvilobata*. Aberfraw Common was visited but *Mibora* was well nigh over while *Ranunculus cambricus* was very young and uncharacteristic. *Salix pentandra* was seen as a planted tree. Our search near Portmadoc for *Scirpus nanus* was rendered nugatory owing to the torrential rain of the preceding night which had flooded the area. *Cochlearia micacea* occurred on Snowden ridge with *Salix herbacea*, but the cliffs were very bare of flowers. It seems that the botanist's toll of the Snowdon cliffs, like that of Clova, Caenlochen, Lochnagar, and Lawers has been too heavy, as none of these seem as flowery as formerly. The paucity of *Hieracia* is especially noticeable. *Asplenium germanicum* still

holds its own in Merionethshire. One may add that the twenty-five members who took part in the excursion enjoyed themselves thoroughly, not the least happy day being that spent on the Great Orme where it was pleasing to see *Cotoneaster* still survives. I believe there are only about five individuals in all. It was a happy idea to have a specimen planted in the charming rock work of the Orme.

A month in March and April was spent in Majorca or Mallorca—a beautiful island which has been well explored by Mr J. Walter White. It enabled us to see most of its endemic species, but we were too early to obtain *Ranunculus Weyheri*, which is limited to a few square yards at an elevation of over 4000 feet, on the Puig Major. A new locality for the rare and diminishing *Leucojum pulchellum* was found and *Moricandia arvensis*, *Anthriscus sylvestris*, *Sagina procumbens* and *Artemisia arborescens* (the two last perhaps introduced at Miramar) seem to be additions to the island flora. The weather was all that could be desired, the sea passages smooth, the boats comfortable and clean, and the people most kindly, while the scenery, especially on the western side, was highly attractive. Sollier is a delightful land-locked port dominated by the highest mountain of the island, the Puig Major of over 5000 feet. We climbed this to nearly 4000 feet. One of the features here and elsewhere in the island was the abundance of *Ophrys speculum*, and the endemic *Cyclamen balearicum*, which Lobelius figured as *C. vernum* in his "Icones" with its small white flowers much in evidence. High up grew *Buxus balearica*, and in the adjoining Barranc we obtained the rare and local *Brassica balearica* and an endemic *Viola*, as well as the more generally distributed *Polygala rupestris* with its purple blossoms. We also saw *Lonicera balearica*, *Taraxacum obovatum*—a distinct species, *Globularis vulgaris*, var. *major*, *Micromeria filiformis* Benth., *Orchis lactea*, *O. longibracteata*, etc. *Melilotus sulcata* grew in the lower orange groves and in the valley, *Lotus creticus* at the Port, *Vicia gracilis*, *Sibthorpia africana*, *Orchis longicornis* Poir., *Ophrys Bertolonii*, *O. fusca*, *Habenaria intacta*, *Trifolium scabrum* and many other species. The hotel, though simple, was most clean and comfortable and the landlord extremely kind. The drive back to Palma was very enjoyable. One has no space to give in detail the many interesting species found in this delightful area which would repay much longer time than we could devote to it.

At the beautifully situated Miramar grew *Anthyllis cytisioides* as unlike an *Anthyllis* as possible. As its specific name indicates it is more like a *Cytisus*. There grew also *Hippocrepis balearica*, the striking Composite, *Urospermum Dalechampii*, and an endemic *Crepis* allied to our *taraxacifolia*. The Ivy of the island is more frequently our var. *sarniensis* as at Valdemosa. *Kentranthus Calcitrapa* was by no means rare. The curious parasite, *Cytinus Hypocistus*, var. *rubra*, grew at Inca where were *Carex divulsa*, *C. vulpina* and *Dactylis hispanica*. The strange *Withania somnifera* was local at Belver, and here grew *Bartsia Trizago* and several Echiiums. *Asteriscus* was abundant and showy. At Pollenza we obtained *Tolyppella glomerata*, *Carex punctata*, *C. serrulata*, and *Artemisia gallica* (not given for Mallorca by Cambessedes). Near Palma *Papaver Rhoeas* appeared as var. *caudatifolium* Fedde, and here, too, grew *Succowia balearica*, a common Crucifer. *Arenaria procumbens*, a reddish-flowered species, was local. *Lavatera cretica*, *Frankenia hirsuta* and *Ononis reclinata*, var. *mollis* (Savi) occurred. The Medics were abundant. *Chrysanthemum Coronarium*, var. *alboradiatum* grew with the type. We also saw *Rapistrum Linneanum* and *Phalaris minor* (omitted by Cambessedes). That author speaks of *Poa bulbosa* being rare. We saw it in many places on the western side of the island. At Aminol we found *Cistus Clusii* and several *Helianthemums*. In a pretty valley near Genoa grew *Teucrium majoricum*, *Serapias Lingua*, *Orchis coriophora* and *Carex Linkii*. The beautiful and fragrant endemic *Hypericum balearicum* with its elegant crisped leaves was locally common with *Anthyllis rubra*. Andraitz was a delightful bay, and the approach to it highly romantic and pleasant. Here we obtained *Helianthemum Barrelieri* Tenore, the beautiful but prickly *Genista lucida* and *Coronilla juncea*. Altogether about 550 species were noted. We were too early to see in flower the two endemic Umbelliferae.

An expedition to the Roman Camp at Chedworth in Gloucestershire afforded a good gathering of *Euphorbia virgata* in Oxfordshire. In the latter part of June a visit was made to Denmark where an enjoyable fortnight was spent and where one had the opportunity of meeting Professor Ostenfeld and seeing the excellently kept Botanical Garden which is under his care. There, too, one examined the splendid

series of the Spotted Orchid in the Herbarium. Both the true *maculata* and *Fuchsii* are well represented in that country where, as with us, in the main the former grows on acid while *Fuchsii* occupies calcareous soils. I noted 430 species of plants in my visit of which only a very few were not British. Among these was *Arnica montana* growing at a low altitude. Denmark, it may be said, has an area of about 43,000 square kilometres (the Faroes in addition are about 1400 kilometres) and there are over 100 inhabited islands. Of this area about 33,000 square kilometres are cultivated. There are large tracts of heathland as yet uncultivated and in some of these near Esbjerg we saw *Arnica montana*. The highest point is the Himmelbjerg, which, although less than 600 feet high, is so well proportioned as to be really mountain-like. On it we saw *Pyrola*, and in woods in the neighbourhood with other plants, *Mai-anthemum*, *Polygonatum verticillatum*, and *Phyteuma spicatum*. On the island of Fano we saw the Zetland form of *Lathyrus maritimus*, var. *acutifolius* Bab., and there too was a flora like that of the Norfolk breck-land with *Scleranthus perennis*, *Silene Otites*, *Weingaertneria canescens*, *Phleum arenarium* as its constituents. In bogs in close vicinity grew *Carex limosa*, *Oxycoccus micropetalus*, *Utricularia*, etc. As a roadside weed in heathy places *Lychnis Viscaria* was not unfrequent. *Euphorbia virgata* was seen near Elsinore as well as *Allium Scorodoprasum*. The latter, like the Norfolk broads, had the White and Yellow Water Lilies, as well as *Cicuta* and *Sium latifolium*.

In early July, accompanied by Mr T. Gambier Parry, a visit was paid to Jersey to try and see *Myosotis sicula* in situ, but the marshy spot was quite dried up and yielded no *Myosotis*. *Galium debile* was, however, found in the vicinity. When in Jersey a painting of a plant was sent to me to corroborate. It was the Epipogon from Oxfordshire, so I hurried back in order to make a search, staying for the night in Corfe Castle in order to see the Calamint on the Castle, which Mr Pugsley refers to *baetica* (*Satureia villosa*). A night was spent at Highnam with its fine arboretum and magnificent early Italian paintings and then a two days' search in the Oxfordshire wood revealed a single specimen of *Epipogon*, which enabled me to give to the British Museum my Ludlow specimen. *Epilobium Lamyi* and *Hypericum Desetangii* were added to the

Oxford flora, and Dr H. Smith showed me an abundance of *Lotus siliquosus* in Berkshire. A short visit was paid to Sir Roger Curtis at Lichfield where *Potamogeton Cooperi* and *Lintoni* were still growing in the Canal. The *Hieracium stoloniflorum* at Hanslope in Berks has now reached to the western side of the railway in some plenty so that it evidently ripens its fruits. *Anthemis tinctoria* is also still very abundant there. A new and native locality for *Muscari* was found near Witney in Oxfordshire. August was spent in Zetland with Prebendary Burdon, and the results of our hard work are given elsewhere in the *Report*. They include a new species of *Thymus* which I found on the summit of Ronas Hill, and which Dr Ronniger and I have named *T. zetlandicus*. We also saw some new Shepherd's Purses. There the rainfall was less than usual. We returned from Lerwick to Aberdeen and then went to Braemar and there met Mr and Mrs Corstorphine, and Mrs Wedgwood, and climbed Lochnagar, finding *Carex Lachenalii* in Dickie's locality (where I last saw it in 1892), and with, or rather near it, *C. helvola* in quantity, both these plants having been seen earlier in the year by Lady Davy, Miss Vachell, Mr Butcher and other of our members. On August 27, with the Hon. Mrs Adeane and Miss V. Keppel we climbed the mountain again from the Alltnaguisach side and obtained some more of the *Rumex* which Prof. Danser names *arifolius*, but it was not in good condition. A recent cloudburst had covered much of it with debris. *Alchemilla glomerulans* was also seen, but the *Hieracia* were in poor show, and we were unable to find *Gnaphalium norvegicum*. So bad was the season that even *Veronica alpina* and *Saxifraga rivularis* were in poor quantity. *Bursu patagonica* grew at Ballater. In September with Mrs Wedgwood and the Rev. H. J. Riddelsdell, Amershan was visited in order to see *Rubus uncinatus* in Mr Britton's locality. Later on Colchester was visited with Miss Trower, and a rich lot of alien plants—chiefly from Syrian barley—was seen at the Hythe Dock where Mr G. C. Brown had previously seen them. Among them were *Xanthium strumarium* and some interesting *Chenopodiums*. At the station near Berechurch for *Filago gallica* we found *Ornithopus roseus* with *Filago apiculata* and *Arnosaris*. At Abingdon in Berkshire was found *Chenopodium solitarium*, a rare plant even on the Continent. In October, under the kind guidance of Mr R. Smith and Mr Melvill, the docks at

Barry and Cardiff were explored. They are rich in Mediterranean species, and it is somewhat difficult to decide in what manner they are brought to our shores. Later on Mr R. Smith and Mr Wade will publish an account of them in one of our Supplements. They showed me over 70 adventive species in situ, and Miss Vachell kindly directed me to Victoria Park where the sweet-scented *Cuscuta suaveolens* was parasitic on *Nepeta Mussini*.

We offer to Mr J. H. Maiden our hearty good wishes on his retirement from the directorship of the Sydney Botanic Gardens, a post which he has occupied with distinguished success since 1896. His important work, "A Critical Revision of the Genus *Eucalyptus*" is now in the seventh volume. It is illustrated by 225 plates. Eight more parts will complete this gigantic work. His "Forest Flora of New South Wales" in eight volumes with 29 quarto plates is now completed. Mr Maiden filled the office of President of the Royal Society of New South Wales in 1896-7 and again in 1911-12. He received the Linnean Gold Medal in 1915, and was elected into the Royal Society in 1916. A portrait of this distinguished worker at the Australian Flora appeared in the Gardeners' Chronicle 400, 1924. We wish him long years of happiness in his new home.

We congratulate Dr Drummond on his appointment to the chair of Botany at Glasgow University and we hope his genial and able predecessor, Dr Bower, may have a long period to enjoy the honour of Emeritus Professor. We note with pleasure that Mr James Jack, who has done much good algological work, has been co-opted on the Council of the Pharmaceutical Society of Great Britain, and that Mr R. H. and Mrs Williamson of Seascale have generously presented to Seascale "St Cuthbert's Church Hall," a handsome and most useful building. Our best wishes are offered to Mr A. Bruce Jackson, one of our Distributors and Editors of the Exchange Club Report, on his receiving the Veitch Memorial Medal of the Horticultural Society. There is an article and portrait of him in the Gardeners' Chronicle 44, 1924. We are also very glad to see that Dr M. C. Rayner, the joint author with her husband, Prof. W. Neilson-Jones, has been awarded a "Theresa Seesel Research Fellowship" in the Graduate School of Yale University of the value of 1500 dollars. It was founded to promote original research in biological studies. Dr J. Burt, the well-known worker at the South

African Flora, had the degree of Ph.D. conferred on him by the University of Cambridge. His portrait appears in the Gardeners' Chronicle 266, 1924, and it is good to know that Oxford is to have the advantage of his services in the School of Forestry. Our members will be glad to see that the distinguished services of the late Speaker, the Viscount Ulleswater, were recognised by the Corporation of London which granted him the Freedom of that City on February 14, 1924, the document being enclosed in a handsome gold casket.

It is very pleasing to notice that Mr Noel Sandwith, who discovered *Scorzonera* in Dorsetshire, has become connected with Kew, which has also obtained the services of Mr A. R. Horwood, one of our Distributors, and Mr R. Butcher, the discoverer of *Tillaea aquatica* in Yorkshire. The interests of British Field Botany will be strengthened by these appointments. We gladly notice that Mr A. B. Rendle, F.R.S., has consented to edit the *Journal of Botany* on the death of Mr J. Britten who had acted in that capacity since the retirement of Mr Henry Trimen in 1880.

## PLANT NOTES, ETC., FOR 1924.

(Mostly New Plants to the British Isles or Notes on British Species  
inserted here for Convenience of Reference.)

ABBREVIATIONS.—† before a name signifies the plant is not native; × = a hybrid; ± more or less; † after a locality, that the Secretary has seen the plant there; [ ] that the plant is not British or the record is doubtful; *Ann. Bot.* = *Annals of Botany*; *Bot. Abstr.* = *Botanical Abstracts*; *Gard. Chron.* = *Gardeners' Chronicle*; *Ir. Nat.* = *Irish Naturalist*; *Journ. Bot.* = *Journal of Botany*; *Nat.* = *The Naturalist*.

22. RANUNCULUS BULBOSUS L., forma APETALA. Mr St John Marriott sent a peculiar plant from Dartford Heath, Kent, growing on a hedge bank. It has much divided leaves cut into narrow segments. The flower is nearly sessile, and has stamens and pistils only. G. C. DRUCE.

Forma SULPHUREA Druce. Differs from the type by its very pale sulphur-coloured flowers. Found by Miss AGATHA WILKINSON on the Abberley Hills, Worcestershire, in May 1924.

24. R. FLAMMULA L., forma PARVIFLORA mihi. In a marsh near Pontac, Jersey, July 1924. Here it occurred as a tall plant with very small flowers,  $\frac{1}{4}$  in. across. At a distance it suggested *ophioglossifolius*, which is now extinct in its old station at St Peter's Marsh, Jersey. G. C. DRUCE.

28. R. SARDOUS Cr., forma PROSTRATA. Differs from the type by the perfectly prostrate growth. Freshwater, Isle of Wight, 1924. ERIC DRABBLE. Dr Drabble has had the plant under observation and finds that the fruits are sterile; he believes it to be a hybrid. Its associates are *R. repens* and *R. acris*. Its prostrate growth suggests if it is a hybrid that *repens* may be the parent, but hybridity is very

rare in the Ranunculi. In the dried state I cannot find evidence of that, and shall look forward to Dr Drabble's further investigations. I have seen prostrate *sardous* in saline meadows in Hampshire.

33. R. GRAMINEUS L. See "Dubious Plants," *Rep. B.E.C.* 740, 1919. Miss I. M. Roper, F.L.S., tells me that she has come across a specimen labelled "Lundy Island" in the Stephens Herbarium at Bristol, which was made about 1850, and has been the property of the Bristol Naturalists' Society for the past forty years. Dr D. O. Stephens was a local medical man who wrote about Bristol plants, 1835-1850. In *Rep. B.E.C.* I quoted from the *Phytologist* of 1855-3 that Mr Baker told the editor that Mr Etheridge of Bristol had recently found it in Lundy Island, but, despite the editor's appeal for a specimen and history of its discovery from the sender, no reply appears to have been forthcoming. Robert Etheridge, F.R.S., lived, says Miss Roper, at Bristol for about 20 years from 1840 onwards, and was curator of the Bristol Institution which developed into the City Museum, so that his period of work well overlapped that of Dr Stephens. It would be remarkable if this were Etheridge's specimen, but it is neither dated nor localised, and Etheridge scarcely could be ignorant of the importance of his find. Even the original record reached the *Phytologist* at second hand through a Mr Baker. Therefore, it still remains as a dubious British plant, but the locality should be carefully searched on the chance of its being refound. In those days labelling of specimens was more perfunctory than now, and I have seen books with the known localities for the plant filled in, and it would not follow that if the specimen was gathered elsewhere the habitat would be corrected.

24 (2). BOCCONIA (Plumier) L.

88 (2). B. CORDATA Willd. Sp. Pl. ii., 1841. Alien, China. Hortal. On waste ground, Colchester, 1924, G. C. BROWN. Named by Plumier after Paul Boccone of Savona and Palermo, a Cistercian, who wrote on Sicilian and other plants.

37 (2). THELYPODIUM Endl. Gen. 876, 1839.

140 (1). T. LASIOPHYLLUM Greene in Bull. Torrey Club xiii., 142 1886. Alien, Amer. bor.-occ. *Turritis lasiophylla* Hook. and Arn.

in Beech. Voy. 321, 1841. *Sisymbrium reflexum* Nuttall in Journ. Acad. Philadelph., n. 5, i., 183, 1847. Tips, Robroyston, Lanark, R. GRIERSON.

191 (4). *SISYMBRIUM RICHARDSONI* Sweet (*DESCURAINIA RICHARDSONI* O. E. Schulze). Alien, N. and W. America; adv. in Holland. Byfleet, Surrey, Lady DAVY. Det. A. THELLUNG.

212 (2). *BRASSICA FRUTICULOSA* Cyr. Pl. Rar. ii., 7, t. 1. Alien. Portugal, Spain, Sicily, Naples. Cardiff (112), R. L. SMITH. Shown me there in some quantity by Smith and Melvill last October. A distinct and pretty species. Det. A. THELLUNG.

232. *BURSA ODONTOPHYLLA* (E. At.). Native. Railway-side, Llanberris, Carnarvon, June 1924, G. C. DRUCE.

232. *B. LUTETIANA* (E. At. ii., 74, class viii.). Native. Spiggie, Zetland, Aug. 1924, G. C. DRUCE. Leaves sinuate, or with large lobes; stem bifida, foliosa, often multicaulis; wr. rather numerous, seldom budding; capsules 7 x 5, with almost straight lateral margins; notch rather deep. From Paris (cultivated), Lille, Brussels and United States—St Louis and Kansas. E. ALMQUIST.

232. *B. SINUOSA* (E. At. ii., 88, class xii.). Scalloway, Lerwick, Spiggie, Zetland, Aug. 1924, G. C. DRUCE. Leaves entire or a little incised, with acuminate lobes; stem bifid, often foliosa, with weak branches; sometimes bushy. Wr. few; capsules 7-8 x 5-6, convex, or scoliotic, or cuneiform; notch more or less deep, with rounded lobes. From Trier (cultivated), Brussels, Lausanne; U.S.A.—Kansas. E. ALMQUIST.

232. *B. ROBUSTA* (E. At. ii., 86, class xi.). Waste ground, Abingdon, Berks, Oct. 1924, G. C. DRUCE. Leaves broad, entire or sinuate, much indented; stem foliosa, bifida, multicaulis, with long firm branches; wr. numerous, with broad short leaves, denticulate; pedicels long; capsules 8-9 x 5-6, lateral margins very convex; notch deep. From Bremen (cultivated), Stockholm, Ghent, Grenoble. E. ALMQUIST.

350 (3). *SILENE PSEUDO-ATOCION* Desf. Fl. Atlant. i., 353. Alien.

Balearic Isles. Waste ground, Bembridge, Isle of Wight, T. O. W.  
Det. A. THELLUNG.

385. *ARENARIA TRINERVIA* L., var. *HYEMALIS* D'Urban *in lit.*  
This differs from the type in flowering through the winter, in its being a stiffer and much more branched plant, especially in the upper part, where there is a quick transition in the size of the leaves of the main stem, which are firm in texture, short and broadly ovate, to those of the copiously branching ramifications on which the leaves are less than half the size of the lower ones. The flowers are smaller than those of the type, both as regards sepals and petals. The stamens are not more than seven in number. Locality under trees and on wall-tops, Countess Wear, S. Devon. W. S. M. D'URBAN, NOV. 1924. One may add that the sepals are less strongly nerved, and when fresh are barely discernible. It forms an approach to *A. pentandra* Dufour, from which it differs in its laminae and their nerves being ciliate, in the larger number of (7 as against 5) stamens, in the less strongly marked (when there are more than three) leaf-nerves, and in the smoother seeds; from *Moehringia erecta* Mart.-Donos (*Fl. Tarn.* 106, 1864) it differs in being less pubescent, the upper leaves are spreading, the upper branches are not erect, nor is the plant simple, stiff and slender. Rouy & Foucaud (*Fl. Fr.* iii., 256) cite the *Eng. Bot.* plate, 1483, for *M. pentandra*, but in error, as the leaf-nerves are shown to be ciliate. In the details of the flower added in the third edition (t. 234) the flower has ten stamens. *A. pentandra* may be found in Britain, indeed see *Camb. Fl.*, where Mr Carter collected a plant in Devonshire "which seemed to be it," but of which nothing more has been heard. It may be added that the name *trinervia* is misleading, as the nerves vary from 3 to 5 in number. G. C. DRUCE.

396. *A. VERNA* L. See *Rep. B.E.C.* 31, 123. Mr C. C. Lacaita writes that "in Italy the plant is quite indifferent as to soil, and certainly knows nothing about lead." Its distribution in England is discontinuous, and it has yet to be proved that lead is found in all its habitats. It must also be borne in mind that it is a variable plant. Can these variations be connected with soil constituents?

436. *HYPERICUM PERFORATUM* × *QUADRANGULUM*, vel *H. PERFORA-*

TUM × DUBIUM. By the Leader near Easton, Roxburgh, Sept. 1914, Miss I. M. HAYWARD. Mr C. E. Salmon suggests this parentage. The two-angled stem, etc., is *perforatum* evidence, whilst the broader, blunter sepals, imperfectly dotted blunter leaves, pellucid veins, etc., all point to another parent.

439. H. ELODES L. (HELODES PALUSTRIS Spach), nov. forma GLABRATUM. Differs from the type by the leaves being nearly glabrous. On banks of dug-out ditches, Lyndhurst, S. Hants, 1924, Miss TODD; Burnham Beeches, Bucks, 1922, G. C. DRUCE.

497 (3). GERANIUM IBERICUM Cav. Diss. 209, var. PLATYPETALUM (Fisch. & Mey.) Boiss. Alien, Caucasus. The Mound, E. Sutherland, quite naturalised in a wood, July 1923, G. C. DRUCE; Abergavenny, Monmouth.

531. LABURNUM ADAMI = CYTISUS ADAMI. This interesting graft-hybrid of *Laburnum Laburnum* and *Cytisus purpureus* fruited this year at the Botanic Garden of Holloway College, and Miss E. M. Blackwell showed specimens at the Linnean Society on November 20. The tree bore fruits of (1) *L. Laburnum*, (2) of *C. purpureus*, and (3) of *C. Adami*. Hildebrand has shown that in 1904 two seeds of it were obtained, but that from these two seeds typical *Laburnum* plants resulted.

640 (2). TRIFOLIUM BECKWITHII Brewer, ex. S. Wats. in Proc. Am. Ac. xi. 128, 1876, Calif. Burton-on-Trent, Derby, on waste heap.

643. DORYCNIUM HERBACEUM Vill. Messrs Melvill and R. L. Smith showed me this pretty southern species *in situ* at Barry Docks, Glamorgan, in October 1924. My note on it, through the absence of a comma, is misleading. It should run—"The flowers are touched at the tip with pale blue, not black." Mr C. C. Lacaïta says that he believes "it to be the true Melilot of the ancients . . . In the south of Italy whole hillsides are covered with it in some districts, and, especially towards evening, it fills the whole air with a most delicious scent of honey, which is not possessed by any of our Melilot species."

741 (2). *PRUNUS CERASIFERA* Ehrh. Beitr. iv. 1789 (*P. divaricata* Ledeb. Ind. Hort. Dorp. Suppl. 6, 1824). Alien, Oriens. This is the plant which was sent to the Club in 1922 by Mr L. Cumming as *P. domestica* (see *Rep. B.E.C.* 832, 1922). Dr Thellung identifies it as above. It is the Myrobalan Plum, and, of course, a planted tree in Britain. It came from a hedge in Kilsby village, Northants.

786. *RUBUS ULMIFOLIUS* Schott (*RUSTICANUS* Merc.). Near the Manoir de la Trinité, Jersey, 1924, ATHELSTAN RILEY. In this curious plant the blossoms are completely double, all the stamens being petaloid, the petals being very narrow, almost linear, but pointed at apex. The blossoms are about an inch across and of a pretty rose-pink colour. I name it *lusus* (vel var.) *FECUNDISSIMUS*. G. C. DRUCE.

917 (2). *ACAENA LAEVIGATA* Ait. Hort. Kew., ed. 2, i., 68, 1810. Alien, Straits of Magellan. Hortal. Introduced in 1790. From Levenhall, Edinburgh; cult. at Shipley by Mr J. CRYER.

966. *CRATAEGUS MONOGYNA* Jacq., var. *MASONII* Druce. The Rev. W. Wright Mason this year sent me from Melmerby, Cumberland, specimens of a hawthorn which is distributed through the Club. It differs from the type in the flowering-branches being pendulous, that is, the flowers are turned downwards. Although the calyx-tube is practically glabrous, there appears to be no crossing with *C. oxyacanthoides*. The styles are usually curved. G. C. DRUCE.

972 (4). *COTONEASTER BASILARIS* Wallich, f. *OBTUSA* Dippel. Alien, India. Slinfold, Sussex, A. WEBSTER (see *Rep. B.E.C.* 389, 1923). Det. A. THELLUNG. Doubtless planted.

1043. *LYTHRUM SALICARIA* L., var. *ALTERNIFOLIUM* (Lorey) Coss. & Germ. Fl. Env. Paris, ed. i., 2, 188. *L. alternifolium* Lorey Fl. Côte d' Or. In a china clay quarry, Newton Abbot, S. Devon, C. J. COOKE. This differs from the ordinary form in having alternate leaves and spikes of fewer flowers. See Rouy & Camus *Fl. Fr.* vii., 158. G. C. DRUCE.

1067 (2). *OENOTHERA CATHARINIENSIS* Camb. Alien, temperate S. America. Avonmouth Dock, W. Gloster, 1923, N. SANDWITH

1100. *CICUTA VIROSA* L. A large plant with secondary umbels arising from a base of flowerless involucral bracts. Ormesby Broad, Norfolk, E. M. REYNOLDS.

1115. *CONOPODIUM MAJUS* Loret, var. *vel lusus*. Sent by the Rev. W. Wright Mason from Melmerby, Cumberland, who noticed it growing with the type, from which it differs in the greener tint of the flowers, and especially in that each flower is composed of many petals, the stamens in most cases having become petaloid. At a distance the umbel suggests that of *Meum*. G. C. DRUCE.

1151. *PEUCEDANUM SATIVUM* B. & H. Exhibited as *Pastinaca sativa* at meeting of Linn. Soc. (no. 439) December 19, 1924, as a remarkable cut-leaved plant which occurred at Norton Common, Letchworth, Herts, by Mr W. Percival Westell. Known since 1915, it has been raised from seed. Mr C. E. Salmon suggested that it was *Pastinaca Fleischmanni* Hladn. *Peucedanum Fleischmanni* (Hladn.) comb. nov. is a very rare plant, only recorded from Carniola by Nyman. G. C. DRUCE.

1155. *TORDYLIUM MAXIMUM* L. This adventive species was included in my "Extinct and Dubious Plants of Britain," which appeared in the *Report* for 1919, as it had not been recorded since 1877, when Dr Eyre de Crespigny found it at Tilbury, Essex. This year Mr W. G. Clarke kindly sent me a note of its occurrence in E. Norfolk at Arminghall, where it was found by Mr P. Looker. In answer to my enquiry Mr W. G. Clarke kindly says that Mr P. Looker, an able teacher at the Technical Institute, was out gathering specimens for his class last July when on a waste heap in a field, he found an Umbellifer which he had never seen previously. He worked it out carefully by "Hayward," and came to the conclusion that it could be nothing but *Tordylium*. He took part of the plant with flower and fruit to the senior class, and without any lead they also tracked it to *Tordylium*. Unfortunately, when the spot was revisited the rubbish-heap had been carted away and so Mr Clarke was unable to verify the identification. Nevertheless, he is convinced that *Tordylium* was found, and that there would have been a voucher except for the fact that Mr Looker never presses specimens. It is a plant that may turn up in any southern county as an adventive species.

1167 (2). CAUCALIS GRANDIFLORA (Boissier as *Torilis*, not of Linn.), var. ACULEATA (Boiss.), comb. nov. *Torilis microcarpa* Bess. Enum. Pl. Volhyn. 43, 1822, var. *aculeata* Boiss. Fl. Or. ii., 1081. Alien, Russia; Asia Minor. Buildwas, Salop, 1909, W. B. ALLEN, ex J. C. MELVILL *in lit.* The *Caucalis microcarpa* of Hooker and Arnott Beechey Voy. 348 is a totally different plant, and, unless the permanence of the original trivial is always to be maintained, prevents our using Boissier's *microcarpa* under *Caucalis*.

1198 (2). GALIUM DEBILE Desv. Obs. Pl. d'Anjou 134, 1818. Caulibus flaccidis, debilibus, basi radicanibus, erectis, quadrangulis, inangulis prominentibus remote minuteque scabriusculis vel sublaevibus; foliis in verticillis 5-6, internodiis elongatis, multis, brevioribus anguste linearibus vel supra medium parum latioribus, obtusiusculis vel scutis, muticis, nervo dorsali tenui parum prominulo, margine leviter revoluta minute scabris (aculeolis adscendentibus); panicula laxa, corymbiformi, e ramis elongatis, erecto-patulis, apice cymigeris composita, cymis trichotomis, apice glomerulos densifloros gerentibus, pedicellis flore fructuque brevioribus; corolla alba, extus rubella, lobis acutis, fructibus jam ante maturitatem papilloso-granulatis. Willkomm & Lange *Prod. Fl. Hisp.*, ii. 322. The habit is much that of *Asperula cynanchica*. This is placed by Rouy (*Fl. Fr.* viii., 44) as a sub-species of *G. palustre*. Under *G. debile* he puts *Witheringii* as a variety. Grenier & Godron (*Fl. Fr.* ii., 40) also draw attention to the resemblance it bears to *Asperula cynanchica*. They quote as synonyms *G. constrictum* Chaub. (which has broader leaves) and *G. uliginosum* Mérat, non L., and they give as a variety *congestum* (Jord.). Rouy also gives as varieties *humile*, *congestum*, and *constrictum*. Coste (*Fl. Fr.* ii. 243) makes *constrictum* to be synonymous with *debile*, and gives a figure. Our plant varies from 4-14 inches high, and is a small-leaved strict flowering plant with narrow inflorescences owing to the pedicels not spreading. The leaves are narrower and more strictly linear, and less rough at the edges than those of *Witheringii*. Habitat: Marshes at St Brelade, Jersey, 1924; L'Ancrese, Guernsey, 1906. To this may be referred, I think, specimens gathered by Miss Todd at Lyndhurst in 1924, and by Mr T. F. Rayner from moist pasture by Hatchett's Pond, Beaulieu, S. Hants. Specimens from marshy meadows near Grendon, Bucks, and from Halton in that county, and from

Beaumont, Jersey (1906), which Professor Glück said were probably *debile*, have wider leaves and more spreading inflorescences than the St Brelade plant. I named them, ad interim, forma *angustifolium* of *G. palustre*. There is another small-leaved plant, *microphyllum* Lange, which is common in Zetland and which I have seen at Darkadale in the Orkneys, but this differs in its firmer texture, by the leaves being less truly linear although quite small, and by the more open panicle with very few flowers. *G. palustre* and *debile* differ in a somewhat analagous way to that of *G. Mollugo* and *G. erectum*. Whether the asperities (*papillose-granular*) on the fruit are constant differences I am unable at present to say. Nyman (*Consp.* 327) divides the *palustre* set into four species—(1) *debile* of Hoffmanssegg and Link, confined to Portugal and Galicia, which is an untenable name owing to *debile* of Desf. being two years earlier; (2) *constrictum* Chaub., under which is put *debile* of Desf., which is found from Spain and France along the Mediterranean as far east as Eubaea; (3) *G. elongatum* Presl, which they make synonymous with *G. maximum* Moris, and (4) *G. palustre* L. The European distribution is not antagonistic to *debile* being a native of the Channel Isles and south-western England.

1297 (2). *RUDBECKIA AMPLEXICAULIS* Vahl in Skriv. Nat. Selsk. Kjset. ii., 2-29, 1793. *R. amplexifolia* Jacq. Ic. Pl. Rar. iii., 16, t. 592. Alien, Southern U.S. and Mexico. Waste places at Benthall House, Broseley, Mr G. POTTS, ex J. C. MELVILL *in lit.* See *Journ. Bot.*, Aug. 1924.

1304 (5). *SPILANTHES DECUMBENS* (Sm.) Moore (S. ARNICOIDES DC.), ? var. *MACROPODA* (DC.) Moore in Proc. Am. Acad. Arts & Sc. xiii., n. 20, 550, 1907. Alien, Brazil; Uruguay; adv. in France and Holland. Paradis, Guernsey, 1923, C. G. TRAPNELL, Mrs HICHENS, Mr TOMLINSON, etc. See *Rep. B.E.C.* v., 33, 1917, when Mrs Sandwith found the var. *leptophylla* at St Philip's, Bristol. Mr F. Robinson also sent to the Botanical Exchange Club the same plant labelled *Buphthalmum* and *Anthemis* from St Ouen's Bay, but I think by a slip of the pen he wrote the wrong locality. I have never seen it there.

1349 (3). *ANTHEMIS MACRANTHA* Heuff. in Flora xvi., 362, 1833.

Alien, Austria. Hortal. Quite naturalised on a high bank near Fishguard Hotel, Pembroke, April 1923, G. C. DRUCE. Distributed in 1924. Named at Kew.

1400. *SENECIO SYLVATICUS* L., nova forma *DISCOIDEUS*. Miss COBBE sent me specimens gathered on Walney Island which had no ray-ligules but only tubular florets. Rouy says ligules always present, although often very small, and I cannot find any reference to a discoid form. At Seascale, Miss Cobbe says *sylvaticus* had the normal flower-heads.

1408 (14). *S. MIKANOIDES* Otto. See *Rep. B.E.C.* iii., 475, 1913. A South African species, which I have gathered naturalised in the Azores, has been sent by Mr N. SIMPSON from a wall near St Catherine's, Jersey, 1923, ex Miss VACHELL, and from the same vicinity by Bro. L. ARSENE in 1924.

1408 (15). *S. INAEQUIDENS* DC. *Prod.* vi., 401. Alien, South Africa. Waste ground, Bradford, Yorks, 1919, J. CRYER. In the *Index Kewensis* it is placed subordinate to *S. pellucidus* DC. *Prod.* vi., 380.

1645. *TARAXACUM GLAUCINUM* Dahlstedt in *Bot. Notiser* 177, 1909. Folia glaucescenti-viridia, pallida, glabra; petiolis angustis  $\pm$  alatis, pallidis v. marginibus inferne laete violaceis, lobis deltoideis brevibus usque subfalcatis  $\pm$  elongatis, apicibus  $\pm$  patentibus—porrigentibus, in margine superiore  $\pm$  dentatis—valde subulato-dentatis, interlobiis latiusculis brevibus—elongatis angustioribus inaequaliter et longe subulato-dentatis, lobo terminali triangulare-hastato, lobulo apicali saepe angusto lineari sat acuto. *Scapi* plures, vulgo pallidi glabri, folia aequantes vel sat longe superantes. *Involucrum* 10-12 mm. longum, 6-7 mm. latum, squamis exterioribus  $\pm$  patentibus, inferioribus ovatis, ovato-lanceolatis, superioribus lineari-lanceolatis ecallosis, leviter callosis (paucis interdum corniculatis), apice  $\pm$  roseo-violaceis sat late et conspicue albido-marginatis, interioribus linearibus sub apice roseo-violaceo leviter callosis—breve corniculatis. *Calathium* 35-45 mm. latum, parum radians, laete luteum. *Ligulae* marginales subtus stria violacea notatae. *Antherae* polline carentes. *Stylus* luteus, stigmatibus

fuscis. *Achenium* lucide rubrum, apice sat longe et anguste sy inulosum, 3.3 mm. longum, 1 mm. latum, pyramide 0.8 mm. longo, rostro 10 mm. longo. Sweden: Smaland, Westgothland, Dalsland. Allied to *T. fulvum* Raunkier and *T. limbatum* Dahlst. Chichester, Sussex, as a modification, July 1923, G. C. DRUCE.

1645. *T. ALONIENSE* Dahlstedt. Sect. VULGARIA. Grendon Underwood, Bucks [AA. 79]; probably this from Ivinghoe, Bucks; Llanberris, Carnarvon, June 1924, with a forma RECURVILOBATA Dahlst. G. C. DRUCE.

1645. *T. ANCISTROLOBUM* Dahlst. Tarax. Scand. Exsicc. Fasc. ii., n. 16, 1912, et Tarax. Vastra Norge 27, 1923-4. Folia glabra, leviter pilosa, obscure (canescenti-) viridia, subtus pallidiora, magna-maxima, lata  $\pm$  obovato-oblongo, lobis valde approximatis, v. interdum  $\pm$  distantibus, interlobiis brevibus v. rarius longioribus,  $\pm$  latis integris v.  $\pm$  dentatis sejunctis, superioribus vulgo integris saepius valde hamatis, inferioribus magis patentibus et  $\pm$  dentatis, obtusiusculis, breve acutis, summis saepe obtusis, inferioribus magis acutis, lobo terminali in fol. ext. et intermed.  $\pm$  brevi hastato, marginibus  $\pm$  convexis, breve acuto v. sub-obtuso, in fol. interioribus magno—maximo  $\pm$  obtuso lato-latissimo, interdum  $\pm$  elongato, lobatis basalibus vulgo valde hamatis  $\pm$  obtusiusculis-obtusis; petiolis (interdum leviter coloratis) et nervo mediano pallidis. *Scapi* longi pallidi, inferne interdum  $\pm$  roseoli, glabri v. apice leviter araneoso-pilosi. *Involucrum* magnum breve et crassum,  $\pm$  atroviride, basi ovato-truncato. *Squamae* exteriores reflexo-patentes, suberectae, interdum laxe adpressae,  $\pm$  anguste ovato-lanceolatae, v. lineari-lanceolatae obtusiusculae, breve acuminatae, apice obtuso saepe leviter coloratae, in pag. interiore violascentes, olivaceo-virides, v.  $\pm$  violacentes vix v. levissime marginate, quam squ. interiores vulgo paullo breviores; interiores lineari-lanceolatae apice angusto obtusiusculo. *Calathium* magnum—maximum 50-60 (70 mm.) diametro, radians. *Ligulae* luteae angustae, marginales extus stria lata, rubro-purpurea ornatae. *Antherae* polliniferae. *Stylus* et stigmata fusco-virescentes. Norway: Christiania, Bergen, etc. A modification of this occurs at Yarnton, Oxon [AA. 81]; Mansfield College Grounds, Oxford [AA. 50]; Alton, Hants; Newbury, Berks. G. C. DRUCE,

1645. *T. CYANOLEPIS* Dahlst. in Arch. Bot. Stockh. n. 11, 40, 1911. Folia sat laete prasino-viridia, in utraque pagina leviter, subtus in nervo dorsali pallido sparsim vel praesertim apicem versus densius arenosa, petiolis sat angustis v. alatis, pallidis v. leviter praesertim ad basin coloratis, lanceolata, obovato-lanceolata, exteriora lobis inferioribus, triangularibus, breve acutis, superioribus  $\pm$  hamatis, breve acutis-obtusiusculis, mucronatis margine superiore convexo, lobo terminali obtusiusculo-obtuso, marginibus convexis, intermedia lobis brevibus—mediocriter longis—sat latis, inferioribus v. plurimis triangularibus-deltaideis, patentibus-retroversis, in margine superiore leviter-crebre, subulato-dentatis, acutis, superioribus v. plurimis  $\pm$  hamatis, obtusiusculis, mucronatis, sat acutis, plerumque integris, vulgo latis, margine superiore valde convexo et interlobiisque nullis v. brevibus v. margine superiore minus convexo et interlobiis saepe sat bene evolutis, denticulatis,  $\pm$  angustis, lobo terminali brevi-mediocri, latiusculo-lato, ontoso, breve acuto, marginibus convexis, integris v. etiam triangulari-hastato—sagittato, supra lobulos laterales parvos, patentes contracto, lobulo mediano saepe angusto, brevi, obtusiusculo, mucronato, intima lobis hamatis, magis patentibus, deltaideis, margine superiore magis denticulato, lobo terminali majore et latiore, nunc brevior obtusulo nunc mediocriter longo, magis acuto  $\pm$  integro v. inferne denticulato-dentato. *Scapi* folia ut plurimum longe superantes, pallidi v. basi apiceque leviter colorati, glabri v. apicem versus leviter, sub involuero densiusculi araneosi. *Involucra* obscure viridia v. vulgo atroviridia, c. 15-17 mm. longa, crassiuscula v. vulgo crassa, basi truncata. *Squamae* exteriores patentissimae—erectopatentes, 3.5-5 mm. latae, 15-16 mm. longae ovato-lanceolatae—lanceolatae, acuminatae, leviter sed sat conspicue marginatae, saepe denticulatae, subtus obscure virides v. atrovirides piceae, apicem, versus  $\pm$  violascentes, supra vulgo intense, caeruleo-violaceae v.  $\pm$  obscure atro-violaceae, rarius rubro-violaceae, interiores linearilanceolatae, obscure virides, fere atrovirides, apicem  $\pm$  piceae et apice ipso violascentes. *Calathium* c. 55-60 mm. latum, sat obscure luteum, planum. *Ligulae* marginales c. 3 mm. latae, sat planae, apice demum  $\pm$  involutae, extus stria rubro-purpurea intense coloratae, dentibus  $\pm$  obscure purpureis, intimae apice  $\pm$  involutae. *Antherae* polliniferae. *Stylus* cum stigmat. sordide virescens, sic-

cus valde obscurus. *Achenium* fusco-olivaceum, apice acuto spinulosum, caeterum  $\pm$  tuberculatum, sat laeve, basi laeve, c. 3 mm. longam, 1 mm. latum, pyramide, 0.5 mm. longo, conico, rostro 8-9 mm. longo. Dalsland, Vastergotland, Skane, Norge; Finland. Moreton Pinkney, Northants; Ivinghoe, Bucks, 1922, G. C. DRUCE.

1646. *T. LAETIFRONS* Dahlst. [2508]. Black Craig, Stromness, Orkney, June 1924, Col. H. H. JOHNSTON.

1646. *T. MUCRONATUM* Lindb. f. in Act. Soc. Faun. et Fl. Fenn. xxix., n. 9, 24, 1907, et Arkiv. för Bot. 62, 1911. Finland, Sweden, etc. A plant allied to this was common by the roadside near Woodleys, Oxon in 1923 [AA. 81]. G. C. DRUCE.

1646. *T. TRIANGULARE* Lindb. f. in Med. et Soc. Faun. et Fl. Fenn. xxxv., 19, 1909, et Arkiv. för Bot. 68, 1911. Finland, Sweden, Norway. In some plenty at the back of the Crescent, Oxford, with small flowers. It is allied to this, says Dahlstedt.

There are also two Dandelions of the Erythrospermae as yet undescribed. One from Ivinghoe Beacon, Bucks is allied to *T. laetum* Dahlst., the other from St Giles, Oxford, is allied to *T. praevnum* Dahlst. Another marked form, also undescribed, grew at Inchnadamph, W. Sutherland. The identifications of the foregoing *Taraxaca* we owe to Herr H. Dahlstedt.

1677. *CAMPANULA RAPUNCULUS* L. Among the contrasting features which distinguish the somewhat similar species *C. Rapunculus* and *patula*, Syme (*Eng. Bot.* vi., pp. 15 and 16) gives for *Rapunculus*—"Calyx-tube glabrous; segments linear-setaceous, entire, erect;" and for *C. patula*—"Calyx-tube glabrous; segments linear, subulate-serrulate, sub-erect," and he adds, "the calyx-segments are not so long in *patula*, broader at the base and finely serrulate on the margins." Grenier and Godron (*Fl. Fr.* ii., 418) also stress the serrulate calyx-segment character of *patula*, "denticuléés dans leur tiers inférieur." This summer the Rev. W. H. Wilding brought me a specimen which he thought was *C. patula* from Buckinghamshire (where I had many years ago gathered *C. Rapunculus*) and this specimen though fragmentary I referred to the same species. He pointed out, however, that the calyx-segments were not entire and

had slight projections on the margin near the base, which indicated *patula*. However, from other characters there was no doubt that the specimen was *Rapunculus*. To prevent confusion it will be well to amend the description by adding "rarely the calyx-segments in *Rapunculus* have a few teeth springing from the hyaline margin." Such specimens are in my herbarium from Mr Bickham at Ledbury, where it occurs as a garden-weed, from Enville, Staffordshire, coll. J. Fraser, 1879, and from Woodhouse, Notts, gathered in 1855 by Miss C. E. Palmer. The character seems too small to found a variety upon; therefore the description in *Hayward's Bot. Pocket Book* is altered by adding the word "usually," *i.e.*, usually entire. G. C. DRUCE.

1684. *VACCINIUM ULIGINOSUM* L. Studier over Polymorphien hos *V. uliginosum* L., Henning E. Petersen, *Bot. Tidsskrift* 217, 1924. Includes notice of var. *pubescens* Horn. Leaves occur with rounded or pointed apices and the variations can be put in 6 groups; they may form 162 possible combinations and of those 104 have been noted. The var. *microphylla* Lange I got at Saxavord, Unst.

1687. *OXYCOCCOS OXYCOCCOS* (L.). A preliminary treatment of the varieties and forms of *Vaccinium Oxycoccus* found in the bogs of Germany by W. Gleisberg in *Ber. Deutsch. Bot. Ges.* 130-9, tt. iv., 1922. See also *Bot. Arkiv.* 1-34.

1689. *ARBUTUS UNEDO* L. A beautiful illustration of this species is given in *Gard. Chron.* 289, 1924. Trees forty feet high are found at Killarney. The tree bears fruit and flowers at the same time.

1693 (2). *ERICA STRICTA* Donn. Mr C. C. Lacaita shows that the correct name is *E. terminalis* Salisbury, which dates from 1796. Donn's *stricta* of the same year is a nomen nudum, and for that reason I quoted it from Willdenow, who adopted it, but as Mr Lacaita says (see *Bull. Soc. Bot. Ital.* for 1911) Salisbury's name has to be used.

1693 (2). *ERICA STRICTA* Andr. *Irish Naturalist*, May and September 1924. Further significance is given to the occurrence of this species in N. E. Ireland (see *Ir. Nat.*, March 1923) by the dis-

covery by Miss Knowles of a note by the late James Britten in *Journal of Botany* 25, 1872, calling attention to the remark in DC. Prod. vii., 666, that the plant's distribution is "in montibus Corsicae, Sardiniae, et Hispaniae australis (Boiss.!), etiam in Hibernia boreali (Lloyd in Herb. Hooker!)" Mr Britten added that the specimen was in the Kew Herbarium, and that there was no doubt of its identity with *E. stricta*; it is labelled in Sir W. J. Hooker's hand, "North of Ireland! Dr Lloyd, 1834." Dr Praeger now hopes that the plant may prove to be actually indigenous in the north-east of Ireland, as one of the species of the "Mediterranean element," on the analogy of *Glyceria festucaeformis*. This analogy however is based on the deduction that the Strangford Lough plant is *G. festucaeformis*, but Hackel and other distinguished critical botanists decline to accept that suggestion and to me it is only a variety of the polymorphic *Glyceria maritima* which I named var. *hibernica*. It is closely allied to *G. Foucaudii* (Hackel). *E. terminalis* Salisb. is a most unlikely Hibernian plant. One might as well claim *E. lusitanica* for Dorset.

1706. RHODODENDRON PONTICUM L. Mr W. B. Turrill gives (*Gard. Chron.* 378 (1), 1924) an account of this popular species, which is now so completely naturalised in the warm sandy soils of south-west Britain, where it seeds frequently. He says it occurs in the south-western Caucasus (Colchis or Pontic region) from the sea-coast to 1800 metres, hence its specific name. Noe collected it on the Bithynian Olympus, where I failed to find it in the spring. It also occurs in Azerbaijan and in the Lebanon from 1000 to 2000 m. as a form called *brachycarpum*. There is another widely separated area in the south of the province of Cadiz, in N.W. Portugal, and in Northern Portugal, Beira, etc. The evidence of Rhododendron remains in the Tertiary beds is discussed. The Höttinger breccia near Innsbruck yields plant-remains which were described by Wettstein, and in the Isle of Skyros in the Aegean Sea leaves have been discovered in tufa of a Quaternary age. Our honorary member, Professor Domin, has described a variety *Skorpilii*, differing from the type in having long persistent flower-bracts, from oakwoods at Malko Tirново at 400 metres, just on the Bulgarian side of the Thracian frontier.

1717. LIMONIUM TRANSWALLIANA Pugsl. See *Journ. Bot.* 129,

1924, with a figure. Coast of Pembrokeshire. Closely allied to it specifically distinct from *L. binervosum*.

1725. *PRIMULA VULGARIS* Huds., forma *VIRIDIFLORA*. Inverary, Argyll, June 1924. This curious plant, which was sent by the Duke of Argyll, had been found by Mr Malcolm, one of his tenants, there. The corolla is of a very pale green colour with a yellow throat. The corolla-lobe margins are slightly crenulate as noticed by the sender, the under side of the corolla is faintly rugose and clothed with slight arachnoid pubescence. It is evidently a foliaceous corolla, but with a texture on the upper side nearly glabrous and having the normal shape of a primrose blossom. G. C. DRUCE.

1725. *P VULGARIS*, var. *CAULESCENS* (Koch). Miller Christy, F.L.S., in *New Phytologist* xxii., 233, 1923. Here the author gives reasons to prove that there is a caulescent variety of the primrose not due to hybridisation, and he gives instances of its occurrence in various places. That was my experience, and it was for that reason I included it in the *List*, p. 48, 1908. Mr Christy overlooks the fact that Koch published it under *acaulis*, not *vulgaris*, and for that reason I enclosed Koch in brackets.

404 (5). *BUDDLEIA* (Houston) L.

1751 (10). *B. SPECTABILIS* Kunth & Bouché Ind. Sem. Hort. Berol. 11, 1845. Alien, Mexico. Hortal. On waste ground, Cardiff Docks, Oct. 1924, MELVILL, SMITH & DRUCE; Harlech, Merioneth, 1922, G. C. DRUCE; garden-ground, as a seedling, Pyrford, Lady DAVY. The genus was named in honour of Adam Buddle, a well-known British Bryologist of the late seventeenth century. The present species is the well-known and popular garden shrub with purple flowers which are so attractive to Lepidoptera. G. C. DRUCE.

1840. *CUSCUTA TRIFOLII*, Prevalence of, in Great Britain. Rarely if ever known to have been established in Scotland. *Jour. Min. Agr. Great Brit.* 38, 1923.

1851 (5). *PHYSALIS FENDLERI* A. Gray. Alien, Colorado. Sand-hills between Phillack Church and Dynamite Works, Cornwall, 1923, F. HARRIS in Thurston & Vigurs' "Note on the Cornish Flora" 329, 1924.

1887 (2). *LINARIA PALLIDA* Tenore Fl. Nap. i., 32, t. 159, 1811-15. Alien, South Italy. Hortal. In considerable quantity on the sea-shore at Bardsea, N. Lancs. "The shingle is absolutely lilac with it—as pretty a sight as one could wish to see anywhere. It is just like a lilac carpet to walk on." D. LUMB *in lit.* Belonging to the *Cymbalaria* group, it is a beautiful species. Det. G. C. DRUCE.

1905. *VERONICA SPICATA* L. in England. W. G. Clarke in *Norf. & Norwich Nat. Soc.* xi., pt. 5, 541, 1923-4, gives its history and states that Mr Arthur Bennett found it constant in culture.

1924. *V. AGRESTIS* L. Although usually classed as a common weed, this Speedwell cannot be so regarded in cultivations about Bristol. Latterly, however, it has been abundant in some Leigh Woods gardens, and consequently has attracted special attention in regard to the difficulty that is often found in separating it, at least in the dried state, from the closely allied *V. Buxbaumii*. When flowering there can be, of course, no hesitation in the matter, the corolla of *agrestis* being relatively small and pale with the lower lobe always white. But these corollas invariably fall directly the plant is gathered, and it is in their absence that doubt arises, due to a lack of precision by British authors in describing the other parts of the plant, in particular the relative length of peduncles to leaves, and the sepals. Babington says—"Leaves usually exceeding the peduncles . . . sepals oval." And Hooker—"Leaves about as long as the peduncles." And Syme—"Ped. as long as or shorter than the leaves." I have never seen a specimen in which some peduncles were not longer than the leaves by as much as a third. And the sepals of *agrestis* are in fact ovate, subacute, with blunt tips. Fries describes them as enerviis, but they really have three nerves or ribs, as noticed by Hooker and by Leighton. As the leaves of both species practically correspond it is of some importance, to a beginner at any rate, that such characters as can be observed in the dried plant should be accurately stated. And I note that this is well done in the *Flore de France* of Grenier et Godron. A striking confirmation of my point—the real difficulty in separating *agrestis* from *Buxbaumii* when the corollas have fallen—is furnished by the *Rep. B.E.C.*, 1915, where one expert reports on some dried specimens in favour of *V. Buxbaumii*, while another wrote "*V. agrestis*." J. W. WHITE.

1947. *BARTSIA VISCOSA* L., forma *RAMOSA*. Mr P. D. WILLIAMS sent in July an abnormal form from near St Keverne, Cornwall, which had a branched stem. The wet season suited *B. viscosa*, and the Hon. Mrs A. LEITH sent from Bosahan in the same county very luxuriant specimens.

1949. *PEDICULARIS PALUSTRIS* L., forma (*lusus*) *FASCIATA*. The Rev. E. M. REYNOLDS found at Runham, Norfolk, in 1924, a plant with a prostrate flattened stem, over six inches across at base, and over six feet in length.

1974. *LATHRAEA CLANDESTINA* L. Mr J. L. North in the Quarterly Report of the Royal Botanic Society's Garden for October, says that he was surprised to notice the force with which the seeds were scattered by the explosion of the capsule when squeezed between finger and thumb. The seeds are shot out, as observed by him and Professor Gates, so violently that some of them were found to have travelled 27 feet. This, he says, may explain the spreading of the plant from the root of a beech tree, its original host, to other plants 40 feet away, where this year in London in May, the plants have flowered freely. That, too, was the case in Suffolk, where Lady de Sausmarez planted it at Livermere Park on the roots of a tree, and in the course of years it had spread even more than 40 feet. See *Rep. B.E.C.* 506, 1910.

1990. *MENTHA LONGIFOLIA* Huds., var. *WEINERIANA* (Opiz) Briq. Marcham, Berks, 1891, G. C. DRUCE.

1990. *M. LONGIFOLIA* × *ROTUNDIFOLIA* = × *M. NILIACA* (Jacq.), var. *HALLERI* Briq. Nort Leigh, Oxon, 1882, G. C. DRUCE.

1993. × *M. PIPERITA* L., var. *DRUCEANA* (Briq.) = *M. affinis* Strail, non Boreau. See *Fl. Berkshire* 392, 1897, and *Rep. B.E.C.* 342, 1891. By the pond near the railway at Didcot, Berks. Differs from *affinis* "ob calicum tubulosum, basi glabrum et corollam intus glabrum ab omnibus *M. aquaticam* formis longe distans et *M. piperita* pertinet." Briquet *in lit.*, 1894. Stem erect, flexuous, branched, 2-3 ft., red, very thinly hairy, with short hairs, more obvious under the nodes. Leaves of the main axis oval, acute,

unequal and slightly cuneate at the base, serrate, dark green above, thinly hairy at first but soon glabrous, thinly hairy on the nerves beneath and pale green, densely punctate with glands on both faces; smaller leaves ovate, rounded at the base; serratures 5-10 on each margin, 0.25-1.25 mm. deep, of the small leaves only 0.25 mm. deep. Inflorescence shortly spicate, interrupted at the base, of the branches often capitate. Flowers ♀, corolla glabrous within; calyx glabrous, with ciliate teeth; pedicels glabrous. The principal distinguishing characters of this Mint are the oval leaves of the main axis, without basal auricles, the small number and small size of the serratures. The leaves of a form from West Gloucester are ovate to ovate-lanceolate, often auricled at the base, with 5-25 serratures, 0.25-2 mm. deep. J. FRASER.

1994. *M. AQUATICA* L., var. *ACUTA* Briq. Marston, Oxon, 1885.

Var. *INCISO-SERRATA* Briq. Lungmore, Berks, G. C. DRUCE.

Var. *LOBELIANA* Briq. S. Hinksey, Oxon, 1889; Lungmore, Berks, G. C. DRUCE; Coppice Moor, Northants, 1873, G. C. DRUCE.

Var. *ORTMANNIANA* (Opiz) Briq. Antony, E. Cornwall, BRIGGS; Shiplake, Oxon and Berks, 1882, G. C. DRUCE; Kinlochewe, W. Ross, 1882, G. C. DRUCE.

Var. *LUPULINA* Briq. Braunton Burrows, MOYLE ROGERS; Freshfield, Lancs., 1888, COSMO MELVILL.

Var. *NICAENSIS* Briq. Hurst, Berks, G. C. DRUCE.

Var. *WEIHEANA* Briq. Gayton, Northants, 1878; Denbigh Hall, Bucks, 1873; Hinksey, Berks, 1884, G. C. DRUCE.

Var. *OBSCURA* Briq. Loddon-side, Berks, 1893, G. C. DRUCE.

1996. × *M. VERTICILLATA* (L.), var. *ADULTERINA* Briq. Wokingham, Berks, DRUCE.

Var. *ATROVIRENS* Briq. Wantage, Wokingham, DRUCE; Newton Ferrers, S. Devon, BRIGGS.

Var. *CAERULEA* Briq. Winkfield, Berks, DRUCE.

Var. *OVALIFOLIA* (Opiz) (*BENESCHIANA*, Fl. Berks, pp. 393). Lungmore, Kintlury, Radley, 1889, etc., Berks, DRUCE; Horton, Dorset, (284) 1891, E. S. MARSHALL; Godstow, Oxon, 1892, DRUCE; Rescobie, Forfar, 1882, DRUCE; Milton, S. Hants, 1892, MOYLE ROGERS.

Var. *RUBRO-HIRTA* (Zajn). Bungay, Suffolk, 1883, DRUCE.

Var. TRICHOIDES Briq. Hereford, 1882, DRUCE.

Var. LINTONI Briq. Shirley, Derby, 1887, W. R. LINTON.

1997. × *M. GENTILIS* (L.), var. *GRATA* (Host) Briq. Skelwith Bridge, Westmorland, 1890, H. E. FOX.

Var. *RESINOSA* (Opiz) Briq. Meavy, S. Devon, 1878, W. B. WATERFALL.

1999. × *M. RUBRA* (Sm.), var. *RARIPILA* Briq. Dorking, Surrey, 1889; Haseley, Warwick, 1881, BAKER.

Var. *LAEVIFOLIA* Briq. Sennen, Cornwall.

Var. *CALLIMORPHA* Briq. (forma rara as sub-species *Wirtgiana* F. Sch. ob calicem parvum pertinens). Cult., Shirley, Derby, 1887, W. R. LINTON.

1999. × *M. RUBRA* Huds., var. *DRUCEI* Briq., var. nov. (*M. VERTICILLATA* × *VIRIDIS*). Stem erect, flexuous, very thinly hairy below, with short hairs, more obviously hairy above, 2-3 ft., slightly branched above. Leaves oval, acute, cuneate at the base, serrate, minutely hairy along the midrib above, otherwise glabrous, thinly hairy on the nerves beneath; serratures 3-12 on each margin, acute, 0.75-1 mm. deep. Petiole  $\frac{1}{4}$ - $\frac{1}{2}$  in. long. Bracts of the inflorescence small, ovate, acute or acuminate. Calyx short for the species, broad, campanulate, glabrous except for the ciliate teeth, conspicuously lined with glands between the nerves. The distinguishing features of the variety are the narrow, oval, acute, very finely serrated leaves, the long petioles, the small ovate bracts, like those of *M. rubra*, var., *raripila*, rather than *M. rubra*, var. *laevifolia*, and the short, campanulate calyx, recalling *M. rubra*, var. *callimorpha*.

2000. *M. ARVENSIS* L., var. *CUNEIFOLIA* Briq. (see p. 625). Kintbury, Lungmore, Berks, 1890, DRUCE; Milton, S. Hants, 1892, MOYLE ROGERS and PURCHAS; Cubley, Derby, W. R. LINTON; Hatton, Warwick, BROMWICH.

Var. *DENSIFOLIOLATA* Briq. Radley, Berks, DRUCE.

2008. *THYMUS SERPYLLUM* L. T. ZETLANDICUS Ronniger and Druce as a sub-species. Blätter 7 nervig, breitelliptisch, erwachsen 5 mm. lang, 3 mm. breit, oberseits reichlich behaart, untere

Häefte des Randes lang gervimpert (Wimpern bis 2 mm. lang). Blütentragende Aste gonotrich, Haare oben lockerabstehend, fast so lang wie der Stengelderschmesser, Köpfchen grossblütig 15-18 mm. in Durchmesser. Blütenstiche dicht starr behaart, Haare schiefe abwärts gerichtet, Kelch dicknervig, lang: zottig, nur auf der Dorsalseite kahl. Von ssp. *Drucei* Ronn. durch stark behaarte, lang gewimperte Blätter verschieden Nähert sich durch beidseitig 5 nervige Blätter (besonders in Zwerg, formen von Ronas Hill) dem *T. arcticus* Dur. Hab.: Ins. Zetland from near sea-level to summit of Ronas Hill, 1650 feet. Leaves 7-nerved, broadly elliptical, when fully grown, 5 mm. long, 3 mm. broad, upper surface very hairy, the lower half of the margin bearing long (up to 2 mm.) cilia. Flowering shoots gonotrichous, upper hairs scattered and outstanding, almost as long as the diameter of the stem. Capitula large-flowered, 15-18 mm. in diameter. Peduncles closely covered with stiff hairs which are directed obliquely downwards. Calyx with thick nerves, long, villous, glabrous on the dorsal surface. It differs from the sub-sp. *Drucei* Ronn. in its strongly hairy leaves with their long cilia; it approaches *T. arcticus* Dur. by its occasional 5-nerved leaves (especially occurring in the dwarf-forms from Ronas Hill). Zetland, Fitful Head, etc., 1924, DRUCE.

2053. *STACHYS SALVIAEFOLIUS* Tenore. Mr Lacaita has shown (*Nuov. Giorn. Bot. Ital.* xxxix., 19, 1923) that Miller's plant was *Sideritis sicula* Ucria, and not *Stachys*, so that Tenore's name applies to the plant in question.

2092. *PLANTAGO LANCEOLATA* L. Mr C. E. Thurston has sent a curious form from Polzeath Marsh, Cornwall. The flower-stalk, about 12 inches high, is capped with a leaf-rosette. The leaves are 2 inches long, and there are numerous flower spikes 3-4 inches long, the inflorescence being bracteate. G. C. DRUCE.

2113 (3). *AMARANTHUS GRACILIS* Desf. in *Tabl. Hort. Par.*, ed. i., 43. Alien, adv. in Gall. et Eur. centr. Det. A. THELLUNG. Avonmouth, Som. N. or W. Glost., 1923, N. SANDWICH.

2124. *CHENOPODIUM SOLITARIUM* Murr in *Deutsch. Bot. Monast.* xix., 50, 1901. Abingdon, Berks, Oct. 1924, G. C. DRUCE. Dr Murr remarks "forma rara et eximia,"

2131. *C. HIRGINUM* Schrad., var. *FICIFOLIOIDES* Murr. in sched. Waste ground, Port Meadow, Oxon, Sept. 1924, found by T. GAMBLER PARRY.

2207.  $\times$  *RUMEX KLOSII* Danser (Funf. neue Rumex Bastarde) = *R. dentatus*  $\times$  *maritimus*. This new hybrid, which Prof. Danser has never found wild, he has obtained in cultures of *R. dentatus* in his garden. It has been sent in, I think, from Blackheath, Kent, by Miss GERTRUDE BACON. Particulars will follow.

2219 (2). *EUPHORBIA PALUSTRIS* L. Alien, Europe. Barry Docks, Glamorgan (n. 108), Aug. 1924, R. L. SMITH. Teste A. THELLUNG. Showed me by Smith and Melvill, but the fruit being unripe the det. is not precise.

2250. *URTICA DIOICA* L. Sent from Bettws-y-coed, Carnarvon, by Miss TODD. It is a very acuminate-leaved plant, the margins being cut into teeth half-an-inch deep, a few of the teeth being themselves toothed. G. C. DRUCE.

2253 (3). *PLATANUS DIGITATA* Gordon. Professor A. Henry with Miss Margaret Flood contributes a paper (*Proceedings of the Royal Irish Academy*, vol. xxxv., 21, 1919), entitled the "History of the London Plane." A synopsis of the six living species are given. In the *Gardeners' Chronicle* (2) 250, 1924, figures are given of *P. digitata* Gordon, supposed to be a second generation hybrid from *P. acerifolia*, itself suggested to be a hybrid of the Eastern Plane *P. orientalis* and the Western Plane *P. occidentalis*. Of *digitata* only two trees are known, one at the Cambridge Botanic Garden, the other at Bicton. The other Plane figured is *P. acerifolia*, var. *cantabrigensis* Henry.

2258 (2). *ALNUS INCANA* Willd., var. *GLABRA* Regel. Melmerby, Cumberland, Rev. W. W. MASON.

2259. *CARPINUS BETULUS* L. in Britain, MILLER CHRISTY in *Journ. Ecology* xii., 39, 1924. A very valuable paper on its history and a most useful account of its distribution in Britain. That it is native is proved by its nuts being found in pre-glacial lacustrine deposits at Hoxne in Suffolk, in the Lea Valley, and in the Valley

of the Cam. Its charcoal has been found in several places including Hambleden in Bucks, associated with oak, elder and ash. This monograph is a model which one hopes will be followed in the treatment of other trees and shrubs.

2272. *SALIX DAPHNOIDES* Vill. A good figure of the catkins of this striking willow is given in *Gard. Chron.* (1) 395, 1924. Its large *Caprea*-like catkins and its young branches covered with a waxy bluish-violet coating make it an attractive species. It sometimes attains a height of 35 to 40 feet. It is much less frequent than it should be, but round Gailey Reservoir, Staffordshire, it is a pleasing feature. It is the earliest willow to produce its catkins, which are often in full flower in February. The variety *pomeranica* is planted on the dunes near Southport. Mr J. F. Rayner reports a var. *aglaia* from a hedge near Petersfield, found by Mr Browning.

2295. *EMPETRUM NIGRUM* L. A natural history study. O. Hagerup in *Bot. Tidsskr.*, 253-304, 1922.

2311. *EPIPOGON EPIPOGIUM* (L.) Dr. See *Rep. B.E.C.*, 330, 1924; *Gard. Chron.*, Aug. 1924. To the account already published I am able to add that the specimen at the Cambridge Herbarium is not from Ludlow, but is the original specimen which was sent by the finder from Tedstone Delamere to the Rev. W. R. Crutch, from whom it passed to Professor Babington. Thus we know for certain of only three British specimens—(1) this from Herefordshire at Cambridge, dated Aug. 1854; (2) gathered by me in the Ludlow locality in 1892, which I have now given to the British Museum, and (3) the Oxfordshire specimen gathered last July, which is in my own herbarium. Our member, Mr F. M. Day, tells me he has seen a dried specimen which was gathered in 1910 by Mr Mountfort in Herefordshire, and this, if in existence, will make the fourth. It occurred as a solitary example near Ross on Wye. There is a note on the Babington sheet at Cambridge, where there is a painting of the Salopian plant dated Aug. 1881, to the effect that it was seen by a retired chemist named Cockney, but he thought it was a deformed Bee Orchid. The wood where it grew was called the Upper Evens. The plant was found quite close to the present high road. Miss Peile, who also found it there, tried to get it to grow in her garden but failed. G. C. DRUCE,

2325. *ORCHIS LATIFOLIA* L. Seeds of this were described by Mr T. A. Dymes at the Linn. Soc. Meeting (no. 435), June 19, from Chippenham Fen, Camb., and Winchester. He says the kernel is shorter and broader than in *praetermissa*, and it is, he says, "obviously a pure species." When I was last at Chippenham I saw much *praetermissa* and two plants which were almost certainly hybrids of *praetermissa* and *Fuchsii*, but, of course, these may have been in a different part of the fen. It would be well if the flowers from the plant which afforded the seeds were also preserved.

2325. *O. LATIFOLIA* L. Mr W. H. St Quentin sent me a photograph of a plant which Dr Keller sent me in 1923 from Aarau in Switzerland. The leaves are rather narrow and spotted. The flower-shape is not easy to see in the photograph but it is evidently not *praetermissa* and appears to have a facies of its own. The specimens sent from Aarau had gone over, but they were different from those of any plant seen in Britain.

2327. *O. O'KELLYI* Druce. Mr A. W. Stelfox, after his recent visit to the Burren where he saw abundance of this plant, says:—"I have come to the conclusion that it and the ordinary white Orchid (*O. Fuchsii*) which we get about here are quite distinct. Mr R. A. Phillips has always maintained so. Many plants of the *O'Kellyi* had a purple blush and were not pure white, had an almond essence scent, and buff-yellow (not pink) anthers. Moreover, I saw growing beside it a white orchid which to me was an albino *Fuchsii* and the two were very different, though the *Fuchsii* was nearly over and the *O'Kellyi* just out." See *Ir. Nat.*, December 1924.

2342. *HABENARIA VIRESCENS* Druce. An abnormal form—a "Reversion," as J. F. in *Gard. Chron.* (2) 57, 1924, calls it—is well figured there. The plant was exhibited to the Scientific Committee of the Royal Hort. Soc. in June by J. F. Bunyard. Mr Fraser contributes a full description.

2377. *GALANTHUS NIVALIS* L. There is an article by Formakin (*Gard. Chron.* (1) 160, 1924) which treats of this popular vernal flower, of which the writer planted 20,000 bulbs 20 years ago, but his experience was that he had never observed seedlings from them.

He says it is quite naturalised at Ardgowan and Finlayson in Renfrewshire. In the former place it owes its origin to Lady Stewart, who had the bulbs planted between 1800 and 1812.

2428. *JUNCUS CONGLOMERATUS* L. Doddington Wood, Lincoln. Rev. W. W. MASON. A curious condition over three feet high, with very weak but thick stems, and a copiously branched compound inflorescence, some of the heads being sessile, others themselves compound, borne on pedicels 1-3 inches long. Mr Fraser tells me he has seen a similar plant from Virginia Water. It is a form educed by shade and moisture.

2437. *J. BULBOSUS* L., var. *KOCHII* (Schultz). In *Svensk Bot. Tidskr.* 143-153, 1923, F. Hard av Segerstad claims that this 6-stamened plant is a good species, as it has specific geographical distribution, being an Atlantic species.

2468. *AMORPHOPHALLUS TITANUM* Beccari. See *Gard. Chron.* ii., 302, with some good photographs. This gigantic and most evil-smelling aroid flowered at the Buitenzorg Garden in June this year. The tuber had been sent from Sumatra. It also flowered at Kew in 1901; the total height of the flower was  $2\frac{1}{4}$  metres, the diameter of the sheath 1.2 metre. The Java plant was longer, reaching 2.61 metres in height, the circumference being 1.23 metre. The stench was overpowering: a mixture of rotten shrimps and dead flesh would be nothing compared with it.

2542. *SCIRPUS SETACEUS* L., var. *PEDICELLATUS* Dr. (see *Rep. B.E.C.* 68, 1924). Mr N. Sandwith draws my attention to a note in the *Phytologist* iii., 865-7, dated Feb. 6, 1850, in which Mr R. Withers of Bath contrasts *S. Savii*, var. *monostachys*, and *setaceus*. The figure he gives of *setaceus* shows flowering spikes on conspicuous peduncles quite 3 mm. long, the plant being about 8 cm. high. It was collected at Hampton Bogs near Bath, N. Somerset, by Mr T. Dutton. Mr Withers remarks that "the locality appears to me to afford plants with the spikes more pedunculated than any I have before examined."

2556. *CLADIUM MARISCUS* Br., which has so wide a range in South, West and Middle Europe, is one of the rarest plants in Nor-

way, and although mentioned by Bishop Gunnerus in 1772, and by others, great doubts were expressed upon the identification. It was, however, found near Kristiansand in 1871 by R. E. Fridtz, and in 1922 our member, Prof. J. Holmboe, discovered it in a small tarn near Lervik among sphagnum, with *Lysimachia thyrsoflora* and *Menyanthes*, the underlying rock being a micaceous shale. Dr Holmboe concludes that, like *Hedera*, *Cladium* came into Norway from Southern Sweden, where it already existed in late glacial times, and it then attained in the south and south-west coast districts a wider distribution than at present and has since shrunk to the couple of relict occurrences noted above. *Cladium*, as we know, thins out northwards in Britain, and I have thought that its solitary locality in Western Ross is rather an arrival than a relict, and that its occurrence there may be due to water-fowl.

2611. *CAREX REMOTA* × *DIVULSA*. Mayfield, Surrey, C. E. SALMON. Specimen exhibited Linn. Soc. (No. 435) June 19, 1924.

2631 (11). *PASPALUM DILATATUM* Poir. Encyc. v., 35. Alien, Brasilia. Cardiff, Misses VACHELL and DAVID, R. L. SMITH and MELVILL. Det. R. BUTCHER and A. THELLUNG.

2641 (4). *SETARIA GENICULATA* (Lam.) Pal. Beauv. (*S. GRACILIS* H.B.K.). Waste ground, Bradford, 1923, J. CRYER. Det. A. THELLUNG.

2643. *SPARTINA TOWNSENDII* Groves. In *Gard. Chron.* 162, 1924, Professor Oliver has an article in which he discourses on the notes made by M. Senay and Corbière et Chevallier (*Comptes Rendu*, vol. 174, 1084, 1922) of its occurrence in France. He agrees that the French and British plants are identical, and says that the view is gaining support that *S. Townsendii* is really identical with the plant named by E. D. Merrill as the var. *pilosa* of *S. glabra* Muhl., as we showed in *Rep. B.E.C.* 72, 1923. One may add the authority for the varietal name *S. glabra* Muhl., var. *Townsendii*, is Corbière et Chevallier, *l.c.*, if it be necessary to reduce it to that rank, and assuming that it is not of hybrid origin. It seems, however, deserving of specific rank as *S. Townsendii* Groves. Should it be proved not to be a hybrid, what an amount of verbiage has been written about its

vigorous growth and rapid spreading as being the effect of the supposed vegetative powers possessed by first hybrids. It may be well to put on record that *Townsendii* has been planted at Sheerness, in the Colne at Alresford, in the Stour estuary, in the Wells (Norfolk) marshes, on the west coast at Clevedon, Somerset, and in Mid Wales on the Dovey estuary in Merioneth and Cardigan. Why will not our numerous geneticists attack the problem and see if they cannot produce *Townsendii* from pollinating *stricta* with *alterniflora*? Again, Merrill's variety should be brought from the States and cultivated here in order to see whether it is exactly *Townsendii*.

2662 (12). *SPOROBOLUS ARGUTUS* Kunth. Alien, Brasil. Cardiff, showed by MELVILL and SMITH, 1924. Named by Kew.

648 (4). *PIPTATHERUM* Beauv. Agrost. 17, 1812; *Oryzopsis Michx* Fl. Bor. Amer. 59, 1803.

2669 (20). *P. MULTIFLORUM* Beauv. Alien, Europe. In plenty at Barry Docks, Glamorgan, DRUCE, MELVILL and SMITH. Det. A. THELLUNG.

2673. *PHELEUM PRATENSE* L., var. *INTERMEDIUM* (Jord.). Merton, Surrey, sent by Mr C. E. Britton as a bracteate form of *intermedium* (R. n. 2709). The long inflorescence (5 inches) has a leafy bract at the base.

2737. *CYNOSURUS CRISTATUS* L. Newquay, Cornwall, C. E. THURSTON, 1924. Remarkable for its interrupted inflorescence—f. *INTERRUPTUS* Druce.

2683. *AGROSTIS VERTICILLATA* Vill. × *PALUSTRIS* Huds. (vel *ALBA* L.) nov. hybr. = × *F. ROBINSONII* Druce. St Sampson's, Guernsey, with both parents, F. ROBINSON, July 1924. On the *palustris* side, but with the panicle-branches having spikelets to the base. Appears sterile. G. C. DRUCE. Marquand and Fraser agree to its being a hybrid.

700 (2). *ASPERELLA* Humb. in Roem. & Ust. Mag. iii., vii., 5, 1790.

2858 (2). *A. HYSTRIX* Humb. Alien. Waste ground, Oxford, Sept. 1924, G. C. DRUCE. Det. (as *Elymus Hystrix*) by Kew.

## 708 (2). PTERIS L.

2876 (2). P. LONGIFOLIA L. Alien, S. Eur. On the Conservatory wall, Botanic Garden, Oxford, self-sown and there for some years, Sept. 1924, G. C. DRUCE.

2907. POLYPODIUM VULGARE L. in Essex: Why is it decreasing? Miller Christy, *Essex Naturalist* xx., 287-292, 1924. The author thinks there must be some special cause of a general nature to account for its very marked decrease throughout Essex. I may say that it is still pretty common in North Essex in the old hedges about Twinstead, Alphamstone, and Wickham, but the cutting of hedges and tidying up are destroying factors, and the fumes from tar-spraying the roads may also be nocent.

2934. NITELLA OPACA Ag., var. BRACHYCLEMA Groves and B. Webster in *Journ. Bot.* 33, 1924, and in *Brit. Charophyt.* Westmorland, Easedale, H. G. FOX, etc.; Caithness, Yarehouse Loch, GRANT; Asta Loch, Shetland, DRUCE; Donegal, Kindrum Lough, etc., B. WEBSTER.

2952 (2). CHARA MUSCOSA Groves and B. Webster, *l.c.* 34, t. 570, and in *Brit. Charophyt.* First collected by Canon Bullock-Webster in Lough Mullaghderg, W. Donegal, 1917.

2953. C. BALTICA Fr., var. RIGIDA Groves and B. Webster, *l.c.* 34, 1924, and in *Brit. Charophyt.* Hickling Broad, E. Norfolk, Canon BULLOCK-WEBSTER, 1898.

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NOTES ON PUBLICATIONS, NEW BOOKS, ETC., 1924.

(Owing to exigencies of space and the erratic receipt of foreign works this is necessarily incomplete.)

ABRAMS, LE ROY. AN ILLUSTRATED FLORA OF THE PACIFIC STATES, WASHINGTON, OREGON, AND CALIFORNIA. Vol. 1, tt. xi., 557; tt. 1299, Stanford University Press, 1923,

ALMQUIST, E. Investigations of Bacterial Hybrids, in Journ. Infect. Diseases, vol. 35, 341-6, 1924. *B. typhosus* × *B. dysenteriae* has been discovered, thus indicating sexuality in Bacteria.

ARMITAGE, ELEONORA. Hepatics of Herefordshire, in Journ. Bot. 67-79, 1924, gives details of the 90 species and 21 varieties and forms which have been found in the county.

AVEBURY. THE LIFE-WORK OF LORD AVEBURY (SIR JOHN LUBBOCK). Edited by his daughter, the Hon. Mrs Adrian Grant Duff, and comprising essays by Sir Bernard Mallet, K.C.B.; Sir Arthur Keith, F.R.S.; Dr A. Smith Woodward, LL.D., F.R.S.; Professor J. A. Thomson, LL.D.; H. St J. K. Donisthorpe, F.Z.S., F.L.S.; Dr A. C. Seward, F.R.S. and Sir Michael E. Sadler, K.C.S.I. pp. vii., 261. Watts & Co., London; 6/-. A most interesting little volume which all admirers of Lord Avebury will welcome. The chapters, which comprise essays by those who knew him, deal with his interests in Botany, Zoology, Anthropology, Entomology and Geology, as well as with his early and later years, his political and economic interests, and his ideas of education. It is an interesting account of the life of a man who, from a sensitive child, trained by a sensible system of education by his mother, became one of the greatest promoters of the study of science as well as a seeker of the welfare of others. His intense interest in nature was inspired by his great friend, Charles Darwin, with whom he had been associated from childhood. He was not satisfied with a mere theory of his subject but would always carry it out by practical experiment whenever possible. Thus he was able to give to science valuable knowledge from actual observation. Amongst the numerous interests in life he established many Acts of Parliament; laid the foundation of modern Anthropology; promoted the research of Geology; and was a pioneer of the scientific and fascinating study of animal behaviour and study of insects—notably ants, wasps and bees. On Botany he wrote several books and articles on flowers considered in relation to insects; on fruits and seeds and leaves; on stems, buds, stipules and seedlings, all resulting from his tireless and careful personal study and by utilising every spare minute of his exceedingly full and varied life. His great aim was to make his works clear enough to interest the layman in natural research so

that they might be able to carry on experiments themselves and help to find out a reason for all things in nature, not just to be satisfied with a surface knowledge, but to find out the "whys and wherefores." Each chapter of this compact little book closes with a bibliography of Lord Avebury's works and the whole volume is illustrated by extracts from his writings.

RUTH BRIGHT.

BAILEY, L. H. *MANUAL OF CULTIVATED PLANTS*. pp. 851. The Macmillan Company, New York and London, 1924; 31/6. In this concise, excellently printed octavo, descriptions are given of plants which are cultivated in the continental United States and Canada. These are grouped under 170 natural families, 1246 genera, and 3665 species. The numerous horticultural varieties, forms, and hybrids are excluded. It may be said that the same author's *Standard Cyclopaedia of Horticulture* has 26,602 species, although even that does not include all the plants cultivated in North America. That book gives also 6715 Latin-named varieties. In looking through this most practical work one feels struck that for some reason or another the American botanical writer seems to have a clearer idea of what is needed, and how best to supply that need, than his British confrère. I have just had to use Hemsley's Chinese Flora—to give it a short title—and despite the author's erudition, how repulsive the long string of names and synonyms becomes. There is no adequate introduction—it is as dry as dust, but I am not saying the dust is not gold. Here on the contrary we have in four pages the "purpose of the work" clearly set out: mainly it is to describe, as its title implies, the species most commonly cultivated, but there are three classes of rather marked exceptions—(1) Many plants not offered by dealers nor appearing in printed lists are in cultivation in old premises and private gardens, and likely to be exchanged from hand to hand; these plants have established themselves in the affections of growers and they should be recorded, even though not common or in the process of passing out in a commercial epoch. (2) Species of rather recent introduction that promise to be acquisitions, but which are not yet well known; it is impossible to forecast which ones are likely to become fairly common or established. (3) Certain species of great historic interest in Europe and other countries that should be known as a matter of general knowledge but which

may be little cultivated in North America : an example is *Lupinus albus*, and cogent reasons are given for the inclusion of this and other cases. The author has followed the International Rules and adopted the Engler System of sequence, but we are glad to see that the multiplication of genera is not copied, *e.g.*, *Lychnis* serves for four of the Engler genera. The author prefers to spell the names as they were originally written, therefore he writes *Wisteria* not *Wistaria*, although Nuttall gave it that name in commemoration of Caspar Wistar (a family name sometimes spelled Wister); and he says Nuttall had the right to spell it as he pleased; so too, as in our *List*, he spells *Mathiola* as it was written in Aiton, and *Malcolmia* not *Malcolmia*. Robert Brown, he says, was a critical student, and his spelling of these generic names must be accepted as intentional. The fact, however, is that in Aiton's *Hort. Kewensis* Brown does not appear as the author. This, however, has no bearing on Mr Bailey's argument, which seems sound, or else one treads on a treacherous morass, and such names as *Goodenough* or *Bartsch* will have to be brought into use instead of the Linnean *Bartsia* or Gay's *Goodenovi*, which was doubtless used by the author for the sake of euphony. However, one notices that *Ludwigia* not *Ludvigia* is chosen. Fancy the poor gardener who has mastered the difficult word *Strausvaesia* to have to grapple with *Straugwazsii*. Three pages are devoted to "The Herbarium," and the proper way in which one should be formed. As he well says, a herbarium is an index to the vegetable community, the plants themselves being on the cards. Nineteen pages are occupied with "Terms and Names," which include an excellent glossary. Four pages are devoted to "Authorities for the Binomials and Abbreviations and Explanations." Then comes an excellent "Key to the Families" followed by the "Systematic Treatment of Cultivated Plants." Here we are glad to see *Phyllitis* and *Dryopteris* used in their proper sense. We may add that under each family there is a key to the genera, and under each genus a key to the species.

BAILEY, L. H. THE NATURE AND PROPERTIES OF SOILS. Macmillan & Co.; 15/-.

BAILEY, L. H. THE CULTIVATED EVERGREENS: a Handbook of the Coniferous and most important Broad-leaved Evergreens planted for

ornament in the United States and Canada. 4to.; pp. xvi. 434, tt. 48. Macmillan & Co., London, 1923; 31/6.

BAKER, R. T., & H. G. SMITH. WOOD-FIBRES OF SOME AUSTRALIAN TIMBERS: investigated in reference to their prospective value for paper-pulp production. pp. 159. A. J. Kent, Sydney, 1924.

BEAN, W. J. SHRUBS FOR AMATEURS. pp. vii. 117. Country Life, 1924; 5/-.

BECCARI, ODOARDO. ASIATIC PALMS—LEPIDOCARYEAE: The Species of Calamus. pp. vi. 142; tt. 83. Ann. Roy. Bot. Gard., Calcutta. Vol. xi., 1913-4; 42/-. 256 species of the genera are known to exist, and it contains the longest flowering plant known.

BENNETT, F. T. OUTLINES OF FUNGI AND PLANT DISEASES: for Students of Agriculture and Horticulture. Svo., pp. xi. 254. Macmillan & Co., London, 1924; 7/6.

BENTHAM, GEORGE. HANDBOOK OF THE BRITISH FLORA. Assisted by Sir J. D. Hooker. The seventh edition, revised by A. B. Rendle, M.A., D.Sc., F.R.S. pp. lxi., 606, and ILLUSTRATIONS OF THE BRITISH FLORA, drawn by W. H. Fitch. The fifth edition, pp. xxvii., 338, tt. 1315. Lovell, Reeve & Co., London, 1924; 12/- each. The publication of this popular work will be of great interest to many botanists to whom the name Bentham is a household word. To a large section of our members it is a Koran and the soubriquet "Benthamites" is a cordon of merit of which most are proud. Even if, sometimes, I may have faintly suggested that they are perhaps a trifle too eclectic yet one always feels that there is such a great comfort in dogma which can never be experienced by the most inveterate "hierarchiarch" or the most confirmed batologist. The popularity of the *Handbook* is not undeserved. It came into being when Babinington's *Manual* was the only serious competitor. It offered a scientific treatment, clear descriptions, simplicity of style, and a clavis. There was a good, useful summary of the characters and uses of the families, and the illustrations, though small, were well done. Therefore it appealed to a wide circle and it enabled its readers to run down the plants more easily and more correctly than most workers

were able to do with the *Manual*. Between it and the intense worker there is a great gulf but the *Handbook* often led its reader to the cliff-side and sometimes induced him to venture over to the splitters. The two big volumes, issued at 60/-, formed my first working books and I had to renounce smoking to get them, so one always has a kindly feeling towards it and watches its development with a friendly eye. To pour new wine into an old bottle is not a thankful task as one has had to realise when one edited "Hayward" or reviewed the *Manual*, but the compiler or reviser may always comfort himself with the thought that it might have been done worse. The reviser of the present work has had much courage to enter upon such a task when occupying the great and responsible position which he holds. He brought a great asset in his scientific knowledge and in his innate conservatism—I am using the term in a commendatory sense—since too bold an innovator might have wrecked the work. We are, therefore, very grateful to him for retaining its plan and its general nomenclature, so that we read *Lychnis dioica* L. (not emend. anybody), that *Rhinanthus* is retained, as are *Rosa Eglan-teria* for our Sweet Brier, *R. villosa*, *Epilobium tetragonum*, the time-saving *Cotyledon Umbilicus* and *Kentranthus*. Doubtless the reviser's hands were tied in regard to the main text but one does not like to see such statements as "recently found" when it applies to forty years ago as in the cases of *Schoenus ferrugineus* and *Juncus tenuis*. The revision of erroneous statements regarding the habitats or localities has been practically negligible, hence we have such a travesty of facts under *Crepis taraxacifolia* which is said to "chiefly occur in limestone districts of southern England, but extending into Yorkshire, rather more frequent than *foetida*." Few people have gathered *foetida* in more than two British localities. We may say that *taraxacifolia* is present in the proportion of a million to one of *foetida*, that there is scarcely an agrestal parish south of Yorkshire in which it is not found, and it has reached Ireland. So, too, with the belated remarks about *Matricaria suaveolens* which is said to be "established in several places." The fact is that it occurs in every country of Britain, even to the most northern island of the Zetland group. Of *Senecio squalidus* it is said that "it is quite established on walls at Oxford, Bideford, Cork, and a few other localities in middle and southern England and Ireland." Readers

need no reminding of the masses of it on railway-ballast (not on walls only) at Oxford, Didcot, Reading, Southall, Swindon, Droitwich, of the thousands of specimens on the Staffordshire mine-tilts, and of its occurrence at Chester, Aberystwith, Portland, Rugby, etc. Other glaring examples of distribution not brought up-to-date are *Cirsium setosum*, *Orepis biennis*, *Holosteum*, *Muscari racemosum*, *Scirpus parvulus*, *Najas flexilis*, and *Viola rupestris*. *Scheuchzeria* is no longer found in the habitats given, but it does occur in another county. *Pinguicula alpina* has not recently been found, and is there any proof that it was ever found in Skye or Sutherland. *Cirsium tuberosum* is not limited to Wiltshire—it occurs in two other counties. Nor is the distribution so limited of *Carex tomentosa*, *Carex verticillatum* (one did not expect Surrey habitats to be omitted), *Salvia pratensis*, *Arabis scabra* (written *stricta*) or *Potamogeton rutilus* which extends to the Orkneys and Zetland. *Elisma natans* is an increasing species which is spreading along our canals and is abundant in several places. *Linaria purpurea* is somewhat more than “nearly naturalised.” How long is it since *Sisymbrium polyceratum* was seen in the streets of Bury St. Edmunds? *Gnaphalium norvegicum* is found in Ross-shire, but one doubts if it ever has been gathered in Forfar. *Oxytropis campestris* is not confined to Clova. *Carex rupestris* is not a plant confined to high mountains, and is *C. ericetorum* always on “chalk-hills?” *Selinum* is not confined to “damp-fen woods,” and *Sonchus palustris* is not confined to the Eastern counties. *Juncus capitatus* is found in Anglesey. I have never seen *Scirpus Holoschoenus* in the Channel Isles, nor have I ever heard of any one who has, and the same may be said of *Anaphalis margaritacea*. Probably the Cape *Gnaphalium undulatum*, which is abundantly and completely naturalised, has been mistaken for it. *Asarum*, too, has a much wider range than that given. *Ophioglossum lusitanicum* is not found in Ireland. The Somerset locality for *Leucojum vernum* is omitted, and *Lobelia urens*, *Juncus tenuis*, *Orchis hircina* and *Salvia pratensis* have additional localities, the *Juncus* now being widely spread. It is ludicrous to read “that *Calamagrostis stricta* was formerly found in Scotland, etc.” It is still there and also in Norfolk. This criticism applies to a very large number of species. Surely it is high time to correct the statement that *Sisymbrium pannonicum* is “half naturalised.” Com-

pare its occurrence with *S. Irio*. There seems a curious inconsistency in the selection of plants added. (The additions are enclosed in square brackets.) We see that *Carex microglochis* is figured but not *chordorrhiza*, that *Sisyrinchium californicum* is included but not *Polygonum sagittatum*, that *Populus canescens* is figured but the much commoner *P. deltoidea* is not even noticed. *Hydrilla*, *Azolla* and *Prunella laciniata* are figured but not *Ajuga genevensis* nor are *Impatiens parviflora*, *glandulifera*, etc., mentioned. *Nymphæa occidentalis* is given specific rank, but *Rhinanthus groenlandicus* is not mentioned. *Cerastium pumilum* is poorly described and like several other species is grouped under *vulgatum*. *Cucubalus baccifer* has its new stations unnoticed and there is no proof that it was "introduced into the Isle of Dogs in ballast." *Dianthus gallicus*, *Orobanche Ritro* and *reticulatus*, *Agrostis verticillata*, *Sagina scotica*, *Cotoneaster microphylla* and *C. Simonsii* and many others are omitted. It may be urged that some of these are recent arrivals or only casuals—but if we glance through the additions what can be said for *Sisyrinchium californicum* and *Narcissus obvallaris*? Have not the foregoing as great a claim for admission as *Erysimum orientale*, *Arabis Turrita*, *Caucalis latifolia*, *C. daucoides*, *Linum usitatissimum*, *Coriandrum*, *Roemeria*, *Atriplex hortensis*, *Xanthium Strumarium*, *Asplenium fontanum*, *Orobanche ramosa* and *Sempevivum* which are figured. One of the least worthy additions is *Veronica arvensis*, var. *eximia* since if such a trivial plant is inserted it gravely upsets the standard of the plants described. One may say that the additions include *Geranium purpureum*, *Juncus alpinus*, *Luzula pallescens*, *Narcissus obvallaris* (alien), *Allium carinatum*, of which a figure would be welcome, *Iris spuria*, *Sparganium alterniflorum* and *Potamogeton Drucei*. There has been little change in the nomenclature. It would have been an advantage to have replaced *Euphorbia segetalis* by *portlandica*, to have given the valid names *Brassica arvensis* and *incana* instead of *B. Sinapis* and *B. adpressa*. What advantage is there in using *Linum bienne* for *angustifolium* while *L. perenne* is retained, or *Erica carnea* for *mediterranea*, or what advantage in *Hieracium villosum* (which has never been found in Britain), *Gladiolus communis*, *Bupleurum opacum*, *Trigonella purpurascens*, *Anagallis caerulea*, *Leontodon hirtus*, *Orobanche major* (in the sense of

*Rapum*), *Carex Hostiana*, *C. flacca*, *C. ovalis*, *C. rostrata*, *C. lagopina*, *Poa rupestris* (in the sense of *procumbens*), *Paeonia officinalis*, *Lepturus incurvatus*, *Gastridium lendigerum*, *Oxytropis uralensis*, *Polygala depressa*, *P. Amarella*, *Romulea parviflora*, *Lythrum hysopifolium*, *Lloydia serotina* and *Juncus obtusiflorus*. Since attention is called on special groups such as Hieracia, Rubi and Salicornias to special works the same compliment might have been paid to Mrs Gregory's "Violets" and to the papers in our own Reports on *Thymus*, the Water Buttercups, *Sagina*, *Melampyrum*, *Taraxacum*, etc. The book is admirably printed and the plates are reproduced on paper which we are told will bear water-colours well. There are few misprints. *Dianthus caesius* is of Sm. not L. *Arenaria sedoides* is anonymous, and the Zetland botanist was Edmondston not Edmonstone. We have no doubt that this revised edition will have a large circulation and will in time bring many neophytes to our ranks. My old friend, Sir Mountstuart Grant Duff, used to give a copy of the *Handbook* to many of his young friends to put them into the right path and in his charming "Diaries" there will be found many pleasing references to it for he was also a Benthamite. Had he seen the energy with which some of his disciples last year were at Llanberris most industriously painting in their finds after a heavy climb up the Glydyr he would have greatly rejoiced.

BLACK, J. M. FLORA OF SOUTH AUSTRALIA. Part 1: Cyatheaceae—Orchidaceae. pp. 154, tt. 9, fig. 34. R. G. E. Rogers, Adelaide. Several new varieties and combinations occur.

BLAKELY, W. F. Prolific Weeds, in Agric. Gaz., New South Wales, 346, 1924. The following aliens are now becoming more or less aggressive weeds:—*Tribulus terrestris* (Caltrops), *Heliotropium europaeum* (Wild Heliotrope), *Navarretia squarrosa* (Californian Stink-weed), *Solanum rostratum* (Buffalo Burr), *Centaurea solstitialis* (St Barnaby's Thistle), *Inula graveolens* (Stink-weed), and *Tagetes minuta* (Stinking Noger).

BLATTER, Rev. E. Flora Arabica, in Rec. Bot. Soc. of India. Vol. viii. : Labiatae-Ceratophyllum.

BOSE, SIR JAGADIS CHUNDER. THE PHYSIOLOGY OF PHOTOSYNTHESIS.

SIS. Demy 8vo., pp. xx., 287. Longmans, Green & Co., London, 1924; 16/-.

BOTANICAL ABSTRACTS. Published under the direction of the Board of Control of Botanical Abstracts, Inc. Vol. 13, Jan.-Nov. 1924; 12 dollars.

BOTANICAL SOCIETY OF EDINBURGH. Public lectures were given under its auspices at the Lecture Hall, Botanic Gardens. These include "Primulas" by Prof. W. Wright Smith; "Plant and Bird Life on the Barra Isles," by R. M. Adam; "How Plants Grow," R. I. D. Graham, M.A., D.Sc.; "Remarks on the Flora of Salisbury Crags," G. B. Wallace, B.Sc.

BOWLES, F. A. A HANDBOOK OF CROCUS AND COLCHICUM FOR GARDENERS. 8vo; pp. xii., 185; pt. 24. Martin, Hopkinson & Co., London, 1924; 12/6. This eminently practical and useful work, by one whose long experience in growing these beautiful plants, can be most highly recommended. What Mr Bowles does not know about their propagation and development may be said not to be worth knowing. Anyone who has seen the beautiful variation in colour of *Chrysanthus* in his garden at Myddleton Hall will bear witness to this. I saw it last January, and the brilliant orange-red of *garganicus* recalled the slopes of the Bithynian Olympus, where I last saw it growing. His notes, too, on the *Colchicum* are of high value.

BRITTON, N. L., and J. N. ROSE. THE CACTACEAE. Vol. iv. and last. Carnegie Institution of Washington, 1919-23. The giant *Cereus* of Arizona is named *Carnegiea gigantea*; it reaches a height of 30 feet, and a plant will weigh from 6 to 8 tons. The four volumes have 137 plates, mostly in colour, and there are about 1100 text figures.

BRITTON, N. L., and PERCY WILSON. BOTANY OF PORTO RICO AND THE VIRGIN ISLANDS. New York Acad. Sc., 1924; 2 dollars.

BROWNE, Lady ISABEL. Note sur les Bractées de *Palaeostachya gracilis*, in Bull. Mus. Nat. d'Hist., Paris, xxix., 1923.

BRITISH BRYOLOGICAL SOCIETY. Report for 1924. Secretary, Mr D. A. Jones, 1 Victoria Road, Brynteg, near Wrexham; subscription for 1925, 7/6. There were 4665 specimens distributed among the members in 1923-4. It contains new forms of *Sphagnum* from the pen of our late most valued member, Mr J. A. Wheldon.

BULLER, A. H. REG. RESEARCHES ON FUNGI. Vol. 3: The Production and Liberation of Spores in Hymenomycetes and Uredineae. pp. xii., 611. Longmans, Green & Co., 1924; 30/-.

BULLETIN SOC. LINNÉENNE DE LA SEINE MARITIME. 12 francs annual sub. Issues EXSICC. 1923 of 78 species, including several critical species. *Spartina glabra* Muhl., var. *Townsendii* Corb. et Chev. from "Est de Havre," P. Senay.

CARTER, HUMPHREY GILBERT. DESCRIPTIVE LABELS FOR BOTANIC GARDENS. pp. 80. University Press, Cambridge, 1924; 1/6. The object of these labels is to convey along with the name of the species some useful or interesting knowledge respecting them. The ordinary label used in Botanic Gardens of cast iron material necessarily has no room for such details, and is not a sightly object. In the Cambridge Garden such descriptive labels as these are first coated with some water-proof material, such as celluloid, either in amyl acetate or acetic acid, in order to obtain a reasonable durability. A glance through this series shows how well Mr Gilbert Carter has succeeded in giving in terse language some striking points relative to the species. Under *Cercidiphyllum japonicum* ten lines give an excellent account of the species: however, at Westonbirt the tree which in Japan is 100 feet high is little more than a shrub but the autumn colouring is a thing to behold. One may suggest that a somewhat larger type for the species name might well be employed. One hopes that this method may catch on so that he who runs may read.

CHEMIST AND DRUGGIST. Descriptive Articles; Nature Pictures of Medicinal Plants. Jan.-May 1924. Eight excellent coloured plates include Belladonna, Stramonium, Hyoscyamus, Valeriana, and Digitalis.

CHRISTY, MILLER, F.L.S. See under *Carpinus Betulus* and *Polygonidium vulgare* L.

COPELAND, EDWARD BINGHAM. RICE. pp. xiv., 352; tt. 27. Macmillan & Co., London, 1924; 20/-. The monograph of the Wheat Plant written by our member, Prof. Percival, dealt in a masterly manner with the history and cultivation of the cereal, with which we in Britain are especially familiar, and for which he claimed that a greater amount is grown than any other corn. He gave its ancient lineage and mentions that about 2000 varieties are grown by him at Reading. Next to it, if indeed it has to yield a second place, undoubtedly is Rice, which likewise has a most ancient history, the origin of which it is well nigh impossible to determine. Probably, as Professor Copeland suggests, it had its beginnings in S.E. Asia. but he is too wise to attempt to more precisely indicate its origin. He claims that its produce even excels that of wheat in its annual crop. The International Institute of Agriculture estimates its normal annual production at 440 billions of pounds weight of rough rice, which, when prepared ready for food, affords no less than 300 billions of pounds. It is, he says, the staple food of the greatest number of people. While wheat is admitted to come from several species, it appears that Rice is derived from *Oryza sativa* only, but it has thousands of varieties, mostly cultivated forms which are distinguishable. In equatorial Africa *O. longistaminata* has received specific rank. It is a perennial, but its introduction even into tropical Queensland has not been a success. The wild rice of the northern United States is quite a different genus. The author gives an excellent chapter on its botany. We know how fields may be benefitted by the growth of the bacillus-noduled Leguminosae, so on the other hand there are plants which prove poisonous to other species. Rice, says the author, thus suffers when it is preceded by Cogon grass. The influence upon the Rice crop of Climate, Soil, and Water are treated in an admirable manner, as are Diseases and Pests. Among the latter are a group of nematode worms, some living in the roots, others in the stem, while there are moths such as *Chilo* species and *Sesamia*, of which coloured figures are given, the caterpillars of which attack the leaves. Still worse are the Borers, which get into the stem. Nor after the Rice is garnered are the troubles over. Malevolent weevils, *Calandra Oryzae* L., and other beetles take a large toll. The remedy is "poison gas" in the shape of the malodorous bisulphide of carbon. There are birds and animals also to

be dealt with. To the ordinary British botanist Rice is Rice. Allusion has already been made to the varieties: their number is legion. Java, Indo-China, and Japan have, it is said, about a thousand varieties each. In the Philippines, where Prof. Copeland did so much of his excellent work, 3500 varietal names are known, and he presumes as the result of government experiments that 2000 are really different. In India about 8000 have been recorded. Ceylon has only 200, while for the enormous Chinese country no estimate is made; probably we might safely adopt the Indian number, so that over 20,000 varieties may exist. Carolina Rice, which commands a higher price than the Indian, has two good varieties, White and Golden. The information given on the Seed and Varieties makes this work indispensable to the rice grower. As regards California, where rice-culture is of quite recent origin, the author tells us that in 1903 he planted several varieties, only one of which came to maturity. That excellent Bureau of Plant Industry began tests of rice in the Sacramento Valley, for three years on private land, and in 1912 on the Bigg's Rice Field Station. The crop in 1912 on 1400 acres, yielded 31,500 sacks, each of 100 pounds, at the rate of 22.5 sacks per acre. In 1922 the acreage had increased to 140,000 and the crop to 3,717,000 sacks, with an average yield of 26.6, the average rainfall being 20 inches, practically all falling from November to March. There are great differences in temperature. Among the weeds of the crop there are the Barn-yard Grass *Echinochloa Crus-galli* (which is well figured, p. 184), *Typha latifolia*, *Phalaris paradoxa*, and *Eleocharis palustris*—a strange mixture. In the Philippines there has been an increase in Rice culture exceeding that of the population, that is, from 750 million kilos in 1909 to 1893 millions in 1922. So, too, the production in India is in gigantic figures. In 1916-7 the Indian Empire grew 34 million tons of rice. Professor Copeland gives a reassuring statement as to the supposed linkage of malaria and rice growing. He shows from figures compiled by Professor Grassi that the diminution of malaria goes *pari passu* with rice culture, and that deaths of 85 per m. sunk to 14 per m. in three hundred years. Taking Italy as a whole, the malarial death rate from 1905 to 1909 was 14 per 100,000 whereas in the Rice area of Navara and Pavia it was only 2.4. This too seems to be the case in Spain and Portugal, and the author states that it is also the experience in

California. As he says, there are only two ways to eradicate malaria—one to break its life cycle within the body, the other to break it outside the body, by mosquito extermination. As a most valuable treatise on rice and its culture this work of Professor Copeland's should be in the libraries of all our Colonial agricultural establishments, and especially those of our Indian dependencies.

COTTER, SIR J. L. ALL ABOUT THE ROSE IN SIMPLE LANGUAGE. 8vo, pp. vii., 214. Andrew Melrose Ltd., London; 6/-.

COULTER, MERLE C. OUTLINES OF GENETICA, with special reference to Plant Material. Univ. of Chicago Press; 1 dollar 60 cents.

COVENTRY, B. O. WILD FLOWERS OF KASMIR. Ser. i., cr. 8vo. W. Thacker & Co., London; 24/-.

COWARD, T. A. LIFE OF THE WAY-SIDE AND WOODLAND: When, Where, and What to Observe and Collect. pp. viii., 216; tt. 111. F. Warner & Co., London and New York, 1923; 10/6.

CRISP, SIR FRANK, Bt. MEDIÆVAL GARDENS: "Flowery Medes" and other Arrangements of Herbs, Flowers, and Shrubs grown in the Middle Ages, with some Account of Tudor, Elizabethan and Stuart Gardens, by the late Sir Frank Crisp, Baronet, LL.B., B.A., Treasurer and Vice-President of the Linnean Society of London. Edited by his daughter, Catherine Childs Paterson, with Illustrations from Original Sources collected by the author. Two vols., pp. 140, fig. 225 and 314. J. Lane & Sons, London, 1924; Six guineas. The lengthy title cited above gives an idea of the pictorial survey which Sir Frank intended to illustrate. As we are told in the Introductory note by Mrs Paterson, the notes descriptive of the subject and source of Mediæval Gardens have been collected from a very large number of MSS. and printed books. Sir Frank found none depicted earlier than the thirteenth century, but after 1450 they are more numerous, the period from 1450 to the end of the middle ages being the most prolific in literature. The author's industry in collecting was remarkable, as is evidenced by the extraordinary number of microscopes and of botanical books which he accumulated, and these sumptuous volumes bear evidence to the zeal with which

he attacked so difficult a subject and the lavish expenditure it must have involved. In looking through the splendid process-prints culled from such various sources one sees the development of the art of gardening. Not, of course, are the oldest gardens shown; doubtless at Knossos some of the flowers depicted on the ceramics were grown in a garden. The recent photographic reproduction which appears in the *Journal of Egyptian Archaeology*, no. x., 1924, shows a garden which was only last autumn brought to the light at Tell el'Altnarnah, in which a large number of square beds, each about 16 inches square, are surrounded by a small bank, through an opening in which the irrigating water entered, and the holes for trees are still visible. These protected squares recalled the garden at Sumburgh in Zetland, where the small enclosures with slabs of stone about two feet high sheltered from the fierce winds the delicately-tinted Nemesias which last August were in showy flower. The object of these Egyptian borders was perhaps to keep out pests or to maintain a moisture about the roots of the plants. But all through the Middle Ages the pleasure gardens appear to have been of limited extent and of formal arrangement, which had their culmination in 1550 in such gardens as those of the Villa D'Este. Naturally, the illustrations show many instances of anachronisms. The painter of sacred subjects gave the garden he was accustomed to see in his own vicinity, and Sir Frank says the Garden of Gethsamene is shown by all except one painter as a garden of their own time enclosed in a wattle fence or paling, the one exception being Berna of Siena (who died in 1381), who introduced some Eastern plants in his painting. Dr Warton, in his Essay on Pope, observes that the prints represent Paradise as "full of clipped hedges, square parterres, straight walks, trees uniformly lopped, regular knots and carpets of flowers, groves nodding at groves, marble fountains and waterworks," and these are all represented in these volumes. As the author points out, a picture of the Garden of Eden in 1500 shows a wattle fence, another of 1610 gives a lattice fence. The Middle Ages are roughly defined to be between the fifth and the fifteenth centuries, the latter date almost coinciding with the invasion of Naples by Charles the Eighth and the Discovery of America, but Sir Frank extends the period to 1534, the date of the English Reformation, a movement which was of special interest to Sir Frank, who was proud of the Puritans. The

two types of gardens, the Herb Garden and Orchards, are described, the latter having then a different meaning from that now understood; then it was not limited to fruit trees, but included plants generally. The Orchards varied much in size, for Leland in 1540 says "that the leaves (of one tree) cast their shadow on the greater part of the orchard, while Charlemagne is said to have received the ambassadors of the last pagan King of Spain in an Orchard where 15,000 men were stretched upon a white carpet." A much more elaborate one is described by Albertus Magnus in his *De Vegetabilium* of the thirteenth century which has "pomegranates, pears, apples, laurels, and cypresses, and turf covered with climbing vines and fragrant herbs, behind the turf such as rue, sage, and basil, and flowers such as the columbine, violet, lily, and rose, and among the latter a mound of earth should be raised to form a flowery seat where one could sit and repose." The Orchard formed the Pleasaunce of the Middle Ages, but towards the end of the fifteenth century the garden began to take the place of the Orchard, and they were replaced in Queen Elizabeth's time with the "Gardens of Pleasure." Plants, Herbs, Flowers, etc., are then illustrated. It will be seen what a debt the Saxons owed to the Roman Invasion, the invaders being skilled gardeners who doubtless brought in to Britain among others the Lime, the Sweet Chestnut, Box, Laurel, Periwinkle, and Gilliflower—the latter a *Dianthus*. A list of plants which should be seen in a garden is given by the Abbot of Cirencester before 1217. It includes peonies, mandrake, dittany, lettuce (of which the early Egyptians were extremely fond), cucumber, drowsy poppy, amid many others, but although in the English gardens of the fifteenth century many native species were included, yet, after all, only a very small number of species were actually grown. The wealth of the Indies had not yet arrived. The "Special Features of Gardens" are alluded to in chapter v., emphasis being properly placed on the small area they occupied, an instance being given so late as 1775, when John Rae considered that twenty yards square was sufficient for a private gentleman's flower garden. Details are also given of the enclosing fence which in the fifteenth century was wattle or palings, the former made of Osier twigs, intertwined with stakes, much as the hurdles still made in Wiltshire, while iron palings more or less elaborately wrought were used in the fifteenth century, as is

shown in the beautiful picture which is most delightfully reproduced in No. 124 by Quintin Matsys of the Virgin and Child, showing the fence and the Rose border. Privet, thorn, sweet brier, and yew were also much used. Flower beds, both as raised beds and flat oblong or square beds, which are said to be anterior to the use of circular beds, are treated of in chapter vi. There is nothing new under the sun, for in the Egyptian garden already alluded to there were not only square beds, chess-board fashion, but also circular beds grouped together. Chapter vii. treats of Knots and Parterres, the earliest illustration of Knots dating from 1499, but there are detailed descriptions of them given as early as 1467. Sometimes the knots outlined by plants had their beds filled with coloured earths—the prelude to carpet-bedding. One of my youthful remembrances is that of the vivid bit of colouring on the west side of that delightful house. Castle Ashby, but it may be held that this was more of a parterre into which the knot developed. Of these there are some delightful designs given on t. cxc. Smith's dust and iron-fillings gave shades of black, and there was red sand and powdered tiles and brick-dust, which literally paved the way for the incoming of a more natural method of ornamentation, so that the floral contents and not the shapes of the beds stimulated the horticulturist rather than the designer. Labyrinths and Mazes are next mentioned, and many illustrations given, the average height of the fence being, as in that at Hampton Court and Hatfield, from three to four feet. A description of Fair Rosamond's Bower, which was a labyrinth, is quoted from Michael Drayton in 1631. Arbours, Pergolas and Galleries appear in chapter ix., many beautiful illustrations being given. Hornbeam and Lime were frequently used, and the pleached Ilex alleys, several hundred feet in length, are still retained at the Villa Gori near Siena. Topiary Work occupies chapter x., the art being an old one, for in Pliny's Tuscan garden there were animals cut in box. Curiously, there is no reference to the Yews which old Jacob Bobart fashioned at the Oxford Physic Garden before 1630, about which much has been written and to which poems have been dedicated. Turfed Mounds and Turf-topped Benches used for seats are mentioned in chapter xi. Either the climate was then drier or our forefathers feared damp less than we do now, for such curious and rheumatic-giving arrangements rather than wooden seats were fashionable. Nor

was it an even turf on which the dalliers reclined, for the ends of the wattles were not cut off but left projecting, so Sir Frank humorously queries whether some extra cuticular development then existed which had not been transmitted to these later days, albeit it may have changed its place. The immunity was perhaps a question of education, since in its earlier stages the lounge began by reclining in troubadour fashion on "sweet herbes and flowers for nose-gaies set upon seats for which Camomile, Pennyroyal, Daisies and Violets are seemly and comfortable." In chapter xi. Mounts are described which, when judiciously built, give dignity and an appearance of increased size. These were copied from Roman gardens. There were fine ones at the Louvre in the fourteenth century, the one at Wadham College is mentioned, and two figures of the more striking one at New College are included. Next are described Fountains, Spring Heads, Bathing Pools, Monastery Gardens, which go back to the ninth century; Castle Gardens, hardly less ancient, and of these some delightful examples are given. The last chapter (xvi.) is devoted to the "Hortus Conclusus," which appropriately brings the text to a conclusion, although Hortus Conclusus meant an enclosed garden. A delightful translation of a thirteenth century poem on the "Romance of the Rose" gives a vivid description of such a garden within a garden. There is a good Bibliography, in which, however, we find no reference to the First Catalogue of the Oxford Physic Garden, which, as it was the first of its kind in Britain, might have been mentioned, since many more recent and less important works are cited. But we must not end on a note of regret. The perusal of the splendid volumes has been a real enjoyment and the possessor of them may be proud of such an addition to his library, as one knows that, however grim the sky or dull the surroundings, the magician's carpet presented in these pages will waft the reader into brighter scenes under fairer skies. We are glad to be able to bear testimony to the careful and accurate manner in which the difficult task of editing this work has been accomplished by Mrs Paterson, and to the publishers for the very successful way in which they have so excellently done their part in the production of these golden volumes.

CURTIS' BOTANICAL MAGAZINE. Edited by Dr. O. Stapf. Vol. 149, pt. i., 1923; 17/6. Pt. ii., tt. 8990-9000, 1924; 17/6.

DALGLEISH, E. FITCH, Ph.D. MARVELS OF PLANT LIFE. pp. viii., 261; tt. 23, and 41 text figs. Thornton Butterworth, Ltd., London, 1924. One of the Thornton Butterworth "Marvel" Series. Fourteen chapters are devoted to describe these Marvels, with some good illustrations, and thus the reader is taught how plants feed, how they collect insects, how they give out light, how they feel and sleep, which being written in an easy and popular style may perhaps offer to those to whom text-book phraseology is repugnant a ready means to acquire a knowledge of plant life which otherwise would be a closed page to them. Sometimes one wonders if something is not lost in the process of popularising. We are told, for instance, that the Bladderwort "is a small plant, which floats at the surface of the water, except when in bloom, when it is raised up into the air and light." Would this not convey to the reader that the whole plant emerges from the water, whereas it is only the flower-stalk that rises above the surface. Nor has the last word been said upon the animal visitors to the bladders. There appears to be no reference to the discoveries of Sir Jagadis Bose, which might have been included in the Marvels and given "thrills" to its readers. Leaves and the Story of the Flower, Strange Marriage Rites and Customs, and the Seed and Fruit have many readable and some valuable notes. The Dispersal of Seeds, Self Protection and Giants are treated of, the last not necessarily those to whom a pituitary gland secretion is necessary, but big flowers, plants and trees. A good account is given of the discovery of the Victoria "regia" by Sir Robert Schomburgk, a name which is a pitfall from which Dr Dalgleish has not escaped, for he spells it with a terminal "h." The flower is the crest of this Society, but Schomburgk published it as *Victoria Regina*, as the original printed description and the lithographed figure show. In both cases it is called *Victoria Regina*, a name given by permission of Her Majesty. A full account of the discovery is published in the first Proceedings of our Society in 1839. Among these giants we see no reference to the Rattan, of which an account is given in this *Report*. Nor can we trust the measurement of 500 feet in height which is assigned to the Eucalyptus; nor is the girth of the great Chestnut of Mount Etna accurately given, since it is a hundred feet wrong. Its circumference is given as 80 feet, but Brydone says it was over 180 feet, and therefore if we

can trust the measurement it was by far the biggest tree in the world. The book is well printed and illustrated, but we are again and again struck in this and other botanical works by the indiscriminate use or misuse of capitals for specific names. There is no excuse for this, since the *Index Kewensis* is consultable, and may be taken safely as a guide for the spelling of the names and for the use of capitals. Here we have *Californicum* spelled with a capital when it does not need it, but *Carica* which does with a small letter. The Brazilian botanist was George Gardner, not Gardiner. There is an excellent plate of the spotted orchis, which is represented by *Orchis Fuchsii*.

DAHLSTEDT, H. Nye Hieraciun-Arter fra Denmark, in Bot. Tidskr. 241-252, 1922. Eight new species.

DAHLSTEDT, H. TARAXACA fran Vastra Norge Bergens Museums Aarbok, 1923-4, raekke n. 6 pp. 40. Includes several new species—*T. craspedotum*, *T. hilare*, *T. Landmarkii*, *T. atropiumbeum* of the Spectabilia; *T. Sellandi*, *T. pannucium*, *T. Piceaticeps*, *T. sinuatum*, *T. granvinense*, *T. oncolbum*, *T. ancistrolobum* (*Taraxaca Scandinavica* Exsicc. Fasc. ii., n. 16, 1912), recently found by me in Britain, *T. acroglossoides*, *T. decorum*, *T. convexum* and *T. occidentale* of the *Vulgaria*.

DANSER, B. H. De Nederlandsche Rumex-Bastaarden, in Nederl. Kruidk. Arch., 1924. *Rumex abortivus*, *R. Drufftii*, *R. Steinii*, *R. callianthemus* (*maritimus* × *obtusifolius*), *R. Henrardi* (*maritimus* × *palustris*), *R. crispus* × *obtusifolius* = *acutus*, *R. crispus* × *obtusifolius sylvestris* (*R. acutus confinis*), *R. conspersus* (*aquaticus* × *crispus*), etc., are described. Weber einige Aussaalversache mit Rumex-Bastaarden, in Nederl. Tijdschrift, etc., dell v., afl. 2-3, 1924, includes × *R. Thellungii* (*dentatus* × *obovatus*) with excellent drawings of the perigone, *R. limosus* Thuill. (*conglomeratus* × *maritimus*).

DEVONSHIRE ASSOC. TRANS. (Science, etc.) 54-63, 1923. Fifteenth Botany Report. Edited by Miss C. E. Larter. Includes *Erica aurea* from Sticklepath, but we are not told in what condition this Cape Heath grows. The obsolete name *Sisymbrium panno-*

*nicum* is kept up. There appears to be no new county record of flowering plants.

DISCOVERY. A Monthly Popular Journal of Knowledge; 12/6 post free. Benn Bros., 8 Bouverie Street, London, E.C. 4. Hairy Plants, K. E. Styan, 294, 1924.

DIXON, H. H. THE TRANSPIRATION STREAM. 8vo, pp. 80. University of London Press, 1924; 2/6.

DIXON, H. N., M.A., F.L.S. THE STUDENT'S HANDBOOK OF BRITISH MOSSES, with illustrations and Keys to the Genera and Species by H. G. Jameson, M.A. Third edition revised and enlarged. pp. xlviii., 582, tt. 63. V. T. Sumfield, Eastbourne; Wheldon & Wesley, London, 1924, 24/-. To our British Moss collectors the advent of a third edition of this useful, scientific and popular Handbook is of great importance, since its author has kept so well abreast of modern thought and discovery that it is a most fitting text-book for students and one of which British Bryologists may well be proud. As the writer in his preface says: The plates have been entirely redrawn by Mr Jameson, with numerous emendations and additions, and are now reproduced by photography direct from the drawings themselves, every figure being drawn from nature. The late Dr Stirton described over 100 new British species, the value of which was more than doubtful. These have recently been examined by Mr Dixon, and have, when necessary—and this was usually the case—been reduced to the species, under which Stirton's name, for the convenience of foreign workers, has been put in synonymy. It may be said that the first edition of the Handbook was published in 1896, at 18/6, with 520 pages and 70 pages of figures; the second edition in 1904, at the same price, reached 586 pages and 75 plates of figures, while the present edition by judicious compression is reduced to 582 pages and 73 plates, but the Index has two more pages, showing that many additions have been included. It would have been interesting to have had a page devoted to the names of the actual additional species here described, but the accomplished bryologist, who doubtless has them at his finger ends, will not miss it. The able manner in which the species are described, the clear definitions of the genera, the vivid notes on the habitat

are evidently the work of a master of his craft. It shows how far behind British Phanerogamic botany is left, whose most modern text book is but a rechauffé of very old and inadequate material. One wishes that a few more localities had been given, even if there had not been room for a full comital distribution, but such additions would increase the bulk and the expense. One would also have liked the date and discoverer of each of the British species. We may add a word of praise to the printer, who has used a clear and readable type, and well displayed it, to the draughtsman for his beautiful and accurate figures, and to the way in which these drawings have been reproduced. We heartily congratulate our member upon the production of a really valuable text-book, for which we hope an extensive sale, indispensable as it is to every bryologist. No public library should be without such a standard authority.

DONCASTER, L. AN INTRODUCTION TO THE STUDY OF CYTOLOGY. Ed. 2, 8vo, pp. xiv., 280, tt. 24. Cambridge University Press, 1924; 21/-.

DYKES, W. R. A HANDBOOK OF GARDEN IRISES. 8vo, pp. 250, 1924. Martin, Hopkinson & Co.; 12/6.

ECOLOGY, JOURNAL OF. The British Ecological Society; subscription 35/-. Hon. Sec., Dr E. J. Salisbury, The Briars, Cross-path, Radlett, Herts; editor of Journal, A. G. Tansley. Contains among other papers: The Hornbeam in Britain, Miller Christy. On the Ecology of British Beechwoods, with special reference to their Regeneration, A. S. Watt (pt. 2, 145). Plant Successions of the Brush-Prairie in North-West Minnesota, J. Ewing (238). The Edaphic Factors accompanying the Succession after Burning in Harpenden Common, T. Eden (267). Studies on the Ecology of English Heaths, V. S. Summerhayes, L. W. Cole, and P. H. Williams (287). *Primula elatior*, supplementary note. Miller Christy (314). Note on the Ecology of Radipole Lake, R. D'O. Good and C. D. Day (322).

EDINBURGH, TRANS. BOT. SOCIETY. *Carex microglochis* in Scotland, G. C. Druce, p. 7. Scottish Taraxaca, G. C. Druce, p. 4. Additions to the Orkney Flora, Col. H. H. Johnston. Includes

*Taraxacum sub-simile*, but it awaits H. Dahlstedt's further study. Notes on Caithness Plants, Arthur Bennett, p. 54. Notes on *Potamogetons*, Arthur Bennett, p. 45, suggests the American form of *P. zosterifolius* should be named on account of its fruit character var. *americanus*. He names a new species *P. Hagstromii*, a plant from British Columbia.

ENGLER, A. DAS PFLANZENREICH: Euphorbiaceae-Crotonoideae-Acalypheae-Acalyphinae. F. Pax & K. Hoffman, Euphorbiaceae Addit. W. Engelmann, Leipzig, 1924; 14/60 gold marks. Band 10 MUSCI (Laubmoose). pp. iv. 478. W. Engelmann, Leipzig, 1924; 30 gold marks.

ERITH, ADELA GWENDOLEN, B.Sc. WHITE CLOVER (*TRIFOLIUM REPENS* L.). Monographs of Agricultural Plants, edited by Professor John Percival. pp. viii. 150, tt. 75. Duckworth & Co., London, 1924; 18/-. These valuable Monographs promise to give us a much-needed exposition of the history of our cultivated plants, the origins of many of which are still shrouded in the mists of antiquity. Professor Percival has already given a splendid work on the Wheat Plant, which is reviewed in our *Report*. That was a gigantic task to accomplish, dealing as it did with all the numerous varieties of the corn which forms in Britain the "Staff of life." Necessarily, the White Clover, which is limited to more restricted use among domesticated animals, has not the primary importance of the Wheat. But there were problems to solve, varieties to describe, and researches to be carried out upon the morphology, anatomy, and development of the plant, which Miss Erith has carried out in an extremely able manner. As she says, White Clover ranks among the "foremost of the world's pasture plants." It has a wide range of growth, occurring throughout Europe and extending throughout Siberia, Syria, and Palestine, and from the Caucasus through Central Asia to Lake Baikal. It occurs in Tibet and ascends to 20,000 feet on the Himalayas. It is widely spread in Africa and has been recorded for Greenland. It is largely cultivated in America and specimens were sent by Clayton from Virginia before 1739, but these may have been introduced, not native, specimens. I saw it with other English weeds near Newcastle in Jamaica, but there it was certainly due to introduced hay. The seeds pass through the intestinal canal

of horses or cattle, and Miss Erith quotes, 5370 clover seeds were taken from one pound of dried residue taken from a liquid manure-barrel. Of these 62 per cent. were germinative. They are small, so that two thousand of them only weigh a gram. An excellent account is given of them, together with the most likely impurities. There is a detailed morphology of the seed, the root-system and the bacterial-nodules, which are infected with *Bacillus radicumicola*. To these it is that the rapid improvement in pastures is chiefly due. The morphology of the plant as a whole is well explained, and a reference is also made to the "Movements of the Leaves," for the leaves of the Clover at night assume a very curious position, of which a figure is given. This is supposed to prevent or to greatly limit, dew-deposit. The Morphology of the Flower is well done, and the excellent text-figures aid the student materially. As Darwin proved, fertilization is mainly carried out by bees. The account of the fertilization and development of the flower is an excellent piece of work which deserves high praise. The White Clover is first figured as *Weyssz Fleyschblum* in Brunfels Herbarum of 1531, and in 1540 (Herb. pars. 3) he gives it the name of *Trifolium album*, a name which it is a pity Linnaeus did not conserve. Later on the herbalists confused it with white forms of *T. pratense*. Miss Erith gives the varieties of *T. repens* L., and figures, and well describes each, giving comparative measurements of plants grown under the same conditions. Allusion is made to the occurrence of cyanophoric glucosides in this plant. This in Britain is well nigh negligible, but in North America has occasionally had serious effects upon stock. The point that occurs to one is, may not it be developed in greater quantities during the drying stage, *i.e.*, that is, when fermentation takes place in the withering plants? The var. *purpureum* has an older synonym, which is cited—*fusco-maculatum* Godet, a much more cyanophoric plant; the var. *grandiflorum* Peterm. is our Zetland plant; var. *rubescens* Seringe is Babington's *Townsendii* from the Scillys, which occurs sporadically in other parts of Britain; the var. *Biasoletii* Steud. is from the Mediterranean and Adriatic regions, and *Orphanideum* Boiss. is from Greece and Italy; *macrorrhizum* (Boiss.) is from Cilicia and Cappadocia, while *ochranthum* Maly is only known from Bosnia. Miss Erith also gives a chapter on teratological forms, among which is the four-leaved clover, the

form with the curious inflorescence, *Trifolium album umbella siliquosa* of Merrett, while the phyllody of the calyx is shown in *T. repens*, var. *phyllanthum* Seringe, but these occurrences, despite an immense amount of published literature, still await a definite explanation. The "varieties and their agricultural value" is one of supreme importance to the farmer, and these receive adequate treatment here. A good "Bibliography" is another important feature which Miss Erith has not lost sight of. We most heartily congratulate her upon bringing her long labours to so successful a result.

FARMER, Prof. J. B., has an interesting letter in *Nature* ii., 86, 1924, on Leaf-Mould, of which he notices the formation is inhibited when the surface-soil consists of heavy, especially calcareous soil, whereas sand or gravel promotes its formation. "Such an acid soil by not neutralising the products of bacterial action, would conduce to the arrest of bacterial activity and so provide the requisite condition for leaf-mould formation," and this he was able to confirm. The matter is an important one to the field-botanist, since plant occurrences are greatly influenced by the presence or absence of leaf-mould. W. H. Pearsall, the son of our member, has a paper on "The Ages of Peat Deposits," *Nature* ii. 830, 1924.

FERNALD, M. S. Contributions from the Gray Herbarium of Harvard University, no. 63, pp. 87-300, 1921; see also *Rhodora* 1921, and Notes on the Flora of Western Nova Scotia, 1921, *Rhodora* xxiv., pp. 157-208, 1922. A valuable contribution to our knowledge of the flora of that region. The main result was the discovery or verification of many coastal plants. The itinerary abounds with interesting notes and in the systematic list of plants noticed. There are some most valuable observations. The author follows the International Rules—but international uniformity of names seems as far off as ever. *Thelypteris* (notwithstanding Christensen's Index) is used instead of *Dryopteris*, so our Male Fern is *Thelypteris Filix-mas*, and presumably the Marsh Fern must be *Thelypteris Thelypteris* (L.) comb. nov., but Fernald uses *T. palustris* Schum. Our Meadow Sweet is *Filipendula Ulmaria* and our Yellow Lily, a *Nymphoanthus*. *Glyceria* is replaced by *Puccianella* so far as *maritima* and the allies are concerned. Our *Circaea intermedia* is

quite correctly called *C. canadensis* Hill, and *Atriplex glabriuscula* Edm. is used instead of the later *Babingtonii*. A most suggestive note is that on *Polygonum lapathifolium*, which we will allude to later. Fryer's (wrongly spelled Freyer) *Potamogeton varians* is made *P. gramineus*, var. *spathulæformis* Robbins. A "new" hybrid, *Drosera rotundifolia* × *longifolia*, is described, but it has already been established by Collier (*Schrift. Schles. Ges.* ii., 84, 1892). It may be remarked that *Glyceria maritima* is as polymorphic there as here as is also *Agropyron repens*. We heartily congratulate our honorary member for this excellent work, and we cannot forbear culling a practical note. In drying certain plants every collector must have been annoyed by the way in which the petals of certain flowers (*Ficaria*, *Pinguicula*, *Anemone apennina*) curl up when put on the drying sheet. Fernald "impulsively tore off a bit of newspaper, moistened it with his tongue, and applied it to the curling petals and leaves, with the instant result that they were held closely to the pressing paper. The slips are left in press, and eventually flake off." He calls the method "salivation," but for this salvation of the plant he claims no patent rights. *Polypodium Virginianum* and *P. vulgare*, *Rhodora*, July 1922, gives the history and distinguishing features of the two species. The Dwarf Antennarias of North-Eastern America, *l.c.* 95, 1924, with clavis of 11 species. On the Eastern Representatives of *Arnica alpina* with clavis of 8 species. Some Senecios of Eastern Quebec and Newfoundland.

FOURNIER, P. Florule de poche des genres et espèces complexes ainsi que de leurs hybrides pour la flore parisienne et les régions du nord, du centre et de l'est de la France. Fasc. i., pp. 32. l'auteur Ibis, Rue des Alliés, 1924; 3 fr.

FREY, ED. Vegetationverhältnisse der Grimselgegend. pp. 197. Mitt. der Naturf. Gesellsch. Bern, 1922.

GAMBLE, J. S., F.R.S. FLORA OF THE PRESIDENCY OF MADRAS. Cr. 8vo. Pt. 6: Scrophulariaceae-Plantaginaceae. pp. ii., 963-1160. Adlard & Son, West Newman, London, 1924; 10/-.

GARLICK, CONSTANCE. AN INTRODUCTION TO BOTANY. pp. 410. C. W. Daniel, London, 1924; 21/-.

GARDENERS' CHRONICLE for 1924. This old-established and ably edited weekly paper, published at the low price of sixpence a copy, contains many things of great interest not only to the florist but to the taxonomist. Mr Kingdon Ward gives a readable account of his eighth visit to India and China. The Rev. Hilderic Friend, of Earth-worm fame, gives several articles on the Garden-Craft in the Canticles. There are delightful accounts of Walhampton, the seat of Lord and Lady St Cyres, and of Westonbirt. There are articles on the Germinating Power of Seeds, a well-reported account of the International Botanical Conference, of Sir Frederic Keeble's lecture at the Royal Institution, and an able paper by D. J. Parkin on the Classification of Flowering Plants, in which we are glad to see a brief is held for the De Candolleian method of starting with the Ranales rather than with the Ferns. This view is also, we are glad to see, supported by Mr J. Hutchinson.

GATES, Prof. R. RUGGLES. Species and Chromosomes, in *Nature* ii., 353, 1924.

GAYER, GYULA. Prodrömus der Brombeerenflora (*Rubi*) in Ungarns Maygar Bot. Lapok. i., 44, 1921. 59 species; 600 names.

GEIKIE, Sir ARCHIBALD. A LONG LIFE'S WORK. Macmillan & Co., Ltd., 1924. This interesting Autobiography, which appeared in 1924, was too soon followed by the death of the author, who was born in December 1835, and passed away from us in November 1924. He has described for us a strenuous life, for the amount of splendid work he accomplished in his 88 years was indeed immense. As has been the case with many others who became famous in their own line his parents were opposed at first to the career in which he was destined to do so much. They wished him to be a lawyer, but his mental bias was too strong in the direction of natural science, and that bias was speedily turned, by the perusal of Hugh Miller's "Old Red Sandstone," to the special subject of Geology. As a boy he got the name of "The lad of the stones" from the canny Scotch country folk who watched him in his walks and considered him to be obviously a little weak in the head. His success in his education at the High School and University of Edinburgh showed that he could have been a classical professor instead of a

geologic one had he chosen to follow that line, but this was not to be, and at 20 he became an assistant in the Geological Survey, and in that work, finally as Director General, he worked for 46 years. Through all that time he was perpetually "in the field," at first traversing and studying every part of Scotland and afterwards getting new light from other countries—light on "Volcanism" (one of his favourite branches) from Auvergne, the Eifel and Italy and from the lava fields in Western America; light on Ice Action from glaciers in Norway and Switzerland; light on Denudation from the Highlands, increased by his travels in Auvergne and the "Wild West" of America; light from the microscope (to which he was introduced by Sorby) on the history of rocks and minerals through the study of their minute structure. Thus did the enthusiast and genius turn everything to advantage in tracing the past story of our globe. He could not escape the many geologic controversies which unavoidably divided schools of thought in a science which was feeling its way. Just as previously the war had raged at Edinburgh between the "Neptunists" and the "Plutonists," whose "rival theories of Water and Fire were discussed (according to Brewster) with all the warmth or even bitterness of political or theological controversy," and ended, says Sir Archibald, "with the ultimate discomfiture of the Neptunists," so in his early days the controversy raged between the Cataclysmic and the Uniformitarian schemes of Geology. It must have been a grief to him to have to differ from his teacher and friend, Murchison, who was of the Cataclysmic faith, on this subject, but his realisation of those wonderful powers of Sub-aerial erosion, which he continually observed in his travels, made him an advocate of the view that most of the work of the sculpture of the earth's surface had been done by those forces of Nature which we still see in operation. Still later came the controversy as to the way in which the glaciation marks on the rocks had been produced, whether by floating ice when the land was submerged, or by great sheets of land ice that once covered the country. Sir Archibald's study in 1861 and 1862 of the smoothed and striated rock surfaces in Scotland convinced him of the truth of the latter theory, as propounded by Louis Agassiz twenty years before. Finally came the controversy as to the possible length of Geologic time, and he combated in a lecture Lord Kelvin's *minimising* views on

the subject. More recent discoveries have shown that, however accurate Lord Kelvin's deductions may have been from the data before him, those data were not by any means the whole of the factors in the problem. The eye for scenery which was one of his possessions and which he was constantly exercising in his travels made him, as in his work on "The Scenery of Scotland viewed in connection with its Physical Geology," an admirable exponent of the way in which beautiful scenery has been the result of geologic changes and he records his delight in the saying which he quotes from Sir Thomas Browne's "Religio Medici," that NATURE IS THE ART OF GOD. A man, as those who knew him say, of charming personality, he had from his prominent position the opportunity of meeting a great number of the distinguished men of his day and gives us often in this memoir interesting little notes of their conversation and characteristics. He had too a fund of humour and a treasure of amusing stories some of which he gives us, as for example the quite impossible way in which Gladstone assured him that he took castor oil by putting first into a wine glass a "couche" of water, then the oil and lastly another layer of water which was supposed to remain on the top of the oil! A funny geologic story is that of the spreading bullet marks on the face of a rock which an eminent palæontologist maintained, until enlightened, to be of organic origin. A good recipe for a long life was that given by an old woman in Cumberland:—"I married a tinker and lived for sixty years under the hedges!" It is an interesting lesson on the properties of the Solanaceae when he tells us that the smoking after the dinners of the Literary Society compelled both him and Sir Theodore Martin to give up their attendance at them—Sir Archibald because of its effect on his eyes and Sir Theodore because it rendered him "utterly prostrate" next day. A practical piece of geologic or more strictly of chemical experience is his caution against the use of white marble for monuments in the open air. He found that they speedily decayed. The great Geologist's memory was at fault when he tells us that Sir Francis Galton died six weeks after he was knighted. It was in fact a year and seven months before his death that he received the honour—an honour, which in view of the great and varied contributions to science made by Galton, had been too long delayed. Let us hope that Sir Archibald was equally mistaken

when he tells us, on the authority of Professor Pillans, that an infant class of little tots four or five years old was asked "How long did Jeroboam reign over Israel?" When his well-earned retirement came his early classic education led him to visit Horace's Sabine valley; Sulmona, the birth place of Ovid; Sirmione, "the home that Catullus loved," with the idea of discovering how far the influence of their surroundings could be traced in their poetry, and it is delightful to see how the working at strict science for so many years failed to injure his devotion and to his enjoyment of literature. He held so many offices, as well as that of Director-General of the Survey and (that highest of scientific honours) the Presidency of the British Association and he poured forth his knowledge in so many admirable books that we may truly describe his long career as indeed a well-filled life.

F. BENNETT.

GILBERT WHITE FELLOWSHIP. Subscription, 7/6; Hon. Sec., Miss W. M. Dunton, 18 Crockerton Road, Wandsworth Common, S.W. 17. Paper on the Rev. Gilbert White and Moral History read by Sir D. Prain on Jan. 24, 1924.

GLUCK, HUGO. BIOLOGISCHE UND MORPHOLOGISCHE UNTERSUCHUNGEN UBER WASSER UND SCHWIMMPLATTFLORA. G. Fischer, Jena, 1924; 25 gold marks.

GOEBEL, Prof. Dr K. VON. DIE ENTFALTUNGSBEWEGUNGEN DER PFLANZEN UND DEREN TELEOLOGISCHE DEUTUNG. Ergungs Ergänzungsband zur organographie der Pflanzen. Ed. 2. pp. x., 565. G. Fischer, Jena, 1924; 20 marks.

GROVES, JAMES, and Canon G. R. BULLOCK-WEBSTER. THE BRITISH CHAROPHYTA. Vol. ii.: Chareae. pp. xii., 129, tt. 21-45, with explanations, figs. 27-31 in text. Printed for the Ray Society, London, 1924. This volume splendidly completes the *Charophyta*, of which the first volume was reviewed in this *Report*. In the second volume the same high standard of excellence is maintained. The Chareae are divided by the authors into three genera—(1) *Nitellopsis* Hy., which has a single representative in Britain, *N. obtusa*, formerly known as *Lychnothamnus stelliger*, of which the

headquarters are the Norfolk Broads, in which at Filby Mr Arth. Bennett first discovered it in Britain. (2) *Lamprothamnium*, which again is only represented in Britain by one species, *L. papulosum*, once known as *Lychnothamnus alopecuroides*, which has a very limited distribution in Dorset and the Isle of Wight. My last visits to Hamworthy failed to reveal it. (3) The genus *Chara* now has 17 species, as against 12 given in my *List*, but *rudis*, *denudata*, *desmacantha*, and *delicatula*, which appeared as varieties there, are now given specific rank, and Canon Bullock-Webster has discovered in Ireland a new species, *C. muscosa*. We may add that *C. vulgaris* has an additional variety, *refracta*, but as the var. *melanopyrena* is withdrawn the numbers remain unaltered. Under *C. hispida* the vars. *gymnoteles* and *macracantha* are reduced to formae, while *horrida* is now referred to *hispida* proper. *C. denudata* is at present only known from Brittas Lough in West Meath, where it was discovered in 1892 by Mr Levinge. The new species, *C. muscosa*, was discovered by Canon Bullock-Webster in Lough Mullaghderg, Donegal, in 1917. A new variety is added to *C. baltica*, namely, var. *rigida* Gr. & B.-Webst., from Hickling Broad in 1898. Our old *C. polyacantha* Braun has its name changed to *C. aculeolata* Kutz., which was published 27 years before Braun's name. From *C. aspera* the var. *capillata* is dropped and *desmacantha* raised to a species. The variable *C. fragilis* has now only one variety given, i.e., var. *Hedwigii*. To the distribution Bucks and Oxon may be added. The one-time var. *Sturrockii* is thought possibly to be a hybrid with one of the *Diplostichae*. *C. delicatula* is now separated from *fragilis* and to it is put var. *barbata* and the new var. *annulosa*, which was the *C. fragilis*, var. *delicatula*, figured on t. 207, in *Journ. Bot.* 102, 1880. This I have collected at Tingwall and Asta, Zetland. Mr Groves contributes a valuable paper on his laborious researches into the Geological History of the *Charophyta*. Beginning with the Paleozoic era are organisms which have been referred to this group, but the earliest remains which without doubt may be referred to Charophytes have been found in the Lower Coal Measures of Nova Scotia. In the Mesozoic era the Chipping Norton beds (Middle Oolites) in Oxfordshire yield *C. Bleicheri*, but the most productive source of these remains is to be found in the Middle Purbeck Beds of Dorset. The author says that the very specialised form of fruit

which has remained practically unchanged from the Carboniferous era to the present time seems to point to their being a very ancient and distinct type of vegetation, and not, as some authors suppose, merely a subordinate group of *Algae*. Canon Bullock-Webster gives an extremely practical chapter on how to collect and preserve these brittle organisms, which often appear in our Herbaria as dusty fragments. Those who have seen his beautiful specimens will assuredly wish to follow his advice if they cannot attain to his results. There is a copious Bibliography and a good Index to the two volumes. A new variety of *Nitella opaca*, i.e., var. *brachylema*, is also described. It is frequent in Loch Spiggie and Brou Loch, Zetland. One would fail in one's duty if attention was not called to the excellence of the plates, from the talented hands of Miss Mary Groves, and to Messrs Whittingham and Griggs for so skilfully reproducing them. The whole work is most useful and sets a high standard which other monographers will have difficulty in reaching. We may here also draw attention to the beautiful Exsiccata which were issued by the authors in 1924 at a guinea for each of the two sets. A few of these are still available.

HAINES, H. H. THE BOTANY OF BEHAR AND ORISSA. Part v. : Apetalae. pp. 755-1058. Adlard & Son, West Newman, London, 1924.

HARSHBERGER, Prof. JOHN W. The Plant Life of Scandinavia. He shows a photograph of *Asplenium septentrionalis*. The Third International Phytogeographic Excursion to Switzerland in 1923 is described in Ecology v. 287, 1924. The Gardens of the Faeroes, Iceland, and Greenland, in Geograph. Review xiv., p. 404, July 1924. *Archangelica* (Kvan) is said to be indigenous in Iceland, where Kvanhaven is named from it. Some Old Gardens of Pennsylvania, in Pennsylv. Mag. of Hist. and Biog. 48, Oct. 1924. The first Botanical Garden was founded there by the Rosicrucian fraternity, but the most celebrated is that of John Bertram (born in 1699); some of the trees still survive.

HENDRY, GEORGE W. Alfalfa in History, in Journ. Amer. Soc. Agron. 171-6, 1923. Originally from Mesopotamia, thence to Arabia, Egypt, Greece, and Italy. Introduced to China 126 B.C.,

HIRST, HAROLD M. How to start a Herb Garden, in *Pharmaceutical Journal* 296 and 332, March 1924, gives practical advice on this matter. Mr Hirst has himself been most successful at Ashburn, Scarborough, where he has made one which is of great public interest.

HOFFMANN, DR JULIUS. ALPINE FLORA, for Tourists and Amateur Botanists, with Text descriptive of the most widely distributed Alpine Plants. Translated by E. S. Barton (Mrs A. Gepp). pp. xiv., 121, tt. 43, and 283 figures; New Edit. Longmans, Green & Co., London, 1925; 12/6. This is the second edition of a popular book, in which an opportunity has been taken to incorporate four new plates, which appeared in the second German edition under the editorship of Prof. K. Giessenhagen of Munich. These treat of Rushes, Sedges, Ferns, Lycopods, Mosses, and Lichens. Even now the Carices and Junci are inadequately represented, considering the numbers met within the area. The book supplies a real want, as so many British botanists feel when they visit the Alps, since either the Floras are too cumbersome and costly, or are written in a language which offers a stumbling block to the reader. Armed with this and with the more complete and scientific *Flora der Schweiz* of Schinz and Keller, the tourist will be able to correctly identify the majority of plants met with. In this volume, by the Alps is meant an area which covers not only Switzerland but the Bavarian highlands, Tyrol, Salsburg, Styria, and Lower Austria. The arrangement is not Englerian and begins with the Ranunculaceae. We may instance that seven Anemones are described and five figured; 14 Ranunculi and 9 figured; Potentillas, of which only four are given, seems inadequate considering how common *P. verna*, *Crantzii*, and other species are, but there are 16 Gentians, all with good figures. *Oxytropis campestris*, which with us exists as a dull yellow flowering plant, is the var. *sordida*; in the Alps a blue-flowered form, var. *caerulea*, occurs, but the common or typical plant has bright yellow blossoms tinged with red, resembling one of our forms of *Anthyllis Vulneraria*. Our blue sowthistle is kept in the genus *Mulgedium*, but the flowers are given a more vivid blue than we see. *Scirpus caespitosus* appears as *Trichophorum Caespitosum*, but the capital in the species name is unnecessary and might have been used in *Botry-*

*chium Lunaria*, where it is needed. There is a useful glossary; the book is well printed; the plates, though a little too vivid in colouring, are well drawn, and the volume is in a portable form. Owing to the leaves not being sewn, but stuck in the cover, they rapidly become detached, and it would be well either to have it rebound or enclosed in a portfolio.

HOWARTH, W. O., M.Sc. On the occurrence and distribution of *Festuca rubra* in Britain, in Journ. Linn. Soc. xlvii., 313, 1923. Here Mr Howarth suggests three species—*F. heterophylla* Lam., *F. rubra* L. emend., *F. juncifolia* St Am., which are differentiated by (A.) ovary hispidulous, branches mostly intravaginal=*heterophylla*; (B.) ovary glabrous = *rubra* and *juncifolia*. The two latter are separated by branching and leaf characters. Under *rubra* as subsp. are *genuina* and *fallax*. The former has a var. *grandiflora* (Hack.), a var. *tenuifolia*, and *glaucescens*. Here is var. *dumetorum* (L.). He thinks that all Hackel's forms of *genuina* are true varieties: *vulgaris* (this includes Syme's *duriuscula*), *grandifolia*, *dumetorum*, *tenuifolia*, *glaucescens*, *junceae* (includes *duriuscula* Asch.), *arenaria*, *planifolia*. His examination of the Linnean Herbaria induces him to construe *dumetorum* in a different sense to Hackel. (It will be remembered that Hackel named only the Skegness plant as *dumetorum* which was afterwards found in some other places on the East coast.) One is quite in accord with Mr Howarth in keeping *heterophylla* as a distinct species and also *juncifolia*. He gives the contrasting features of it and *rubra* with *arenaria*, with which it may be confounded.

IRISH NATURALIST. Eason & Sons, Dublin, 1923, 12/-; 1924, 15/-. Edited by R. L. Praeger. Down and Antrim Plants, 96, 1923, Corrie D. Chase. Notes from Co. Down and Armagh, A. W. Stelfox. Some Reflections on the Irish Alpines 117, 1923, R. F. Scharff. *Spiranthes Romanzoffiana*, 73, 1924, M. C. Knowles. From this we gather that H. Mousley (*Orchid Review*, Mar 24, 1924) traverses Colonel Godfery's reference to Drummond's supposed "ambiguous statement," since his experience differs considerably from that of Colonel Godfery. He thinks that the difference between the north and south *Spiranthes Romanzoffiana* may be due to habitat. One's own experience is that when Orchids grow in open exposed

situations the leaves become shorter and broader, cf. *Habenaria viridis*, var. *ovata* and type, and *Liparis Loeselii*, var. and type. When the plants grow with other foliage the tendency is for the leaves to become long and narrow. Mousley believes in the identity of the Irish and American plant, and that *gemmipara* is purely synonymous. New County and Vice-County Records of Irish Plants 33, 1924, R. W. Phillips. A very valuable list.

JACKSON, Dr B. DAYDON. Botanical Illustration from the Invention of Printing to the Present Day, in Journ. Royal Hort. Soc. xlix., 1924, gives most interesting details of the three main methods employed. The History and Compilation of the *Index Kewensis*, l.c. 224-229, 1924.

JENKIN, T. J., M.Sc. The Artificial Hybridisation of Grasses. Univ. Coll. of Wales. Welsh Plant Breeding Station. W. Walker, Shrewsbury. pp. 18, 1924; 3/6. Among other crosses Mr Jenkin has succeeded in obtaining *Festuca rubra* × *Lolium perenne* and *F. elatior* and *Lolium*. Extremely interesting and valuable. Considering the great variability of the acknowledged hybrid grass, *Lolium festucaceum*, these may well be grouped in this plant of very different parentage. I would suggest crossing *F. elatior* or *pratensis* with *Glyceria fluitans* or *plicata*. I believe plants which I found near Chichester to have that origin. It may be added that Mr Jenkin had negative results in crossing *Dactylis* with *Lolium* and with *Arrhenatherum*.

JEKYLL, GERTRUDE, and Sir LAWRENCE WEAVER. Gardens for Small Country Houses. Fifth edition; demy 4to; pp. 312. Country Life, London, 1924; 25/-.

JOHNSON, WALTER. THE NATURE WORLD OF LONDON: Trees and Plants. 8vo, pp. viii., 118, tt. 8. The Sheldon Press, New York and Toronto; Macmillan & Co., 1924; 3/-.

JOHNSTON, IVAN M. Studies in the Boraginaceae. Contributed to Gray Herb. Harvard Univ. lxxiii., 42, 1924, with clavis to genera. *Nonea* (not *Nonnea*) Medik. is used, as is *Lappula* Moench. *Mertensia* of 1797 is kept up instead of the earlier *Pneumaria* Hill,

1764. The genus *Omphalodes* dates from Miller Abr., 1754. *Amsin-  
hia* is retained despite the earlier *Benthamia* of Lindley, which, if  
the Cornaceous genus *Benthamia* is sunk, is available.

JOHNSTONE, JAMES, D. Sc., ANDREW SCOTT, A.L.S., and HERBERT  
C. CHADWICK, A.L.S., with an Introduction by Sir William A.  
Herdman, F.R.S. THE MARINE PLANKTON, with special reference to  
Investigations made at Port Erin, Isle of Man, during 1907-14. pp.  
xvi., 194, tt. 20, graphs 6. University Press of Liverpool, 1924;  
Hodder & Stoughton, London; 12/6. The matter is too technical for  
elaboration in these pages, but the book, as the authors' preface  
says, is primarily a student's guide to a practical knowledge of the  
marine plankton and a general discussion of the many interesting  
problems that arise when one studies the drifting microscopic life  
of the seas. It is also a record of a special series of observations  
which for over fourteen years have been carried on at Port Erin, so  
it is a positive contribution to our knowledge of marine plankton.  
Only a few of the more important organisms that have been identi-  
fied and enumerated are considered in the present volume, but many  
others are being drawn and as far as possible identified, and these  
will from time to time be published in the Annual Reports of the Port  
Erin Biological Station. It is arranged that subscribers to the  
present work will be able to have copies. As Sir William Herdman  
in his preface says, it was in 1846 that Johannes Müller took Ernest  
Hackel and other students to Heligoland and showed them how to  
use the tow-net in the North Sea. Little was known of what they  
then called "Auftrieb." The word Plankton was not invented till  
40 years later by Hensen. It was on the Challenger Expedition that  
John Murray with his simple open tow-nets planned out the main  
lines of our knowledge of plankton distribution—vertically and  
horizontally. The late Professor Herdman speaks with great ex-  
perience and he gives very high praise to the work of the authors of  
this book, which he says is both practical and theoretical. The  
student requiring to identify his plankton can use its plates (which  
are excellent) and descriptions as a work of reference, while the  
more philosophical biologist can follow Professor Johnstone's en-  
quiries into the reasons of the phenomena. To those who ask cui  
bono? Prof. Herdman says that, as a result of Edward Forbes' zoo-

geological work in Asia Minor, it has been shown that the wanderings of a mollusc may have determined the career of Alexander the Great. So, too, all the life of the sea, and ultimately on land also, may depend for its existence upon the reproduction in spring of the lowly microscopic diatoms of the Plankton. To those who wish to pursue the study of Oceanography it is indispensable, and even "cross-word" workers may have to refer to it to discover what those blessed words Benthos and Nekton mean, while the scientific investigator will be glad to have its practical information as to the construction and use of plankton nets and for the preservation of its not always odorous catches.

JONES, W. S. TIMBERS AND THEIR IDENTIFICATIONS. 4to, pp. xi., 148. Clarendon Press, Oxford, 1924; 15/-.

JOURNAL OF BOTANY, British and Foreign. Vol lxii., 1924. Edited by J. Britten. Flora of Steart Island, by H. S. Thompson, p. 1. Notes on British Charophyta, by James Groves and Canon G. R. Bullock-Webster—*Chara muscosa* nov. sp. and *C. baltica*, var. *rigida*, p. 33. *Orchis latifolia* L.: A Historical Study, by Colonel Godfery, p. 35. Tautonyms, Nomina Abortiva, and Homonyms, by T. A. Sprague, p. 41. New South African *Campanulaceae*, by R. D'O. Good, p. 48. The Vitality and Distribution of Seeds, by T. A. Sprague and J. R. Matthews, p. 50. Notes on Collecting Roses, by Lt.-Col. A. H. Wolley-Dod, p. 52. The Hepatics of Herefordshire, by E. Armitage, p. 67. Imperial Botanical Conference, p. 79. The Origin of Constant Species, by E. Almquist, p. 97. Notes on Pembroke Plants, by H. W. Pugsley, p. 102. Notes on Mexican *Tiliaceae*, by T. A. Sprague, p. 106. Reproductive Mechanism in Land Flora, by A. H. Church, pp. 108, 139, 209, 268. *Thymus tenuifolius* Miller, by A. J. Wilmott, which he says = *T. vulgaris* L., p. 113. A new *Statice* in Britain, by H. W. Pugsley, p. 129. Plants from Jebel Marra, by Cecil Norman, p. 134. Superfluous Nomina Conservanda, by T. A. Sprague, p. 143. Ferns Grown under Bottles, by C. E. Benham, p. 146. New Tropical African *Lentibulariaceae*, by R. D'O. Good, p. 161. The Type Specimen, by A. S. Hitchcock, p. 166. Vegetation of Steep Holm, by R. C. M'Lean and H. A. Hyde, p. 167. The British Dactylorchids, by M. J. Godfery, T.

Stephenson, and T. A. Stephenson, p. 175. Trinomials, by T. A. Sprague, p. 178. *Gentiana uliginosa* Willd. in Britain, from Tenby, p. 193. No mention by Mr Pugsley is made of the record in the *Annals of Scot. Nat. Hist.* 173, 1906. Proposed Alterations in the International Rules, by T. A. Sprague, p. 196. *Orchis Fuchsii*, G. C. Druce, p. 199; Col. Godfery, p. 201. Some New British Roses, by Lt.-Col. Wolley-Dod, p. 202. A large number of new hybrids are given, e.g., *R. scotica* (*spin.* × *mollis*) Marshall (n. 2936 and 2904; Banff); *R. mayoensis* Mayo, Marshall (1625), but surely it is undesirable to have two names for the same hybrid combination; *R. Barclayi* (*spin.* × *omissa*) Auchterarder, but there is already a *R. Barclayi*; *R. borealis* (again a duplicated hybrid) Marshall (4081); *R. Drucei* (*can.* × *rubig.*), Northants; *R. latens* (*can.* × *mic.*), Surrey; *R. tomentilliformis* (*tom.*, var. *Borreri* × *rubig.*); Cheshire; *R. glaucoides* (*mollis* × *glauc.*), Cumberland; *R. Shoolbredi* (*mollis* × *omissa*, var. *suberecta*), Ross and Sutherland; and several varieties, including *R. tomentosa*, var. *Brittoni*, Surrey, Oxon, as well as *R. Pouzini* from Surrey. *Miscellanea Bryologica*, by H. N. Dixon, p. 228. *Arabis ciliata* ? in Wales, p. 236. C. E. Salmon holds that the *ciliata* of Irish botanists (*A. Brownii* Jord. Diagn. 123, 1864) does not occur in Wales, an opinion we had arrived at some years ago. He thinks the Tenby plant may be a Jordanian segregate of *hirsuta*. Notes of the Flora of the Varna District, Eastern Bulgaria, by W. B. Turrill, p. 238. Four Shropshire Aliens, by J. C. Melvill, p. 242—*Geranium Endressi*, *Lactuca macrophylla*, already recorded for that county in *Rep. B.E.C.*, *Torilis macrocarpa* Bess. and *Rudbeckia amplexicaulis* Vahl. Malayan Plants Suppl., by H. O. Forbes. Norfolk Mycetozoa, by H. J. Howard, p. 257. *Anemone nemorosa*, var. *caerulea*, by E. J. Salisbury, p. 265. *Statice* and *Limonium*, by T. A. Sprague, p. 267. We are glad to see that *Limonium* is applied to the Sea Lavenders and *Statice* to the Thrifts, thus supporting the view I have urged and used for many years. The Botanical Name of the Water-cress, by T. A. Sprague, p. 225. Here unfortunately Mr Sprague decides for *Nasturtium*, stating that *Radicula* was restored by Groves in 1904. As a matter of fact it did not need restoring, for Mönch had used it in 1794. The argument used by Schinz and Thellung, who at first adopted *Radicula* but afterwards rejected it on what I consider to be insufficient

grounds, was that names of genera must be rejected when they are formed from a technical term borrowed from morphology, unless they are accompanied by specific names. *Radicula* was established by Dillenius (*Cat. Hort. Giss.*), but as Rendle and Britten point out *Radicula* is not borrowed from morphology. At the Brussels Conference, by special pleading and an alteration of the original art. 54, "Names of genera are to be rejected when they coincide with a technical term concurrently used in morphology, unless they are accompanied with specific names." Now, in the case of *Radicula*, specific names are present, so that the argument falls to the ground, since Mönch *Meth.* 262, 1794, in restoring Dillenius' genus, which had already been brought into post Linnean citation by Hill (*Brit. Herb.* 227, 1756), gives three species (not the Water Cress, which was united with it by Robert Brown) under *Radicula*. Obit of C. F. Nordstedt, by H. Groves, p. 289. Authorities for Corrected Names, by T. A. Sprague, p. 292. New Malayan Plants, by H. N. Ridley, p. 294. The Age and Composition of Pennine Peat, by T. W. Woodhead, p. 301. A "Quilled Dandelion," by F. E. Weiss, p. 304. James Britten Obituary, by A. B. Rendle, p. 337. The Botanical Name of the Quince, by T. A. Sprague, p. 343. The Harpidioid Hypna of Herefordshire, by E. Armitage, p. 344. La Gasca in England, by J. Britten and B. Daydon Jackson, p. 347. Biographical Notes, by J. Britten, p. 350.

KELLER, ROBERT. Ueber neue Arten der Gattung *Hypericum*, in *Bot. Jahr.* 190-9, 1923.

KNOCHE, HERMAN. FLORA BALEARICA: ETUDE PHYTOGRAPHIQUE. 8vo, vol. i., 534, 1921; ii., 585, 1922; iii., 411, 1923; iv., plates and maps and a thesis, 1923. L. Lhomme, 3 Rue Corneille, Paris; 300 francs.

KOORDERS, S. H. EXKURSIONSFLORA VON JAVA. Vierter Band. G. Fischer, Jena, 1924; 8 gold marks.

LANSDELL, Miss K. A. Weeds of South Africa, Rep. 45, 1923. In this bulletin six weeds are figured and described with suggestions for their eradication. They are *Cirsium (Cnicus) lanceolatum* (the authority wrongly attributed to Linneaus, who called it *Carduus*),

the dodder *Uscuta chinensis* Lam., *Acanthospermum hispidum* DC., *Centaurea Melitensis* L., and *Opuntia aurantiaca* Gilles.

LEWIS, FRANCIS J., and E. S. DOWDING. The Anatomy of the Buds of Coniferae, in *Annals of Botany* xxviii., 217, 1924.

LINDMAN, C. A. M. POA. Scientific Results of the Norwegian Expedition to Novaya Zembla. 13, pp. 111-126, 1921. *Poa abbreviata*, *P. alpigena*, *P. alpina*, *P. arctica*. He considers *P. stricta* Lindeb. to be a hybrid of *alpina* × *laxa*.

LINNEAN SOCIETY OF LONDON. Secretary, B. Daydon Jackson; subscription, £4 yearly. Meetings, Exhibits. No. 425, Jan. 10. Mr A. J. Wilmott showed *Myosotis sicula* from Jersey, *Alchemilla pastoralis* from Teesdale, *A. glomerulans* from Inverness-shire, *Viola Juressi*, the *V. epipsila* of Greg.?, *Geranium purpureum*, var. *Forsteri*. No. 427, Feb. 7. Sex Conditions in *Silene nutans*, by E. J. Collins, B.Sc. No. 427, Feb. 7. Mr H. W. Pugsley exhibited what he proposed to call *Statice transwalliana* from Pembroke-shire. No. 431, April 3. The Occurrence and Distribution of *Festuca ovina* L., sens. ampl. in Britain, by Mr W. O. Howarth. No. 435, June 19. *Carex remota* × *divulsa* collected by Mr C. E. Salmon from Mayfield, Sussex, was shown. Mr T. B. Blow exhibited an extensive series of *Charophyta* from Madagascar which included several undescribed species. No. 439, Dec. 19. A remarkably cut leaved variety of *Pastinaca sativa* from Norton Common, Letchworth, Herts. Prof. W. C. M'Intosh was awarded the Linnean Medal. The Presidential Address was given on May 22, on the work of Linnaeus in Holland.

LONG, HAROLD C., B.Sc. PLANTS POISONOUS TO LIVE STOCK. Ed. 2., pp. vi., 120. Cambridge Agricultural Monographs. Camb. University Press, 1924; 8/6. The fact that a second edition of this work is produced is an evidence that it supplied a want and supplied it well. In the introduction useful hints are given, such as how to burn the trimmings of hedges and shrubberies, since they sometimes contain yew and other toxic leaves. The Poisonous Plants are arranged in the sequence of Bentham and Hooker's *Genera Plantarum*, and the various active toxic principles, so far as they have

been ascertained, are given as well as the symptoms of poisonings which they cause. Examples of such poisonings are quoted. Among the Cruciferae the seeds of Charlock are said to be toxic on account of the presence of Volatile Oil of Mustard, great depression being one of the symptoms in horse-poisoning. The valid name for the plant *Brassica arvensis* is omitted. Cultivated Mustard—we are not told which species, *nigra* or *alba*—caused the death of 200 out of a flock of 221 sheep which in Norfolk were killed from being folded on it. The seeds of the Corn Cockle are said to be toxic, and stock fed on them rapidly lost weight and in some cases died. *Hypericum perforatum* has been found nocent abroad, but we have no evidence of its being harmful in England. *Laburnum*, the correct name of which according to the last decree is the tautonym *Laburnum Laburnum* (L.), contains a toxic alkaloid, Cytisine, and the same, or a similar body, is present in the Broom. The poisonous properties of the seeds of *Lathyrus sativus* and of the Java Bean *Phaseolus lunatus*, are described. *Cicuta* is one of our most dangerous plants, but, fortunately, in that sense it is local and a decreasing species. No allusion is made to the statement that at Duddingston, near Edinburgh, the plant is said not to be poisonous, but regarding *Conium* it is remarked that it is less toxic in the north. *Oenanthe crocata* is also very poisonous, its toxic property being chiefly due to a resinous principle, Oenanthotoxin. A few cases of sheep poisoning from Rhododendrons are cited. The genus *Azalea* is kept apart so that we have both *Rhododendron ponticum* and *Azalea pontica* given, but they are the same creature. The whole paragraph should be kept under *Rhododendron*. With regard to *Dulcamara*, the poison is said to be due to the glucoside Dulcamarin and to the alkaloid Solanine: he gives instances of its toxicity. Of my own knowledge one can substantiate it. But, like other poisonous plants, it seems to vary in toxicity from time to time. Also though at some times animals reject it, yet at others it offers a morbid attraction. I knew of an instance in this county where, although a valuable breed of sheep had for years inhabited a certain pasture, yet on one occasion, when the sheep were in parturition, day after day many died until I was asked to visit the place, when one saw that the sheep had gone down for shade to a dried-up water-ditch and had then freely eaten of the Bitter-sweet, which grew there

abundantly. The removal to another pasture where no *Dulcamara* grew stopped the mischief, and there were no further deaths. Of *Atropa* he says a child died after eating three berries; the active principle is Atropine. A horse has eaten two pounds of Belladonna leaves, and I have seen rabbits eat them with impunity. The "capers" of *Euphorbia Lathyris* are said to have caused death in several instances. Even Acorns are said to be injurious, but how much of this is due to toxic principles, and how much to mechanical obstruction is open to doubt: so many records come in a most unscientific manner that it is difficult to arrive at the true facts in animal poisonings. The Yew is the only Coniferous plant likely to be seriously injurious in Britain: there are cases reported yearly of deaths of horses from eating the leaves, yet one continually sees horses browsing on them without ill effect. They seem to me more toxic when partly withered. The active principle is said to be Taxine. It seems difficult to associate the Horse-tails with cattle poisoning, yet both *Equisetum arvense* and *E. palustre* are charged with this offence. The latter I have known cause death to cattle at Rycote Park in Oxfordshire, but the question arises, is it not at least in part due to the indigestibility of the hard silicious stems? A chapter is devoted to the "Classification of Poisons," and there is a copious and excellent Bibliography. While the nomenclature is on the whole so excellent, one might suggest the use of *Sium erectum* instead of *S. angustifolium*, and to use capitals in the case of *Lauro-Cerasus*, *Scabiosa Succisa*, and *Ranunculus Lingua*. *Polygonum aviculare* and *Rhamnus catharticus* do not need them. *Equisetum heleocharis* is said not to be British, but it is so, being synonymous with our *E. limosum*. *Scilla bifolia* and *Crocus sativus*, p. 106, might be deleted from the British Plants and *Anemone* is *apennina*, not *appenina*; the authority for *Bryonia dioica* is Jacquin not Linnaeus; *Nepeta hederacea* is the valid name for Ground Ivy, and *Potentilla erecta* Hampe for the Tormentil; *Dryopteris Filix-mas* Schott is the more correct name for the Male Fern, but these are trifles which can be easily put right in the new edition, which we hope may soon be rendered necessary.

MARTINEAU, Mrs PHILIP. GARDENING IN SUNNY LANDS: The Riviera, California, Australia. With an introduction by Edith

Wharton. pp. 296, 17 plates and coloured frontispiece. R. Cobden-Sanderson, London, 1924; 15/-. A delightful present for the garden lover and the stay-at-home florist, since the bright pictures in it give him glimpses of another world in a pleasant and inexpensive manner. And to those whose travelling days are drawing near to a close what pleasant memories it brings as one looks at the picture of the stuccoed terrace adorned with pendulous roses such as one has often seen at Mentone, above the bays "the peacock's neck in hue," or the spacious sweep of the well-designed gardens of the Villa Rosmary, or the more informal garden of the Villa Sylvia, where the grey olives and sombre cypress spires offer a dignified foil to the purple *Iris*, bright *Prunus*, and stately tree-peonies. Another glorious sight is to be obtained at a Cap Martin garden which has an unusual feature in the Riviera of a clear stream of water running through. Mrs Martineau shows a delightful picture of a garden at Lake Como with the snow-topped hills beyond the lake and in the near foreground masses of Azaleas. Of all these and many more in various lands Mrs Martineau writes in an enthusiastic and charmingly discursive manner. And there are many useful hints which florists will value scattered through the pleasant pages or in the Lists given at the end, in which a large number of plants recommended for these sunny gardens are mentioned. But a strange slip has been made in calling the Bladder Senna *Corylus Avellana*, which is the common Hazel of our British Wood. It should have been *Colutea arborescens* L.

M'CREA, Mrs M. A. Supplement (1923) to Marquand's Flora of Guernsey and the Lesser Channel Islands, in Trans. Soc. Guernésiaise for 1923. A painstaking piece of work in which the various scattered records are brought up-to-date. As a matter of trifling importance, I found *Briza media* and took it to the late Mr Marquand.

M'GILL AND SMITH RESEARCH ANNUAL. pp: 116, 1924; 5/-. Includes information on Formation of Permanent Pasture, Notes on Temporary Grasses, Native Plants for Pasture Making, Pastures, Plant Breeding, Oats, Potatoes.

MATTHEWS, J. R. The Distribution of Certain Portions of

the British Flora : ii., Plants Restricted to Scotland, England, and Wales, in Ann. Bot. xxxviii., p. 707-721, 1924. Of *Potamogeton falcatus* in France, one must not lay too much stress on the non-occurrence since it is a highly critical Pond-weed which is reduced by Hagström to a form of *nitens*.

MILLAIS, J. G. RHODODENDRONS AND THE VARIOUS HYBRIDS. pp. xii., 265, size 16 x 12 in., with 17 full-sized coloured plates by Miss Beatrice Parsons, Miss Winifred Walker, and Miss Lilian Snelling. 14 collotype plates, and 46 half-tone plates. Longmans, Green & Co., London, 1924. Second series, Ten guineas. In 1917 Horticulturists in general and Rhododendronologists in particular were rendered grateful by the publication of a sumptuous work by Mr Millais on this attractive genus, the execution of the work being admirably prepared by Mr Millais, the typography, paper and plates reflecting the greatest credit on its publishers, and eliciting a chorus of praise from the reviewers in a wide range of publications, some even rashly stating that the work had exhausted the subject. So far from that being the case, and one for which the author was in no way responsible, the production of the present volume is a sufficient answer. For the past ten years, by the exertions and researches of such travellers as Reginald Farrer, Capt. Kingdon Ward, and George Forrest, an immense number of plants have been discovered, especially in Western China, in the high altitudes of which country each separate valley seems to afford a different species. They are the *Hieracia* and *Rubi* of the west. In the *Genera Siphonogammarum* of 1900-7 Dalla Torre estimated the number of species as about 200, but according to Mr Millais they now number 670, a most astounding increase, and there are many others yet to come. Even allowing for many reductions we may safely estimate that over 800 species of this showy genus will be found, and these include not only tiny shrubs like the representatives on the Swiss Alps, but large forest trees exceeding 110 feet in height, while their beauty in their native home cannot be imagined. Once I asked Sir Joseph Horker what was the greatest display of flower-colouring he had ever seen, and he replied without doubt it was the Rhododendrons of Sikhim. Students of the genus were fortunate in enlisting the services of two such eminent botanists and cultivators as Prof. I. Bayley Balfour and his successor, Prof. W. Wright Smith, for to

their indefatigable energy the cultivation, the naming and description of a very large number of the new species are due. In the first volume Mr Millais had the assistance of Mr Hutchinson of Kew in the preparation of a key for the species. This *clavis* is absent from the present work, which, dealing for the greater part with newly described species, will be none the worse for delay in its execution. In the general treatment of these species, the increased popularity of which is in a great part due to the production of the first volume, there is the same general standard of excellence. But, of course, the last word has not been said as to the species themselves or even perhaps on their identifications, but the writer has done justice to the mass of material at his disposal, the magnitude indeed of which was not the least difficulty in its preparation. As in the last series the publishers have done their share in a splendid manner. The illustrations are most charming whether they are from the delightful paintings of the three talented lady artists, which are vividly reproduced, or in the collotype plates, in which the effects of colour are almost given, so well are they printed, and then there are the lavish half-tone blocks which adorn page after page of this sumptuous work—the production of which must have been exceedingly costly and can scarcely repay either publisher or author for the expense incurred. One may add that the illustrations include some photographs taken by Mr Forrest on the Chinese hills and these add another interest to the book. The work is prefaced by a practical chapter on “Modern Shrub Gardening.” The second chapter is devoted to the Chinese explorations by the three collectors already referred to, and the author is fortunate in obtaining from Forrest and Kingdon Ward descriptions from their own pen of their adventurous journeys. Mr Euan Cox gives some details of Farrer’s last expedition. Another chapter is devoted to the New Hybrids, of which some examples are beautifully figured. One of the most striking is *R. Loderi*, a cross of *Portunei* and *Griffithianum*: it flowered in the sixth year, some of the blossoms being actually seven inches across. The species and hybrids are arranged in alphabetical order, references being given to those described in the first volume, but we notice many (twenty) species which are included in the *Index Kewensis* and its first Supplement not including those in the other Supplements. This brings the total number already described to 700

species—therefore one of the largest genera known. It would have been well to give all that are published. One of the last illustrations is that appropriately of *zeylanicum*, of which a noble example is shown growing near Newara Elya in Ceylon, where once in company with Lord Meath and Dr Longstaffe we saw some splendid examples flowering. We hope sincerely that the edition of 550 copies will soon be exhausted, so that author and publishers may not be the losers by their enterprise.

MILLSPAUGH, CHARLES F., and LAWRENCE W. NUTTALL. FLORA OF SANTA CATALINA ISLAND, CALIFORNIA, in *Field Mus. Nat. Hist. Bot.* Vol. 5, pp. 413, tt. 14, 1923. Includes 882 species and 459 genera in an area 22 miles long and  $\frac{2}{3}$  of a mile wide.

MISCELLANEOUS INFORMATION, BULLETIN OF. Royal Botanic Garden, Kew. The ten numbers of this very cheap Government publication as usual teem with important matters relating to Botany. Four hundred pages are supplied at a cost to the purchaser of 8/4, which even beats our 414 pages for 10/—, but, alas, we have not the public purse to draw upon. Mr Sprague is well to the fore and, in conjunction with L. A. M. Riley, begins a most useful Flora of British Honduras—where the mahogany comes from. The colony is slightly larger than Wales, twice the size of Jamaica, and four times the size of Trinidad; the highest hill is Victoria Peak, 3700 feet above sea level. About 800 species are known, but it is expected that the total number will be nearly 4000 species. The Flora is not arranged according to Engler's *Pflanzenreich*. Mr Sprague also gives the Mexican Itinerary of Humboldt and Bonpland. Mr J. Hutchinson gives his third paper on Contributions towards a Phylogenetic Classification of Flowering Plants. Mr W. H. Pearson's posthumous Notes on Tasmanian Hepatics. Mr W. G. Craib gives contributions to the Flora of Siam, with many new species. Mr L. A. M. Riley gives The Mexican and Central American species of *Ouratea*, with a key. No. 4 contains a note on a New National Pinetum, from which it appears that 50 acres have been acquired at Bedgebury, about ten miles east of Tunbridge Wells, for that purpose. There are many trees already growing there, including a fine specimen of *Abies grandis*, 100 feet high. The area acquired

may be indefinitely extended; already over three hundred plants have been sent from the Kew nurseries. The committee to arrange the laying out of the planting contains, we are glad to see, the names of Sir John Stirling-Maxwell, Mr W. J. Bean, and Dr A. W. Hill, but the general management is in the hands of the Forestry Commission. Mr J. Hutchinson gives a most valuable article on "Contribution towards a Phylogenetic Classification of Flowering Plants," no. iv., which is a proposed re-arrangement of Families comprising the Archichlamydeae. On p. 136, Mr W. B. Turrill gives an account of "The Formation of a Seed Collection," which now comprises about 5300 samples. On p. 137, S. Garabedian gives "A Revision of *Emilia*," with a key to the species on p. 146. Mr D. Thoday gives "A Revision of the 15 Species of *Passerina*." On p. 178, Dr W. Robyns of Louvain University gives "A Revision of *Sphaeranthus*," which has 38 species. Ten new species of Exotic Orchids are described on p. 199. Mr L. A. M. Riley continues his Flora of Sinaloa, and on p. 223 Dr J. Burtt Davy describes New or Noteworthy South African Plants. Our Editor of the last *Report* of the B.E.C., Mr C. V. B. Marquand (p. 241), contributes "A Revision of the genus *Cyananthus*;" 21 species from the Himalayas and China are described, including five new species and many varieties. An account of Ancient Cotton Fabrics is reprinted from *Sudan Notes and Records* for Dec. 1923 from the pen of Mr R. E. Maney. He gives the earliest historical reference to Cotton as Herodotus, 450 B.C., who in giving an account of the invasion of India by Darius, 521 B.C., alludes to trees which grow there, "the fruit whereof is a wool exceeding in beauty and goodness that of sheep." Theophrastus more precisely localises the Cotton in the Isle of Bahrein in the Persian Gulf and well describes it, and there are many other references given. The Plants of Patos, a small island between Trinidad and Venezuela, are given on p. 258 by Mr R. O. Williams. On p. 287, Mr W. B. Turrill begins an important paper on the Flora of the Gallipoli Peninsula, enumerating 472 species. It is continued on pp. 305-331, 337-363, 369-383. On p. 331 Mr L. A. Boodle gives an account of Mistletoe on Oaks, in which he mentions the curious fact that *Viscum album* is sometimes found parasitic on *Loranthus europaeus*, itself a parasite, and this is accountable for erroneous records of Mistletoe on oaks in South-East

Europe. Of course this does not affect British records, because *Loranthus* does not occur with us.

MIYOSHI, DR MANUBA. PLATES OF JAPANESE IRIS. Vol. i.-iv., tt. 105. Wheldon & Wesley, London; £5 10/-. The author has succeeded in obtaining 222 new varieties of *Iris laevigata*, 100 of which are beautifully figured.

MOREUX, L'ABBE TH. POUR RECONNAITRE LES FLEURS. 2 vols., pp. 212, tt. 150. Gaston Doin, Paris, 1924; 8 frs.

MURBECK, SVANTE. Species Nonnallae novae maroccanae, in Bot. Notiser i., 269, 1922; ii., 60, 1923.

MURR, DR JOSEF. NEUE UEBERSICHT UBER DIE FARN UND BLUTEN-  
PFLANZEN VON VORALBERG UND LIECHTENSTEIN. No. 3, Bregenz, 1924.  
Verbenaceae. Among other changes in names *Mulgedium* appears  
as *Cicerbita alpina* and with it is *Lactuca muralis* as *C. muralis*  
Wallr., thus following Beauverd. A very large number of *Hieraciu*  
are described, and he has subsequently described a new hybrid.  
*Crepis biennis* × *capillaris* = *C. Drucei*.

NABELEK, DR FR. Iter Turcico-Persicum. Pt. i.: Pl. Coll.  
Enum. Ranunculaceae-Dipsacaceae. Pub. de la Fac. des Sciences,  
Univerité Masaryk, 1923. Plants collected in Palestine, Mesopo-  
tania, Kurdistan, and Armenia.

NATIONAL TRUST, 25 Victoria St., Westminster. Report 1923-4.  
Frontispiece shows view from Scafell Pikes looking north over the  
area vested in the Trust. Among other properties recently acquired  
are the Roman Villa, Chedworth, with seven acres of ground. An-  
nual subscription, 10/- and upwards.

THE NATURALIST. Brown & Son, London; 10/6 prepaid, 1923;  
15/-, 1924. Edited by T. Shepherd, M.Sc., etc., and T. W. Wood-  
head, Ph.D., etc. Botanical Survey and Ecology in Yorkshire, by  
T. W. Woodhead, 97-128, 1923. John Ingham: a Memoir, 238-9.  
His Mosses go to Leeds University. Yorkshire Naturalists at Penny-  
stone, by W. H. Pearsall, D.Sc., and T. A. Mason, 340; ditto at  
Bedale, 378. *Asplenium Trichomanes* at Greenfield, by F. J.

Stubbs. West Yorkshire Botanical Notes, 48, 1924. Recolonisation of woodland flora after burning by W. G. Town, 169. Further Notes upon the Vascular Plants characteristic of Peat, Mildred Hinchcliffe and J. H. Priestley, 201. Yorkshire Naturalists at Ravenscar, by W. H. Pearsall, D.Sc., and T. A. Mason, 272-8; ditto at Teesdale, 346. Robert Kidston: a memoir and portrait, 364-6.

NATURE. Weekly 1/-. Edited by Sir Richard Gregory. Contains, as usual, an immense amount of most valuable material. We may note among others the addresses of Professor Bateson on Progress in Biology, given in connection with the centenary of the Birkbeck College; on Problems of Muscular Receptivity, by Sir Charles Sherrington, P.R.S., O.M., G.B.E.; the Plant Commonwealth and its Mode of Government, by Sir F. Keeble, C.B.E., F.R.S., a discourse delivered at the Royal Institution on March 21, which we wish space allowed us to reprint. Insects and Flowers, by Dr E. J. Salisbury. A very able paper on this subject will be found on p. 92, 1924, for July. Excellent reports are given of the meetings of the Imperial Botanical Congress held in London under the Presidency of Sir David Prain, May 28-31, and of the Edinburgh Conference on the Vegetative Propagation of Plants held in that city on July 17 and 18 under the auspices of the Botanical Society of Edinburgh. The meetings were held by permission of the Regius Professor, W. W. Smith, in the Royal Botanic Gardens, which are so well maintained under his careful management. A report is also given of the meeting of the South African Association for the Advancement of Science, held at Cape Town, July 7-12, under the Presidency of Prof. J. A. Wilkinson.

NEW PHYTOLOGIST. Edited by A. G. Tansley; 25/- per annum. A Fuerteventura Diary, by R. L. Praeger, p. 216. Note on the Periodicity of Leaf Form in *Taraxacum officinale*, by B. M. Griffiths; 14 text fig.; 153 specimens gathered in the grounds of University College, Reading. Unfortunately the particular plant experimented with was not submitted to Herr Dahlstedt, nor was the *T. erythrospermum* critically identified. The latter came true to type, and there was no change in leaf form as in the *officinale*. It is a pity that the obsolete varietal names are used. The conclusions

drawn from these experiments appear to be premature, and not of great value.

NICHOLSON, W. A. Fauna and Flora of Norfolk, in Trans. Norf. and Norwich Nat. Soc. xi., pt. 5, p. 601, 1923-4.

NUTTALL, G. CLARKE. TREES AND HOW THEY GROW. 8vo, pp. xi., 184, tt. 70. Cassell & Co., 1925; 7/6.

OPPENHEIM, BERTHA. WINGED SEEDS 8vo, pp. x., 242, tt. 8. Macmillan & Co., London, 1923; 12/.

OSTENFELD, Prof. C. H. Floriste Meddelelser Smaa Bridragtil om Danske Flora viii. *Iris Pseudacorus* L., var. *pallidiflava* Sims Bot. Mag. 2239, 1821, precedes *I. Bastardi*. *Agrimonia Eupatoria*, var. *ochroleuca* Ostf. (petalis staminisque pallidis fere albescentibus) which I have seen in Britain. Gives a description of five species of *Amsinkia*—*Douglasiana*, *arenaria*, *lycopsioides*, *intermedia*, and *Menziesii*. Also *Odontitis rubra*, var. *serotina* Reichb., sub-var., *pallida* Lange = *O. rubra*, var. *pallida* Lange—which is British. Plants from Beata Island, St Domingo, in Dansk. Bot. Arkiv, band 4, n. 7, 1924. *Plumeria Ostenfeldii* Wib. is described, a small white-flowered tree from the rocky plateau. Also a new genus of Malvaceae—*Ulrichia* Urban was found, and *U. beatensis*, a conspicuous white-flowered species, is described.

PARKIN, J. Stomata and Phylogeny, in Ann. Bot. xxxviii., Oct. 1924. The Strobilus Theory of Angiospermous Descent, in Proc. Linn. Soc., p. 51-64, 1924.

PIPER, C. V., and W. J. MORSE. THE SOY BEAN. pp. xi., 329, 1923. M'Graw-Hill Publ. Co., London; 20/-.

RAYNER, JOHN F. Alien or Adventive Flora of Hampshire and the Isle of Wight, in Proc. Isle of Wight Nat. Hist. Soc. for 1923. County Press, Newport. pp. 166-175; 1/6. The next part will contain a List of the Aliens.

RECHINGER, KARL. Studien über die Gattung *Rumex*, in Ann. Nat. Mus. Wien, 152-9, 1923. *Rumex curvatus* is new and there are several new hybrids.

RIDLEY, HENRY N., F.R.S. THE FLORA OF THE MALAY PENINSULA. Demy 8vo, in five volumes. Vol. iii. : Apetalae. pp. xvi., 406, 1924. L. Reeve & Co. ; 16/-.

RIGG, GEORGE B., Ph.D. THE PHARMACISTS' BOTANY. pp. xviii., 318, with many text figures. The Macmillan Company, New York, 1924. Professor Rigg of the University of Washington, who has been teaching pharmacy students for fourteen years, here gives the outgrowth of his experience and his methods of teaching a subject which is important to the pharmacist as no fewer than three hundred official drugs are obtained from plants. But he has given a wider outlook than that of mere pharmacy, and has therefore included terse accounts of Plant Organs, the Plant Cell, Leaves and Stems, Buds, Roots, Flowers, Seeds, Fruits, as well as Physiological Processes, the Life Histories of Seed Plants and their Classification, brief accounts of Spore Plants, Ecology, Propagation and Plant Breeding, and Genetics, so that the work is one not only suitable to the pharmacist but useful to the medical practitioner who wishes to have a general knowledge of Vegetable Pharmacology. There is an interesting chapter on Botanical Plant Names, and we are glad to see that he has followed the practice of the United States Pharmacopœia in using capitals for the specific names of plants which have been used in a generic sense or are derived from the names of persons. Therefore, such names as *Rhamnus Purshiana* and *Daphne Mezereum* are given, although the latter is by a typographical error written *Mezerium*. One, however, does not like the triple names such as *Prunus Amygdalus dulcis* to express a variety. Our English method of writing *P. Amygdalus*, var. *dulcis*, seems preferable. The date of the consistent use of binomials might have been more precisely stated in the first edition of the *Species Plantarum* of 1753 and not "about 1750." Accidental binomials had been used previously to that date: it was Linnaeus who first used them throughout. The text figures are extremely well executed and well chosen, and the photograph of Belladonna root is excellent. We notice the older name, *Castalia*, is used in the sense of *Nymphaea*, which latter is necessarily restricted to the yellow water lilies. The chapter on Thallotypes is full of practical information put in plain and easy language not overloaded with technical terms. The merits of *Sphagnum* as a wound dressing are

well explained: in the United States *S. palustre*, *S. papillosum*, *S. imbricatum*, and *S. magellanicum* are the species chiefly used. The factors influencing plant life are also most clearly described. In an Appendix are given the Botanical Synonyms of Common Names used in the text. In the States hemlock signifies a species of *Tsuga*—the murmuring pines and the hemlocks—not as with us the Socratic poison, if indeed Xantippe ever used such a weak toxic agent as *Conium* to remove her too philosophic husband. British Pharmaceutical Students will find much of value in this compact, well written, well printed and excellently illustrated work.

ROBSON, FORSTER. THE FLOWER SEEKER. A Simple Guide to the Identification of Wild Flowers. pp. viii., 184, tt. 16, and many text illustrations. Cassell & Co., London, 1924; 3/6. This is arranged on novel lines, which may be helpful to beginners. Here is an example given, "The flower is found by the way-side, on a bank or by a hedgerow, in spring. It is blue. In the list will be found that opposite blue there are three flowers. The flower has four petals—but all three have four petals. The flower under observation has a white centre. The list gives Germander Speedwell as a blue flower with a white centre." But suppose *Veronica Tournefortii* grew there, are the distinctions sufficient? The text gives some useful descriptions, but the essential characters of *Sonchus asper* and *oleraceus* are not specified. The plates are good representations of the plants. Many of the scientific names given are obsolete, and the use of capitals for specific names, though somewhat eccentric, is better than one often sees. There is no reason to include *Echinophora*, which, if it ever occurred, has long been extinct, especially as only two Orchids are included. The little volume is handy for the pocket and would be an acceptable gift to one who is commencing the delightful study of out-door botany.

RONNIGER, KARL. Beitrage zur Kenntnis der Gattung Thymus (1) Die Britischen Arten und Formen. *Sond. aus Fedde Reperts.* xx., 321, 332, 1924. This is practically a reprint in German of the article on Thymus in our last *Report*. *T. praecoë* Opiz, sub-sp. *filiaculis* Ronn. et Borum., *Thuringia, l.c.* 66, 1924.

ROYAL HORTICULTURAL SOCIETY, Vincent Square, Westminster.

Annual subscription, £1 1/-; entrance fee, £1 1/-. The Library now contains over 10,000 volumes. The *Botanical Magazine* is now published by them at £3 3/- a volume.

RUSSELL, Sir E. J., F.R.S. Present-day Problems in Crop Production, in *Nature* ii., 434, 1924.

RYDBERG, P. A. FLORA OF THE ROCKY MOUNTAINS AND ADJACENT PLAINS. Ed. 2, pp. 137-200, 1923; tt. xii., 1144. Published by the author, New York, 1922. Has 139 additional species.

SANTOS, JOSE K. Determination of Sex in *Elodea*, in *Botan. Gazette* lxxvii., 353-376, 1924. The experiments were carried out from material collected in Wolf Lake, about 14 miles from Chicago, where of course both sexes are present.

SALISBURY, E. J., D.Sc. The Effects of Coppicing as Illustrated by the Woods of Hertfordshire, being the Anniversary Address to the Hertfordshire Natural History Society (*Trans. Herts N. H. Soc.* xviii., 1924). Some Impressions of the International Phytogeographical Excursion in Switzerland in 1923 in *Journal of Ecology*, January 1925. *Galinsoga parviflora* was a common wayside plant on the Italian side of the frontier. The Influence of Earthworms on Soil Reaction and the Stratification of Undisturbed Soils in *Linn. Soc. Journ.*, Nov. 1924, 415-425.

SALISBURY, E. J., D.Sc. Changes in the Hertfordshire Flora, being his Presidential Address delivered at Watford, March 26, 1924 (*Trans. Herts N. H. Soc.* xviii., 1924). Regarding the occurrence of Box on the Herts border near Ellesborough, Bucks, Dr Salisbury states, on the authority of Kalm (visit to England in 1745), that when at Gaddesden in 1748 he was told the Duke of Bridgwater planted the Box there in some quantity as the wood was in demand by the London blockmakers. This does away with the idea that it is a native of the Chiltern area. He treats of the increasing frequency of several species and his observations coincide with those of my own for Buckinghamshire. There is a much longer list of diminishing species and 21 are probably extinct from the drying up of marshes. But indiscriminate picking has been one of the

contribute effects in the diminution of many heathland plants. The paper should be read by every field-worker, for it teems with suggestive points.

SHANTZ, H. L. and R. L. PEIMEISEL. Indicator Significance of the Natural Vegetation of the South-Western Desert Region in Journ. Agric. Research, xxviii., n. 8, pp. 721-801, tt. 14, May 24, 1924, Washington. A valuable and thorough piece of investigation of a curious and interesting area. We notice with pleasure that *Dondia* is used in place of *Suaeda*.

SHENSTONE, J. C., F.L.S. The Vitality and Distribution of Seeds, in Journ. Bot. 297, 1923. Although special reference is made of the occurrence of *Sisymbrium Irio* in London after the great fire, and to its appearance in the Oxford Botanical Garden in a fresh place after ashes had been dug in, yet he has not noticed the records in our pages of its appearance in Marston brickyards, with other garden plants. There it keeps fairly constant. I have it in my garden, and seedlings come up in gardens far removed—conveyed by birds or wind. As regards the Aldwych site referred to, we cannot place much stress upon plant occurrences there, for I know a misguided enthusiast who scattered large quantities of seeds there and elsewhere. At present so many records of abnormal occurrences rest on unscientific investigation. In the cases of oily seeds their popularly believed longevity may actually be the case. The influence of winds is, I believe, underrated. I saw *Senecio squalidus* on the top of Dudley Castle; either wind or birds must have conveyed it there.

SKENE, MACGREGOR. THE BIOLOGY OF FLOWERING PLANTS. 8vo, pp. xi., 523, tt. 8. Sidgwick and Jackson, London, 1924; 16/-.

SMITH, GILBERT M., J. B. OVERTON, E. M. GILBERT, R. H. DENNISTON, G. S. BRYAN, and C. E. ALLEN. A TEXT BOOK OF GENERAL BOTANY. pp. x., 409. Macmillan & Co., London, 1924; 16/-.

SMITH, J. E. FERNS AND HOW TO GROW THEM. pp. 66. Simpkin, Marshall & Co., London, 1923; 6/6.

SOCIETY FOR THE PROMOTION OF NATURE RESERVES. Handbook, 1924. Natural History Museum, London, S.W. 7. The Society has lost by death Mr Ogilvy Grant and the Hon. G. S. Montagu, who were members of the executive.

SPENCE, LEWIS. THE PROBLEM OF ATLANTIS. W. Rider & Sons, 1924; 10/6 net. In this interesting book Mr Lewis Spence undertakes to show that Plato's well-known story, derived from Egyptian priests, of the former existence, to the West of Europe, of a large continent known as Atlantis and still remaining within the human period, perhaps not more than 9000 or 10,000 years ago, is probably a true tradition. He gives us Geological, Biological, Pre-historic evidence and brings many traditions, old and various, from Egypt, Central America and other parts of the world to support the truth of the story. To us in this report the interesting part is the evidence given by plants. He quotes M. Gattefosse, of Lyons, "who has made a special study of the question," as saying that "The Canaries, Azores and Madeira have an existing Flora comparable with that of Western Europe in Tertiary times, which Flora has undergone a special and localised evolution and has explicit relations with American Flora." Thus for example some species of Orchids "flourish only in the Canaries, Madeira and America." This, Mr Spence thinks, means that the centre of its origin or dispersion was the lost Atlantis continent, from which it spread East and West or remained on the islands which were once the mountain tops. The evidence of the Flora seems somewhat scanty, but it should be added that the evidence from the Fauna of Central America and Europe is far more convincing. Whether the sceptics will think that Mr Spence has *proved* his case or not he has certainly shown the possibility, perhaps the probability, of the former existence of Atlantis and he will at least convince every unbiassed reader that "No good reason can be found why it should *not* have existed."

F. BENNETT.

STEVENS, WILLIAM CHASE. PLANT ANATOMY from the Standpoint of the Development and Functions of the Tissues and Handbook of Micro-Technik. 4th edit., pp. xv., 398. J. & A. Churchill, London, 1924; 18/-.

STOMPS, TH. J. Rhine Plants and Mollusca in Eastern England, in *Tids. Tijdschrift Kon. Nederl. Aard. Genoot*, Nov. 1923. Of these he says that among others *Muscari racemosum*, *Ornithogalum umbellatum*, *Eryngium campestre*, *Scleranthus perennis*, are confined or nearly confined to the Breckland of Norfolk and Suffolk. This is not quite accurate. *Muscari* is native in Oxon on the limestone, as is the *Ornithogalum*, which also occurs on the Chalk; *Eryngium* is known in Hampshire and Devon, while there is an outlier of the *Scleranthus* in Radnor.

TAHOUDIN, C. B. SOME NOTES AS TO BRITISH ORCHIDS, 1924. One is sorry to see the statement, which can only increase confusion, that *O. maculata* was "recently called *O. Fuchsii*," and that *O. elodes* was "recently called *ericetorum*." If botanical descriptions mean anything, *O. maculata* = *ericetorum*, *praecox*, and *elodes*, and *O. Fuchsii* = *O. maculata* Godfery, non L. The statement that there has been no record of *O. hircina* for Surrey for about 70 years is incorrect. If our pages are consulted a recent one will be found. We regret also to see some other names used, *i.e.*, *Epipactis violacea* should be *E. purpurata*, or rather *Helloborine purpurata*, and *E. atrovirens* is given instead of *H. atropurpurea*. The reference to *Epipogon aphyllum* "*Journ. Bot.*" should read *E. Epipogium* Druce in *Gard. Chron.* 1924 (whence the note in *Journ. Bot.* was culled).

TANSLEY, A. G. The Unification of Pure Botany, in *Nature* 85, 1924.

TANSLEY, A. G. History of the Scots Pine in England, in *Proc. Birmingham Nat. Hist. & Phil. Soc.* 15, Supp. 1923. See *Journ. Ecol.* ii., 128, 1923.

THELLUNG, ALBERT. Über Einige Kritische Heracleum, in *Sippen der Alpen Osterr. Bot. Zeit.* 200-13, 1924. *Levisticum officinale* Koch *Verh. Nat. Gesel. in Basel* xxxv., 29, 1923. Weitere Beiträge zur Nomenklatur der Schweizerflora (viii.), in *Viert. der Naturf. Zurich*, pp. 457, 1923, replaces *Sparganium affine* Schniz., 1845, by *S. angustifolium* Michx. *Fl. Bor. Am.* 189, 1803. Uses *Agrostis palustris* Huds. vice *A. alba* L., *Mariscus serratus* Gilib. vice *C. Mariscus*, but why not *Mariscus Mariscus*? Retains *Polygonum mite* Schrank. The arguments for the use of *P. dubium* instead of

*P. mite* are considered. *Arabis albida* Stev. nom. nud. is replaced by *A. caucasica* Willd. En. Hort. Berol. Supp. 45, 1813; *Cynoglossum germanicum* Jacq. is adopted instead of *C. montanum* Lam.; *Myosotis alpestris* Schmidt instead of *M. pyrenaica* Pourr., and *Mentha niliaca* (Juss.) Jacq. Hort. Vindob. iii., 46, 1776, instead of *M. villosa* Huds. of 1778.

THOMPSON, R. CAMPBELL, M.A., F.S.A. THE ASSYRIAN HERBAL : A Monograph on the Assyrian Vegetable Drugs. pp. 294 (stencils), Luzac & Co., London, 1924. This erudite publication gives an account of about 250 kinds of Vegetable Drugs which are mentioned in cuneiform plant-lists in the Bodleian Library and other sources. It proves that the early Assyrian was well acquainted with the properties of not only vegetable but mineral medicinal substances. It shows, too, that 250 drugs are mentioned 4,400 times, that 120 mineral substances are referred to on 650 occasions, and that 180 drugs are not yet identified. The Assyrian had a methodical arrangement of the Drugs. He begins with Grasses, follows with Rushes and the Euphorbiaceae, but owing to the prefix "Hul" the Cucurbitaceae and the Papaveraceae are grouped together, while the Compositae are indiscriminately scattered. This, the author says, is entirely in keeping with what is known of the Assyrian method but it evinces, as the subject is more closely studied, that the doctors and chemists of Nineveh had a great knowledge of the subject. He thinks that many of these Assyrian plant-names have found their way, doubtless through merchants, into the Western languages, and of these he gives examples. The much debated "Silphium," he suggests is the *Laserpitium* from the Assyrian "Laserbitu," and that Myrrh is derived from "Murru." The Assyrians described Colocynth apple as "like a ball," the opium poppy as "like Mandragora," and women and children gathered its juice. *Hyoscyamus* is a "heart-plant" which was used for many complaints, and there is a poem about it extant. Unfortunately space prevents the detailed criticism which such a work as this demands.

THONE, FRANK E. A. TREES AND FLOWERS OF YELLOWSTONE NATIONAL PARK. pp. 70, tt. 8. J. D. Haynes, St Paul, Minnesota, 1923.

THURSTON, EDGAR, C.I.E., and C. C. VIGURS. NOTE ON THE CORNISH FLORA. Adds, *inter alia*, *Physalis Fendleri* (adv.).

TODD, JAMES A. PLANT STUDIES. Cr. 8vo, pp. 151. A. Baxendine & Sons, Edinburgh, 1924; 2/6.

TOWNSEND, CHARLES WENDELL. BEACH GRASS. pp. xii., 319, tt. 82. Marshall, Jones Co., Boston, U.S.A., 1923; 3½ dollars. This charming and beautifully printed volume, with its excellent plates, was written by Dr Townsend, the author of "Sand Dunes and Salt Marshes," as an intimate study of a sandy seashore region. It is written in an informal anecdotal style for the general reader of simple out-door tastes, the author's knowledge assuring the accuracy of his observations. "The fox and deer, the muskrat and rabbit, the crow and skunk, herring gull and white-footed mouse, these and other inhabitants and frequenters of the dunes, are the principal characters in a sea-side drama enacted in a sandy setting of beach grass, willow and golden rod. The action does not take place in summer alone, and fully as interesting is the winter season, with its frozen estuaries, surf-battered ice walls, frost-rime and frozen sand columns." The beach grass which gives the book its name is our own Marram, *Ammophila arenaria*. Byron's well-known lines are quoted as a prelude: "There is a rapture on the lonely shore, there is society where none intrudes." He shows this to be the case in his eloquent descriptions of the things he sees there. There is the ever-shifting dune with that purity of outline rippled with the waves of wind which cause its movement, there are fixed dunes, helped to become stationary by the Marram Grass, and then there are what the author calls irregular dunes, which look like snow-covered mountain tops. He tells us of coast erosion, of the extension of the pine trees, of new arrivals, and of Cranberry bogs, and he rightly hopes that no misguided enthusiast will begin planting foreign shrubs or trees to disturb the natural flora of the dunes, and thus destroy the harmony. In this delightful manner the author leads us along in his explorations, and if ever the way seems long he introduces a graceful and vivid photograph to charm us on the journey. One of the most interesting ingredients in the dune flora is the Dusty Miller, *Artemisia Stelleriana*, a Kamscatkan plant which is thoroughly naturalised on the North Bull near Dub-

lin, at Marazion in Cornwall, and of which I found a single example at Lunan Bay in Forfarshire. On the North American dunes it is luxuriant, as the beautiful photograph shows. He tells us that mirages are not unfrequent, and often of singular beauty. His description of a night under the stars makes one long to enjoy the experience. He shows a photograph with a moonlight exposure of twenty minutes, which gives the impression of a cloud upon a mountain side, but it is only the mist sweeping over the dunes. Alas, one sometimes suffers for these poetic wanderings. There are not only the notes of the birds, but also the ping of the mosquitoes—and they take their fill. It is pleasant to know that the Audobon Society's exertions to prevent the destruction of egrets are bearing fruit, and that they are now increasing. Here, too, the great Snowy Owls come as visitors; they are gluttonous eaters, and the list of the contents of their pellets is a revelation of omnivorous feeding. No fewer than thirteen different kinds of birds and four species of mammals were identified in the debris round their nest. "Tracks in the sand" affords most pleasant reading. So, too, do the chapters on the dunes in winter, with the wonderful effects of snow and ice, the frozen seas, and the driven snow, described as they are by a master hand. When one is in a cosy room before a blazing coal fire, one complacently endures, in imagination, a temperature below zero, and one might be inclined to ask oneself—but quite sure that consent would not be given—to "Give me to struggle with weather and wind; give me to stride through the snow," which is not for us septuagenarians. Then there is the glory of the winter sky when Aurora comes with its ever-shifting phases of form and colour, the "dance of the spirits," as the Cree Indians call it. Very delightful, too, are the chapters on "Hawking" and the "Courtship of Birds," a subject on which Julian Huxley has a great deal to say. The reading of the "Beach Grass" has been a real pleasure, and one lays down the book with a sigh of regret at wasted opportunities, or the impossibility of grasping them.

TRAIL, JAMES WILLIAM HELENUS. A MEMORIAL VOLUME. Demy 8vo, pp. vii. 331. The Aberdeen University Press, Upper Kirkgate, Aberdeen, 1923; 7/6. On the fifth of May 1920, a committee was formed in order to raise funds for the creation of a memorial

and on the 29th of March 1922 it was decided to have a mural portrait plaque placed in the New Department of Botany and that a memorial volume containing unpublished work of Professor Trail should be issued. We have already drawn attention to the plaque portrait, which was executed by Miss Alice B. Woodward. The head of Professor Trail is surrounded by a wreath of oak leaves, acorns and galls, the galls of Scotland having formed his favourite object of study, the results of which were published in the *Annals of Scottish Natural History*, of the Botanical portion of which work for some years he was a most efficient editor. The decorative panel presents a dragonfly and a water-spider, representative of his zoological interests; and a bladder-wort indicative of his work at the Scottish flora. The two Brazilian palms have reference to his early papers, after his return from his scientific visit to the Amazon. The second object of the Memorial is in this volume, which is a "Flora of the City Parish of Aberdeen," on which he had spent many years of investigation. It may at once be said that in the execution of this memorial volume its preparers and editors have exercised a wise discretion and have most admirably carried out the task entrusted to them. His friends will especially be very glad to have included the Biographical Sketch based upon a fragment of his Autobiography, which by the permission of the University Library, to which body many of his MSS. were bequeathed, has been allowed to be used. The words of the inscription of the Memorial Tablet are:—"He knew and loved the realm of living nature and inspired successive generations of students with his desire for deeper knowledge." The volume also contains an excellent portrait of Trail taken in 1903. Here one may say that he had prepared a MSS. volume or volumes in which the comital distribution of plants through Scotland was clearly shown. It seems desirable that in some form this should be published, as though for the greater part it appeared in the *Annals of Scottish Natural History*, it was a series of articles and is therefore not easy to consult. This would probably contain additional material to his Reprint from the *Annals* (see *Mem.*, p. 49). In the autobiography referred to there are some pleasing incidents. Trail and a companion walked through the rain from Thurso to Melvich, where, drenched to the skin, they were told at the only inn "there was no room," and were advised to go

to Betty Hill—that hospitable lady whose charms are in every visitors' mouth—but, alas, it was miles beyond. They refused to budge and were shown a room “not good enough for gentlemen,” but which contained two beds, a fireplace, and a table. Here, having had a fire lighted, they undressed in order to dry their clothes, enjoyed a good meal dressed in blankets, liked the place so much that they stayed another night, and when the bill for the two was produced, the total was four shillings which, said the servant, included tips. The Chronological Biography beginning with 1868 occupies 25 pages. The Flora proper begins with a chapter devoted to Changes in Topography, and a good account of the Alien Flora. It may be noted that he recorded several of them for the first time in Britain. The Flora proper contains 228 pages, in which the type clearly shows the native as opposed to the adventive species. The work of the older writers is carefully given. Is not *Helianthus argyrophyllus* a misprint for *H. argophyllus*, a Texas plant? Under the species will be found some valuable notes. The whole volume is a very happy tribute to a real flower-lover and to a genuine student, and especially to be valued since it was the last work of the last of the Professorial Systematists.

TRANSEAU, E. N. GENERAL BOTANY. 8vo, pp: 560. G. G. Harrap & Co., London, 1924; 8/6.

U. S. DEPARTMENT OF AGRICULTURE BUREAU OF PLANT INDUSTRY. Washington, 1924. The marvellous output of publications still pursues its wonted energetic course. The Inventory of Seeds and Plants Imported now numbers up to Dec. 1, 1922, 55,569-56,144. As is customary some most valuable notes are given, and the Introductory Statement by David Fairchild epitomises much of this. In noticing Captain Kingdon Ward's “Romance of Plant Hunters” reference was made to the Likiang Snow Ranges. Mr Rock, another of those adventurous beings, employed by the States, brought back *Lilium sutchuenense* and other ornamental plants. Part of his mission was to collect plants of economic importance. At 8000 feet he got a small, sour, red-fruited apricot of delicious fragrance and aroma, and many other interesting species of cherry and fruit trees which are being tested. A hairy form of Alfalfa from Peru has been cultivated so successfully that several million dollars worth

are grown yearly in California; another, the San Pedrana variety, from Peru, is now being tested. So rapid is its growth that it can be cut every 45 days. An Australian form of *Trifolium subterraneum* shows so much promise that a second importation of seeds has been necessary. As an example of a practical pamphlet one may refer to no. 1339, "On Red Clover Culture." This forms one of the largest crops in the United States. A map is given of the Union, and each tiny dot on it indicates that 2000 acres are under clover culture. This at a glance gives definite information. How different the plan in the *Cambridge Flora*, where the whole of a county bordering the sea would be shaded to indicate a single locality on the coast. Practical methods are given to determine the germinating percentage of the seed, and how to detect the presence of seeds of weeds, good figures of each being given. No. 1381 is another excellent "Bulletin on Herbaceous Perennials." It can be obtained from the Govt. Print. Office, Washington, for 15 cents. Three Bulletins, 1400, 1 and 2, are devoted to the Cultivation of the American Cranberry, *Vaccinium macrocarpon*, which occurs as an adventive in Flintshire. The cultivation was begun about Cape Cod between 1810 and 1820, and was not a success; to-day about 30,000 acres are under its culture, nearly half of which are in Massachusetts. Half a million barrels are produced in the States of the value of over 5½ million dollars. The Scottish Cranberry is *Vaccinium Vitis-idaea*, but we never heard a vernacular name "Fox berry" used for it in Britain. It occurs in the States, but for commercial purposes it is chiefly collected in northern Europe. Another eminently useful publication (Dep. Circ. 323) is, "How to Collect, Label, and Pack Living Plant Material for Long Shipment," by B. T. Galloway. Issued at 5 cents, with ten full-page plates, it cannot be called expensive. In Circ. 51, it is claimed that a plant undistinguishable from the Wild Emmer, *Triticum dicoccum*, var. *dicoccoides*, has been produced synthetically by crossing a variety of *T. vulgare*, var. *Early Red Chief*, with var. *Marouani* of *T. durum* Desf. The results of culture trials are given. It is claimed that through hybridisation a form similar morphologically and genetically to the true wild type has been obtained.

WARD, Captain KINGDON, F.R.G.S. THE ROMANCE OF PLANT HUNTING. tt. xi., 275, with many illustrations and a map. Demy

Svo. Edwin Arnold, London, 1924; 12/6. From time to time we have drawn attention to the vivid accounts of plant-hunting in the far east by Captain Kingdon Ward, which have appeared in the *Gardeners' Chronicle*, and now we have from his pen a handsome and fascinating volume giving his experiences in botanising in the high and practically unknown regions in upland China. We have seen in Mr Millais' stately volume on the Rhododendrons how much additional knowledge of them and other plants we owe to this intrepid traveller. The Botany of China, that great mysterious empire, seems well nigh inexhaustible despite the early workers Bretschneider, Fortune, Loureiro, Hance, and many others in the earlier days, and in more recent times Hancock and Henry. Yet still an unending stream of new things comes in from Farrer, wrecked in the midday of his life; from Forrest, and not in any lesser degree from our author, so that at Kew to-day there are accumulations of material amounting to many, many thousands of specimens which when they are worked out will add hundreds, and possibly thousands of new species. One would not be surprised if eventually the flora of that immense and varied area were not far short of 15,000 species. The present volume treats of his journey through Burnah into Yunnan, and his experience is not all beer and skittles. The atmospheric conditions seem wretched, for when it is not raining—and it rains weeks on end—it is snowing, and he graphically describes the conditions in which poor plant-life struggles on the precipitous screes, subject as it is not only to fierce winds, sleet and tempestuous rain, but also to the cannonade of falling rocks and the slides of the upper surface of debris. Yet here, with the long tap root driven down to the water-bearing strata, beautiful species are to be found, although to gather them in flower or seed one has to face a barrage almost as deadly as that of Flanders fields. Szechwan was explored, and there on the cliffs of Muli facing east to the Litang river are the great screes. On the cliffs themselves he gathered many a rarity, including the great rounded cushions of *Primula Dubernardiana*, studded with yellow-eyed mauve-coloured flowers, but the gem was *Campanula calcicola*, which received the Award of Merit at Chelsea in 1923. "Only an inch high, it forms mats and nests of olive-green kidney-shaped leaves, veined with pale jade, and covered with a soft white down,

From this mosaic rise clusters of large nodding, tremulous, deep violet-coloured flowers." He describes graphically the glory of the "*Lapponicum* sea," the wonderful Rhododendrons of that group whose type is so poor and dubious. He tells us that only one species, *R. nivale*, is known from the Himalayas, but here in spring the moorland puts on a wedding garment, for you may wander for days through a chromatic surf of Rhododendrons, rose-pink, ivory white, lavender, plum-purple, crimson and amber yellow. It is Western Szechwan, the Tibetan Marches, which is the home of the *Lapponicum* Rhododendron. He says that with the exception of the yellow-flowered forms all have crimson or purple styles, but each species itself has a wide range of colouring. He had a hard journey from Likiang, the mountain range of which has peaks 21,000 feet high, to Yungning. Only once was the path below 9000 feet altitude. when the hot gorge of the Yangtze had to be descended. Alas, I only know the wonderful gorges of that mighty stream, but what he found there, and all the other floral beauties he describes, must be sought for in the book itself, which will repay the reader whether he be botanist or traveller.

WATNEY, Lady MARGARET. HERBS. pp. 121, 1924. Privately printed. Extracts from The Herbalists relative to uses and properties of Herbs.

WEATHERS, JOHN. MY GARDEN BOOK: Prepared for the Daily Use of all who own a Garden. Big or Little. pp. xvi., 744, with 24 coloured plates and 392 illustrations. Longmans, Green & Co., London, 1924; 36/-. On the cover it states that "In this work the author, who has had forty years' experience in practical, scientific, and commercial horticulture, not only deals with the best practical methods of modern cultivation and propagation of plants, but also with the reasons underlying the various operations. The work is in fact a treatise on the Theory and Practice of Gardening. It aims at telling the gardener, whether professional or amateur, in plain and untechnical language not only how to perform the work in the fruit, flower, vegetable, rock, bulb, or water garden, but also gives reasons why it should be done in a certain way." The claims made in the foregoing statements are not based too high, for the book will be a *vade mecum* to its happy possessor. In Sir Frank

Crisp's "Mediæval Gardens" allusions were made to those belonging to the religious establishments, and Mr Weathers rightly says that had it not been for the monastic gardens such as those at Thorney, Newstead, and Battle Abbeys, but little advancement in the art could have gone on. He traces the development influenced by the Crusaders, and by the discoverers of this new world who brought home many spoils. Gardening was fostered in England by the so-called Physic Gardens such as that of Lord Burgley's at Holborn. He makes a slight error in attributing the foundation of the Oxford Physic Garden as at Magdalen College in 1622. It is true the fee-simple of the ground is vested in that College, and they have been generous donors to its upkeep, but it was a gift of Lord Danby to the University as a whole, and it is now kept up by them. He tells us that Kew Gardens cover 288 acres. He gives a good view of a woodland scene with the Daffodils, and there is a delightful coloured one with the Bluebells (which are *Scilla nonscripta*, not *S. festalis*, as is given in the text), in which the "heavens are up-breaking through the earth." One of the most valuable features in the book is the advice given as to gardening operations. Then 179 pages are given up to the description of Hardy Herbaceous Perennials, in which those in general use are described in plain language. It may be added that throughout the volume the scientific names are most carefully spelled, and due attention is paid to putting capitals in the right place. The derivation of the scientific generic name is usually added. We wished the *Staticeæ* had been given their correct name *Limonium*, and the Hart's tongue, *Phyllitis*, instead of the no longer valid *Scolopendrium*. There seems no reason to add "probable" to the American origin of *Zea Mays*. Surely there is no doubt of its being American; it is the actual area from which it originates that may be doubtful. There are useful chapters on Hardy Bulbous Plants, Climbing and Trailing Plants, the Rock Garden, Water and Bog Gardening, Hardy Ferns (which is rather condensed), Ornamental and Flowering Trees, and Shrubs and Roses. Part 3 is devoted to Glass-house Gardening; 4 to the Fruit Garden; 5 to the Vegetable Garden, and in Part 6 will be found a most useful "Garden Calendar." The work is certainly one of the most comprehensive yet published, and large as it is, it would be difficult to suggest in what way it could be shortened without

sacrificing its value. We hope the sale will be commensurate with the labour given to it not only by the able author, but by the publishers, who have produced a most attractive book.

WEATHERWAX, PAUL. THE STORY OF THE MAIZE PLANT. pp. xv., 247, coloured tt. 2, fig. 173. University of Chicago Science Series. Univ. Press, Chicago, Illinois, 1924. We have recently alluded to the Text Books on Wheat by Prof. Percival, and on Rice by Prof. Copeland. Here we have a volume to complete the trilogy by the Professor of Botany of Indiana University, which, arranged on different lines, treats of one of the most important vegetable food-stuffs in the world in an attractive and portable volume, excellently printed, clearly illustrated, and with a condensed literary style which conveys in the fewest words and with a clarity of meaning what he wants to tell. "As the only complete modern exposition of the morphology of the Maize plant, the author has given a well-balanced, reliable summary of our present botanical knowledge of maize. He eliminates the influence of the economic point of view and describes it as a plant with problems of its own to solve, a life of its own to live, and a part of its own to play in the drama of organic existence. His treatment of the biological individuality of maize is accompanied by a brief discussion of the influence of corn upon ancient and modern civilisations, and the reciprocal reactions of human activities upon the plant." Under Wheat and Rice attention was drawn to their ancient lineage, yet lengthy as is that of the two old-world cereals, some American authorities have claimed for the Maize an even more remote antiquity—as much as 170,000 years. Even the few fossil remains of Maize are practically the same as the present living plant. Whether as lengthy as this who can say, but from its wide distribution, and its many vernacular names there can be no doubt that as a cultivated plant it is one of the oldest known. Even in the fifteenth century it was grown as far south as Chile and Argentina, northwards as far as the Gulf of St Lawrence, but it was in Peru and Mexico where it attained the greatest degree of successful growth. The early Aztec boasted of his being a corn-eater, while his barbarian neighbours were mere "suckers of blood," in this way reversing the Eastern idea, where the Nomad hunter looked down upon the tiller of the ground. Professor Weatherwax believes that Mexico or Central America was the locality in which

domestication first began. Like many other domestic vegetables, its wild ancestral form is only conjectural. His account of its early culture is a fascinating study, in which, avoiding dogmatic statements, he gives some very valuable information. He says all the fundamental varieties known to-day, as determined by the nature of the endosperm, seem to have been known to the various Indian tribes, but their taste for the gaudy kept in common use a wider range of colours than is known to the average American to-day. It will astonish many an English reader to learn that white, reds, yellows, and purples were maintained in a single variety, others, such as the "sacred corn" of the Mavajos, show striking colour patterns. In Mexico the early culture was developed on islands, some of them artificially formed, making floating gardens, where in a tiny hut and with a patch of corn, the owner led his simple life in safety, needing no soil fertilizers, and no irrigation. The influence upon the natural life and upon his religious views is a fascinating story. Although in the Song of Hiawatha there are some inaccuracies the story showing the Indian's respect for the plant is mainly true. It will be remembered that Prescott tells us in the great temple at Cusco were twelve immense silver vases full of corn; they were as high as a good lance, and two men with outstretched arms could scarcely span them; and there was a garden filled with life-sized maize plants made of gold and silver. Linnaeus gave the name *Zea Mays* to the plant, but it is believed by many botanists that its actual ancestor was a species of *Euchlaena*, a species of which is the teosinté from Mexico, which readily crosses with Maize. Its identity with Maize is disputed by the author, and he shows how Burbank's claim to have produced Maize from teosinté is vitiated by this fact that the parent plant with which he operated was itself a hybrid with maize as the other parent. His view is that *Zea*, *Euchlaena*, and *Tripsacum* descended directly from a common ancestor now extinct, which was probably a herbaceous perennial. He learnedly suggests its evolution to monococism and to an annual habit. The author says Maize is readily known from the other American genera by the pistillate inflorescence and the fruit; he regards it as the most highly specialised grass-plant in existence. Its first authentic discovery was made by Columbus—his first Christmas meal in America had Maize for its main constituent, but

its fleshy rival was the iguana, which perhaps to him seemed a fearful beast for which it was not worth risking his digestion. He brought the maize to Europe; it was grown in Seville before 1500, it finds a place in Cibo's herbarium about 1540, and a few years after Rauwolf saw it grown in the valley of the Tigris, so rapid was its conquest of the East. It is beautifully figured as Tüchisch Corn in my copy of Fuchs of 1543. The author supplies some maps showing its present culture in the various continents. The chapters on the structure, ecology, endosperm, heredity, products, and uses are of great value, and there is a good Bibliography. The book will take a high place among the monographs of our vegetable food-products. It may be remarked that at Kew there is an unpublished monograph on the subject by the French botanist, M. J. Gay, which may perhaps see the light of day in the Kew Bulletin. Prof. Weatherwax concludes his work by quoting a poem by Edna Dean Proctor, written on the occasion of the four hundredth anniversary of the discovery of America, from which a few lines are given here:—

The rose may bloom for England,  
 The lily for France unfold.  
 Ireland may honour the shamrock,  
 And Scotland her thistle bold;  
 But the shield of the Great Republic,  
 The glory of the West,  
 Shall bear a stalk of her tasseled corn,  
 Of all her wealth the best.

But the wide Republic's emblem  
 Is the bounteous golden corn.

WEISS, F. E., F.R.S. A Quilled Dandelion, in Journ. Bot. 304. 1924. Found at Manchester and proved to be apogamous, reproducing similar plants with pale lemon-coloured blossoms. He suggests the name *T. officinale*, var. *cucullatum*. A tri-hybrid *Primula* = *P. acaulis* × *elatior* in Manchester Memoirs lxxviii., 8, 1924.

WEST, W. (the late) and G. S. WEST (the late). A MONOGRAPH OF THE BRITISH DESMIDIACEAE. Vol. v.: Nellie Carter. pp. xxi.. 300, tt. 39. Printed for the Ray Soc., London, 1923; 37/6.

WILD FLOWER MAGAZINE. Secretary, Miss Dent, Flass, Maulds Meaburn, Penrith; subscription 5/-. The popularity of the useful Society of which this is the organ is well maintained, notwithstanding the great loss of Miss Gertrude Bacon's work owing to a lamentable breakdown in health. We trust her delightful literary powers will soon be in evidence once more. It was a most fitting gift that the members gave her—an antique writing table—as a token of their appreciation of her kindness. There has been a marked improvement in the naming of plants, thanks to the watchful eye of Lady Davy and other officials. Hon. Mrs Guy Baring gives a pleasing account of the Excursion of the Botanical Soc. of the Brit. Isles to Llanberris. Miss Hillard and Dr Hellon's last botanical notes appear. Their death is a severe loss to both societies.

WILLMOTT, ELLEN. WARLEY GARDEN IN SPRING AND SUMMER. Ed. 2; 10/6:

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#### OBITUARIES.

BAILEY, CHARLES, M.Sc. Born in Warwickshire, June 18, 1838; died at St Mary Church, Devon, September 14, 1924. He was educated at Shrewsbury and in London. In 1854 he entered the service of Messrs Ralli Brothers of Manchester, in which firm he rose to a position of great trust and confidence which he held until his retirement in 1909. He was a Congregationalist and an earnest worker at Sunday School and Bible Class instruction. Attending Professor Williamson's lectures at Owen's College in Quay Street, Manchester, in that dingy lecture-room, he became interested in botany and in botanical collecting—indeed, as he said, there were laid the foundations of that enormous and important herbarium which was destined in after years to be one of the great possessions of the then unformed Victoria University. Here, as so often is the case, amid grimy and sordid surroundings, greater dreams are imagined and more important schemes planned than is often the case in huge and magnificently equipped laboratories or lecture-rooms. Bailey threw himself into the intellectual life of Manchester, notwithstanding its moist and depressing atmosphere, with great

zeal, working hard not only at botany but as an ardent student of the microscope. His collection of microscopical slides numbered many thousands, and he had some very excellent and costly instruments. He was one of the most valued members of the Leeuwenhoek Club. One of the founders of the Manchester Field Club he accompanied them on many excursions, not only in Lancashire but in the surrounding counties, and papers of considerable value were contributed to it by him. For many years he was the Treasurer of the Manchester Literary and Philosophical Society, and for it he wrote papers "On the Adventitious Vegetation of the Sandhills of St Anne's-on-the-Sea, North Lancashire" (1902), and "On the Structure, the Occurrence in Lancashire, and the Probable Source of *Najas graminea* Delile, var. *Delilei* Magn." (1885). This alien aquatic was discovered there by Mr James Lee in 1884. The paper is illustrated with some good figures and careful anatomical details, and bears witness to his botanical skill and acumen. He began his botanical collection in 1861, and of this Herbarium he contributed a most valuable account to that Society in 1917. In 1878 he was admitted a Fellow of the Linnean Society, and he was also for some years a constant attendant at the British Association meetings. His Herbarium, begun as we have said in 1861, grew to be the largest of its kind in Britain. He was a great but careful collector: none of the plants which might suffer from over collection fell a victim at his hands, but he set out to make it as representative of comital distribution as was possible. He was in frequent communication with Dr J. Cosmo Melvill, and it was agreed between them that, while the chief sets of exsiccata which were issued should be purchased, Dr Melvill would take the extra-European while Bailey bought the British and European sets, thus preventing overlapping. He mounted them, he tells us, on sheets  $17\frac{1}{2} \times 11\frac{1}{2}$  inches. These were put in boxes having wooden frames and pasteboard lids, the lids being as deep as the box. The British portion is arranged according to the sequence of species in Druce's *List of British Plants*, and each box is labelled with Druce's numbers; the Continental portion follows the sequence of Nyman's *Conspectus* and its Supplements. The British specimens occupy 760 boxes and consist of 8,882 sheets; the European plants occupy 2417 boxes and include 208,597 sheets. The exotic plants number

21,239. This more than princely gift to the Victoria University, Manchester, was supplemented by a cheque for £500 to defray the cost of mounting, etc., and by his library of 8000 volumes and a large collection of microscopic slides, which he made over by a deed of gift in 1917. He also added the plates of Sowerby's *English Botany*, Fryer's *British Potamogetons*, and Hanbury's *Hieracia*. Two copies each of Nyman's *Conspectus*, Willkomm and Lange's *Prod. Fl. Hispanica*, Grenier and Godron's *Flore de France*, Koch's *Syn. Fl. Germanica* were cut up to paste on the lid-covers so that time would be saved to the consultant, who thus would have close to him the description of the plant he was examining. As Bailey well says, "Every herbarium represents part of its founder. It will show his weakness and his strength, his preferences, idiosyncracies and fads. It will disclose his accuracy or otherwise in the records which it includes; his acumen or the lack of it, in appreciating the facts and ways of nature. It embalms the friendships of his life, the botanical stimulus which he has received, the countries which he has visited. It tells of hair-breadth escapes by land or water; it reminds him of threatened arrests for trespassing or poaching. Its accumulations testify to the life-giving and life-sustaining pursuits with which its collections have been brought together. It has undoubtedly introduced him to a long roll of the most worthy and lovable of his fellow-creatures. The foundation of a good herbarium rests upon a thorough grounding in the main facts of structural and physiological botany." Our readers will whole-heartedly subscribe to this, and its health-giving powers are evidenced in Mr Bailey's case by the ripe age of 88 which he reached. His herbarium speaks for itself; it shows that he was a man of prodigious and continuous industry; it bears witness to his preciseness and to his friendliness, as is to be seen by the long list of contributors to it, to his generosity by the large sums which he must have annually expended on its growth and upkeep, and by the fact that during his life-time he saw it well-housed and cared for in the University of the City of which he was such a respected member. He published in 1917 a full description of its contents, which bears witness to his methodical habits and to his prodigious industry. We may add that Dr J. Cosmo Melvill also gave to the same University his Herbarium, which consisted of over 225,000 sheets. Mr Bailey had many dupli-

cates. Of these he sent over 6000 sheets to Queen's College, Belfast, about 16,000 to other institutions, and swelled our own contribution to the University of Louvain by 2000 specimens. Mr Bailey joined our Club about 1862. In 1875 he became Local Secretary, and in 1879 he accepted the onerous office of General Secretary. We had been lucky in having in upwards of 40 years few changes, our Secretaries having been Dr J. Boswell Syme, the author of *English Botany*, Mr J. Gilbert Baker, F.R.S., the author of the *Flora of North Yorkshire*, and Mr C. Bailey, M.Sc., who held office until 1903. He carried out his duties in his accustomed unassuming and efficient manner. He liberally supported its funds and was a most long-suffering Treasurer, yet for reasons difficult to understand the members, who were not only critical botanists but perhaps somewhat hypercritical in other details, by a vote ruled that he should not make critical remarks on plants sent in for distribution, and some of its members, especially those who ought to have been most loyal to him, started another Club practically on the same lines, which did not lessen the difficulty Bailey had of managing our own or making both ends meet. On one occasion there was a by no means pleasant circular sent round objecting to his acting as Distributor. Although he was the most patient of men and one of the last to take offence, I know this action, which savoured of ingratitude, pained him and probably induced him to think the burden was hardly worth the work. He never publicly complained, but he wrote in January 1898 that he had the plants sent to him, and he did the mechanical work of making up and posting the parcels, "and though I tried to get the parcels made up before I took my autumn holiday, I was not able to do so as jury engagements for two weeks, and two commercial inquiries from the India Government, have absorbed no end of my time, one of which is still proceeding, to say nothing of church work and my ordinary business duties. If members therefore have written to you referring to their great disappointment in not getting their parcels ready, it is not because of strenuous efforts being lacking on my part. They must bear in mind, and I would ask you to take it to heart yourself not to be annoyed at such remarks, that all the work which is done by successive editors and distributors is entirely honorary labour and can only be expected at their convenience, and that when done, as it has been done with

conspicuous self-sacrifice, the least that should be expected would be gratitude and a desire to believe the best. I am reluctantly coming to the conclusion that a business man like myself is unsuitable to hold the office of Secretary, and as the Club is carried on as it has been at a considerable pecuniary loss to myself ever since I took it, 19 years ago, I think the time is coming when it must pass into other hands." However, I induced him to keep on for a few years, though the growing demands on his time from other quarters determined him to relinquish the office in 1903.

My own acquaintance with Mr Bailey began by correspondence in 1874, just half a century ago. Looking around, what a gloomy stock-taking it is. Of the active botanists of that time how few are left. Yet we are grateful to see that Messrs T. Bates Blow, Arthur Bennett, James Groves, Sir Everard Im Thurn, and Colonel Wolley-Dod are still members of our Society. Bailey was the kindest correspondent, and he wrote a most enviable copper-plate hand. I was brought pretty closely in touch with him in the eighties and nineties, since I acted as Distributor in 1889, 1893 and 1898. Nothing could have been more helpful and thoughtful than his manner of conducting the somewhat thorny path we had to traverse. He told me of his intention of retiring from the Secretaryship, and suggested I should take up the reins. Before doing so I had an interview with him in Manchester and found him to be a tall, good-looking man of easy address, with kindness beaming on his face. He told me that the deficit on the editorship was over £200. The pecuniary difficulty did not act as a deterrent, but I was utterly unwilling to act merely as a Secretary with such limitations as he endured. Eventually, in order to save the Club from lapsing, I put myself at his service. In September 1903 he issued a circular explaining the position and asking for the views of the members. It was sent to 42 names that were on the book, of whom 30 were subscribing members for that year, and 36 replies were received. Four members retired, one being nine, another seven, another four years in arrears. These arrears came out of the Treasurer's pocket. There were 4 or 5 who had not paid for over 20 years. Thirty-one of the members desired that it should continue and were willing to increase the subscription to 7/6. Seven members were unable to suggest any name to act as Secretary, one chose a member who had resigned owing to

old age, and the others were kind enough to select me to "*manage the affairs* of the Club." Mr Bailey was good enough to guarantee the deficit, if any, for two years, so I accepted the post, and I am glad to say he was never called upon to make up any deficit, willing as he would have been to do so. One was glad to take part in the presentation to Mr Bailey of an album of the photographs of the members, and an address of grateful thanks for his long and faithful service. He sent a characteristic reply: "Some few weeks ago, through the hands of Mr G. Claridge Druce, I received an unexpected pleasure from the members of the Botanical Exchange Club of the British Isles, in the form of a handsome album containing portraits of British Botanists with whom I have been in pleasant correspondence for many years. Some of these faces are those of old friends whom I have met, and some I have never had the good fortune to meet, but whether known or unknown to me personally, I value very highly the gallery of portraits which you have sent me, and still more the kind thought which prompted such a gift and the friendship which it cements. Please, therefore, receive my warmest acknowledgments for so agreeable an evidence of your regard and begging your acceptance of the enclosed portrait (this is reproduced in the present *Report*), taken specially for you at the beginning of October last.—I remain, yours faithfully, CHARLES BAILEY." This is dated December 15, 1904, from Atherstone House, St Anne's-by-the-Sea.

He was always ready to help a brother in time of need, and in 1905 our friend, Mr Fryer, of Chatteris, who had fallen on evil times, was too proud to accept any ordinary method of help, although his income was about a shilling a day. He said he enjoyed the simple life which it entailed, but I was determined to remove such a scandal as allowing a cultured man, who had done such service to the investigation of Fen-land vegetation, especially the Pond-weeds, to live in such abject penury, although he would bitterly resent this word as applying to his condition. A willing helper was Mr Bailey, as his letter of March 7, 1905, shows: "Much obliged for your letter of the third and for what you have written to Mr Fryer. It is much if he lets you have your way in the matter, as he is so much of a law unto himself. However, I send you a cheque for five pounds to apply as you have opportunity and if more is wanted ask me again.

I am sorry that the official botanists will not support your application to the Treasury for an annual, or a single grant. I think the latter might go through. The best course is for a friend of the Prime Minister's to see him personally and press for one or the other." On May he writes: "I am very pleased to see how successful you have been in circumnavigating Mr Fryer—I think only you could have done it. However, the means are immaterial if they will admit of the end designed being accomplished. Every year that his work is left undone (this refers to his uncompleted volume on the Pondweeds) increases the difficulty of his doing it as he would wish it done, and his years are now so lengthened as to make it risky to tamper with them. I suppose the other matter referred to in his letter has reference to a grant (in a lump sum) from the Treasury. If so, I am glad to see how well he takes to the proposal. (This, I believe, alluded to a small grant from the Royal Society which we were enabled by the help of official botanists to get through.) I return you his letter with thanks for the sight of it. All his letters show the same kind of feeling and refinement. I corresponded with him forty years and always supposed I was writing to the squire of his village, until a mutual friend who lived at Chatteris told me he was a working gardener—a fact that greatly increased my regard for him. I have had a nice Easter holiday with members of the Manchester Field Club at Ashbourne, Derbyshire, but the season is so backward that we did not find much. I went a day or two before the rest of the party and drove over to Shirley to pay a visit to the Rev. W. R. Linton, whom, like Fryer, I have never seen. Both he and his wife were out, and though they afterwards gave us three different dates I was unable to leave my party, as after Prof. Weiss left I was in charge." Again in January 31, 1908, he writes: "I am extremely obliged to you for sending me a copy of your *List of British Plants*. The size of the work is out of all proportion to the labour it has taken to evolve it. Every line of it is the result of independent investigation, checking of authorities, and the like, and very evidently you have had to sit as judge, jury, and executive officer upon every plant cited, and upon a good many others not cited, and whose non-appearance in the *List* is fair evidence, for the present, that they have left your court without any stain upon their character! The principal features you had previously told me

about. I am specially pleased with the large inclusion of aliens. Much as most botanists like to discard them, they are a very recent feature in our flora, and as the country is open to human aliens without let or hindrance, why should not their associated plants be recognised? But what a number they tell up to and how they increase. *Vallisneria spiralis* has turned up as growing in the Reddish Canal—the locality for *Najas graminea* and *Chara Braunii*, and this is only one of scores of others. To record them is therefore the best inducement to be on the lookout for others. Stockport, St Anne's, Accrington are the most prolific seats of such introductions; many of them I find are traceable to bird-seeds, which I am told are not only the siftings of grain, and therefore so have a marketable value, but are actually imported as bird-seeds."

Another letter shows incidentally that his work was not confined to science or business. On December 1919 he writes: "My copy of your *Tweedside Flora* reached me a few days ago, and I congratulate you very heartily upon its thoroughness. You and Miss Hayward between you have succeeded in determining no less than 348 species, against 526 of Planchon's celebrated memoir, which I have looked upon as the facile princeps of such investigations. I was not aware that so many as 800 species have been recorded in the *Florula Juvenalis* and, subsequently I am glad that you have given a deserved rebuke to some suburban botanists on page xxi. Dr F. H. Bowman, who is alluded to in more than one place in your *Adventive Flora*, is the gentleman who succeeded me in a large Bible Class which I conducted at Manchester for some forty years; he was remarkable for wearing a Scotch cap, by which he was universally known on the Manchester Exchange." After his removal from Lancashire to a delightful home on Cleeve Hill near Cheltenham (for alas in 1911 he had a paralytic seizure from which however he made a fair recovery), he continued the arrangement of his herbarium. He lent me the *Cerastia* for the preparation of the article in the *Cambridge Flora*. On my visit to him, I detected a specimen of *Lycopodium Cyparissias* labelled *alpinum* in his herbarium, which was purported to be gathered by Shepherd, the keeper of the Liverpool Botanic Garden on Ingleborough. He writes on February 11, 1911: "I am glad you were pleased with the specimens and with the way in which they are put up. You are quite welcome to use them for any purpose you

want. I am not surprised that interesting examples should turn up amongst them, as I have fished pretty wide for most of my plants." His letters were not only kindly but had always in them some fact worth reading, and rarely a bit of humour was added, as when he chaffed me about my varied spelling of the Perthshire mountain, Ben Laiogh or Laoigh "on one page, too," or when he says the "pin-pricker was referred to the other day as *Urtica Dodartii* englished as the Roman Nettle," to which one had to reply that in recognition of his—the "pin-pricker's"—connection with medicine *Urtica pilulifera* seemed more appropriate.

In 1914 he had a second cerebral seizure which for a long time laid him low, but thanks to his own good constitution and to the unremitting care of one of the best of wives he rallied, but he decided on account of the climate, to move to a delightful home at St Mary Church, Devon, so that his declining years had all the ameliorations that loving thought and pleasant surroundings could give. There one had more than one opportunity of seeing him and of chatting over the Society's progress, in which he was always interested. His end came peacefully and, although there had been a gradual failing, he was only confined to his bed for a week and then suddenly and painlessly died on the Sunday afternoon in the presence of his devoted wife and sister-in-law.

BONAPARTE, H.H. PRINCE ROLAND. Born at Auteuil in 1858; died at Paris, April 15, 1924. He was the great-nephew of Napoleon, his father being Prince Pierre Napoleon, the son of Lucien, the second brother of the great Napoleon. Prince Roland, a brilliant pupil of the Lycée St Lois, entered the military school of St Cyr and gained his second-lieutenancy two years after. But his military career was cut short by an Act of 1886 which prohibited all members of royal families who had once reigned in France from being soldiers. However, the result was to the good for his military career being closed he began his travels and turned special attention to natural history not only in the tropics but in the arctic districts. He concentrated on the study of the Filices, a subject of which he became the recognised authority. His collection of them was enormous and year by year from his pen appeared the series modestly entitled "Notes Pteridologiques," in which a very large number of

new species were described. The last, number xvi., treating chiefly of Madagascar ferns, was one on which his last moments on earth were spent for he literally died pen in hand. He had become possessed of the great Fern Herbarium of C. Christensen, the author of *Index Filicum*, the cost of the preparation of the 2nd Supplement of which was borne by Prince Roland. That author in 1920 dedicated a Madagascanian species of *Trichomanes*—*T. Bonapartei* to him. Earlier he had received the greatest scientific honour of his country in being elected a member of the Institut de France. Few deserved it better, for his life was dedicated to science in a broad sense, and anthropology, ethnology, and zoology had in him a sympathetic worker. His recreation was alpine climbing and he became President of the French Alpine Club. His publications include in 1883 "Les Inhabitantes de Suriname," in 1885 "Le Théâtre Javanais," "Premiers Voyages," "Derniers Voyages," "Recents Voyages des Neerlandais à la Nouvelle Guinée," "Les Lapps de Finmarck," "La Fleuve Augusta," "La Golfe Huon," "La Pêche à la Balaine sur les côtes de Norvège," "Une Excursion en Corse" etc. He was an Honorary D.Sc. of Upsala and Cambridge, and was twice President of the French Geographical Society, his last tenure of office of 14 years terminating only with his death. He was also an Honorary Member of our Royal Geographical Society. He married Mlle. Felix Blanc, the heiress of M. Blanc of Monte Carlo, by whom he had one daughter, Marie, who, in 1907, was married to Prince George of Greece. Not only had he the great Herbarium of Ferns, probably the finest in existence, but he was also the possessor of the valuable herbarium formed by M. Rouy in the preparation of the *Flore de France*. I was fortunate enough to make the acquaintance of His Highness at the Darwin Celebration at Cambridge when, after my introduction, we went for a walk along the charming college backs. On the walls grew *Linaria Cymbalaria* and he asked me its name. I told him it was the very plant which Dillenius, the Oxford professor, asked Linnaeus, on the occasion of his visit to the Oxford Physic Garden, to demonstrate and to show to which of his classes he would refer it. Linnaeus did this in such a clear and convincing manner that it laid the foundations of a long and real friendship. Prince Roland was kind enough to ask me to call on him in Paris and there, at his palatial residence in the Rue d'Jena,

I had the opportunity of seeing his great Herbarium of about half a million of specimens including Rouy's most valuable French material. He was a man of imposing stature, and goodly build. He had a delightful, if somewhat shy manner, but real kindness beamed from his face. Although without the slightest facial resemblance to each other he always recalled to me Charles Rothschild, and he had many of the same charming characters and the same kindly outlook on science and scientific things. I last saw him about three years ago when passing through Paris with a young lad. I asked the boy, as this was his first visit to the French capital, what were the four things he would like to see. The answer was Napoleon's tomb, the Eiffel Tower, the Louvre and Notre Dame. So our first morning was spent in visiting that impressive memorial to Napoleon. Then without saying anything of our next call, I went to the Rue d'Jena, but was told that His Highness was not receiving that day. I left my card with the Major Domo, who handed it to his Secretary, who asked me to wait a few moments as he thought the Prince would not like me to go without seeing him. Soon I heard the well-known voice saying come up, and I had what proved my last interview with him. So the boy not only saw the tomb of the great warrior but his distinguished, peaceful representative. He showed us some of the relics of the past, his magnificent library of 100,000 volumes, and again we went down to the rooms where the gigantic herbarium was so well stored. He was kind enough to name a large quantity of exotic Ferns for the Fielding Herbarium, and it was a matter of great regret that he did not live to receive any recognition from Oxford of his great services to Botanical Science.

BRITTEN, JAMES. Born, London, May 3, 1846; died suddenly in London, October 8, 1924. Educated privately, he studied medicine and was for some time assistant to a doctor at High Wycombe, Bucks, where he began accumulating material for a Flora of that county, several papers on the subject appearing in the *High Wycombe Magazine of Natural History* and in the *Naturalist*. When 23 he went as an assistant to Kew Herbarium, and while there wrote an account of the South African Crassulaceae for the *Flora Capensis*. In 1871 he entered the Botanical Department of the British Museum where he worked until 1909. Even after his retirement in that year he still kept in touch with the Museum work,

helping and criticising and working on the early collections, the results of which he published in the *Journal of Botany*. He published a work on European Ferns and, in conjunction with R. Holland, compiled a *Dictionary of English Plant Names* for the Dialect Society, which is the best literature we have on the subject. Britten was much interested in botanical nomenclature, taking part in many heated discussions on the subject, and after the Vienna Congress he and Dr Rendle published their *List of British Seed Plants and Ferns*. He edited a re-issue of Turner's "Names of Herbes" and, in collaboration with Professor G. S. Boulger, a *Biographical Index of British and Irish Botanists* with three supplements. He edited the British Museum publication of the plants collected in Australia by Banks and Solander and in 1871 compiled a List of Plants growing in Berkshire. In the year 1880 he succeeded Dr Trimen as editor of the *Journal of Botany* to which he had been a contributor from the beginning. He was unremitting in his work as editor and contributed many valuable papers to the *Journal*. A vigorous, if polemic writer, he will be greatly missed by his botanical associates and friends. [Contributed.]

BROTHERSTON, ROBERT PAGE. Born at Ednam, Berwick, February 7, 1848; died at Old Scone, Perth, December 21, 1923. A frequent and welcome contributor to the *Gardeners' Chronicle* for many years. In 1874 he became gardener to the Earl of Haddington at Tynninghame, whence I had a letter from him last autumn on the occurrence of *Erinus alpinus* at Morham, East Lothian, where it is adventive. He published "The Book of Cut Flowers" in 1906, a useful work which had a deserved popularity. He had a good knowledge of British plants. See *Gard. Chron.*, September 1, 1923.

COSTE, HIPPOLYTE. Died November 1924. He was the distinguished author of the well-known and excellent *Flore de France*, which was published in three volumes. Vol. i., dated 1901, contains 416 pages with map and 1082 figures; vol. ii., dated 1903, of 627 pp. with 1567 figures; and vol. iii., dated 1906, with 807 pp. and 1705 figures. It was originally issued in parts, the dates of publication being given in the third volume. The clearness of the descriptions, the excellent keys and the well-drawn figures from the Abbé's own pencil combine to make this one of the most useful

Floras in existence. The loss of its author to French Botany is well nigh irreparable. One has been told that his remuneration—a sadly ill-fitting word—was only £25, but we may be sure that it was a labour of love. It is the French Bentham, only, it must be confessed, it is on a higher standard. One keeps it in the place of honour on the reference shelf, and few days go by without finding it of use, and one's admiration of it increases as time goes by. The Abbé wrote this pathetic letter to his life-long friend, M. Ch. Duffour, on November 21, 1924:—*Mon cher Ami,—Ma terrible maladie de coeur n'a cessé de s'aggraver dans le courant de cette année et je suis persuadé que je suis arrivé à la fin de ma vie. Je n'ai pas quitté mon presbytère cet été. Depuis longtemps je n'exerce plus ma profession. Je garde la chambre et même le lit presque toutes les journées et mon travail se réduit à quelques lectures. Je n'ai pu cet été examiner les plantes critiques de mes correspondants. A moins d'un revirement subit de ma santé, que je n'espère pas, je suis perdu et n'arrivera pas à la fin de l'hiver! Votre cordialement attaché, H. Coste.* His fears were too soon realised for M. Duffour's letter of sympathy of the 24th November came back on the 30th of that month marked "Renvoyée à son adresse pour cause de décès." We are informed that the *Flore de France* is now out of print, but an endeavour will be made to obtain a few copies.

DEANE, HENRY. Born at Clapham, 1847; died at Melbourne, March 12, 1924. An authority on Tertiary Palaeobotany, he was educated at Queen's University of Ireland, Galway, and later studied engineering at King's College, London. In 1880, owing to indifferent health, he went to Sydney where in 1889 he was made engineer-in-chief for the Kalgoorlie-Port Augusta Railway. He was twice President of both the Royal and the Linnean Societies of New South Wales. He collaborated with our Hon. Member, Mr J. H. Maiden, in some papers on the *Eucalyptus* and collated the material and wrote the letterpress for Fitzgerald's Australian Orchids. He was the son of Henry Deane, a distinguished pharmacist and microscopist of Clapham, in the sixties, who selected for me my first binocular.

HARTOG, Professor MARCUS M., D.Sc. Born at London, August 19, 1851; died at Meudon, France, January 21, 1924. The second

son of Prof. Alphonse Hartog, he was educated in London and at Trinity College, Cambridge. In 1874 he was placed in the first class in the Nat. Science Tripos. He then went to the Peridenya Gardens in Ceylon where he was assistant director, and in 1877 obtained a position as demonstrator and lecturer in natural history at Owen's College, Manchester. Later he got the chair of Natural History at Queen's College, Cork. He retired in 1921 and went to live near Paris where he died. He was a constant attendant and a somewhat frequent speaker at the meetings of the British Association, but he made no contribution to British Botany. He seemed rather to lack the wit of the Celt and the conversational charm of the Latin race.

HELLON, ROBERT. Born at Workington, 1854; died at Seascale, November 9, 1924, aged 70 years. He was educated at Wardrow's School and Grove Park Grammar School, Wrexham. He studied Chemistry in Germany and France, subsequently taking the Ph.D. at Heidelberg under Professor Bunsen. He then went into partnership with our late respected member, Mr Alfred Adair of Egremont, their profession being that of analysts and metallurgists. He became an analytical and consulting chemist at Whitehaven, and subsequently was appointed County Analyst for Cumberland and Westmorland, a post which he occupied for the past 35 years. He was an acknowledged authority on the chemistry of tanning and during the war was often consulted with regard to boots and leather goods. Dr Hellon served on the Council of the Society of Public Analysts and was also on the Council of the Institute of Chemistry. He was a Fellow of the English, French, American and German Chemical Societies, and was Past President of the International Association of Leather Chemists. He had a whole-hearted interest in scientific education, and was a warm and generous supporter of any project which he deemed of educational value in the widest sense. He was one of the founders and a past President of the Whitehaven Scientific Society. In religion a Wesleyan, he was a valued member of that body, and for some time filled the office of steward at Seascale. He was made a county magistrate in 1913. In his early life he had a most serious operation on the temple in order to relieve the intense head-pain from which he suffered and, although the risk was con-

siderable, the operation proved successful. Although not robust, when I was last at Seascale, we had a very pleasant walk together and he showed me *Gentiana baltica* and *Geranium lancastriense* which were new to the district. He also directed my attention to an extremely small *Plantago* which deserves further study. A dried specimen which he sent me suggested *Littorella* but it is a *Plantago*, either *maritima* or possibly a starved *Coronopus*. [It proves to be a *Coronopus*.—Ed., 1925]. He hoped to cultivate it. He was very delighted when I showed him *Fumaria Bastardi* as a garden weed. One had heard much of his kindness, and all the good things I had heard about him I found were amply justified. He had a truly scientific mind and was not apt to rush at conclusions. Had his health held out there is no doubt that he would have rendered considerable service to botany. He had a large and well-selected library and this was placed at the service of those who wanted a question unravelled, and many questions were from time to time put to him by members of the Wild Flower Society. On the occasion of our meeting I was the guest of our most generous mutual friend, Mr R. H. Williamson. He will be most sadly missed by him and by all classes and conditions in his own neighbourhood. To ourselves it is a great disappointment as one hoped from his scientific training and his wise judgment that much might have been done at the Botany of his native county. This is sadly deficient so far as the critical knowledge of plants is concerned and yet it boasts the highest English mountain and there is much botanically unexplored ground in that much visited Lake-land area, where, alas, in the future our lamented member can only be a fragrant memory. Unfortunately in the summer heart-troubles came on and he became unable to write those beautifully penned and delightful letters one always welcomed. In September he took to his bed and gradually sank to rest. He was buried at Gosforth Cemetery. His wife, Miss Lees of Penrith, predeceased him nine years ago.

HEMSLEY, W. BOTTING. Born at East Hoathly, Sussex, December 29, 1843; died at Kew Lodge, Broadstairs, October 7, 1924. His father was a horticulturist. The boy was educated privately. His health being delicate, he worked out of doors in his father's establishment until 1860 when he went on the recommendation of the

daughter of W. Borrer to the Kew Gardens, whence he was soon removed to the Herbarium in which by patient hard work he rose to become eventually keeper of the Herbarium and Library. His ability was soon noticed by George Bentham, then preparing the *Flora Australiensis* in the preface of which (vol i.) Hemsley's services are mentioned. However his health, which in his early years was never robust, soon broke down and he went to Sussex to recuperate. His time was not wasted for he learned Latin and French and prepared an excellent *Outline of the Flora* of that county. Then in 1874 he returned to Kew, and for nine years was engaged in working out and describing the material collected on the Challenger Expedition by Salvin and Godman. The botanical portion, written by Hemsley, appeared in the five great volumes of the *Biologia Centrali Americana*, 1879-1888, and its excellence secured him admission to the Royal Society in 1889. Subsequently he prepared a *Flora of China* which occupies three volumes of the Linnean Society's *Journal*. He also assisted Aitcheson in the description of the plants collected on the Afghan Boundary Commission and made other important contributions to botanical science. It may be recalled that his earliest published notes appeared in that useful work, Lindley & Moore's *Treasury of Botany* of 1806. He was kindly, courteous, and without side, and thus his relations with the staff at Kew were of the happiest. These are gracefully expressed by Sir W. T. Dyer in *Gard. Chron.* 381, 1909. Honours were showered upon him from many widely separated quarters, and in 1918 the University of Aberdeen conferred the degree of LL.D. on one by whom it was so thoroughly deserved, while the Royal Horticultural Society awarded him the gold Victoria Medal of Horticulture. Dr Hemsley had been paralysed for some years, but his mind remained clear to near the end. See also sympathetic memoir in *Kew Bulletin* 390, 1924.

HILLARD, Miss. Born February 10, 1857; died at Westbourne, near Emsworth, Hants, July 1, 1924. Her botanical interest was kept to a great degree in abeyance until the death in 1912 of her mother, to whom she had been a most devoted daughter. By that time that terrible and anguishing disease, arthritis, which defies medical treatment, had set in, and its insistent progress made life well nigh unendurable. Yet her love of field-botany was the one thing which kept the enemy to some extent at bay. Few readers of our

*Reports*, who noticed the frequent discoveries in Hayling Island by Miss Hillard, realised under what conditions these had been made. She was so crippled as to be unable to walk, yet whenever possible she went out in a bath chair and was wheeled from one spot to another, while her attendant brought her any thing which her lyaux eye had spotted from her post of observation. It was my privilege to see her making her explorations and it was indeed a lesson of enduring patience. She was blessed with a most loving attendant who entered into the game with assiduous fervour. Day by day every inch of the district within reach of willing arms was carefully scrutinised and in this way were such good additions made. Despite! ah perhaps because, of the affliction Miss Hillard was so sweet-tempered and her persistent interest in the plants of her neighbourhood probably was one of the great solaces of a much tried life. Her health gradually got worse and a change of residence to the warmer soil of Westbourne brought no improvement. Death released her brave and cleanly spirit from the crippled body, and her loss, in some way tempered by the knowledge that her suffering was finished, is still one one most keenly feels. The memory of "a brave lady" will long remain fragrant with those who had the privilege of knowing her.

KIDSTON, ROBERT, F.R.S., LL.D., Glasgow, D.Sc., Manchester. Born at Bishopton House, Renfrew; died of heart failure in South Wales, July 13, 1924. Educated at Stirling High School and the University of Edinburgh, he went into business in a bank and about 1878 he attended Botanical Classes in the University of Edinburgh. A distinguished paleontologist who contributed over 100 papers on the Carboniferous Flora and the Catalogue of Palaeozoic Plants in the Geological Collection of the British Museum, he received the Neill Medal from the Royal Society of Edinburgh and the Murchison Medal from the Geological Society of London. He made some additions to the Flora of Stirling, and contributed notes to the *Annals of Scottish Natural History*. Among his brilliant observations were that a fern-like plant of the Coal Age bore seeds and in 1905 he produced a most valuable memoir on the microsporangia of the Pteridospermae. See a most sympathetic memoir from the pen of Dr Dukinfield Scott in *Nature* ii., 322, 1924, and one with a portrait in *Naturalist* 364, 1924.

LYNCH, R. IRWIN, M.A., V.M.H. Born at St Germans, Cornwall, in 1850; died at Chelston, Torquay, December 7, 1924. He entered the Royal Botanic Gardens at Kew when he was seventeen and proving industrious and intelligent he quickly made progress so that on the resignation of Mr Mudd from the Cambridge Botanic Garden he was strongly recommended by Sir Joseph Hooker for that important post. There he proved a most efficient curator. His alert intelligence, his readiness to oblige, his wide knowledge and judicious governance caused him not only to be respected but to be loved. As a consequence the Gardens became worthy of the University. Nor did he, despite the temptation, allow his love of our native flora to evaporate and he was always ready to cultivate any of our local forms which might be sent him. He was specially kind to Mrs Gregory whose violets flourished under his care. One plant he was very proud of was the Wood Betony from his Cornish cliffs which retained its pygmy character and white flowers unchanged in cultivation on the Cambridge rock-work. This he described in the *Gardeners' Chronicle* 127, 1918 as *S. Betonica*, var. *nana*, being unaware that I previously given this dwarf form the same name under *officinalis* in *Rep. B.E.C.* 122, 1917. Lynch wrote a very useful *Book of the Iris* and his paper on *Hybrid Cinerarias* which appeared in the *Journal of the Horticultural Society* in 1900 earned him great commendation. Other papers to the same *Journal* were on the *Evolution of Plants* and the *Classification of the Genus Paeonia*. He was a splendid man to work with and many of his understudies who have risen to important posts owe much to the initial training under his competent hands. A side-light is shown on this in one of his letters to me. "I beg to thank you very sincerely for the *Caltha radicans* you have kindly sent me. I am grateful at all times for anything British. Just now I have special interest in anything I can receive as I have just had a change of foremen. The one, you may remember, who did so well with British plants, has just left and is succeeded by another with whom the subject is not so familiar. I am anxious, therefore, to cultivate him and the plants together." Writing about his Cornish Betony he says, December 18, 1918, "Your letter affords me great pleasure. I shall be pleased to send you a plant of my white *Betonica* in the spring. It has never borne seed and I suppose that pollen from

another plant is necessary." In 1906 the University of Cambridge, and not in too great haste, conferred on him the Honorary M.A. "in recognition of services rendered to botanical science in the University as Curator of the Botanic Garden." In 1903 he received the Veitch Memorial Medal in recognition of his work as a practical horticulturist, in 1907 he was made President of the Kew Guild, and in 1908 he received the blue ribbon of horticulture in the Victoria Medal. In 1919 his health became broken so he retired from the Cambridge Garden and took up his residence at Torquay, but the change did not greatly benefit him, and his bodily powers gradually diminished although his mental faculties remained unimpaired. Cambridge and Oxford have often been contrasted and while Cambridge may claim Ray Oxford has its Morison and Dillenius. So, too, if Oxford had a model Garden Curator in William Baxter Cambridge may point with no trembling finger to the life and work of Irwin Lynch who has so recently passed away.

M'ALPINE, Professor A. Died at Glasgow, December 6, 1924. A well-known and popular lecturer who as Professor of Botany at the West of Scotland Agricultural College made his subject attractive to his pupils. He was connected with the College since its foundation twenty-one years ago.

NORDSTEDT, Prof. CARL F. O. Born at Jönköping, Sweden, January 20, 1838; died at Lund, February 6, 1924, aged 86. This distinguished botanist was descended from Charles, the brother of Linnaeus. He studied at the University of Lund under the great algologist, Agardh, and having qualified in medicine became assistant physician at the military hospital in Stockholm. He founded the Botanical Club of Lund, and was connected with the Botanical Institution as an amanuensis for over forty years. When the younger Agardh gave his collection of over 40,000 specimens of Phanerogams to the University Nordstedt was made the conservator, and on Agardh's rich library being bequeathed to the same University in 1901 Nordstedt became its keeper, and there he worked till within four days of his death. That excellent publication, the *Botaniska Notiser*, which was started in 1839, was taken over by him in 1870, and for 51 years he remained its editor. His very important and excellently collected and preserved exsiccata of fresh-

water algae and Charophytes are a monument to his industry. He was made a knight of the Vasa Order in 1900 and of the Polar Star in 1906. He presented portraits of the father and brother of Linnaeus to the collections at Hammarby near Upsala. At the Darwin Meeting at Cambridge I had the honour of being introduced to him and found him a man of delightful charm. An appreciative memoir by Dr Daydon Jackson will be found in *Nature*, April 19, 1924, and a very full obituary in the *Botaniska Notiser* for March of this year.

VEITCH, SIR HARRY JAMES, Kt., V.M.H., F.L.S. Of Scotch descent he was born at Exeter, June 29, 1840; died at East Burnham Park, near Slough, July 6, 1924. He was educated at Exeter Grammar School and in Paris. In France he was engaged by the celebrated florists, Wilmorin-Andrieux et Cie, but joined his father's horticultural establishment when he was eighteen years old, a firm celebrated for its production of the first artificial hybrid Orchid, *Calanthe Dominii*. From time to time this firm has introduced to the gardening world a large variety of beautiful plants among which may be mentioned *Berberis Darwinii* from Chile in 1849, the magnificent *Lilium giganteum* from the Himalayas in 1852 and *Sequoia gigantea* from the Yosemite in 1853. It is difficult to realise as one looks at the avenue of these trees at Wellington College that they are of such recent introduction. They also introduced the lovely *Lapageria rosea*, so named from Josephine Lapagerie, the wife of Napoleon, a native of Chile sent out in 1847, the Melastomaceous *Medinilla magnifica*, from Manilla which well deserves its specific name, and perhaps the most popular of them all in 1868, *Ampelopsis Veitchii* from Japan. According to strict nomenclature it should stand as *Vitis tricuspidata*, thus depriving it of its popular name. These are only a tithe of the plants which British gardeners owe to this enterprising firm. A full list will be found in the *Hortus Veitchii* published in 1906. Into the varied interests of the firm Harry Veitch threw himself with characteristic zeal, and for the last half century his interest in horticulture never flagged. So early as 1866 he was on the Committee of the International Horticultural Exhibition and Botanical Congress held in London. The profits from it went to purchase the Lindley Library which was vested in the Royal Horticultural Society, an institution which owes

a great deal of its success to Sir Harry, who long served on its Committee, and whose popularity was shown by the presentation portrait from the brush of Sir H. Riviere, which now hangs in the Council Room. The second great International Horticultural Exhibition took place in 1912 when the King conferred upon him the honour of knighthood. Sir Harry also received the honour of the Crown from the King of the Belgians, the French Legion of Honour, and the Isidore St Hilaire Medal, the United States' George R. White Gold Medal, and the Royal Horticultural Society awarded him the Victorian Gold Medal of Honour. For many years he had been the Chairman of its Orchid Committee, and in 1918 he became its Treasurer. He was a wise and generous helper in philanthropic works associated with his own calling, and he was also a willing worker in wider spheres, for he served on the board of the British Orphan Schools. His long life was a round of service, in which nothing useful was neglected. His own immediate neighbours as well as the world at large have much to be grateful for in having such an example set as that which was shown by the life and labours of Sir Harry Veitch. His place on the roll of our members will be difficult to adequately fill. There is an excellent account and portrait in the *Gardeners' Chronicle* for July 12, 1924.

WARMING, Professor JOHANNES EUGEN BULOW, Emeritus-Professor of Botany of the University of Stockholm 1882-5 and of Copenhagen 1885-1911. Born at Mano in Jutland, November 3, 1841; died April 2, 1924. In 1892 he published *Lagoa Santa*, a pleasing account of his excursions over the lowlands into the mountains of Brazil, but his earlier work included investigations on the Podostemaceae. The work by which he is best known to taxonomists is the *Botany of the Faeroes* which, written in English, extends to a thousand pages. In this he had most able co-adjutors in our valued member, Prof. C. H. Ostenfeld, and in F. Borgesen who worked out the marine Algae. His publications were voluminous and it is mainly through him that Plant Ecology came into its own. His English edition of the *Oecology of Plants*, edited by I. B. Balfour and Percy Groom, appeared in 1909, and a later edition of this popular work under the title of *Pflanzengeographie* by Warming and Graebner appeared in 1918. See biographical note in *Nature* 684, 1924, by Dr W. G. Smith.

WEBSTER, GEORGE. Born at Aldborough, near Boroughbridge, in the East Division of the West Riding of Yorkshire, June 22, 1851; died at Merton Cottage, York, August, 1924. He was past president of the York and District Field Naturalists' Society, of which he had been a member for 50 years. For a long period he was connected with the well-known horticultural firm of Messrs Backhouse, York, where he obtained a good general knowledge of plants. Since his retirement past seven years ago he had devoted much time to the Botanic Garden in connection with the Yorkshire Philosophical Society at York. Webster was not a great contributor to botanical literature, but his services to Yorkshire Botany are acknowledged in Lees' *Flora of North-West Yorkshire*. He became connected with our Club about 1873 and so was one of our oldest existing members. He was especially interested in Roses and Brambles and a fairly regular contributor of specimens to the Club up to 1892, his remarks showing that he was a good discriminating botanist. I had corresponded and exchanged specimens with him since 1876. We may quote from a letter I received from him in 1903 after Mr Bailey had sent out his circular resigning the Secretaryship and showing the financial statement from which it appeared that some well-to-do members were many years in arrears of payment. He says, "In the first place please accept my share of thanks for your coming forward to steer the old Exchange Club in its need. It is good of you to tax yourself so far, for we should evidently be soon upon the rocks. Owing to pressure of business-work, during late years I have been a bad contributing member. I, however, like to keep up my connection by subscribing and always receive the Reports with great interest. In Mr Bailey's circular the amount of the subscription was questioned and I expressed my willingness to pay an increased one if necessary to keep the Club going. The statistics showing outstanding subscriptions reveal a very poor example of honour among members. It is, however, not an isolated occurrence as in our York Nat. Soc. we have just the same leakage, and have in consequence to pay a collector 5 per cent. to call upon the members. Our York Church Institute has the same type of members requiring a paid collector. At one of the meetings a "Revd." had in my opinion the audacity to get up and say he had not paid on principle as he had not been personally called on. He, however,

had not neglected to use the Library and Reading-Room where posters always drew attention that Subscriptions were due. Personally I am glad that the Club is retaining its individuality, with no merging into the Watson Club. I think if such an amalgamation took place we should lose some of the scientific tone now attached to our corporation. I do not think I have been in Oxford since I called on you some years ago, but I had a valued Moss correspondence with Mr H. Boswell up to the time of his being laid aside." It may be added that Webster had a good knowledge of Mosses and Hepatics. He was much respected at York and was churchwarden of St Martin-cum-Gregory in that city for many years. Webster was one of those hard-working unassuming field-botanists which the intensive education of the twentieth century usually fails to produce, but who in their time and generation have offered an example to their fellows, have proved of service to many seekers after botanical facts, and have often laid good foundations of accurate observations which have permanent value.

WHELDON, JAMES ALFRED. Born at Northallerton, Yorkshire, May, 1862; died at Orrell Park, Liverpool, November 28, 1924. It is not often that a single individual attains to a good all-round knowledge of British plants, both phanerogamic and cryptogamic, and at the same time becomes a recognised authority on genera belonging to both groups. Such an one was J. A. Wheldon. At an early age he showed a love for natural history, probably inherited from his father, James Wheldon, who was a good botanist and ornithologist. Young Wheldon was educated at Cleveland College, Darlington, and was afterwards apprenticed to the business of a pharmacist in that town. After passing his qualifying examination in 1884, he served for some time as chemist's assistant at Scarborough, and afterwards at Brighton. During his stay in these coast towns he was very favourably placed for the study of maritime and other bird life and he gained a very good knowledge of ornithology. He made a large collection of living and stuffed birds, and attained considerable skill as a taxidermist. For some years previous to this he had collected flowering plants, mosses, insects, and land and fresh-water shells, and now added seaweeds and leaf-fungi. In 1886 he commenced business on his own account at York, and here he became secretary of the York and District Field Naturalists' Society. He

devoted much of his spare time to the study of mosses, and in 1888 compiled the "York Catalogue of British Mosses," a work which filled a want at the time. He had only been in business at York four years when a disastrous fire destroyed his stock in trade and also most of his valuable Natural History collections and books. He removed from York and in 1891 obtained the post of pharmacist to the medical staff at H.M. Prison, Liverpool. Here he remained until his retirement from the prison service in 1922, at which time he was senior pharmacist in the service and was decorated with the Imperial Service Medal. After his removal to Liverpool botany became his favourite study. His first work was on the mosses of the Mersey Province. He compiled lists of the species, looking up and verifying the old records where possible, by personal examination of herbaria and by work in the field. He also explored much new ground. The results of these investigations were published in the *Journal of Botany*; Cheshire, South Lancashire, and West Lancashire being treated of in turn. It was in connection with the bryology of the latter vice-county that the writer of this notice had the good fortune to make his acquaintance. We soon became close friends and met during our holidays for botanical excursions. In 1899 I mentioned to him that I had been accumulating notes during the previous twenty years on the flora of West Lancashire, with a view to possible publication sometime, and asked him if he would care to collaborate with me. He at once fell in with the idea and took up the work with enthusiasm. During the following eight years most of our spare time was devoted to the Flora. Neither of us was resident in the vice-county, but we visited it on every possible opportunity. Most of our excursions were confined to week-ends, prolonged sometimes from Friday to Tuesday. The beautiful dales and fells, the limestone hills and woods, the lowland peat bogs, and the long and varied coast line were explored at all seasons of the year. Besides the work with the flowering plants and ferns, many hundreds of specimens of mosses, hepatics and lichens were collected and afterwards examined with the microscope, correct determination being of course not always possible in the field. To my colleague belonged the credit of doing almost all this microscopic work. The very rich variety of forms of Harpidioid Hypna and Sphagna which West Lancashire contains rendered an intensive study of these groups necessary, and

Mr Wheldon entered into the task with great ardour. One of the results of his work was the publication of a valuable paper entitled "The North of England Harpidia" (*Naturalist* 65-92, 1902). He corresponded for many years with British and foreign students of this difficult and polymorphous group, and in 1920-1921 he published in the same journal a "Key to the Harpidioid Hypna" which embodies the results of his ripe experience. Hardly less important than his work on the Harpidia was his work on the Sphagna, upon which group he soon became the foremost British authority. In 1917 he wrote "A Synopsis of the European Sphagna, indicating the species, varieties and forms occurring in the British Isles, with descriptions of many of the forms." This was compiled from Warnstorff's "Sphagnologia Universalis," but contains descriptions of a number of new varieties and forms first described and named by himself. The "Flora of West Lancashire" was published in 1907, after which the authors felt free to go further afield. We visited the Highlands of Scotland at various times and also Westmorland and the Isle of Man. Several papers—mostly referring to cryptogams—were the result, perhaps the most important being one on the "Lichens of Perthshire," published as a supplement by the *Journal of Botany* in 1915. Mr Wheldon did much other work on British lichens, describing several new species, and at the time of his death had in preparation a long paper on the lichens of the Isle of Man. This is being prepared for the press by his son, Mr Harold J. Wheldon. One of the most original and valuable of J. A. Wheldon's papers was entitled "Social Groups and Adaptive Characters in the Bryophyta" (*The Lancashire Naturalist*, 1911). This was an important contribution to oecological botany and has been widely quoted from. Altogether Mr Wheldon's works and articles in journals, written either by himself alone or in conjunction with others, number considerably over a hundred. They include papers on phanerogams, mosses, hepatics, lichens and fungi. He wrote the account (as yet unpublished) of the genus *Erythraea* for the *Cambridge Flora*. In conjunction with Mr W. G. Travis he named and described the var. *condensata* of *Parnassia palustris*, found on the Lancashire sand dunes; and the same authors were the first to show that the *Helleborine* which grows on these dunes and which had been considered to be a form of *H. latifolia* was *H. viridiflora*. Mr Wheldon



J. A. WHELDON.



was one of the founders of the Liverpool Botanical Society, of which he was several times president. He was also one of the founders of the Moss Exchange Club—now the British Bryological Society. He had the unique distinction of having acted as Distributor for all three of the leading British botanical exchange clubs, viz., for phanerogams, mosses, and lichens. He accumulated a very fine herbarium consisting of over 32,000 specimens, all the above groups being well represented. Mr Wheldon was elected a Fellow of the Linnean Society in 1901, and in 1923 had the honour of being elected an Associate of that Society. In the same year the honorary degree of M.Sc. was conferred upon him by the University of Liverpool. Of Mr Wheldon's personal character the writer can speak from long experience. We had been most intimate friends for over 25 years. He had an unassuming, genial manner and a natural affability, which endeared him to all who were privileged to know him. Although he had little leisure time at his disposal he was always ready to help others by naming specimens or in other ways. During the last few months of his life he suffered from an incurable disease which caused him much pain. This he bore with great fortitude. His mind was active to the last, and within two hours of his passing away he was able to read with pleasure a reprint of his last paper, "Additions to the Scottish Sphagna," published in the *Journal of Botany*. He had been a widower for nine years. He leaves two sons and one daughter. The elder son, Mr H. J. Wheldon, is a capable fungologist and author of "A Key to the British Agaricineae."

A. WILSON.

One cannot allow the death of my dear friend to pass without offering my sincere tribute of respect and sympathy. His loss to British Botany is very great and although in later years he devoted himself to the Mosses and Lichens yet we could not grudge his divergence for he made such a conspicuous success in his study of the difficult groups of mosses. I first met him at Liverpool many years ago, and then saw how much respected he was by those under whom he served, for at that time he was pharmacist to the Liverpool Prison. But he was more than that, for his knowledge of the subject was much valued by the medical attendants at that gloomy place. Wheldon was a kindly person to all who met him and certainly his devotion

to Botany was stimulated by the repellent adjacent atmosphere. He brought out a good tentative Alien Flora of the neighbourhood, and did much at the Botany of the Isle of Man. One may say that field workers long felt it was high time that some recognition of his botanical service should be made. And it was a never ceasing regret that Oxford did not reward the great service he did in naming our large Lichen and much of our Moss collection. Manchester could not well move since he belonged to a neighbouring city. However, if tardily, he received from Liverpool the degree of M.Sc., which was as much a source of pleasure to his friends as it was to himself. Working—not climbing—was more in his way. He had been an active member of our Club for many years and he was one of our most loyal friends. He wrote a most kindly and appreciative letter on the publication of the *British Plant List* and a humorous communication, with a sketch of himself, reading the 1919 Report seated in his arm-chair and emitting from his pipe clouds of smoke. He says he has had his nose buried in it nearly all day. He gave his paper on *Erythraea* to the *Cambridge Flora* and wrote, "I have been kept all these years expecting it to appear each year. Had a brief résumé been printed, plants might have been distributed, opinions evoked, and the final result much improved. It is 5 or 6 years wasted which might have been spent in improving one's idea before final publication." Despite the painful character of his mortal disease his son tells me that he read our last Report through the day before he died. He left a very large herbarium of over 15,000 sheets of phanerogams and about 17,000 specimens of Mosses, Hepatics and Lichens, his collection of Sphagna and the Harpidioid Hypna being especially rich. The whole has been acquired by the National Museum of Wales at Cardiff where it will be preserved intact. G. C. DRUCE.

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#### 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*; *Gar. Chron.* = *Gardeners' Chronicle*; *Nat.* = *The Naturalist*; *Journ. Bot.* = *Journal of Botany*; † = *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, or that the plant is not British.

We are under great indebtedness to Dr A. Thellung for his most kindly help in determining so many of the adventive species and also to the Director of the Royal Botanic Gardens, Kew, to Mr J. Fraser, Mr W. O. Howarth, Mr C. E. Salmon, Rev. H. J. Riddelsdell, and others who have rendered critical assistance.

†1 (3). CLEMATIS VITICELLA L. Hayling Island, S. Hants, BIDDISCOMBE.

†2. THALICTRUM AQUILEGIFOLIUM L. Bank at Edradour, E. Perth, WEBB.

†13. ANEMONE JAPONICA S. & Z. Mayals, Glamorgan, WEBB.

16. ADONIS ANNUA L. Near Sleaford, Lincs, Miss LANDON; one specimen in a cornfield five miles west of Winchester, Rt. Hon. H. BAKER.

20. RANUNCULUS ACRIS L., sub-var. MINUTIFLORUS Dr. Grassy side of cart-track leading to Cantelupe Farm between Haslingfield and Grantchester, Cambridge, SHAW. Var. RECTUS Bor. Penzance, Cornwall, THURSTON. Det. DRUCE.

23. R. LINGUA L., the glabrous plant. River Corrib, below Meulo, Galway, Mrs EVANS.

†25 (2). R. ACONITIFOLIUS L. Near Sleaford, S. Lincs, Miss LANDON; near Luinsden, N. Aberdeen, WILSON.

†27. R. ARVENSIS L., var. INERMIS Koch. Near Sleaford, Lincs, Miss LANDON.

40. R. HETEROPHYLLUS Weber, var. TRIPHYLLUS (Wallr.). Post-

combe, Oxon, DRUCE. Var. SUBMERSUS. Bedale, N. Yorks, BUTCHER, teste PEARSALL.

42. R. BAUDOTH Godr., var. CONFUSUS Godr. Stone Abbotsham, N. Devon, 1894, H. A. EVANS, teste PEARSALL.

46. R. HEDERACEUS L. On Carmarthen Van, at over 2000 feet. WEBB.

47. R. FIGARIA L., var. SINUATA Horw. Sloping bank of the Taff, Cardiff, Glamorgan, Miss VACHELL.

51. HELLEBORUS VIRIDIS L. Near Pont Ynyseven, Carmarthen, Mrs BEGG.

†52. H. FOETIDUS L. Garvestone, Norfolk, Mrs RUSSURIM; Sibton Abbey Wood, Suffolk, REDGROVE.

54. AQUILEGIA VULGARIS L. Truly wild at Kingthorpe, near Pickering, N. Yorks, FLINTOFF; †Coille Voullin, Pitlochry, E. Perth, WEBB; bank between arable fields, Wymondham, E. Norfolk, CLARKE.

60. DELPHINIUM AJACIS L. St Helen's Spit, Isle of Wight; Dunwich Priory, Suffolk, Canon VAUGHAN; Warlingham, Surrey, BEADELL.

†61. D. ORIENTALE Gay. Woodhall Spa, Lincs, 1922, ALSTON. Det. THELLUNG.

†63. D. CONSOLIDA L. Woodhall Spa, Lincs, 1917-22, ALSTON. Probably PANICULATUM Hort., THELLUNG.

†68. ACONITUM NAPELLUS L. Sibton Abbey Wood, Suffolk, REDGROVE.

†79. PAPAVER SOMNIFERUM L., var. HORTENSE (Huss.). St Aubin's, Jersey, and as a very small-flowered plant on the foreshore at Sumburgh, Zetland, DRUCE; in potato fields Moulin, E. Perth, WEBB.

†86. P. ORIENTALE L. Chadlington, Oxon, DRUCE.

- †86 (2). *P. BRACTEATUM* Lindl. Mayals, Glamorgan, WEBB.
- †90. *GLAUCIUM CORNICULATUM* Curt. Norwich, CLARKE; Woodhall, Lincs, ALSTON.
- †98. *CAPNORCHIS CANADENSIS* Dr. (DICENTRA). Newlands Vale, Cumberland, H. P. BUNELL.
- †100. *CAPNOIDES SOLIDA* Moench. Headbourne Worthy, N. Hants, H. L. GREEN.
- †101. *C. LUTEA* Gaertn. Strathardle, E. Perth, WEBB.
104. *FUMARIA CAPREOLATA* L., var. *BABINGTONII* Pugs. Melto, Woodbridge, Suffolk, there for many years, SHAW.
125. *RADICULA AMPHIBIA* × *ISLANDICA*. Linley, Salop, 1874, Miss PALMER in *Hb. Druce*.
- \*126. *R. ISLANDICA* Dr. Olna Firth, Zetland, DRUCE.
128. *BARBAREA VERNA* Asch. Fishguard, Pembroke, DRUCE; Woodbridge, Suffolk, SHAW. Det. THELLUNG.
130. *B. ARCUATA* Reichb. Nampean, Cornwall, THURSTON.
- †138. *ARABIS ALPINA* L. Maryborough, Lanark, GRIERSON. Sp. non vidi.
140. *A. PETRAEA* Lam., var. *GRANDIFOLIA* Dr. Stob Bhan, at head of Glen Nevis, Westernness, R. J. PEALLING.
142. *CARDAMINE PRATENSIS* L., var. *FLORE PLENO*. Melmerby, Cumberland, MASON.
145. *C. FLEXUOSA* With. Near Clayhithe Lock, Cambridge, SHAW.
- †155. *ALYSSUM ALYSSOIDES* L. Burgh Castle, E. Suffolk, SHAW.
- †157. *A. INCANUM* L. Ditch, Pitlochry, E. Perth, WEBB; Woodhall, Lincs, abundant, 1917-24, ALSTON.
162. *DRABA MURALIS* L. North Devon, D'URBAN, *in litt.*; on an

old wall, Chickereil, Dorset, Miss ROPER; wall top north of Kilpedder, Co. Wicklow, BRUNKER.

169. *COCHLEARIA MICACEA* E. S. Marsh. On the ridge of Snowdon overlooking the Llanberis Pass, Carnarvon, DRUCE. This I first found there many years ago and Marshall agreed to the name.

†184. *SISYMBRIUM ALTISSIMUM* L. Hassocks, Sussex, Lady ALTHEA BUXTON; Melmerby, Cumberland, MASON; Moulin, E. Perth, WEBB; Cardiff Docks, R. L. SMITH. Det. THELLUNG.

†185. *S. ORIENTALE* L. Hoar Cross, Stafford, D. MEYNELL; Melmerby, Cumberland, MASON; on railway between Beck Hole and Grosmont, N. Yorks, FLINTOFF; Woodbridge, Suffolk, SHAW. Det. THELLUNG.

†186. *S. PYRENAICUM* L. (*AUSTRIACUM* Jacq. *ACUTANGULUM* DC.). Routh Park, Cardiff, R. L. SMITH. Det. THELLUNG.

†187. *S. LOESELII* L. Cardiff [CC. 49], DRUCE.

189. *S. OFFICINALE* Scop., var. *LEIOCARPUM* DC. Evenedine, Hereford, F. DAY.

†191 (3). *S. BRACHYCARPUM* (Rich.) Thell., f. *EGLANDULOSUM* Thell. Ware, Herts, A. W. GRAVESON. Det. THELLUNG.

†198. *ERYSIMUM REPANDUM* L. Sherborne St John, Hants, BOYS. Det. THELLUNG.

†200. *CONRINGIA ORIENTALIS* Dum. Poldhu Beach, Cornwall, E. T. PEERY, ex THURSTON.

†202. *CAMELINA SATIVA* Cr. Walney Isle, S. Lancs, Miss M. COBBE; Routh, Cardiff [CC. 30], DRUCE.

†202 (2). *C. MICROCARPA* Andrj. Airdrie, Lanark, 1923. GRIERSON. Det. THELLUNG.

†209. *BRASSICA TOURNEFORTII* Gouan. Barry, Glamorgan, R. L. SMITH. Det. THELLUNG.

†212. *B. ELONGATA* Ehrh., var. *ARMORACIODES*. At Grosmont, N. Yorks, 1923, FLINTOFF. Det. as a sub-sp., THELLUNG.

- †218. *B. JUNCEA* COSS. Colchester, DRUCE; Lanark, GRIERSON.  
Det. THELLUNG.
- †222. *B. GALLICA* (Willd.) Dr. Garden-weed, Stansteadbury,  
Miss TROWER; Southwick, Sussex, Miss COTTIS. Det. THELLUNG.
- †225. *DIPLOTAXIS ERUCOIDES* DC. Abundant at Barry and Car-  
diff and quite naturalised. Shown me by MELVILL and SMITH.
226. *D. TENUIFOLIA* DC. In two different forms at Hayling Isle,  
S. Hants, RAYNER.
- †227. *D. MURALIS* DC. Gouthland, York, FLINTOFF.
- †228. *ERUCA SATIVA* Mill. Hayling Isle, S. Hants, BIDDISCOMBE.
232. *BURSA* (*CAPSELLA*) *ANGLICA* (E. At.). Yardley Gobion,  
Northants, DRUCE.
232. *B. BATAVORUM* (E. At.). Portmadoc, Carnarvon, and ex-  
tending into Merioneth, DRUCE.
232. *B. BREMENSIS* (E. At.). Christchurch, S. Hants, RAYNER.
232. *B. BRITTONII* (E. At.). Chadlington, Henley, Oxon, DRUCE.
232. *B. CONCAVA* (E. At.). Finchingfield, Essex; Scousburgh,  
Zetland [also at Palma in Majorca], DRUCE.
232. *B. DRUCEANA* (E. At.). Swaythling, S. Hants, RAYNER;  
St Ouen's, Jersey, DRUCE.
232. *B. GALLICA* (E. At.). Southampton, S. Hants; Wood-  
stock, Oxon, DRUCE.
232. *B. GERMANICA* (E. At.). Aberdeen; [Oldensee, Denmark]  
DRUCE.
232. *B. LUTETIANA* (E. At.). Scousburgh, Zetland; [Fano,  
Denmark], DRUCE. New to Britain.
232. *B. MEDITERRANEA* (E. At.). Christchurch, S. Hants [No.  
3 & 4], RAYNER.

232. *B. ODONTOPHYLLA* (E. At.). Llanberris, Carnarvon, DRUCE.  
New to Britain.

232. *B. PATAGONICA* (E. At.). Ballater, S. Aberdeen, DRUCE.

232. *B. TURONIENSIS* (E. At.). Hynam, W. Gloster, DRUCE &  
GAMBIER-PARRY; [Fano, Denmark], DRUCE.

233. *CORONOPUS DIDYMUS* Sm. Welbeck, Notts, GOULDING.

239. *LEPIDIUM PERFOLIATUM* L. Andover, N. Hants, HILLARD;  
Headley, N. Hants, Miss GWATKIN, ex RAYNER.

†241. *L. NEGLECTUM* Thell. Gasworks, Hitchin, Herts, LITTLE;  
Truro, Cornwall, BORLASE, ex THURSTON; Coatbridge, Airdrie, Lan-  
ark, 1923, GRIERSON. Det. THELLUNG.

†247. *L. VIRGINICUM* L. Mayals, Glamorgan, 1921, R. L. SMITH.  
Det. THELLUNG.

†247 (4). *L. DENSIFLORUM* Schrad. Cardiff, Glamorgan, DRUCE,  
MELVILL and SMITH; Walney Isle, S. Lancs, Miss A. B. COBBE;  
Colchester, 1921, BROWN; Truro, THURSTON. Det. THELLUNG.

†247 (5). *L. BONARIENSE* L. Bristol, 1923, N. SANDWITH; Bos-  
cawen Park, Truro, Cornwall, THURSTON.

†247 (31). *L. RAMOSISSIMUM* A. Nels. Clarkeston, Cornwall.  
1923, THURSTON. Det. THELLUNG.

252. *IBERIS AMARA* L. Oolite quarry, Dundry Hill, N. Somer-  
set, BROWN.

†255. *VOGELIA PANICULATA* Horn. Walney Isle, S. Lancs, Miss  
A. B. COBBE.

†262. *BUNIAS ERUCAGO* L. Woodhall, Lincoln, 1917-24, ALSTON.

†263. *B. ORIENTALIS* L. West Wycombe, Bucks; Byfleet, Sur-  
rey, DRUCE. Distributed this year.

†266. *RAPISTRUM PERENNE* (L.) All. St Philip's, Bristol, 1922.  
SANDWITH. Det. THELLUNG.

†268. *R. RUGOSUM* All. Eastbourne, Pevensey, E. Sussex, D. P. MURRAY.

†286. *RESEDA ODORATA* L. Foreshore, St Aubin's, Jersey, DRUCE.

(All the *Violas* are named by Mrs Gregory.)

293. *VIOLA SYLVESTRIS* Kit., var. *PUNCTATA* Dr. Centurion's Copse, Bembridge; near Gatscombe, 1875; near Newport, 1867; Apes Down, 1869; Loughlane, 1869; Isle of Wight; Crab Wood, Winchester, cleistogamous form, 1875, STRATTON; Froyle, N. Hants, Canon VAUGHAN.

294. *V. RIVINIANA* Reichb., var. *DIVERSA* Greg. Staplers, Isle of Wight, STRATTON. f. *MINOR* Greg. Fitful Head, Zetland, DRUCE. Var. *NEMOROSA* (Neum.) Standen Lane Copse, Isle of Wight, 1912, STRATTON. × *RUPESTRIS*. Ditchley, Oxon, DRUCE.

295. *V. RUPESTRIS* Schmidt, var. *GLABRESCENS* Neum. Fitful Head, Scousburgh, Zetland, DRUCE. × *CANINA*. Lea of Setter, Zetland, DRUCE.

296. *V. CANINA* L., var. *ERICETORUM* Reichb. Staplers, Isle of Wight, 1878, STRATTON; Kingsley, N. Hants, Canon VAUGHAN. Var. *PUSILLA* Greg. Hayling Isle, S. Hants, 1909, Canon VAUGHAN; Snowdon, Carnarvon, Laxo, etc., Zetland, DRUCE; Gullane, Haddington, Miss I. M. MARTIN. Var. *SABULOSA* Reichb. Snowdon, Carnarvon, DRUCE; Garforth, N. Yorks, BUTCHER, teste Miss ROPER. × *LACTEA*. Gravelly heath, Staplers, 1869; Recketts Copse, Freshwater, Isle of Wight, STRATTON.

298. *V. ODORATA* L., var. *DUMETORUM* (Jord.). Apes Down, near Newport, Isle of Wight, 1867, STRATTON.

299. *V. HIRTA* L., var. *FOUDRASII* (Jord.). St Boniface Down, Isle of Wight, 1875, STRATTON, as *calcareea*. Var. *PROPERA* Gillot. Alton, N. Hants, Canon VAUGHAN. × *ODORATA*. Newport, 1867, Longlane, Staplers, Apes Down, Isle of Wight, STRATTON.

300. *V. CALCAREEA* Greg. Garforth, N. Yorks, BUTCHER, teste Miss ROPER.

301. *V. EPIPSILA* × *PALUSTRIS*. Hormingford Withy Bed, Isle of Wight, 1869, as *palustris*, STRATTON; Short Heath, Selborne, N. Hants, Canon VAUGHAN. f. *GLABRESCENS* A. & G. Stow Bardolph, LITTLE in *Wats. B.E.C.* 1919.

(All the Pansies are named by Dr Drabble.)

†302. *V. CORNUTA* L. Banks of the River Otter, Devon, 1892, Miss WALKER.

303. *V. AGRESTIS* Jord. Wool, Dorset; Pyrford, 1917, DRUCE; Hindhead, Surrey, C. BAILEY; Wilbarrow Hill, Beds and Herts, 1903; Frilford, Berks; Banbury, Oxon; Denham, Bucks, 1902; Oxney Lode, Northants, 1900, DRUCE; Hertford, ANSELL; Bodorgan, Anglesey, DRUCE; Tilston, Cheshire, as *Déséglisei*, 1900, W. DOD; Sandscale, L. Lancs, LUMB; Coldstream, Berwick, DRUCE; Killin, Perth, FRASER. × *HORTENSIS*. Frilford, Berks, DRUCE.

303. *V. ARVATICA* Jord. Bexhill, E. Sussex, H. L. GREEN; Twinstead, Essex; W. Wycombe, Bucks; Eye, Northants, DRUCE; Swanston, Edinburgh, 1857, *Hb. Bell*.

303. *V. DESEGLISEI* Jord. Bix, Charlbury, Oxon, DRUCE.

303. *V. DERELICTA* Jord. Aldbourne, Wilts, Miss TODD; Berechurch, N. Essex, DRUCE; between Stromness and Sandwick, Orkney [No. 2425], as *segetalis*. E. S. MARSHALL.

303. *V. GRACILESCENS* Jord. Probably this, Drummore, Wigtown, DRUCE.

303. *V. LEJEUNEI* Jord. Alford, N. Aberdeen [No. 7171]; Isbister, Scousburgh, etc., Zetland, DRUCE.

303. *V. LEPIDA* Jord. Nateby, N. Lancs, WHELDON; Ambleside, Westmorland, R. TUCKER; Bantry, Lincs, 1884, WEBSTER; Forres, Elgin, as *tricolor*. C. BAILEY; Ballater, S. Aberdeen, DRUCE.

303. *V. LLOYDII* Jord. St Helier's, Jersey; Hanslope, Bucks; Aldborough, Suffolk, DRUCE; Rainford Moss, S. Lancs, as *carpatica*, WHELDON, see *Rep. B.E.C.* 112, 1904; Galashiels, Selkirk, DRUCE.

Var. *INSIGNIS* Drabble. Hoy, Orkney, DRUCE. A hybrid of this at St Helier's, Jersey, 1850, *Hb. Piquet*.

303. *V. OBTUSIFOLIA* Jord. Noirmont, Jersey, 1851, PIQUET; Alresford, N. Hants; Hursley, S. Hants; Ambarrow, Berks; Moulshford, Berks [No. 5222]; Stow Bedon, Norfolk; Tackley [No. 361], 1905, Oxon; Harleston, 1874, Evenley [V. 79], Caistor, Hunsbury Hill, Northants, DRUCE; Manchester, BAILEY; Spiggie, Zetland, DRUCE; Belfast, KENNEDY.

303. *V. RURALIS* Jord. Littlestone-on-Sea, Kent; St Lawrence, Isle of Wight, DRUCE; Selham, W. Sussex [2679], MARSHALL; Odiham, N. Hants, 1878, Miss PALMER; Gangsdown, Oxon; Cosgrove [V. 53], Ashton [4184], Northants, DRUCE; Lighthorne, Warwick, 1851, Miss PALMER; Lichfield, Stafford; Larne, Antrim; Galashiels, Selkirk, DRUCE.

303. *V. SEGETALIS* Jord. Wrington, Somerset, Nuneham [Q. 74], Oxon; Beaumaris, Anglesey; Drummore, Wigtown; Selkirk; Strath Carron, W. Ross, DRUCE.

303. *V. SUBTILIS* Jord. Aldbourne, Wilts, Miss TODD.

303. *V. VARIATA* Jord. Bexhill, Sussex, H. L. GREEN; Brampton, Cumberland, DRUCE; Stonehaven, Kincardine, BAILEY; Tongue, Alltnaharra, W. Sutherland, DRUCE; Stromness [2424], Orkney, MARSHALL, named by him *V. arvensis* × *tricolor*; Bay of Quoy, Orkney, DRUCE. Var. *SULPHUREA*. Odiham, N. Hants, Miss PALMER.

308. *POLYGALA SERPYLLIFOLIA* Hose. In varying colours from Lumsden, N. Aberdeen, W. WILSON.

309. *P. VULGARIS* L. Exceptionally beautiful plants at Ross-lare, Wexford, perhaps under var. *Ballii* Ostenf., Mrs WEDGWOOD.

309 (2). *P. BABINGTONII* Dr. Ben Evenagh, Londonderry; Horn Head, Donegal, TRAPNELL.

310. *P. DUBIUM* Belynyck. Kenmare, Kerry, 1890, DRUCE. Var. *DUNENSE* (Dum.). Aberfraw, Anglesey, DRUCE; Aberafan, Glamorgan, RIDDELSDELL.

318. *DIANTHUS DELTOIDES* L. Near Snelsmore Common, Berks, Col. J. SAUNDERSON.

†331. *SAPONARIA VACCARIA* L. Near Parkstone, Dorset, H. J. WADLOW, ex Bourn. Nat. Sc. Soc.; Walney Isle, S. Lanes, Miss M. COBBE.

332. *S. OFFICINALIS* L., var. *HIRSUTA* Wierzb. Llanfoist, Monmouth, WADE.

343. *SILENE ANGLICA* L. Woodbridge, Suffolk, SHAW; Berechurch, N. Essex, DRUCE.

†344. *S. QUINQUEVULNERA* L. Tackley, Oxon, W. EVETTS.

†345. *S. PENDULA* L. Long Meadow, Cambridge [No.49], SHAW. Det. THELLUNG.

\*360. *LYCHNIS DIOICA* L. Orton Waterville, *Hb. Marchioness of Huntly*.

368. *CERASTIUM ALPINUM* × *VULGATUM* = *C. SYMEI* Druce. Stob Bhan, Westerness, R. J. PEALLIN.

370. *C. VULGATUM* L., var. *SERPENTINI* Dr. Wenlock Edge, Salop, DRUCE and Lady J. LEGGE.

†386. *ARENARIA MONTANA* L. Welbeck, Notts, GOULDING.

405. *SAGINA CILIATA* Fr. Kenn, S. Devon, Miss TODD.

410. *SPERGULA SATIVA* Boenn. Cardiff Docks, 1924, DRUCE; \*Llantarnam, Monmouth, WADE; Mendip, near Charterhouse, N. Somerset, SANDWICH.

413. *SPERGULARIA SALINA* Presl. Plentiful at Colchester, BROWN.

414. *S. ATHENIENSIS* A. & G. Fort Regent, Jersey, in some plenty, DRUCE.

†419. *CLAYTONIA PERFOLIATA* Donn. Snelsmore, Berks, Col. SAUNDERSON; by the railway, Gosmont, N. Yorks, FLINTOFF; Gerard's Cross, Bucks, Miss M. COBBE.

424. ELATINE HEXANDRA DC. Pond at Worplesdon, Surrey, BIDDISCOMBE.

430. HYPERICUM MONTANUM L. Pexton Moor, N. Yorks, FLINTOFF.

435. H. QUADRANGULUM L. (MACULATUM). Gilwern, Brecon, WADE. Var. EROSUM Schinz. Llanrwst, Carnarvon, DRUCE.

\*435 (2). H. DESETANGII Lam. Sturdys Castle, Oxon, 1925, DRUCE.

†447. LAVATERA THURINGIACA L. Woodhall, Lincs, 1917-24, ALSTON.

452. MALVA SYLVESTRIS L., var. LASIOCARPA Dr. Barry Docks, Glamorgan, DRUCE; a curious form, presumably of this species, with nearly entire leaves, Sharpness, Gloster, Miss TODD. Additional specimens would be very welcome.

†452 (2). M. NICAENSIS All. Truro, THURSTON; Cardiff, MELVILL and SMITH. Det. THELLUNG.

†454. M. PUSILLA With. Shalford, Surrey, CHASE. Forma PILOSA. Oakley, N. Hants, RAYNER. Type at Bowling Distillery, Dumbarton, 1923, GRIERSON.

†456. M. PARVIFLORA L. With glabrous carpels, Edenbridge, Kent, Mr JUSTICE TALBOT. In *Bab. Man.* it wrongly says that the carpels meet with a toothed edge. That is a character of *M. pusilla* With. Bowling Distillery, Dumbarton, GRIERSON; Old Croft, Shalford, Surrey, 1923, CHASE.

†458. M. CRISPA L. Maryborough, Lanark, GRIERSON.

(The above Malvae have been named by Dr Thellung.)

†475. GERANIUM VERSICOLOR L. Meifod, Montgomery, Miss FLORA RUSSELL.

†476. G. NODOSUM L. Haveley, Middlesex, Mrs CHAMPNEYS; Goonbell, Cornwall, THURSTON; Besilsleigh, Berks, Miss WALKER.

†479. G. PHAEUM L. Coed Colonel, Menai, Anglesey, WEBB,

- †479 (2). G. ENDRESSI Gay. Goonbell, Cornwall, THURSTON.
485. G. ROTUNDIFOLIUM L. Hassocks, E. Sussex, Miss COTTIS; Llanelly Station, Carmarthen, WEBB; Woodbridge, E. Suffolk, SHAW; Henley, Oxon, DRUCE.
488. G. ROBERTIANUM L., \*var. CELTICUM (Ost.). Limestone hills, Llyn-llech Owen, Glamorgan, 1922, HAMER.
- †512. IMPATIENS PARVIFLORA DC. Paxton Park, Hunts, 1881, *Hb. Marchioness of Huntly*.
- †513. I. GLANDULIFERA Royle. Luxuriant on the banks of the Erme River near Modbury, Devon, R. M. MILNE; Gilwern, Brecon, WADE; Kelston, Gloucester, SHAW; on rubbish at Marlborough, Wilts, G. PEARSON.
- †528. LUPINUS NOOTKATENSIS Donn. Bayswater Tips, Blackpill, Glamorgan, WEBB.
- †529. L. ANGUSTIFOLIUS L. St Aubin's, Jersey; Berechurch, Essex, DRUCE; Stanway, Essex, BROWN.
533. GENISTA ANGLICA L., var. SUBINERMIS R. & F. Lumsden, N. Aberdeen, W. WILSON, and merging into type at Kynance, Cornwall, B. KING.
539. ULEX MINOR Roth. Growing at Thornton Dale, N. Yorks. Found by Mr J. Green. See *Naturalist* 356, Dec. 1924, ex FLINTOFF (n. 398, 417).
- †548. TRIGONELLA FOENUM-GRÆCUM L. Worcester, D. HAMER; Newport, Isle of Wight, Mr LONG, ex RAYNER; Grimsby, Lincs, S. J. NORTH.
- †555. T. BESSERIANA Ser. Gloucester Docks, Rev. J. H. ADAMS.
- †568. MEDICAGO FALCATA L., var. TENUIFOLIOLATA Vuyck. On the shingle, Minehead Warren, Somerset, W. HADDON, ex W. D. MILLER; Aberdovey, Merioneth, Mrs DEBENHAM; Woodhall, Lincs, abundant 1917-24, ALSTON; Trafford Park, Lancashire, H. BRITTEN.

†572. *M. TRUNCATULA* Gaertn. Bradford, Yorks, CRYER; Barry Docks, Cardiff, MELVILL, distributed this year. Var. *APICULATA* Burn. Colchester, DRUCE.

†573. *M. LITORALIS* Rohde. Barry, Glamorgan, R. L. SMITH.

†575 (2). *M. MUREX* Willd. Barry, Glamorgan, R. L. SMITH.

579. *M. HISPIDA* Gaertn., var. *CONFINIS* Burn. Cardiff; Colchester, DRUCE.

580. *M. ARABICA* All. Woodbridge, Suffolk, SHAW.

†592. *MELILOTUS SULCATA* Desf. Newport and Ryde, Isle of Wight, Mr LONG, ex RAYNER.

†595. *M. ALBA* Desf. Swannington, E. Norfolk, CLARKE; Woodbridge, E. Suffolk, SHAW; \*Orton, Hunts, 1878, *Hb. Marchioness of Huntly*.

†597. *M. INDICA* All. Forncett St Peter, E. Norfolk, CLARKE.

†608. *TRIFOLIUM INCARNATUM* L. Grosmont, N. Yorks, F. SNOWDON, ex FLINTOFF. Var. *STRAMINEUM* Presl. Midhurst, Kent, B. KING.

611. *T. ARVENSE* L. A curious form with small interrupted spikes grew at St Ouen's, Jersey, and I suspected some insect influence. Mr Swanton kindly determines it as being caused by *Eriophyes plicator*, var. *Trifolii*. DRUCE.

†613. *T. SQUARROSUM* L., probably. Barry Docks, Glamorgan, DRUCE, MELVILL and SMITH.

†615. *T. CONSTANTINOPOLITANUM* Ser. Falmouth, Cornwall, SANDWICH.

†615 (2). *T. DIFFUSUM* Ehrh. Bristol, SANDWICH.

619. *T. STRIATUM* L., var. *ERECTUM* Gasp. Dawlish Warren, S. Devon, W. K. MARTIN.

620. *T. SUBTERRANEUM* L. The wet season seems to suit this

plant for Mr E. THURSTON and Dr DEVIS found a specimen on Par Sands which measured 18 inches in diameter.

628. *T. REPENS* L., var. *RUBESCENS* Seringe. Still at Tresco, Scilly, teste Prof. J. PERCIVAL. Var. *GRANDIFLORUM* Peterm. Spigie, Zetland, DRUCE.

†630 (2). *T. ISTHMOCARPUM* Brot. Baptist Mills, Bristol, SANDWITH.

\*638. *T. FILIFORME* L. Melmerby, Cumberland, MASON.

†644. *LOTUS SILIQUOSUS* L. First found well established in Berkshire by V. MURRAY in 1912 (*Rep. B.E.C.* 315, 1913) and still there in 1924. See H. Ridley in *Journ. Bot.* 1924. It was shown to me by Dr Herbert Smith last July on a grassy slope above the Thames near Henley, but on the Berkshire side of the river. It must have been established for some years as it was plentiful over many square yards. Near Forest of Bere Farm, abundant, Captain WHITEHEAD, 1886, specimen in *Herb. Canon Vaughan*. It was first noticed in Hants and as a British alien (*Rep. B.E.C.* 14, 1875) from the waste side of a field at Ashley near Stockbridge, F. J. WARNER, and near Sparsholt, F. STRATTON, who says it is well established (*Journ. Bot.* 179, 1875 and *Fl. Hants* 115). The Rev. E. ELLMAN writes that last September he has found it near Bath in Gloucestershire in great quantity in pasture land. About twenty to thirty years ago the land was hand-cultivated for potatoes and manured with barley refuse, when the plant came up and has since much increased. Here it is, he says, thoroughly and permanently established, chiefly on clay, and also on oolitic limestone. DRUCE.

648. *L. TENUIS* Kit. Hungerford, Berks, beautiful specimens, Major BATES VAN DE WEYER; Woodbridge, W. Suffolk, in two distinct forms, SHAW; Colchester, DRUCE.

†\*650. *L. ANGUSTISSIMUS* L. In a sandy field at Byfleet, Surrey, Lady DAVY. An interesting occurrence. The field was manured some years ago with shoddy waste.

†650 (10). *HOSACKIA AMERICANA* Piper. Hythe Quay, Colchester [2226], BROWN. Det, Kew.

†651. *GALEGA OFFICINALIS* L. Ryde, Isle of Wight, Mr LONG, ex RAYNER.

†652 (5). *COLUTEA ARBOREA* L. St Helen's Spit, Isle of Wight, 1893, Canon VAUGHAN.

†666. *CORONILLA VARIA* L. Owselbury, N. Hants, H. L. GREEN; Woodhall, Lincs, 1917-24, ALSTON.

†670 (2). *ORNITHOPUS ROSEUS* Desf. Berechurch, N. Essex, DRUCE. It is still plentiful and was in beautiful flower last November in the field where Lady Davy found it near Byfleet in Surrey.

680. *VICIA OROBUS* DC. Near Blaen Coal Farm, Nantgwyllt, Radnor, WEBB.

†681. *V. VILLOSA* Roth. Swaythling, S. Hants, RAYNER; Fforest Foch, Glamorgan, WEBB; Tiverton, Devon, amongst corn, 1923, DOWNES. f. *GLABRA* Thell. Edlington, Lincoln, 1923, ALSTON.

†683. *V. DASycARPA* Ten. Woodbridge, Suffolk, SHAW; Weybridge, Surrey, 1923, Lady DAVY; Colchester, BROWN; Barry Docks, Glamorgan, R. L. SMITH; Cardiff, DRUCE. Det. THELLUNG.

†686. *V. CALCARATA* Desf. Hythe Quay, Colchester, with 687. *V. BITHYNICA* L., †690. *V. NARBONENSIS* L. and var. *SERRATA*, 691. *V. LUTEA* L., in several forms, †694. *V. PANNONICA* L., †701. *V. PEREGRINA* L., †720. *LATHYRUS ANNUUS* L., †723 (2). *L. HIEROSOLYMITANUS* Boiss., †724. *L. OCHRUS* L., †732 (2). *PISUM HUMILE* Boiss., and other adventives from the adjacent maltings, most of which have been found previously by G. C. BROWN.

691. *V. LUTEA* L. Swaythling, S. Hants, RAYNER; Christchurch, S. Hants, Mrs ROTHWELL; Fforest Foch, Glamorgan, WEBB; Norwich, CLARKE; Lihou, Guernsey, W. H. JONES; Colchester, BROWN; Byfleet, Surrey, Lady DAVY. Det. THELLUNG. Var. *CAERULEA* Archang. Lydd, E. Kent, W. H. KEW.

698. *V. ANGUSTIFOLIA* Roth, var. *UNCINATA* (Desv.). Chinnor, Oxon, 1923 [AA. 299], DRUCE. Var. *ALBA*. Barry Docks, Glamorgan, DRUCE; Kettleiness Cliff, North Yorks, 1923, FLINTOFF,

705. *V. TETRASPERMA* Moench, var. *TENUISSIMA* Druce. Godmersham, E. Kent, Hon. ELIZ. LEGGE.

706. *V. GRACILIS* Lois. Near Haslemere, W. Sussex, Preb. R. J. BURDON; University Farm, Cambridge, SHAW.

†707. *LENS LENS* (L.) Karst. Biggar Station, Lanark, GRIERSON.

†721. *LATHYRUS CICERA* L. Plentiful at Colchester, October 1924, DRUCE and Misses TROWER. Det. THELLUNG. Barry, Glamorgan, SMITH.

†722. *L. SATIVUS* L. Riddings, Coatbridge, Lanark, GRIERSON. Det. THELLUNG.

†723 (2). *L. HIEROSOLYMITANUS* Boiss. Colchester, October 1924, DRUCE and Misses TROWER. Det. THELLUNG.

†731. *PISUM ARVENSE* L. Common as a relic of cultivation, white and pink, throughout Dunfarsghy neighbourhood, Donegal, TRAPNELL.

†734 (10). *GLYCINE SOJA* Sieb. & Zucc. in Abh. Akad. Muench iv., ii., 119, 1843. Alien, Asia. Avonmouth, N. SANDWICH.

†738 (2). *PRUNUS CERASIFERA* Ehrh. Sloughton, Leicester, BEMROSE.

(The alien Leguminosae have been named by Dr Thellung.)

761. *RUBUS IMBRICATUS* Hort. Wraxall, N. Somerset, July 1924, BROWN.

\*777. *R. VILICAULIS* Koehl. Fingrinhoe, N. Essex, BROWN.

791. *R. SCHLECHTENDALII* Weihe. Wraxall, N. Somerset, July 1924, BROWN, teste RIDDELSDELL.

\*809. *R. CINEROSUS* Rogers. Berechurch, N. Essex, BROWN.

844. *R. PALLIDUS* Weihe. Grange, Borrowdale, Cumberland, H. H. HARVEY, teste RIDDELSDELL.

851. R. PURCHASIANUS Rogers. Crowell, Oxon, DRUCE.
872. R. DUMETORUM Weihe, var. FEROX (Weihe). Stowe, Staffs, H. EVANS.
895. POTENTILLA ARGENTEA L. Cardiff, Glamorgan, MELVILL and SMITH.
- †896. P. INTERMEDIA L. Christchurch, S. Hants, Mrs ROTHWELL and RAYNER; Leicester, ex *Leic. Mus.*; Leckwith, Glamorgan, R. L. SMITH. Det. THELLUNG.
- †906. P. NORVEGICA L. Woodbridge, Suffolk, SHAW; Newport, Isle of Wight, RAYNER; Mayals, Glamorgan, WEBB; Whitehaven, Cumberland, Miss M. COBBE. Det. THELLUNG.
907. P. SIBBALDI Hall. f. Sgurr Mhor, Fannich, W. Ross, Lady M. WATNEY.
909. ALCHEMILLA ALPESTRIS Schmidt. Bein Garbh, W. Sutherland, DRUCE.
- 909 (2). A. GLOMERULANS Buser. Lochnagar, S. Aberdeen, at 3000 ft., DRUCE.
- †921. POTERIUM CANADENSE A. Gray. In a meadow at Droxford, N. Hants, RAYNER.
927. ROSA CANINA L., var. WOLLEY-DODIANA. R. SENTICOA W.-D., not of Acharius, which teste Crépin is a *glauca* form. Pool Bottom, Oxon; Llandudno, Carnarvon, 1924, DRUCE.
928. R. ASPERNATA Déség., f. GLOBOSA Wolley-Dod. Highnam, Gloucester, GAMBIER-PARRY and DRUCE.
929. R. VERTICILLATA Mérat, var. LITIGIOSA. I think this species. Only once previously recorded from Britain, teste Wolley-Dod. Hunsbury Hill, Northants, 1878, DRUCE. But see *British Roses*.
942. R. OMISSA Déség. Falting Park Copse, Isle of Wight, RAYNER, teste W.-DOD.

†952 (7). *R. RUGOSA*. Gravel pit in the hills beyond Alness, E. Ross, WEBB.

Some Roses which were collected by Professor Percival and named by Mr J. G. Baker, Lt.-Col. Wolley-Dod has identified as follows:—

927. *R. DUMALIS* Bechst. Freeholders' Wood, Yorks.

932. *R. DUMETORUM* Th., var. *CANESCENS*, f. *HEMITRICHA*. East of Preston, 1884, named by Baker *R. sphaerica*. Var. *CALOPHYLLA*, Freeholders' Wood, named as *obtusifolia*.

932. *R. DUMETORUM* Th., f. *SEMIGLABRA* W.-D. Preston, named as *lutetiana*; from Freeholders' Wood, named as var. *frondosa*, and from the same place named as *arvatica*. Var. *URBICA*. To this probably belongs Baker's *incana* from the same Wood, Yorks, v.-c. 55.

934. *R. GLAUCA* Vill., var. *REUTERI*. Wensleydale, Yorks, 1884. Var. *SUBCRISTATA*, f. *ADENOPHORA*. Thoresby, Wensleydale, Yorks, named as *subcristata* Baker.

935. *R. CORIIFOLIA* Fr. Wensleydale, Yorks, type 1887; do. Freeholders' Wood.

940. *R. TOMENTELLA* Lem. Wensleydale, Yorks, 1887. Named *frondosa* by Baker.

941. *R. SCABRIUSCULA* Winch, probably. Weston, Suffolk, named by Baker *subglobosa*.

942. *R. OMISSA* Déség. Freeholders' Wood. Named *mollissima* by Baker. Near var. *SUBRECTA*. Freeholders' Wood, named by Baker, *scabriuscula*.

†958. *PYRUS HYBRIDA* (L.) Ehrh. (*P. fennica* Bab.). Abbot's Hall Park, Shalford, Essex, 1886, Canon VAUGHAN. See *Rep. B.E.C.* 502, 1918.

†959. *P. INTERMEDIA* Ehrh. A solitary planted tree at Llanberis in beautiful flower when the members were there last June. It grew near a house not far from the railway at the lower lake. Specimens were sent from the same place later on by Miss TODD.

\*962. *P. LATIFOLIA* Syme. Kilkenny, Wexford, Carlow, STELFOX and PHILLIPS. See *Ir. Nat.*, December 1924. New to Ireland.

†965. *CRATAEGUS AZAROLUS* L. On Durdham Down, W. Gloucester,

BROWN and WADE. Mr J. WHITE thinks that like *Rhamnus Alaternus* it may be bird-sown there.

966. *C. MONOGYNA* Jacq., var. *PTERIDIFOLIA* Loud. Byfleet, Surrey; Penrhos, Anglesey, DRUCE.

967. *C. OXYACANTHOIDES* Thuill., var. *MICROPHYLLA* Druce. Pilgrim's Way, below Gatton, Surrey, WOLLEY-DOD.

971. *COTONEASTER* *COTONEASTER* (L.) Karst. Existing in small quantity on the Orme's Head. One was glad to see a specimen growing in the rock-garden there. It is to be hoped that collectors will be satisfied by seeing it and allow the native specimens to have a protracted "close time," since only five individuals are known to survive.

†972 (2). *C. MICROPHYLLA* Wall. On rocks of the old quarries, Bourton on the Hill, Gloster, V. C. MURRAY; abundant on the Great Orme and in Llanberris Pass, Carnarvon, DRUCE.

†972 (3). *C. SIMONSI* Baker. Fegla Fawr, Barmouth, Merioneth, D. A. JONES.

†973. *AMELANCHIER CANADENSIS* L. Blackdown, W. Sussex, R. J. BURDON. Det. FRASER.

982. *SAXIFRAGA GRANULATA* L., flore pleno. Naworth, Cumberland, 1886, H. P. BUNELL; in two places, Newcastle, Co. Down, one in a wood growing by an avenue far away from a garden, the other on a bank at The Downs under a Laburnum, Colonel H. NUGENT HEAD. Probably a relic of cultivation in both cases. Thought by the authors of the *Cybele Hibernica* to be doubtfully indigenous in Co. Down.

983. *S. CAESPITOSA* L. The true plant in the classic Glen Spean locality, Westernness, F. J. FOGGITT, v. sp.

988. *S. STELLARIS* L., with three-valved capsule. Durness, W. Sutherland, TRETHERWY.

989. *S. UMBROSA* L. Native at 1500 feet on Lugneguilla in Co. Wicklow, STELFOX, *in litt.*

†1002. *RIBES NIGRUM* L. Llanfoist, Monmouth, WADE.

†1003. *R. RUBRUM* L. Bettws, Monmouth, WADE; Pandyrodyn, Dolgelly, Merioneth, WEBB.

†1004 (3). *R. SANGUINEUM* Pursh. Seedlings at Christchurch, S. Hants, RAYNER.

1007. *COTYLEDON UMBILICUS-VENERIS* L., var. *BRACTEATA* Dr. St Austell's, Cornwall, THURSTON; a specimen of the type had 11 branches at Benarth Wood, Conway, Carnarvon, CLARKE.

†1012. *SEDUM REFLEXUM* L., var. *ALBESCENS* (Haw.). Costessey, Sparham, Norfolk, CLARKE.

†1014. *S. SEXANGULARE* L. Littlehampton, Kent, Mrs JESSOPP.

†1016. *S. ALBUM* L. Blackford Hill, Edinburgh, F. W. SAN-SOME; Coed-y-paen, Monmouth, WADE.

†1018. *S. DASYPHYLLUM* L. On the walls of Portchester Castle, S. Hants, 1907, Canon VAUGHAN.

1045. *LYTHRUM HYSSOPIFOLIA* L. Brackenridge Coup, Lanark, 1923, GRIERSON. Det. THELLUNG.

1050. *EPILOBIUM LAMYI* F. Schultz. Brambridge, S. Hants; \*near Reading, Berks, WALLIS, ex C. E. SALMON in *Journ. Bot.* 336, 1924; Henley, Oxon, DRUCE. = *E. canescens* (Döll), not of Endlicher or White, contains the older trivial. Near Uppingham, Rutland, J. S. L. GILMOUR. Mr C. E. Salmon agrees to the determination of the Oxford plant.

†1065. *OENOTHERA ODORATA* Jack. Glyn Neath, Glamorgan, WEBB; Bradford, Yorks, CRYER.

†1070. *OE. TENELLA* Cav. Hythe Quay, Colchester, BROWN. Det. THELLUNG.

†1072 (2). *CIRCAEA CANADENSIS* Hill (*INTERMEDIA*). Lignant

Valley, Cardigan; Wastwater, Cumberland, R. H. WILLIAMSON and Miss COBBE.

1073. *C. ALPINA* L. \*Hoveton, Norfolk, Nicholson's *Additions*. Particulars of the occurrence would be welcomed. Even Townsend mistook small specimens of *lutetiana* for *alpina*.

\*1076. *BRYONIA DIOICA* Jacq. Caldey Island, PUGSLEY in *Journ. Bot.* 103, 1924.

†1077. *MESEMBRYANTHEMUM EDULE* L. St Helier's, Jersey, DRUCE; Blackpool Sands, Dartmouth, S. Devon, G. H. DOUGLAS.

1086. *CONIUM MACULATUM* L. Near Peebles, R. GRIERSON. It differs from the common plant in the leaf-segments being much broader.

†1090. *BUPLEURUM ROTUNDIFOLIUM* L. On clinkery ground by the Mersey at Birkenhead, Cheshire, J. CODRINGTON; Norwich, CLARKE; Robroyston, Lanark, GRIERSON.

†1092 (2). *B. LANCIFOLIUM* Hornem. Riddings Coup, Lanark, 1923, GRIERSON. Det. THELLUNG.

\*1099. *APIUM INUNDATUM* Reichb. Abergavenny, Monmouth, WADE.

†1101. *AMMI MAJUS* L. Willian, Herts, 1923, H. W. KEW.

†1107. *CARUM AROMATICUM* Dr. (*COPTICUM* B. & H.). Eastville, Bristol, N. SANDWITH; Brackenridge, Coatbridge, Lanark, GRIERSON. Det. as *Trachyspermum copticum*, THELLUNG.

1127. *ANTHRISCUS SCANDIX* Beck. On sand, Newton Nottage, Glamorgan, WEBB.

†1130. *FOENICULUM FOENICULUM* (L.) Karst. Arable field below Yaxley, Hunts, 1883, *Hb. Marchioness of Huntly*.

1137. *OENANTHE LACHENALII* Gmel. Rumney, Monmouth, WADE.

†1148. *ARCHANGELICA ARCHANGELICA* (L.) Karst. Canal-side,

Woodlesford, W. Yorks, BUTCHER; Spiggie, Boddam, Tolob, Zetland, DRUCE.

†1152. PEUCEDANUM OSTRUTHIUM Koch. Boddam, Zetland, DRUCE.

1160. DAUCUS CAROTA L., forma NANUS Dr. Severn beach, W. Gloster, Miss ROPER.

†1165. CAUCALIS LEPTOPHYLLA L. Uxbridge, Middlesex, Miss A. B. COBBE.

1169. C. NODOSA Scop. Peninaen Rhos, Old Colwyn, Denbigh, Miss A. WILKINSON. The lower umbels were stalked.

1179. SAMBUCUS EBULUS L. Near Potterne, Wilts, GWATKIN.

†1210. ASPERULA ARVENSIS L. Norwich, CLARKE.

\*1225. VALERIANELLA CARINATA Lois. On a brick wall near Sleaford, Lincs, Miss LANDON.

1238. SCABIOSA ARVENSIS L., var. INDIVISA Peterm. Gray's Lane, near Ashtead, Surrey [2692], C. E. BRITTON; Melmerby, Cumberland, MASON. The latter is a very curious plant having very narrow, entire leaves, with the facies of *S. Succisa*. I notice a curious slip in my *List* where *intermedia* is given instead of *indivisa*.

†1240. GRINDELIA SQUARROSA Dunal. Woodbridge, Suffolk, SHAW.

†1245. SOLIDAGO ? SEROTINA Ait., with scented leaves. Milford, Surrey, 1922, Rev. S. LAING.

1248. BELLIS PERENNIS L., with quilled ligules. York, DALTRY. Var. HYBRIDA (Ten.). Coatbridge, Lanark, GRIERSON. Det. THELLUNG as B. PERENNIS, forma CAULESCENS (Lej.) B. & C.

†1252. ASTER TRADESCANTI L. Cwinbwrld, Glamorgan, WEBB.

†1255. A. NOVI-BELGII L. St Clare Road, Colchester [2153], and [2154] Abbeyfield, 1923, BROWN.

1258. *A. TRIPOLIUM* L., var. *DISCOIDEUS* Reichb. Rumney, Monmouth, WADE.

1261. *ERIGERON ACRIS* L. Thornton Dale, on Ellerburn Banks, N. Yorks, FLINTOFF.

†1262. *E. PHILADELPHICUS* L. Markland Grips, Notts, 1923, GOULDING.

†1264 (2). *E. BONARIENSE* L. Cardiff, DRUCE, MELVILL and SMITH. Det. THELLUNG.

1265. *FILAGO SPATHULATA* Presl. Christchurch, S. Hants, Miss TODD.

1277. *GNAPHALIUM SUPINUM* L. Sguir Mhor, W. Ross, Lady M. WATNEY. Var. *FUSCUM* Hartn. Lochnagar, S. Aberdeen, DRUCE.

†1287. *BUBONIUM AQUATICUM* Hill. (*ASTERISCUS AQUATICUS* Less.) Cardiff, Glamorgan, 1906, DRUCE.

†1291. *AMBROSIA ARTEMISIFOLIA* L. Woodbridge, Suffolk, SHAW; St George's Hill, Surrey, Miss DOROTHY EGERTON.

†1292. *A. TRIFIDA* L. Woodbridge, Suffolk, SHAW; Burton-on-Trent, N. WILLOUGHBY SMITH; Parkstone, Dorset, H. J. WADLOW in *Bournem. Nat. Sc. Soc.* Var. *INTEGRIFOLIA*. Maryborough Coup, Lanark, GRIERSON.

†1294. *XANTHIUM STRUMARIUM* L. Cardiff, Glamorgan; Colchester, DRUCE; Woodbridge, E. Suffolk, SHAW.

†1301 (6). *HELIANTHUS LAETIFLORUS* Pers. (*H. SEROTINUS* Tausch). Abbeyfield, Colchester, 1923, BROWN. Det. THELLUNG.

†1302. *H. RIGIDUS* Desf. Ipswich, BROWN; Blackpill Beach, Glamorgan, WEBB.

†1304 (5). *SPILANTHES LEPTOPHYLLA* DC. At Fort Doyle, Guernsey, quite established. A Brazilian species sent by C. TRAPNELL, J. R. TOMLIN, Mrs M'CREA, etc.

- †1306. *GUIZOTIA ABYSSINICA* Cass. Reading, V. MURRAY; Mostyn, Flint, DALLMAN.
- †1311. *BIDENS FRONDOSA* L. Cardiff, DRUCE, MELVILL and SMITH.
- †1314. *MADIA SATIVA* Molini. Woodbridge, Suffolk [No. 17], SHAW.
- †1315. *HEMIZONIA PUNGENS* T. & G. Luxuriant at Colchester, BROWN and DRUCE; Woodbridge, E. Suffolk, SHAW; Craiglockart, Edinburgh, PATTON.
- †1317. *H. KELLOGGII* Greene. Woodbridge, E. Suffolk, SHAW.
1323. *ANACYCLUS CLAVATUS* (Desf.) Pers. Bristol, N. SANDWITH. Det. THELLUNG.
1324. *A. RADIATUS* Loisel. Bristol, N. SANDWITH. Det. THELLUNG.
- †1325. *A. VALENTINUS* L. Cardiff [139], 1924, SMITH. Det. THELLUNG.
1329. *ACHILLEA MILLEFOLIUM* L., var. *CONSPICUA* Dr. Jersey; Corfe, Dorset, DRUCE; Byfleet, Surrey, Lady DAVY. As a form approaching *A. SETACEA*, Isle of Wight, Rayner.
- †1331. *A. NOBILIS* L. Woodhall, Lincs, 1917-24, ALSTON; Cardiff, Glamorgan, MELVILL and SMITH.
- †1338. *ANTHEMIS TINCTORIA* L. On rubbish, Arundel, W. Sussex, H. ROBERTS, teste THELLUNG. A hairy, paler yellow form, probably of garden origin.
- †1340. *A. COTA* L. Riddings Coup, Lanark, 1923, GRIERSON. Det. THELLUNG.
1343. *A. ARVENSIS* L. Cardiff [106], SMITH. Probably, THELLUNG.
- †1344 (2). *A. WIEDMANNIANA* Fisch. & Mey. Colchester [2025], 1922, BROWN.

†1352. *CHRYSANTHEMUM MYCONIS* L. Robroyston, Lanark, GRIERSON. Det. THELLUNG.

1360. *MATRICARIA INODORA* L., var. *FLORE PLENO*. Watlington, Oxon, 1923, C. SCOTT.

†1362. *M. SUAVEOLENS* Buch. At 1200 feet, Forest in Teesdale, Durham, BUTCHER; in abundance at Isbister, Zetland, DRUCE.

†1378. *ARTEMISIA STELLERIANA* Willd. Near St Aubins, Jersey, TEMPLEMAN.

†1380. *A. BIENNIS* Willd. Whitehaven, Cumberland, Miss M. COBBE; Christchurch, Hants, RAYNER.

†1382. *A. ANNUA* L. Yiewsley, Middlesex, COOPER, ex BROWN.

†1386. *PETASITES ALBUS* Gaertn. By railway at Bala, Merioneth, WEBB; Waltham, Leicester, BEMROSE.

†1388. *DORONICUM PARDALIANCHES* L. Baughurst, N. Hants, Mrs JESSOPP.

†1390. *SENECIO SARRACENICUS* L. Strathpeffer, E. Ross. WEBB. Sp. non vidi.

†1396. *S. SQUALIDUS* L., var. *LEIOCARPUS* Dr. On waste ground, Oulton Broad, E. Suffolk, SHAW.

†1399. *S. VISCOSUS* L. Railway near Colwall, Hereford, new to district 4, F. M. DAY.

1401. *S. ERECTUS* Trow, var. *RADIATUS*. Gloucester, Miss HAYWARD; ex Rev. J. H. ADAMS.

†1408. *S. MIKANIOIDES* Otto. Near St Catherine's, Jersey, 1924, L. ARSENE; do., 1923, N. SIMPSON.

†1411. *CALENDULA ARVENSIS* L. Glasgow, GRIERSON.

1422. *CARDUS NUTANS* L. Ipswich, BROWN.

1425. *C. TENUIFLORUS* Curt. Inland at Blaencum in the heart of Glamorgan, WEBB.

1426. *CIRSIIUM ERIOPHORUM* Scop., var. *BRITANNICUM* (Petr.) Dr. Howick, Monmouth, 1892, SHOOLBRED.
1427. *C. LANCEOLATUM* Hill, var. *HYPOLEUCUM* (DC.). Upton-on-Severn, Gloster, Miss TODD, teste THELLUNG.
- †1432. *C. OLERACEUM* Scop. Still at Burnage, S. Lancs, H. BRITTEN.
- †1439. *ONOPORDON ACANTHIUM* L., var. *VIRIDE* Mich. Dewsbury, Yorks, W. B. HALEY.
- †1443. *MARIANA MARIANA* Hill. Weed in park, Ilfracombe, N. Devon, Miss SHUTE.
1446. *SERRATULA TINCTORIA* L., var. *ALPINA* Gren. & Godr. Wet pasture near Cwindu Pit, Mdesteg, Glamorgan, WEBB.
1449. *CENTAUREA JACEA* L., sub-sp. *JUNGENS* Gugl., var. *FIMBRIATISQUAMA* Gugl. Don Bridge, Jersey, DRUCE.
1451. *C. NEMORALIS* Jord. Callington, etc., Cornwall, THURSTON; Henley, Oxon; Cothill, Berks, DRUCE. Var. *DIVERSIFOLIA* C. E. B. Wells, CROSFIELD, ex Nicholson *Additions*; Alton, N. Hants, Canon VAUGHAN. Var. *SUBINTEGRA* C. E. B. Lambriggan, etc., Cornwall, RILSTONE.
1451. *C. OBSCURA* Jord. Perranzabuloe, etc., Cornwall, RILSTONE; near Bridge of Don, N. Aberdeen; Ballater, S. Aberdeen. DRUCE.
1456. *C. SCABIOSA* L., f. *INCISA* C. E. B. Pool Bottom, Oxon; Llanberris, Carnarvon, DRUCE. Var. *GELMII* Briq. Down above Leatherhead, Surrey, BRITTON.
- †1462. *C. SOLSTITIALIS* L. Cornfield, Gilwern, Brecon, WADE.
- †1467. *C. PALLESCENS* Del., var. *HYALOLEPIS* Boiss. Baptist Mills, Bristol, SANDWITH.
- †1474. *C. DILUTA* Ait. Robroyston, Lanark, 1923, GRIERSON. Det. THELLUNG. *C. MACULOSA* and *C. ORIENTALIS* have persisted at Woodhall, 1917-24, ALSTON.

1477. *CARTHAMUS TINCTORIUS* L. Mostyn, Flint, DALLMAN; near Parkstone, Dorset, H. J. WADLOW in *Bourn. Nat. Sc. Soc.*

1480. *CICHORIUM INTYBUS* L. Cornfield, Gilwern, Brecon, WADE.

1483. *ARNOSERIS MINIMA* S. & K. Berechurch, Essex, DRUCE.

\*1489. *PICRIS HIERACIOIDES* L. Yaxley, Hunts, 1884, *Hb. Marchioness of Huntly*.

1494. *CREPIS BIENNIS* L. Near Little Salkeld Station, Cumberland, MASON; Monstrevon Bridge, Queens County, Ireland, Mrs WEDGWOOD. Very luxuriant specimen.

†1495. *C. NICAENSIS* Balb. Rescobie, Forfar, 1923, DRUCE. Det. THELLUNG.

1497. *C. CAPILLARIS* Wallr., var. *ANGLICA* Dr. & Thell. Llanberris, Carnarvon; Sudbury, Suffolk; Corfe, Dorset; Uxbridge, Middlesex; Stokesay, Salop, DRUCE; Sleaford, Lincs, Miss LANDON; Chapel Lane End, Newquay, 1915, as *agrestis*, C. C. VIGURS; Hayling Island, S. Hants; Inverbroom, W. Ross, DRUCE.

1502. *C. TARAXACIFOLIA* Thuill. Portmadoc, Merioneth, DRUCE.

1505. *HIERACIUM PILOSELLA* L., var. *NIGRESCENS* Fr. Hanslope railway cutting, Bucks, DRUCE.

†1512. *H. AURANTIACUM* L. Upper end of Glenfarg, Perth, FOGGITT; Saxby-Cropstone, Leicester, BEMROSE.

1522. *H. PETIOLATUM* Elfstr. Stob Corrie, Westernness, FOGGITT.

1523. *H. GLOBOSUM* Backh. Lochnagar, S. Aberdeen, DRUCE.

1540. *H. SCHMIDTII* Tausch. Excellent specimens by the railway at Llanberris, Carnarvon, DRUCE.

1540 (2). *H. DECOLOR* Ley. Found by the members of the Excursion on the Great Orme, Carnarvon in its classic locality.

1542. *H. RUBICUNDUM* F. J. H. Caenlochan, Forfar, 1923, DRUCE.

1547. *H. SOMMERFELTII* Lindeb., var. *SPLENDENS* F. J. H. Honister, Cumberland, Rev. H. H. HARVEY.

1568. *H. PELLUCIDUM* Laest. Lambridge Wood, Oxon, DRUCE; Crossthaite, Cumberland, MASON; Topsy Pike, Ashwood Dale, Derby, Miss M. COBBE; Hillsborough Demesne, \*Co. Down, STELFOX, in *Ir. Nat.*, 1924, with *H. serratifrons*, var. *grandidens*.

1588. *H. SURREJANUM* F. J. H. Brook, Surrey, Mrs WEDGWOOD.

1601. *H. PINNATIFIDUM* Lönnr. Castle Campbell, Stirling, H. A. EVANS.

1607. *H. MACULATUM* Sm. On old pit-heaps, Midsomer Norton, N. Somerset, DOWNES.

1628. *H. CANTIANUM* F. J. H. Pyrford, Surrey, DRUCE.

\*1630. *H. RIGIDUM* Hartm. Eskdale, Cumberland, Miss M. COBBE.

\*1631. *H. PRENANTHOIDES* Vill. Churnet Bridge, Staffs, Miss M. COBBE.

1632. *H. STRICTUM* Fr. Glenarm, Antrim, Mr JUSTICE TALBOT.

1633. *H. CORYMBOSUM* Fr. Hevingham, Norfolk, Nicholson *Additions*. Var. *PYCNOTRICHUM* Dahlst. St John's Chapel, Durham, Rev. H. H. HARVEY.

\*1638. *H. UMBELLATUM* L. Fenland, Yaxley, Hunts, *Hb. Marchioness of Huntly*.

1640. *HYPOCHOERIS GLABRA* L., var. *EROSTRIS* Coss. & Germ. Dersingham, Norfolk, LITTLE, *l.c.*

The following *Taraxaca* have been identified by H. DAHLSTEDT. They are mostly New County Records.

1645. *TARAXACUM ALATUM* Lindb. f. Farthingstone, Northants, 1923, DRUCE, as a modification.

1645. *T. ANGLICUM* Dahlst. Grendon Underwood, Bucks [AA. 54], DRUCE,

1645. *T. BRACHYGLOSSUM* Dahlst. Llanberris, Carnarvon; Bodorgan, Anglesey; Byfleet, Surrey, DRUCE; Wall Westcott, near Callington, Cornwall, THURSTON.

1645. *T. DAHLSTEDTII* Lindb. f. Hanslope, Bucks, DRUCE.

1645. *T. DECIPIENS* Raunk., forma. Wenlock Edge, Salop, 1924; Byfleet, Surrey, DRUCE.

1645. *T. DILATATUM* Lindb. f. Woodleys, Oxford [AA. 82]; Goring, Oxford [AA. 104], 1923, DRUCE.

1645. *T. DISSIMILE* Dahlst. Belonging to this group are plants from Tenby, Pembroke, April 1923, and Ivinghoe, Bucks, 1922, DRUCE.

1645. *T. DUPLIDENS* Lindb. f. Rozel, Jersey, June 1923, DRUCE.

1645. *T. FAROENSE* Dahlst. Golspie, E. Sutherland, 1923; Ben Garve, Inchnadamph, Bettyhill, W. Sutherland; Cnochan, W. Ross, 1923, DRUCE; Black Craig, Orkney, 1923, Col. H. H. JOHNSTON; Lerwick, Zetland, DRUCE.

1645. *T. FULVUM* Raunk. Near Ranson's distillery, Hitchin, Herts, June 1922, LITTLE.

1645. *T. LACISTOPHYLLUM* Dahlst. Stansteadbury, Herts, Miss TROWER and DRUCE; lane past Haye, Callington, Cornwall, THURSTON; near Biddesdon, Wilts; Tenby, Pembroke, 1923; Wenlock Edge, Salop, 1924; Stanton St John, Oxon; near Bristol, W. Gloucester; Pontac, Jersey, DRUCE.

1645. *T. LONGISQUAMEUM* Lindb. f. Woodleys, Oxon [AA. 73 and 84], 1922; site of the Bicester Aerodrome, Oxon, 1924 [BB. 20], as a forma; Chadlington, Oxon, 1923, DRUCE; seawall, East Mersea, N. Essex, May 1922 [2010], BROWN, as a forma.

1645. *T. NAEVOSIFORME* Dahlst. Cnochan, W. Ross, 1923; Smoo, W. Sutherland, 1923; Silloth, Cumberland, 1923, DRUCE; Bay of Sandside, Graemsay, Orkney, June 1924, Col. H. H. JOHNSTON.

1645. *T. NAEVOSUM* Dahlst. Silloth, Seascale, Cumberland, 1923; Ballater, S. Aberdeen, 1923; Lerwick, Zetland, 1922, DRUCE, as a modification.

1645. *T. NORDSTEDTII* Dahlst. Hanney, N. Essex, 1920, DRUCE; Wakes Colne, N. Essex [2049], 1923, BROWN; Callington

Lane, Cornwall, 1923, THURSTON; Llanberris, Carnarvon, 1924; Oxwich Bay, Glamorgan, 1923, DRUCE.

1645. *T. POLYODON* Dahlst. Radyr, Glamorgan, 1923, DRUCE.

1650. *LACTUCA VIROSA* L., but with characters intermediate with *L. SERRIOLA*. Langley, Bucks, GWATKIN; near Cirencester, Gloster, GREENWOOD.

1655. *SONCHUS PALUSTRIS* L. Between North Woolwich and Barking Creek, S. Essex, abundantly, Sir RICKMAN GODLEE. Vide spec. in *Herb. Vaughan*. Haddiscoe, Rumbelow, Norfolk, Nicholson *Additions*.

1658. *S. OLERACEUS* L., var. *CILIATUS* (Lam.) Dr. Stokesay, Salop; Llanberris, Carnarvon; Portmadoc, Merioneth; Newport, Monmouth, DRUCE.

†1660. *TRAGOPOGON PORRIFOLIUS* L. Near Malpas, Cheshire, WADE.

1663 (10). *SCORZONERA HUMILIS* L. Very plentiful in the original locality near Ridge, Dorset, N. SANDWICH. The bordering fields are different in character which may account for its being confined to two meadows.

†1674. *CAMPANULA RAPUNCULOIDES* L. Refuse tip, Middlewich, Colchester, BROWN; escape Gilton, Hunts, *Hb. Marchioness of Huntly*.

†1676. *C. PERSICIFOLIA* L. Still in Thorparch Woods, W. Yorks, BUTCHER.

1692. *ANDROMEDA POLIFOLIA* L. Still in Chartley Moss, Staffs. Vide sp. ex Sir R. CURTIS.

1695. *ERICA TETRALIX* × *VAGANS* = *E. WILLIAMSII* Druce in Gard. Chron., 1911. Mr P. D. Williams, the original discoverer of this hybrid, has sent me a specimen from another plant gathered on October 14 by Miss LAVENDER WILLIAMS a mile from the original specimen.

1708. *PYROLA MEDIA* Sw. Gawthorp Camp, Pickering, N. Yorks, FLINTOFF.

1709. *P. MINOR* L. Wood near Roscrea, Tipperary, PHILLIPS in *Ir. Nat.*, December 1924.

1712. *HYPOPITYS HYPOPITYS* (L.) Dr., comb. nov. Thornton Dale, N. Yorks, FLINTOFF.

1713. *LIMONIUM LIMONIUM* (L.) Dr. Near Mucknash, Glamorgan, B. KING; Ray Island, N. Essex, DRUCE; St Osyth's Marsh, N. Essex; Southwold, Suffolk; Canon VAUGHAN. *L. LIMONIUM* × *HUMILE* = *L. NEUMANNI*. Hayling Isle, S. Hants, DRUCE; Arne, Dorset, N. SANDWICH.

1724. *PRIMULA ELATIOR* × *VERIS*. Near Bury St. Edmunds, Hon. Mrs EVELYN WOOD.

1743. *ANAGALLIS FEMINA* Mill. St Peter's, Guernsey, Mrs HICHENS.

1745. *CENTUNCULUS MINIMUS* L. Eskdale, Wastdale, Cumberland, Miss M. COBBE.

1750. *VINCA MAJOR* L. Dolrhyd Wood, Dolgelly, Merioneth, WEBB; between Hinton and Cottenham, Cambridge, SHAW.

1754. *CENTAURIUM CENTAURIUM* (L.) Dr., var. *ELLIPTICUM* (Dr.). See *Rep. B.E.C.* 569, 1919. Abundant and beautiful on the Quenvais, Jersey, DRUCE. Mr B. REYNOLDS sent me a specimen from Creux Harbour, Sark, which he thought might be *E. Monnerii* Corb. but it is not that plant.

1757. *C. PULCHELLUM* Druce. Aberdovey, Merioneth, Canon VAUGHAN.

1767. *NYMPHOIDES NYMPHAEOIDES* (L.) Dr. Syston Park, Lincs, Miss LANDON.

†1769. *COLLOMIA LINEARIS* Nutt. Ashton Gate, 1922; Avonmouth Dock, W. Gloster, 1924, SANDWICH.

†1779. PHACELIA PARVIFLORA Pursh. Burton-on-Trent, Derby, F. W. ANDREWS.

†1787. LAPPULA LAPPULA (L.) Dr. Truro, Cornwall, BORLAISE; Ravenglass, Cumberland, Miss A. B. COBBE.

†1789 (6). BENTHAMIA MENZIESII (Nels. & M'Br.) Dr. Sleaford, Lincs, Miss LANDON; Leigh, near Westbury, Wilts, E. JENKINSON; Goonhavern, Cornwall, THURSTON; Brackenridge tips, Lanark, 1923, GRIERSON; Biggleswade, Beds, 1923, C. COURSE and M. C. WILLIAMS, ex LITTLE. Det. as *Amsinkia*. THELLUNG.

\*†1791. SYMPHYTUM TUBEROSUM L. In a copse and adjoining lane, Liphook, Hants, houses in proximity, J. A. WILLIAMS. I have queried its indigenuity, but further observations would be welcome.

†1798. ANCHUSA SEMPERVIRENS L. Narborough, Leicester, BEMROSE.

\*1814. MYOSOTIS REPENS Don. Filby, E. Norfolk, A. BENNETT. Queried in *Top. Bot.*

†1816. M. PYRENAICA Pourr. Mayals, Glamorgan in an orchard. WEBB, teste WADE.

1817. M. SYLVATICA Hoffm. Near the stream which comes from Snowden at Llanberris, Carnarvon. It may owe its origin to gardens as the stream passes through part of the village, but it looks wild enough. This corroborates it as a Carnarvon plant for which county Robinson is the authority in *Top. Bot.*, though its indigenuity may be doubtful. Almost all of Robinson's records for the county have been confirmed, and I have long felt that his memory has been too harshly assailed by Mr Britten. At one time Robinson was a hard-working and intelligent botanist, a writer to the *Bot. Soc. of Edinburgh* (*cf.*, a paper on the Batrachian Ranuncul), to *Science Gossip*, etc. Mr H. C. Watson must have been convinced of his bonafides and ability or he would not have accepted his county lists. On one occasion Mr Britten had an interview with him and the result was that the relations were strained, and Robinson was always re-

ferred to in an unpleasing manner. We may probably truthfully assert that his early records may be safely accepted, bearing in mind his standard of knowledge and the few opportunities he had of consulting good herbaria. Indeed, in any catalogue of plants there is always a loophole for errors. His leisure time was limited as he was a chemist by business. I am afraid he knew the "pit's seductive brink," and this may have been a gradually increasing temptation. Although chosen by Ball and Hocker to accompany them to Morocco it seems evident that on that journey he was not a success. But I could never bring myself to believe he intentionally made wrong records or in any way tried to impose on us false statements. Mr Gwatkin has sent me from Potterne, Wilts, a plant which may be *sylvatica*, but fresh specimens are desirable before putting that species on record.

†1818. *M. DISSITIFLORA* Baker. Woodleys, Oxon, of garden origin, DRUCE.

1821. *M. VERSICOLOR* Sm., var. *PALLIDA* Bréb. Polperro, Cornwall, RILSTONE.

†1830. *CERINTHE MINOR* L. Guildford, Surrey, F. CLARKE.

†1843. *CUSCUTA SUAVEOLENS* Ser. Growing on *Nepeta Mussini* in the Victoria Park at Cardiff. Miss Vachell kindly directed me to it last October when it was in fragrant flower.

†1844. *LYCOPERSICUM LYCOPERSICUM* (L.) Karst. Abingdon, Berks, DRUCE.

†1848. *SOLANUM ROSTRATUM* Dunal. Balford Mills, N. Essex, 1893, Canon VAUGHAN.

†1851. *PHYSALIS ALKEKENGII* L. Ryde, Isle of Wight, LONG, ex RAYNER.

†1851 (4). *P. ANGULATA* L. Baptist Mills, Bristol, SANDWITH.

†1863. *VERBASCUM VIRGATUM* Stokes. Aberdovey, Merioneth, Mrs DEBENHAM.

†1864 (3). *V. SINUATUM* L. Barry Dock, Glamorgan, 1924, R. L. SMITH.

1865. *V. PULVERULENTUM* Vill. Probably this, teste THELLUNG, at Cardiff. Shown me by MELVILL and SMITH, but quite untypical, DRUCE.

1867. *V. NIGRUM* L. A very valuable gathering was sent from near Headbourn Worthy, Hants, by H. L. GREEN. One plant had very broad and almost glabrous leaves, a second had small narrow leaves with a soft pubescence, a third was a monstrous condition in which the inflorescence had become extraordinarily compound. The pedicels were compound, and long—one inch or more—and themselves bore a capitate cluster of abortive sepaloid flowers.

†1869. *V. CHAIXII* Vill. Near Brighton, Sussex, H. D. ROBERTS.

†1872 (11). *ALONSOA INCISIFOLIA* R. & P. Winsley, Somerset, Mrs SMYTH PIGOTT.

†1873. *LINARIA DALMATICA* Mill. Saltersford Waterworks, Lincs, Miss S. STOW; Birkdale, Lancashire, H. BRITTON; Cardiff, DRUCE.

1873. *L. LINARIA* × *REPENS*. Cholsey Hill, ? Berks, Mr TATLOW.

\*1878. *L. REPENS* Mill. Near Welbeck, Notts, on sandy ground near a wood far removed from any garden, GOULDING.

†1883 (3). *L. RUBRIFLORA* R. & C. Walls of Malling Abbey, Kent, F. CLARKE.

1884. *L. SPURIA* Mill., peloric form. Teversham, Cambridge, SHAW.

1893. *SCROPHULARIA ALATA* Gil. By the Eden at Temple Sowerby, Westmorland, Rev. H. H. HARVEY.

1894. *S. NODOSA* L., var. *BOBARTII* Pryor. Near Seascale, Cumberland, R. H. WILLIAMSON. Excellent specimens with flowers wholly yellowish green. Also from Eskdale Green, Cumberland, Miss M. COBBE,

†1896. *S. CANINA* L. In two different forms at Cardiff. Shown me by MELVILL and SMITH, 1924. Both are referred to this by THELLUNG.

†1899. *MIMULUS MOSCHATUS* Dougl. Boggy place, New Forest, S. Hants, RAYNER; Upottery, Devon, 1893, very abundant in the neighbourhood, Miss WALKER.

†1904. *ERINUS ALPINUS* L. On a wall at Downpatrick, Down, Col. NUGENT HEAD.

†1906 (2). *VERONICA LONGIFOLIA* L. Maryborough Coup, Lanark, GRIERSON.

†1906 (3). *V. SPURIA* L. Private roadway, Ditchling, Sussex, H. D. ROBERTS.

†1906 (5). *V. TEUCRIUM* L. Roadside near Ascot, Berks, Miss CLARIDGE.

1931. *EUPHRASIA STRICTA* Host. Holland, S. Ronaldshay, Orkney, August 1824, Col. H. H. JOHNSTON, teste LUMB.

1932. *E. BOREALIS* Wetts. Abundant and generally distributed in Zetland and very variable in colour and habit, DRUCE; Torquay, S. Devon, 1924, WATERFALL. Distributed this year.

1933. *E. BREVIPIILA* B. & G. Holland, S. Ronaldshay, Orkney, August 1924 [R.N. 2776], Col. H. H. JOHNSTON, teste LUMB; St Ouen's, Jersey, 1924, DRUCE; Kirkby Stephen, Westmorland, Mrs MASON.

1934. *E. NEMOROSA* H. Mart., var. *CILIATA* Drabble. Plemont, Jersey; DRUCE; Alton, N. Hants, *Hb. Canon Vaughan*; Lurgashall, Sussex, BURDON.

1935. *E. CURTA* Fr. Birkdale, Lancashire, 1924, H. BRITTEN [N. 2], is var. *GLABRESCENS*, teste LUMB. This is also the Tickenham, N. Somerset plant, 1924, of J. W. WHITE. Urafirth, Setter, etc., Zetland; St Brelade's, Jersey, 1924, DRUCE.

1936. *E. OCCIDENTALIS* Wetts. Mullion, Cornwall, 1924. WATERFALL.

1939. *E. MICRANTHA* Fr. (*GRACILIS*). Tardru, Antrim, 1923, S. A. BENNETT.

1940. *E. SCOTICA* Wetts. New Forest, S. Hants, RAYNER; plentiful and variable in Zetland, DRUCE.

1940 (2). *E. MINIMA* Fries. Gairy Hill, S. Ronaldshay, Orkney [R.N. 2778], Col. H. H. JOHNSTON, teste LUMB; Clawton Holsworthy, N. Devon, H. H. HARVEY, teste PEARSALL.

1941. *E. ROSTKOVIANA* Hayne. Between Torpantau and the Brecon Beacons, also Craig-Fan-ddu, Brecon, September 1924, WADE; Kittow's Moor, N. Cornwall, LITTLE.

1943. *E. KERNERI* Wetts. Avon Gorge, Clifton, W. Gloster, 1924, WADE and BROWN; St Ouen's, Jersey, 1924, DRUCE; Keswick, Cumberland, H. H. HARVEY.

\*1944. *E. SALISBURGENSIS* Funck. On a very steep rock ledge in a corrie at 1100 feet, Binevenagh, Co. Londonderry, TRAPNELL.

1948. *BARTSIA ODONTITES* Huds., var. *LITTORALIS* Reichb. Durness, W. Sutherland, TRETHERWY.

1960. *MELAMPYRUM PRATENSE* L., var. *HIANS* Dr. Abersychan, Monmouth, WADE; Eskdale, Wastdale, Cumberland, Miss M. COBBE. Var. *MONTANUM* Johnst. Goathland, N. Yorks [378], FLINTOFF, spec. not seen; Blorenge, Monmouth, WADE.

1974. *LATHRAEA SQUAMARIA* L. Kingthorpe, near Pickering, N. Yorks, FLINTOFF.

1976. *UTRICULARIA MAJOR* Schm. Stow Bedon, W. Norfolk, F. ROBINSON, ex Nicholson *Additions*.

1977 (2). *U. OCHROLEUCA* Hartm. Foulden, Norfolk, Nicholson *Additions*; peat bogs, Appin Moor, above Coshieville, M. Perth, HAGGART; Inchnadamph, W. Sutherland; Brou Loch, Zetland, DRUCE; Nether Wastdale and near Wastdale, Cumberland, Miss A. B. COBBE.

1982. *Pinguicula vulgaris* L. Small specimens at the outlet of Maffrafield Water, Zetland, but not *P. alpina* L., DRUCE.
1988. *Mentha rotundifolia* Huds. Waltham, Leicester, BEM-ROSE.
- †1989. *M. alopecuroides* Hull. Old Colwyn, Denbigh, Miss A. WILKINSON.
1994. *M. aquatica* L., var. *lupulina* Briq. Staplers, St Helen's Green, Isle of Wight, STRATTON. Var. *capitata* Briq. Brixton, Isle of Wight, STRATTON.
1999. *M. rubra*, var. *rarapila* Briq. Bagwich Farm, Isle of Wight, STRATTON.
2000. *M. arvensis* L., var. *obtusifolia* Briq. Pan Moor, Isle of Wight, 1867, STRATTON.
2004. *Origanum vulgare* L., var. *albiflorum* Lej. Lane near Seascale, Cumberland, HELLON; Colerne, Wilts, 1899, Miss WALKER.
2007. *Thymus pulegioides* L. Alton, N. Hants, DRUCE.
- 2007 (2). *T. glaber* Mill., var. *verticillatus* Lange. On roadside between Brandean and West Meon, N. Hants, September 1900, Canon VAUGHAN, as *Serpyllum*.
2008. *T. lanuginosus* Mill., teste RONNIGER. Alton, N. Hants, DRUCE.
2008. *T. pycnotrichus* Ronn. Boddam, Zetland, DRUCE.
2008. *T. britannicus* Ronn. Aithvoe, Scalloway, Quendale, Zetland, DRUCE.
2008. *T. drucei* Ronn. Aithvoe, Cliva Hill, Zetland, DRUCE.
2012. *Satureia nepeta* Scheele. Cardiff Docks, DRUCE, MELVILL and SMITH; \*Orton Longueville, Hunts, *Hb. Marchioness of Huntly*.
- †2019 (2). *Salvia sclarea* L. Hamble Common. S. Hants, RAYNER.

2023. *S. PRATENSIS* L. Edge of clover field, Hungerford, Berks, Major BATES VAN DE WEYER.

†2025. *S. NEMOROSA* L. With *S. VERTICILLATA* L. Woodhall, Lincs, 1917-24, ALSTON; Silloth, Cumberland, DRUCE and WILLIAMSON.

†2029. *S. HORMINUM* L. Naturalised at Welbeck, 1916-17, 1922-23. It was first observed at Kirkby Notts by Thomas Clarke in 1782, R. W. GOULDING *in litt.*

2039. *DRACOCEPHALUM PARVIFLORUM* Nutt. Byfleet, Surrey, 1923, Lady DAVY.

2044. *PRUNELLA VULGARIS* L., var. *NEMORALIS* Beg. Lambridge Wood, Oxon, DRUCE.

†2048. *SIDERITIS MONTANA* L. Woodhall Spa, Lincs, ALSTON. Det. THELLUNG.

†2049. *MARRUBIUM ALBUM* L. Woodbridge, Suffolk; Cherry Hinton, Cambridge, SHAW.

†2049 (2). *M. PEREGRINUM* L. Woodhall, Lincs, 1917-24, ALSTON; Portishead, N. Somerset, 1895, Miss WALKER.

2056. *STACHYS AMBIGUA* Sm. Bontnewydd, Monmouth, WADE; Nampcan, Cornwall, THURSTON; Eskdale, Cumberland; Manifold Valley, Staffs, Miss M. COBBE.

2056. *S. SYLVATICA* L., with abnormal flowers, some being regular. See *Rep. B.E.C.* 114, 1911, Knuth *Handb. Pollin.* 119, and Bartlett in *New Phyt.* 139, 1909. Near Winton, H. L. GREEN.

2059 (2). *S. RECTA* L. Portishead, N. Somerset, 1898, Miss WALKER.

2060. *S. OFFICINALIS* Trev., var. *ALBA*. Newton Abbot, S. Devon, C. F. COOKE.

2062. *GALEOPSIS TETRAHIT* L., var. *NIGRICANS* Bréb. Upware, Cambridge, SHAW.

†2065. *LEONURUS CARDIACA* L. Penmaen Rhos, Denbigh, Miss A. WILKINSON; Cardiff, Glamorgan, DRUCE, MELVILL and SMITH. Var. *HIRSUTA* Hornem. Woodhall, Lincs, 1917-24, ALSTON.

2068. *LAMIUM ALBUM* L., forma *PURPUREA* Dr. Basildon, Berks, Mrs WEDGWOOD.

†2069. *L. MACULATUM* L. Sleaford, Lincs, Miss LANDON; Groby, Leicester, BEMROSE.

2077. *BALLOTA NIGRA* L., var. *ALBA* (Thuill.). Stevenage, Herts, H. L. GREEN.

†2089. *PLANTAGO INDICA* L. Par, Cornwall, MEDLIN, ex THURSTON; Cardiff, Glamorgan, R. L. SMITH. Det. THELLUNG.

†2091. *P. HUDSONIANA* Dr. Wastwater, Cumberland, Miss M. COBBE.

2092. *P. LANCEOLATA* L. Miss M. A. WILSON sends from Southbourne, Bournemouth, some monstrosities of this species—(1) at the base of the main spike, axillary spikes; (2) with bracteate inflorescence presumably by division of the apical cell, and (3) with a simple melanoid spike, perhaps caused by fungal growth. She also sends four photographs of other forms found near Southport. Mr W. W. WILSON forwards from Alford, N. Aberdeenshire, a two-headed form of the same species. Var. *TIMBALI* (Jord.). Frilford, Berks, DRUCE, teste FRASER.

†2095. *P. LAGOPUS* L. St Agnes, Scilly, 1923, DOWNES.

2098. *P. MEDIA* L. Mr GWATKIN sends from Potterne, Wilts, a curious form simulating *major* but not coming under the var. *lanceolatiformis* Dr.

†2110. *AMARANTHUS RETROFLEXUS* L. Hythe Quay [2014], 1922; Yiewsley, Middlesex [2180], 1923, BROWN; Aldershot, Hants, 1924. Mrs GIBSON; Bulford Mills, Essex, 1893, Canon VAUGHAN; Long Meadow, Cambridge; Woodbridge, Suffolk, SHAW. Var. *DELILEI* Thell. Cardiff, DRUCE, MELVILL and SMITH; Shalford, Surrey, 1923, CORRIE CHASE.

†2112. *A. ALBUS* L. Northgate St., Colchester [2015], 1922, BROWN; Cardiff, DRUCE, MELVILL and SMITH.

(All the Amaranths are determined by Dr Thellung.)

2117. *CHENOPODIUM RUBRUM* L., var. *PSEUDOBOTRYOIDES* Wats. Kinghorn Loch, Fife, SYME. Agreed to by MURR. A small form of type *rubrum* from Guernsey, 1924, Mrs M'CREA. Forma *ANGUSTIFOLIA*. Kelvedon, Essex, 1889, Canon VAUGHAN; Slough, Bucks, 1902, DRUCE.

2118. *C. BOTRYODES* Sm. Still at Hayling Isle, S. Hants, Rev. E. REYNOLDS.

2121. *C. URBICUM* L. Woodbridge, Suffolk; Snoreham, Essex, SHAW. Var. *INTERMEDIUM* Moq. Hayling Isle, 1870, STRATTON.

2122. *C. MURALE* L., f. *MICROPHYLLUM*. L.N.W.R. rubbish-tip, Ipswich, Suffolk [2128]; Colchester [2127], BROWN.

†2123. *C. OPULIFOLIUM* Schrad. Ely, Cambridge, SHAW. Var. *MUCRONULATUM* G. Beck. Bristol, N. SANDWITH. × *ALBUM* = *C. PREISMANNI* Murr. Shirehampton, N. Somerset, N. SANDWITH, teste MURR, who says "planta uberans minus dentata." Hythe Quay, Colchester [2220], BROWN; do. [AA. 897], 1924, DRUCE. This verges to *Borbassii*, teste MURR. Colchester, typical [AA. 896], DRUCE.

2124. *C. ALBUM* L., sub-sp. *PAUCIDENS* Murr. Abbeyfield, Colchester [2136], BROWN; Odiham, N. Hants, DRUCE. Sub-sp. *VIRIDE* (L.). Hythe Quay, Colchester [2141], BROWN. Sub-sp. *VIRIDESCENS* (St Am.). Abbeyfield, Colchester [2143 and 2144], BROWN; do. [2138], BROWN; St Ouen's, Jersey, DRUCE; Staplers, Isle of Wight, STRATTON, the last verging to *pseudo-Borbassii* Murr. [2140], Colchester, verging to this, MURR. Colchester [2141] is a narrow-leaved form, BROWN; Eastleigh, S. Hants, Miss TODD. Sub-sp. *GLOMERULOSUM* Reichb. Cardiff, DRUCE; also [AA. 895] from Colchester which by its longly acuminate leaves approaches *lanco-latiforme*, teste MURR, DRUCE. Sub-sp. *LANCEOLATUM* Muhl. Owen Parry's Quay, Colchester [2143], BROWN. Sub-sp. *PEDUNCULARE* (Pers.) Bert. East Medina Mill, Isle of Wight, STRATTON.

2124. *C. ALBUM* L., type. Colchester [2137]; do. [2221], BROWN; St Helen's, Isle of Wight, STRATTON; Alton, N. Hants, CANON VAUGHAN. Var. *CANDICANS* (Lam.). Freshwater, Isle of Wight, STRATTON; Colchester [2133], BROWN. Sub-sp. *PSEUDO-BORBASII* Murr. St Philip's, Bristol, July 1924, DRUCE. Sub-sp. *SERRATO-SINUATA* Murr. [2145] Colchester, BROWN.  $\times$  *OPULLIFOLIUM* = *C. BORBASII* Murr. Colchester, a handsome plant growing on waste broken ground near the Quay, October 1924 [AA. 900], DRUCE.

2124. *C. LANCEOLATIFORME* Murr. Brislington, N. Somerset, N. SANDWITH; Bishopstoke, Hants, Miss TODD.

2127. *C. GLAUCUM* L. Woodbridge, E. Suffolk, SHAW; Maryborough Coup, Lanark, GRIERSON.

†2130. *C. AMBROSIODES* L. A narrow leaved state, Stapledon, Bristol, N. SANDWITH; Brackenridge Camp, New Monksland, Lanark, GRIERSON.

†2130 (5). *C. BERLANDIERI* Moq. [AA. 898] Colchester, October 1924, DRUCE.

†2131. *C. STRIATUM* Kras  $\times$  *ALBUM* = *SUBSTRIATUM* Murr. Cardiff Dock, DRUCE; Shirehampton, N. Somerset, N. SANDWITH. Sub-sp. *PSEUDOSTRIATUM* Fritsche. Cardiff Dock, October 1924, DRUCE.

†2131 (3). *C. HIRCINUM* Schrad. St Clare Road, Colchester [2120], BROWN. Var. *SUBTRILOBUM* Issl. Colchester [2130], BROWN.

†2135. *ROUBIEVA MULTIFIDA* Moq. Ryde, Isle of Wight, LONG, ex RAYNER; old reinount camp, Swaythling, S. Hants, 1922, RAYNER, as *Artemisia rupestris*. Det. THELLUNG.

†2135 (5). *MONOLEPIS NUTTALLIANA* Greene. Haslemere, W. Sussex, BURDON.

†2145. *ATRIPLEX TATARICA* L. In great quantity at Barry Docks, Cardiff, October 1924. Shown me by MELVILL and SMITH. Det. THELLUNG.

2149. *A. GLABRIUSCULA* Edmondst., forma *BABINGTONII* Dr. Turnberry, Ayr, SHAW.

2150. *A. MARITIMA* Hall. Turnberry, Ayr, SHAW.

2153. *A. PEDUNCULATA* L. has been found in an old locality on the E. Suffolk coast by Mr H. S. REDGROVE.

†2153 (10). *AXYRIS AMARANTOIDES* L. Woodbridge, Suffolk, SHAW; Leicester, *Leic. Mus.*; Christchurch, S. Hants, Mrs ROTHWELL, ex RAYNER; Birkdale, Lancashire, H. BRITEN.

2157 (2). *SALICORNIA DOLICHOSTACHYA* Moss. Steart Isle, Somerset, H. S. THOMPSON in *Journ. Bot.* 2, 1924.

2160. *S. RAMOSISSIMA* Woods. Martlesham Creek, E. Suffolk, SHAW; Weymouth, Dorset, H. S. CASEY.

2163. *S. APPRESSA* Dum. Southwold, E. Suffolk, SHAW.

2168. *SALSOLA KALI* L., var. *TENUIFOLIA* Mey. Woodbridge, Suffolk, SHAW.

2171. *POLYGONUM BISTORTA* L. Llechryd, Radnor; Dolgelly, Merioneth, WEBB.

†2183. *P. PATULUM* Bieb. Barry, Glamorgan, DRUCE, MELVILL and SMITH. Det. THELLUNG.

†2185 (2). *P. EFFUSUM* Meisn. Christchurch, S. Hants, Mrs ROTHWELL and RAYNER.

2191. *P. CUSPIDATUM* S. & Z. Pitlochry, M. Perth; also in Glamorgan, Carnarvon, Anglesey, Brecon, Merioneth, and Flint, WEBB.

†2192. *FAGOPYRUM FAGOPYRUM* (L.) Karst. Hickling Fen, Lincs, M. SHARPE, ex Miss LANDON.

†2193. *F. TATARICUM* Gaertn. Ryde, Isle of Wight, LONG, ex RAYNER.

\*2195. × *RUMEX WEBERI*. This is probably the *R. maximus* from Manorbier, Pembroke, recorded by PUGSLEY in *Journ. Bot.* 105, 1924.

†2199. *R. ALPINUS* L. Eskdale, Cumberland; Ramshaw rocks, Staffs, Miss M. COBBE.

2200. *R. OBTUSIFOLIUS* × *PULCHER*. Hitchin, Herts; Chichester, W. Sussex, LITTLE in *Journ. Bot.* 330, 1924.

\*2207. *R. MARITIMUS* L. Near Gresford, Denbigh, D. A. JONES in *litt.*

†2210 (6). *R. SALICIFOLIUS* Weinm. Woodbridge, Suffolk, SHAW; Colchester, DRUCE; Walney Isle, S. Lancs, Miss M. COBBE.

†2210 (13). *R. OBOVATUS* Danser. Possil, Lanark, GRIERSON; Christchurch [1 & 2], RAYNER.

2215. *DAPHNE MEZEREUM* L. Still at Ling Ghyll, Rev. H. H. HARVEY.

†2216. *HIPPOPHAE RHAMNOIDES* L. Beaumaris, Anglesey, WEBB; Bawdsey, E. Suffolk, mostly planted, SHAW.

2218. *THESIUM HUMIFUSUM* DC. Devil's Dyke, near Cranswick, W. Norfolk, A. LUDDINGTON; Barry Docks, Glamorgan, R. L. SMITH.

†2229. *EUPHORBIA VIRGATA* W. & K. In a barley field near Burford, Cambridge, SHAW; near Wye, Kent, Miss COBBE; Hassocks, Sussex, H. T. ROBERTS. Var. *ESULIFOLIA* Thell. Ashtead [2650], Surrey, Banstead [2695], BRITTON. Det. THELLUNG.

2246. *ULMUS PLOTII* Dr. Sketty iska, Glamorgan, WEBB.

†2247. *CANNABIS SATIVA* L. Woodbridge, Suffolk, SHAW.

2250. *URTICA DIOICA* L., var. *ANGUSTIFOLIA* W. & G. Dulverton, Somerset, Miss TODD; Sheringham, Norfolk, Nicholson *Additions*; Melmerby, Cumberland, MASON. This was the form *INERMIS*.

†2253 (5). *HELXINE SOLEROLII* Req. Mayals, Glamorgan, WEBB.

†2264. *QUERCUS ILEX* L. Naturalised in abundance on east side of St Boniface Down, Isle of Wight, RAYNER.

\*†2267. *SALIX PENTANDRA* L. On River Inny, near Davidstone,

N. Cornwall, *LITTLE in litt.*, probably planted; near Leicester, *Leic. Mus.*; as a narrow-leaved form, planted at Girlsta, Zetland, DRUCE.

2274. × *S. SMITHIANA* Willd. Alvington, Isle of Wight, STRATTON.

2276. × *S. AMBIGUA* Ehrh. A small, neat-leaved plant growing with both parents at Laxo, Zetland, DRUCE.

\*2285. *S. HERBACEA* L. Snaefell, Isle of Man, on Skiddaw slates, TEMPLEMAN. An interesting addition to the Flora.

2299. *HYDROCHARIS MORSUS-RANAE* L. On a moor between Freshwater and Yarmouth, Isle of Wight, 1908, D'URBAN.

2300. *STRATIOTES ALOIDES* L. Between Tattershall and Woodhall Spa, Miss LANDON.

2301. *MALAXIS PALUDOSA* Sw. Wastwater, Cumberland. Miss A. B. COBBE.

2304. *NEOTTIA NIDUS-AVIS* Rich. Thornton Dale, N. Yorks. FLINTOFF.

2310. *GOODYERA REPENS* Br. Hopeman, Moray, near the cliff edge (*Gard. Chron.* ii. 53, 1924). It was at first thought to be *Spiranthes*. See *Rep. B.F.C.* 212, 1924, where doubtless *Goodyera* (not, *Spiranthes*, as it was called) was found near Carrbridge.

2315. *HELLEBORINE PALUSTRIS* Schrank. High Dalby Marsh, Thornton Dale, N. Yorks [N. 365], FLINTOFF.

2316. *H. LATIFOLIA* (All.) Dr., sens lat. Stockbury, Herts, in two forms, one possibly *purpurata*, Mrs BOSTOCK; wood in Berks, TROLLOPE.

\*2316 (2). *H. LEPTOCHILA* (Godf.). Lambridge Wood, Oxon. Distributed this year. Near Fawley, Bucks, DRUCE.

2318. *H. PURPURATA* (Sm.) Dr. Woodbury Common, S. Devon, D'URBAN.

2319. *H. ATROPURPUREA* (Rafn.). Durness, W. Sutherland, very nice specimens, A. W. TRETHERY.

2324. *ORCHIS MORIO* L., var. *CHURCHILLII* Dr. Great Baddon, Essex. *Hb. Canon Vaughan*; Winchester, DRUCE.

2326. *O. INCARNATA* L., var. *PULCHELLA* Dr. Bally Vaughan, Clare, Mrs WEDGWOOD.

2326 (2). *O. PRAETERMISSA* Druce. [In three marshes north of Paris, STEPHENSON]; Winchester, Hants, H. L. GREEN; Castle Hill, N. Devon, Countess FORTESCUE; Kilmashoyne, Co. Dublin, altitude 900 feet, STELFOX; Kincardine, FRASER.

Var. *PULCHELLA* Dr. Loch Insh, Wigtown, Major BATES VAN DE WEYER; Gleniff, Sligo, Mrs WEDGWOOD.

× *FUCHSII*. Winchester [N. 3], Hants, H. L. GREEN.

× *MACULATA*. Hort. Stansteadbury, Herts, Miss TROWER.

2327. *O. MACULATA* L., vera, non Godf. Newlyn Downs, Cornwall, THURSTON; Ashdown Forest, Sussex; near Broughton-in-Furness, PEARSALL, showing great variation in colour and in size of flowers, some closely approaching the var. *MACROGLOSSA* Dr.; Harlech, Merioneth, D. A. JONES, thirty specimens of this gathering sent to Dr Keller of Aarau; Glyncorwg, Glamorgan, WEBB; most abundant on the sloping meadows about Llanberris and Nant Gwynant, Carnarvon, and on the hillsides above Portmadoc in Merioneth; in just such conditions as those described by Webster for his *O. maculata praecox*, Braemar, S. Aberdeen; the prevailing form over the Mainland of Zetland, DRUCE; [Common around Havre (*O. Fuchsii* not seen) P. SENAY in *Soc. Linn. Seine Marit.*; typical in Charente Valley, France, STEPHENSON; near Eschberg, Denmark and, teste *Herb Hafn.*, scattered throughout that country.]

Var. *LEUCANTHA* Dr. Lumsden, N. Aberdeen, W. WILSON.

2327 (2). *O. FUCHSII* Druce. Loch Insh, Wigtown, Major BATES VAN DE WEYER; Cheddon, E. Gloster, DRUCE.

2327 (3). *O. O'KELLYI* Dr. Charlbury, Oxon, beautiful specimens, POWELL. Mr A. W. Stelfox, having studied this plant on the Burren, says he has no doubt of its distinctness from albino *Fuchsii*

which grows round Dublin. See note in *Ir. Nat.*, 1924. Mr Fraser reports it for Surrey.

2331. *O. HIRCINA* Crantz. Fulbourn, Cambridge, A. H. EVANS; near Guildford, Surrey, F. CLARKE.

2333. *OPHRY'S FUCIFLORA* Reichb. Near Godmersham, Kent, Hon. Miss E. LEGGE.

2335. *O. APIFERA* Huds., var. *ALBA*. Near Lechlade, with *O. Trollii*, F. JONES; Benderg Bay and Killard Bank, Co. Down, E. L. LEAVER in *Ir. Nat.*, October 1924.

2336. *O. MUSCIFERA* Huds. Thornton Dale, N. Yorks, FLINTOFF.

2338. *HABENARIA GYMNADENIA* Dr., var. *DENSIFLORA* (Wahl.). Sawston Fen, Cambridge, SHAW.

2340. *H. VIRIDIS* Br. Hopeman, Moray, *Gard. Chron.* ii., 53, 1924. Claimed to be new to Moray but it is included in Gordon's *List* for that county (Elgin) in *Top. Bot.*

2343. *H. BIFOLIA* Br. Beaulieu, S. Hants. E. B. WILKINSON.

2350. *IRIS FOETIDISSIMA* L., var. *CITRINA* Bromf. One plant near Bath, Rev. ELLMAN.

2354. *CROCUS ALBIFLORUS* Kit. (*VERNUS* auct.). Malden, Surrey (as *C. vernus*), PUGSLEY in *Journ. Bot.* 83, 1925; pastures at Harleston, E. Norfolk, in abundance whence it was recorded in the *Bot. Guide* of 1805, W. G. CLARKE.

†2355. *C. VERNUS* Mill (*AUREUS* S. & S.). Fairy Hill, Gower, Glamorgan, WEBB.

†2361 (2). *SISYRINCHIUM CHILENSE* Hook. Probably this on a waste place, Christchurch, S. Hants, Mrs ROTHWELL and RAYNER.

†2377. *GALANTHUS NIVALIS* L. Dolrhyd Wood, Dolgelly, WADE. The same wood has also *Vinca major* so that it is probably due to planting.

†2390. *ASPHODELUS FISTULOSUS* L. Woodhall, Lincs, ALSTON,

2393. *ALLUM AMPELOPRASUM* L. Wiseman's Bridge, near Tenby, Pembroke, WALL.

2396. *A. VINALE* L., var. *BULBIFERUM* Syme. St Peter's, Jersey, DRUCE.

†2399. *A. ROSEUM* L. Cemetery, Falmouth, Cornwall, Mrs JESSOPP. Doubtless planted; it is the var. *BULBIFERUM*.

†2401. *A. TRIQUETRUM* L. Well naturalised and not intentionally planted in the grounds of Sir John Ross near Killowen, Co. Down, sent by Miss L. E. RICHARDS.

2403. *A. OLERACEUM* L. Undercliff, Isle of Wight, E. MARSDEN JONES and R. G. GWATKIN. Miss Todd's locality (*Rep. B.E.C.* 216, 1923) of Upton-on-Severn is probably in Worcester. The same applies to her record for *A. carinatum*.

†2406. *A. PARADOXUM* Don. Clyde Bank, Croxford, May, W. RENNIE, ex Miss I. M. HAYWARD.

†2408. *HYACINTHUS COMOSUS* L. Field near Frilford, Berks, with *Silene conica*, DRUCE; Stadhampton, Oxon, LESLIE SMITH.

2417. *MUSCARI RACEMOSUM* Lam. & DC. In a new locality in Oxon at Pool Bottom about 14 miles east of the Kiddington habitat. Found in good fruit in July. It grew in aboriginal turf. There is no doubt of its being native in the county. It is remarkable how even an attractive plant like this may have for so long remained unrecorded. It should be found in similar ground in Gloster. It occurs in Hampshire in these conditions. DRUCE.

2422. *COLCHICUM AUTUMNALE* L. Boughrood, Brecon; Pandy, Monmouth, WEBB.

2426. *JUNCUS MARITIMUS* Lam. Ravenglass, Cumberland, Miss M. COBBE.

2439. *J. COMPRESSUS* L. Woodbridge, E. Suffolk, SHAW.

2440. *J. GERARDI* Lois. Durness, W. Sutherland, TRETHERWY.

†2441. *J. TENUIS* Willd. Nether Wastdale, Miss M. COBBE;

Lady Hall, S. Cumberland, PEARSALL; Dove Junction, Cardigan, Miss TODD; Conway river banks, Carnarvon, W. G. CLARKE.

†2450. JUNCOIDES (LUZULA) NEMOROSUM Morong, var. RUBELLUM (Hoppe). St Blazey Gate, in Wesleyan chapel yard, MEDLIN; wood at St Bees, Miss BACON, ex Dr HELLON; Ballard's Drive (dist. 4), Hereford, F. M. DAY.

2452. J. PILOSUM × FORSTERI. On a wall at Surrey, Lady DAVY.

2461. TYPHA ANGUSTIFOLIA L. Thursley, Surrey, BIDDISCOMBE; \*Whitland, Pembroke, PUGSLEY in *Journ. Bot.* 105, 1924.

2486. POTAMOGETON POLYGONIFOLIUS Pourr. Cwn Bychan Lake, Merioneth, Miss TODD.

2488. P. COLORATUS Horn. Tickenham Marsh, N. Somerset, BROWN.

2516. RUPPIA ROSTELLATA Koch. Towyn, Merioneth; \*Whiteness, Zetland, DRUCE.

2520. ZOSTERA MARINA L. \*Whiteness, Zetland. New as the type, DRUCE.

†2525. APONOGETON DISTACHYUM Thunb. Keston Pond side, Kent, Miss MARJORIE BOSTOCK; pond at foot of Sussex downs, Miss COTTIS.

†2528 (3). CYPERUS DECLINATUS Moench, var. LIMBATUS. Bradford, Yorks, CRYER.

\*2529. ELEOCHARIS UNIGLUMIS Schultes. Arne, Dorset, N. SANDWITH.

\*2561. CAREX VESICARIA L. Moor between Langport and Muchelney, S. Somerset, DOWNES.

2575. C. FULVA Host. Blackdown, Shapwick Peat Moor, Somerset, W. D. MILLER.

2577. C. OEDERI Retz. St Ouen's, Jersey, DRUCE; Garw Fechan, Glamorgan, WEBB.

2581. *C. ORNITHOPODA* Willd. Miller's Dale and Cresbrooke Dale, Derby, Rev. D. P. MURRAY.

2593. *C. LIMOSA* L. Rannoch Moor, Argyll, Lady DAVY. A form with broader leaves and longer glumes approaching *magellanica* but perhaps best referred to the var. *planifolia* Kohts.

2600. *C. ELATA* All. Kelvedon, Essex, Mrs CAMPBELL.

2609. *C. LACHENALII* Schkuhr. In Dickie's station on Lochnagar, S. Aberdeen, at 3600 feet. Found there by me in 1892, and again this year by Miss VACHELL and others in July, and by myself and Mrs WEDGWOOD in August last, but then past its best. It was associated with its hybrid *C. helvola* which was in considerable quantity and reached a higher altitude, DRUCE.

2615. *C. PAIRAEI* Schultz. Keynsham, N. Somerset, N. SANDWITH; Highnam, W. Gloster, N. SANDWITH and GAMBLER PARRY.

2623. *C. DIVISA* Huds. Recorded as *chaetophylla* from alluvial soil by Avon, opposite the Hotwells, Bristol, H. S. THOMPSON (*Wats. B.E.C.*). It goes to the type not the variety. True *chaetophylla* Steud. was found in Richmond Park, Surrey, 1921, by Mr J. FRASER.

†2632. *PANICUM CRUS-GALLI* L. Newnham, Cambridge; Woodbridge, E. Suffolk, SHAW; Colchester, BROWN. Var. *BREVISETUM* Doell. Headley, Miss GWATKIN, ex RAYNER. Det. Kew.

†2636. *P. MILIACEUM* L. Swaythling, S. Hants, RAYNER.

†2637 (2). *P. LAEVIFOLIUM*, var. *AMBOENSE* Hackel. Netley and Swaythling, S. Hants, RAYNER. Det. DRUCE; Bradford, Yorks, CRYER.

†2648 (2). *SORGHUM HALEPENSE* L. Byfleet allotments, Surrey, Lady DAVY. Det. DRUCE.

†2651. *PHALARIS CANARIENSIS* L. Woodbridge, Suffolk, SHAW; Wilsford, Wilts, Viscount GREY; Grutness, Zetland, DRUCE.

†2653. *P. MINOR* Retz. Exeter, Miss TODD; Woodbridge, Suf-

folk, SHAW; Colchester, abundant, DRUCE and BROWN; Cardiff; Cot-hill, Berks, DRUCE.

†2654. *P. PARADOXA* L. Kennington, Berks, GAMBIER PARRY; Truro, Cornwall, THURSTON, panicle rather lax; Woodbridge, Suffolk, SHAW; Bowling, Dumbarton, 1923, GRIERSON. Det. THELLUNG.

2673. *PHLEUM PRATENSE* L., var. *LONGIARISTATUM* PARN. Southampton Docks, S. Hants, Miss TODD; Great Orme, Carnarvon. DRUCE.

Var. *INTERMEDIUM* (Jord.). Alwalton, Hunts, 1892, *Hb. Marchioness of Huntly*.

†2683. *AGROSTIS VERTICILLATA* Vill. Printon and Walton on the Naze, Essex, on new road, SHAW; Cardiff and Colchester, DRUCE.

2686. *A. SETACEA* Curt. Cwm Garw Fech, Glamorgan, a non-limestone locality, WEBB.

2690. *POLYPOGON MONSPELIENSE* L. Southwick, Sussex, in plenty, Lady DAVY; Barry Dock, Glamorgan, SMITH.

\*2692. *P. LITTORALIS* Sm. In considerable quantity round some pieces of water in the Cardiff Docks, Glamorgan, Miss VACHELL, MELVILL and SMITH where I was shown it last October. It may have come in with other ballast or it may have actually been produced there as both its assumed parents, *P. monspeliense* and *Agrostia alba*, are growing with it. In India it seems to occur in places without *P. monspeliense*.

2694. *CALAMAGROSTIS CANESCENS* Dr. Killway, Bembridge, Isle of Wight, SHAW.

2698. *GASTRIDIDIUM VENTRICOSUM* Schinz & Thell. On ledges of limestone cliffs west of Port Eynon, Glamorgan, Prof. R. M'LEAN; Casewell, by the road, on limestone rocks, WEBB; Whitecliff Bay, Isle of Wight, SHAW.

2717. *AVENA FATUA* L., var. *PILOSISSIMA* Gray. Colchester, DRUCE. Var. *GLABRATA* (Peterm.). Cardiff, DRUCE.

†2719. *A. STRIGOSA* Schreb., \*sub-sp. *ORCADENSIS* Marq., var. *FLAVA* Marq. St Peter's, Jersey; Zetland, plentiful, DRUCE.

†2720. *A. SATIVA* L., sub-sp. *VERNA*, var. "BLACKWINTER" Marq. St Peter's, Jersey, DRUCE.

†2726. *GAUDINIA FRAGILIS* Beauv. Cardiff, DRUCE.

2733. *PHRAGMITES VULGARIS* Dr., var. *FLAVESCENS* (Cust.) Dr. Portishead, N. Somerset, Miss WALKER.

†2737. *CYNOSURUS ECHINATUS* L. Gloster Docks, Rev. J. H. ADAMS. f. *GIGANTEA*. Boscawen Park, Truro, BORLASE; St Ouen's, Jersey, DRUCE; Colchester, BROWN and DRUCE.

†2744. *KOELERIA PHELOIDES* (Vill.) Pers. Bradford, Yorks, CRYER. Det. THELLUNG. Barry Dock, Glamorgan, SMITH.

†2747. *ERAGROSTIS GILIANENSIS* Vig.-Lut. Cardiff, DRUCE, MELVILL and SMITH. Det. THELLUNG.

2752. *DESMAZERIA LOLIACEA* Nyman. Barry Dock, Glamorgan, SMITH.

†2755. *BRIZA MAXIMA* L. St Blazey Cemetery, Cornwall, THURSTON.

2757. *B. MINOR* L. In some plenty at St Peter's, Jersey, DRUCE.

2759. *POA IRRIGATA* Lindl. Pettadale, Zetland, DRUCE.

2765. *P. COMPRESSA* L. Whitehaven, Cumberland, Miss M. COBBE.

2769. *P. ANNUA* L., var. *PERENNANS*. Colchester, DRUCE.

2773. *GLYCERIA PPLICATA* Fr., var. *DECLINATA* Bréb. New Forest, S. Hants, Miss TODD.

2777. *G. BORRERI* Bab. Meldon, E. Suffolk, SHAW.

2790. *FESTUCA AMBIGUA* Le Gall. Cardiff, DRUCE.

2792. *F. MYUROS* L. Very luxuriant at St Anne's, Jersey,

DRUCE; Newport House, Countess Wear, Devon, plentiful, some specimens up to four feet high, D'URBAN; Port Eynon, Glamorgan, WEBB; Cornwall, MEDLIN; Christchurch, S. Hants, RAYNER.

†2794. *BROMUS RIGENS* L. Colchester, DRUCE; Woodbridge, E. Suffolk, SHAW; Portmadoc embankment, Merioneth, Miss TODD and DRUCE.

†2799. *B. RUBENS* L. Bradford, Yorks, CRYER. Det. THELLUNG.

\*†2817 (5). *B. CILIATUS* L. Alien, N. America. In some quantity on the banks of the Dee, near the Suspension Bridge, Chester, September 3, 1924, H. BRITTEN. New to our *List*.

\*2819. *BRACHYPODIUM PINNATUM* Beauv., f. *LEIOSTACHYA* Hack. Charlestown, Cornwall, W. TRESIDDER, ex THURSTON. Det. DRUCE. The glumes are not hairy but only ciliate.

2831. *AGROPYRON CANINUM* Beauv. Neddfechan, Brecon and Glamorgan, WEBB; Stowmarket, E. Suffolk, SHAW.

†2851. *HORDEUM JUBATUM* L. Whitehaven, Cumberland, Miss M. COBBE; Bradford, Yorks, CRYER.

2852. *H. VULGARE* L. Colchester [N. 1773], 1920, BROWN.

†2857 (2). *ELYMUS SIBIRICUS* L. Tees-side, under Barnard Castle Walls, Durham, Rev. H. H. HARVEY.

\*2867. *EQUISETUM LITORALE* Kuehl. Cothill, an interesting addition to the Berks flora, DRUCE.

2873. *E. TRACHYODON* Braun. Still at the glen in Antrim but very rare, Mrs WEDGWOOD.

2875. *CRYPTOGRAMMA CRISPA* Br. Still at Padell-v-Bwlch, Glamorgan, WEBB.

2885. *ASPLENIUM ADIANTUM-NIGRUM* L. A curious monstrosity from Joluny Wood between Rosthwaite and Seatoller, Cumberland, MASON.

2908. *PHEGOPTERIS PHEGOPTERIS* (L.) Dr., comb. nov. Near Goathland, N. Yorks, FLINTOFF.

2909. *P. DRYOPTERIS* Fée. Sleightholme Ghyll, N. Yorks, FLINTOFF.

2917. *HYMENOPHYLLUM PELTATUM* Desv. Upper Cwm Taff, Brecon, WEBB.

2918. *OSMUNDA REGALIS* L. Durnholme, N. Yorks, Flintoff.

2919. *BOTRYCHIUM LUNARIA* Sw. Longmire Camp, N. Hants, Mrs THOMPSON.

†2923. *AZOLLA FILICULOIDES* Lam. Pond near Petersfield; back water of Itchen near Bishopstoke, S. Hants, RAYNER and F. ESCOMBE.

2928. *LYCOPodium ANNOTINUM* L. Sgurr Mhor, W. Ross, Lady M. WATNEY.

2929. *L. CLAVATUM* L. Rudge Warren, Pattingham, Staffs, Miss BRADLEY, vide sp.

2934. *NITELLA OPACA* Ag., var. *BRACHYCLEMA* Gr. & B.-W. Brou Loch, etc., Zetland, DRUCE.

2944. *TOLYPELLA INTRICATA* Br. Near Studley, Oxon. SANDWICH.

2958 (2). *CHARA DELICATULA* Br. Crumwere, Pembroke. Rev. R. TUCKETT. Det. Canon G. BULLOCK-WEBSTER.

## THE VISIT TO NORTH WALES OF SOME OF THE MEMBERS OF THE BOTANICAL SOCIETY AND EXCHANGE CLUB IN 1924.

E. VACHELL.

Delightful memories of the week spent in Jersey during the summer of 1923 led many members of the B.E.C. to look forward with great interest and pleasure to the proposed meeting in North Wales this year. From May 27th to June 2nd six most successful and enjoyable days were spent at Llanberris by about 20 keen field botanists who, under Dr Druce's guidance, were afforded exceptional opportunities of seeing nearly all the rare plants that occur in Carnarvonshire and Anglesey, and of visiting some of the most beautiful spots in the principality. Making the Royal Victoria Hotel their headquarters members were able with ease to see the rarities that grow near the shores of Llyn Padarn and Llyn Peris while expeditions by motor charabanc were organised to all the chief places of botanical interest in the neighbourhood. The party which assembled early on Tuesday morning (May 27th) enjoyed the pleasant journey along the coast to Wales, the hurried glimpses of Conway, the Great Orme's Head, Carnarvon and the distant views of the Snowdon Range, and during the evening a few enthusiasts anxious to make the most of their opportunities wandered down to the narrow strip of land between the lakes to see *Alisma natans* and *Hymenophyllum unilaterale*.

On Wednesday (May 28th) a special train conveyed the party to the highest station on the Snowdon railway. The weather was perfect and after examining the plants that grow near the summit including *Carex rigida*, *Cochlearia alpina* and *micacea*, *Saxifraga nivalis*, *Saussurea* and *Salix herbacea* and enjoying the magnificent view of surrounding country—the coast line of Carnarvon and Anglesey, the Menai Straits and the neighbouring peaks of Y Glyder Fawr, Y Glyder Fach, Y Tryfan, Carnedd Dafydd and Carnedd Llewelyn members walked back to Clowyn Station where lunch awaited them, after which a thorough search was made for rare species on the Clogwyn Du yr Arddu, one of the richest spots for alpinists in the Snowdon range. These magnificent cliffs which rise to a considerable height, are composed of volcanic ash and weathered by the storms of countless centuries provide delightful ledges and

niches where rare plants can find shelter and protection. After a careful search had been made along the base of the cliffs it was found that the contents of the vasculums included *Saxifraga nivalis*, *S. stellaris*, *Silene acaulis*, *Saxifraga oppositifolia*, *S. hypnoides*, *Thalictrum alpinum*, *Vaccinium Vitis-Idaea*, *Arabis petraea*, *Cerastium arcticum*, *Lycopodium clavatum*, *L. alpinum* and *Lloydia alpina*. The shores of the small lake at the foot of the cliffs were then examined and after a stiff scramble up a steep grassy slope the train was rejoined at Clogwyn Station.

Thursday (May 29th) was occupied in observing the many plants of interest that occur in the neighbourhood of Llanberris. In the morning a delightful walk along the railway bank towards Cwm y Glo provided many interesting forms and varieties of some of the commoner plants and a few of the more energetic members of the party, reaching Cwm-y-Glo station, returned with specimens of *Symphytum tuberosum* and *Hieracium Schmidtii*. During the afternoon two boatloads of enthusiasts led by Dr Druce raked up excellent specimens of *Isoetes lacustris* and *Callitriche hamulata* near the shallow shores of Llyn Padarn, while the evening walk to the waterfall not far from the hotel produced *Trollius europaeus* and *Meconopsis cambrica*.

Friday (May 30th). An early start was made by charabanc through Carnarvon and Bangor and up the grand Nant Francon Pass to Ogwen Cottage which guards the entrance to Cwm Idwal. *Lobelia Dortmanna* and other plants of interest were visited on the shores of Llyn Ogwen, but *Lloydia* was the object of the expedition, and after a hurried lunch near Ogwen Cottage which for many years past has been one of the most favoured climbing centres in North Wales, the party straggled up the rough path behind the house that leads to the shores of Llyn Idwal, and made their way slowly up the mountain side. A steep scramble up rough scree led to the cliffs which being composed chiefly of volcanic products are rich in lime and alkalies and produce a flora both varied and interesting. *Cystopteris fragilis* and *Asplenium viride* are almost hidden in the narrow cracks, while *Gnaphalium supinum*, *Vaccinium Vitis-Idaea* and *Sedum Rhodiola* find a footing on the open rock ledges. Slowly, the clouds which for some time had been dark and threatening enveloped the tops of the mountains, rain began to fall and a dense mist made

it impossible to see more than a few yards ahead. All familiar landmarks were blotted out and the search was no longer for *Lloydia* but for the small cleft where *Lloydia* was known to grow; and those who failed to scramble up the treacherous scree and slippery rocks had perforce to drop out and make their way home alone as fresh difficulties arose. After a few hours a temporary rift in the enveloping mist and a few seconds' view of the surrounding country revealed the fact that the few remaining members of the party were far out of their course, high amongst rock ledge and loose stones near the top of the Glyders, a scramble that could easily have been avoided on a clear day. However the short ray of sunshine was sufficient to locate the habitat, rocks and slopes were again negotiated and before long a few specimens of *Lloydia* were found, unmistakable, but not as yet in flower. *Empetrum nigrum*, *Lycopodium Selago*, *Saussurea alpina*, *Selaginilla selaginoides*, *Oxyria digyna* and *Antennaria dioica* were also seen before the return to Ogwen Cottage where a refreshing tea was much enjoyed after the wet walk.

Saturday (May 31st) was reserved for the study of the Anglesey plants. Passing through Carnarvon and Bangor and crossing the bridge over the Menai Straits the party motored past Bodorgan where several interesting plants were observed, to Aberffraw Common, near to which is seen Llyn Coron where *Elatine Hydropiper* has been found. The plant associations of the fixed dunes were studied and specimens of *Viola Curtisii*, *Mibora verna*, etc. were obtained.

Sunday (June 1st). The long day's expedition to Pwllheli had to be abandoned on account of the heavy rain but during the afternoon it cleared sufficiently for a start to be made. Motoring up the Llanberris Pass, past Pen-y-pass and Penygwryd the beautiful valley of Nant Gwynant was entered and the shores of a small lake searched for marsh plants. The drive was then continued past Beddgelert with its interesting legendary associations through the magnificent scenery of the Pass of Aberglaslyn to Portmadoc. The bright spring colouring of the low-lying meadows, the yellow of the gorse and broom, and the purple of the first foxgloves was a sight not easily forgotten. Time did not permit of the drive being continued to Pwllheli for *Scirpus nanus* so it was decided to search for the plant nearer to Portmadoc. Unfortunately its habitat on

the sandy river estuary was completely covered by the tide. A further search near Mynfford was also unsuccessful owing no doubt to the lateness of the season.

Monday (June 2nd). Soon after breakfast the charabanc drew up for the last time in front of the Victoria Hotel and with many regrets goodbyes were said to several members of the party who were remaining behind. Driving through Bangor, Carnarvon, Penmaenmawr, Conway and Deganwy to Llandudno, the Happy Valley gardens were visited where a fine bush of *Cotoneaster* is to be seen. Then, following a winding path to the fine limestone cliffs above the town, *Helianthemum canum*, *Satureia Acinos*, *Hutchinsia petraea* and other interesting limestone-loving plants were observed. Emerging on to the flat top of the headland *Scilla verna* and *Antennaria dioica* were seen amongst the short turf and *Potentilla verna* near a row of cottages close to which *Cotoneaster vulgaris* is said formerly to have grown. The London train started early in the afternoon, so there was unfortunately not sufficient time for most of the members to reach the other habitat. Only a few, therefore, who were remaining in Wales and had only a short journey before them, dared to venture on a further expedition in order to see the plant growing under natural conditions on the cliffs. On Sunday morning Dr Druce gave a delightful and instructive address on Field Botany as a hobby—begging members of the B.E.C. to take their hobby seriously. This advice will, it is hoped, be followed carefully by everyone who heard it, and who will in all probability never forget the beauty of the short address and the extraordinary effort of memory that it entailed. Certainly Dr Druce's knowledge and his marvellous memory are an example better than any words! The week's work came to an end all too soon for although the season was late, keenness and enthusiasm overcame all difficulties. Very few plants were missed, and during the two days spent on the mountains practically all the Arctic-alpine species mentioned in the *Flora of Anglesey and Carnarvon* were seen, though not all in flower, in one or other of their known habitats.

## MY FAVOURITE WILDFLOWER.

HENRY S. SALT.

There are so many choice wild flowers, and such varying opinions of their respective merits, that a flower-lover must feel some hesitation in expressing a personal preference for any one of them. In a little book published a few years ago I ventured to mention several plants that have a special charm for me; and I have since had the satisfaction, in two instances, of finding my own taste confirmed by that of another writer.

One of these flowers was the Greater Stitchwort; and in reading a book by Havelock Ellis, "The Dance of Life," I was pleased to light upon a passage in which, while speaking of the rather limited knowledge which poets show of wild flowers, and their consequent tendency to celebrate only those that have pretty names, he referred to the Stitchwort as an example of undeserved neglect. "I have long cherished," he says, "an exquisite and quite common English wild flower, but have never come across a poem about it, for its unattractive name is the Stitchwort, and it is only lately that even in prose it has met (from Mr Salt) with due appreciation."

In the other case it was the Borage and Bugloss; and here I was agreeably surprised to find in the "Reminiscences" of the Rev. S. Baring Gould, a confession which almost exactly coincided with my own. "When I was a young man I picked the Bugloss and regretted it was not Borage wherewith to flavour cider-cup. Now I stand by the hedge, and drink in the loveliness of the blue, profound as an Italian sky, without any aspiration after cider-cup. In my advanced old age I really entertain more delight in the beauties of Nature and of Art than I did in my youth."

Doubtless association, either with person or locality, often plays a considerable part in one's feelings about a wild flower; in my own case, the order of plants which rejoices me most is that of the Saxifrages, owing to a long familiarity with the mountains of Cumberland and North Wales. But the particular flower which I best love is a native of the upland dales rather than of the high mountains, to wit, the Water Avens, which, though frequent enough in northern districts, is denied us—and the loss is a real one—here in the south.

The peculiar fascination which this plant has for me lies partly

in the graceful and modest droop of the flower-head, but still more in its colouring, a combination of very soft and beautiful hues of rich brown, vinous red, orange, and creamy white, which has somewhat of the effect of the old stained glass that so delights one in a cathedral. I have heard it described as "dingy;" but surely there must be something amiss with the æsthetic perception which can see no more in it than that! In a pleasant old book, "The Flower Garden," by E. S. Delamer (1856), the *Geum* group is referred to as "a genus more remarkable from having been one of the favourites, the whims, the caprices, of the great Linnaeus, than for anything else. It is hard to say what in the *Geum rivale*, for instance, a British meadow weed, could so take the fancy of the Master."

Admirers of the "meadow weed" may be content to be in such good company without giving reasons for their fancy; but it seems to me that the plant is gifted with what I would call a rare *depth* of colour, which is quite a different quality from the bright tints that are possessed by many flowers. The Bastard Balm (*Melittis*), for instance, is exceedingly handsome, as everyone must admit, with its variegated petals of white and pink; but its gay colours seem to give an impression of being superficial rather than deeply engrained, as if some fairy painter had but lately passed along the lane where it grows, and lavishly laid on the pigment with a magic brush. In the Water Avens, on the contrary, sepals and petals alike are steeped and dyed in hues which, though not gaudy, have a richness, a sober radiance, that is all their own, and in the long run is more satisfying to the eye and the heart than any external brilliance can be.

I have a liking, too, for the common Avens on account of its happy relationship; it is the Herb Bennet, or "Blessed Herb," less, I surmise, for its medicinal properties than for its own good fortune in having such lovely kinsfolk. The hybrid, *Geum intermedium*, strikes me as being curious rather than beautiful; certainly, when I last saw them all three growing together by a Yorkshire roadside, it was the Water Avens itself that captivated me. It shares, I fear, the lot of the Stitchwort, in having no poet to sing its praises; yet when we consider what sort of poetry we see in the papers, it may be as well that this article should not rouse any latent singer to activity.

## FLORA LONDINENSIS.

(By kind permission of the Proprietors of "Punch," July 1924.)

When my eyes are fairly weary of this London of to-day  
 I withdraw five battered folios all marbled black and grey  
 From their station on my bookshelves, and I read the world away  
 In the company of CURTIS, prince of botanists, whose word  
 Was the last on London's flora in the reign of GEORGE THE THIRD,  
 When he lived at Lambeth Marshes . . . Yes, I know it sounds absurd  
 But the flowers and CURTIS flourished there, the Thames was bright  
 with Sedge,

Not a crumpled wall at Putney but had Stonecrop on its ledge;  
 There was Traveller's Joy at Lewisham along the turnpike hedge.  
 Then Toadflax throve on Temple walls and Lilies slipped their sheath  
 In Lord MANSFIELD'S little pinewood on the way to Hampstead  
 Heath,

And the copses out at Croydon had white Violets beneath.  
 Not a day went by for CURTIS without some botanic thrill,  
 He found Teasels down at Deptford and "on Moulsey Hurst" a  
 Squill.

And he plucked a Twayblade Orchis from the turf of Shooter's Hill.  
 For him the Chelsea Kingcups blew, for him the Mushrooms stood  
 In the pasture-lands of Islington this side of Hornsey Wood;  
 You can't pluck Cress on Hounslow Heath, of course, but CURTIS  
 could.

At times "within sides of old wells" he found a Hart's-tongue fern,  
 And every year at Battersea he watched the brief return  
 Of the Poppies whose "fugacity" aroused his quaint concern.  
 And now his London too is fled, there's scarce a petal's trace  
 Of the Thames-side flowers that flourished in his Georgian year of  
 grace,

Only weed on weed of brick-work that has over-run its place.  
 Yet if you can harbour CURTIS (and the elbow room he claims  
 Speaks itself of ampler ages) take him down and read the names  
 Of his blossoms and their habitats, until your fancy flames  
 With gable-ends and gravel-pits and lanes that gain the down,  
 And rushy streamlets close at hand and sylvan hills to crown  
 A city almost suburbless, a country-girdled town,

## MENTHAE BRIQUETIANAE.

JOHN FRASER.

\**MENTHA LONGIFOLIA* Huds., var. *WEINERNIANA* Briq. Les Lab. 57, 1891 = *M. WEINERNIANA* Op. *M. florida* Op., not Pausesets. *M. Wondracekii* Op. A strong growing plant, attaining a height of 2-3 ft. Stem branching, thinly and shortly hairy below, shaggy above, with the internodes 2-5 cm. long. Leaves ± broadly lanceolate, tapering gradually to an acuminate point, cordate at the base, sessile or sub-sessile, green and hairy above, grey tomentose beneath, measuring 3-8 x 1-3 cm.; serratures small, acute, directed forward, or ± turned outwards, and concave on the lower side, 0.5-3 mm. deep, and 2-5 mm. apart. Spikes cylindrical, dense, interrupted below. Near Marcham, Berks, G. C. DRUCE.

× *MENTHA NILIACA* Jacq., var. *HALLERI* Briq. Parentage *M. longifolia* × *rotundifolia*. Under the hybrid *M. niliaca* come all such forms as have been described under *M. longifolia* Huds., var. *mollissima* (Borkh.), *M. nemorosa* Willd., *M. villosa* Huds., *M. gratissima* Wigg., *M. rotundifolia* Huds., *M. alopecuroides* Hull, *M. silvestris* Presl, and *M. hybrida* Schleich. Plant attaining a height of 2-3 ft. Stem stout, more or less glabrous below, and shaggy above with deflexed, grey hairs, with internodes 2.5-7 cm. long. Leaves ± broadly ovate, acute, sessile or subsessile, cordate at the base, very convex on the margins, green, hairy and rugose above, or with deeply sunk nerves, grey tomentose and soft or velvety beneath, measuring 2.5-8 x 1.5-4 cm. in surface; early leaves oblong, obtuse, thinly and shortly hairy; serratures acute, irregular, directed forward, or many of them turned outwards and concave on the lower side, 0.5-3 mm. deep, and 1-7 mm. apart. Spikes dense, cylindrical, interrupted below. Near North Leigh, Oxon, G. C. DRUCE.

× *MENTHA PIPERITA* Huds., var. *DRUCEANA* Briq., var. nov. = *M. affinis* Strail. Stem erect, flexuous, branched, red, 2-3 ft. high, very thinly hairy, with short hairs most obvious under the nodes. Leaves varying from oval to the ovate, smaller, upper ones, acute, petiolate, unequal and slightly *cuneate at the base*, the upper ones *rounded* at the base, dark green above, thinly hairy at first, soon

glabrous, pale green and thinly hairy on the nerves beneath; serratures 5-10 on each margin 0.25-1.25 mm. deep, mostly directed forward, and 3-6 mm. apart. Inflorescence shortly spicate, interrupted at the base, often capitate on the branches. Flowers ♀; corolla glabrous within; calyx glabrous with ciliate teeth; pedicels glabrous.

The principal distinguishing features of the variety are the oval leaves of the main axis without auricles, the small number and small size of the serratures. Didcot, Berks, G. C. DRUCE. See *Rep. B.E.C.* 342, 1891, and *Fl. Berks* 392, 1897.

MENTHA AQUATICA L., var. ACUTA Briq. Includes forms of *M. aquatica*, var. *subglabra* Baker. Stem branched, more or less hairy, 2-4 ft. high. Leaves oval or elliptic, acute, cuneate at the base, convex on the margin, acutely serrate, thinly hairy on both surfaces, 2.5-7 x 1.2-4 cm. in area of surface; serratures acute, 0.25-2 mm. deep, and 4-8 mm. apart.

The features of the variety are the oval or elliptic, acute leaves, cuneate at the base and the acute serratures. Marston towards Water Eaton, Oxon, G. C. DRUCE; Epping Forest, Essex, 1883, J. FRASER.

Var. CAPITATA Briq. *M. aquatica* L., var. *minor* Sole. *M. capitata* Opiz. Stems simple, or more or less branched, 2-4 ft. high, rather densely hairy, with recurving hairs. Leaves *broadly ovate*, subacute or obtuse, with a very *convex* margin, broadest near the base, *rounded or subcordate* at the base; serratures numerous, generally regular, projecting somewhat, or salient, forming triangles 1-2 mm. deep, ± acute, straight or slightly convex on the lower side, and standing 3-5 mm. apart.

A common and widely distributed variety with broadly ovate leaves, rounded or subcordate at the base, and a large, capitate inflorescence. Marston, Oxon; Greenham, Berks, G. C. DRUCE; Thames banks below Staines, Middlesex, 1885; Holmwood Common, Surrey, 1916, J. FRASER.

[The older name here is *M. aquatica*, var. *minor* Sole, but it is not necessarily a small plant.—Ed.]

\*Var. INCISO-SERRATA Briq. = *M. inciso-serrata* Strail. Stems

more or less branched above, ± densely hairy, 2-3 ft. high. Leaves ovate, acute or sub-acuminate, with a long entire point, convex on the margin, more or less densely hairy on both surfaces, subcuneate at the base, incise-serrate, measuring 3.5-6.5 x 1.5-3.5 cm. in surface area; serratures acute, salient, often concave on the lower side, often irregular, mixed with very small ones, and forming triangles 0.25-2.5 mm. deep.

The features of the variety are the ovate, acute leaves, slightly cuneate at the base, and the incised serratures. Lungmore, Berks, G. C. DRUCE; Reigate Heath, Surrey, 1909, J. FRASER.

\*Var. LOBELIANA Beck. Stems erect, slender, simple or slightly branched under the inflorescence, subglabrous below, more or less densely hairy above, 16 in. to 2 ft. 8 in. high, with internodes 2-8 cm. long. Leaves oblong-oval, occasionally lanceolate, and a few of the uppermost shorter and ovate, more or less hairy on both sides, the uppermost densely so on the underside, acute or subobtuse; petioles slender; serratures mostly small, numerous, straight or occasionally slightly concave on the lower side, 0.25-2 mm. long. In shade the leaves may be up to 8 x 3.5 cm. in surface area; in exposure they are usually 3-4 x 1-2.5 cm. Inflorescence with a medium-sized capitulum and a smaller verticillaster on the main axis, and a small capitulum on each branch.

The features of the variety are the slender stems, usually small leaves, numerous small serratures, and the rather small capitula of the inflorescence. S. Hinksey, Berks, G. C. DRUCE; Cobham, 1916, and Cold Norton, Surrey, 1921; R. Medway below Tonbridge, Kent, 1919, J. FRASER.

Briquet describes forms of the var. *Lobeliana* verging towards the var. *lupulina* by having some of the lower leaves subrotund; and one intermediate between var. *capitata* and var. *Lobeliana*, by having the leaves of the former and the small inflorescence of the latter.

\*Var. ORTMANNIANA BRAUN = *M. Ortmanniana* Op. *M. crenatodentata* Stail. Stem slender, flexuous, rather densely hairy, apparently simple, 12-16 in. high. Leaves small, ovate to deltoid-ovate, rounded or subcordate at the base, obtuse at the apex, crenate-dentate, hairy on both sides, the uppermost densely so, 2-3 x 1-2.2

cm. in surface area; crenatures 0.25-1 cm. deep. Inflorescence small, consisting of the terminal head and one verticillaster.

Easily recognised by the small ovate-deltoid, obtuse leaves, slender stems and small inflorescence. Near Antony, E. Cornwall (a white flowered form), T. R. ARCHER BRIGGS.

⚡ Var. LUPULINA Briq. = *M. denticulata* Strail. *M. aquatica*, var. *denticulata* H. Braun. Stem 16 in. to 2 ft. high, ± branched, with the internodes 4-6 cm. long. Leaves frequently rather small, broadly ovate or subrotund, obtuse or subacute, with convex margins, subcordate at the base, densely hairy on both surfaces, measuring 2.5 x 1.5-3, rarely larger; starved specimens among sand dunes may have the leaves reduced to 1-1.5 x 0.7-1.2 mm.; serratures consisting of *very numerous, small, closely placed, triangular teeth*, 0.5-2 mm. deep, acute, directed forward, and 1-3 mm. apart. Inflorescence consisting of the terminal head only, or that with one or two verticillasters.

The variety is easy to recognise by its broadly ovate, or sometimes subrotund leaves, densely hairy and furnished with very numerous triangular teeth. Braunton Burrows, N. Devon (miniature), W. MOYLE ROGERS; Ainsdale and Freshfield Sandhills, W. Lancashire, J. COSMO MELVILL; Isle of Wight, and E. Barming, W. Kent, 1919, J. FRASER.

[Here again H. Braun's name seems to have precedence.—Ed.]

Var. NICAENSIS Briq. Stems ± branched at the top or from near the base upwards, thinly hairy towards the base, more densely upwards, 2-4 ft. high, with internodes 3-11 cm. long. Leaves broadly ovate, obtuse or acute on the same or different plants, moderately hairy on both faces, rounded, truncate or subcordate at the base, crenate-serrate, measuring 2.5 x 1.3-4 cm. in surface area; serratures very small or shallow, but varying a little, directed forward. 0.25-2 mm. deep, rarely 3 mm., acute. Inflorescence consisting of a small or medium sized terminal head with a small, distant verticillaster on the main axis and stronger branches and one small head on each of the smaller branches.

The variety is readily recognised by the short, broadly ovate, almost deltoid leaves, shallow serration, and small size of the numer-

ous flower clusters. Hurst, Berks, G. C. DRUCE; Sheerwater, Byfleet, Surrey, 1916; R. Medway, Maidstone, 1919, J. FRASER. Not uncommon.

Var. *OBSCURA* Wimm. et Grab. Stems  $\pm$  branched, thinly hairy throughout, 2-3 ft. high, with internodes 2-10 cm. long. Leaves ovate obtuse, suddenly and shortly cuneate at the base, shallowly serrate or crenate-serrate, very thinly and shortly hairy on both surfaces, convex on the margin, measuring 5-6 x 1.5-3.5 in surface area, but the uppermost *very broadly ovate, rounded at the base*, subacute, and measuring 3.5-5 x 2-3 cm. including the bracts; serratures directed forward, often lying very close to the edge of the leaf, acute, with the free points 0.25-1 mm. deep. Inflorescence of a moderate sized head and two verticillasters set far apart.

Apparently a water form, with the upper leaves and bracts recalling the corresponding ones of *M. verticillata*, var. *ovalifolia*. Loddon Side, Berks, G. C. DRUCE.

\*Var. *WEIHEANA* Braun = *M. Weiheana* Op. Stems stout, producing numerous short branches, thinly hairy, 2-3 ft. high or more, with internodes 4-8 cm. long, thinly hairy throughout. Leaves large, broadly ovate or broadly oblong-ovate, obtuse, or the uppermost ones small, ovate and acute, all very convex on the margin, rather finely crenate-serrate, rounded or truncate at the base, or suddenly and only shortly cuneate there, broadest near the base, usually pale red, and measuring 3-9 x 2-5.5 cm. in surface area; serratures directed forward, mostly triangular, acute, sometimes mixed with small ones, with their free points 0.25-2 mm. deep. Inflorescence with one large head and two verticillasters on the main axis, and smaller heads on the branches.

Apparently this is a river bank form, growing in water and usually named *M. aquatica*, var. *subglabra* Baker, by British collectors. Gayton Canal side, Northants; Hinksey, G. C. DRUCE; Thames banks above Molesey, Surrey, 1898, J. FRASER; Denbigh Hall, Bucks, G. C. DRUCE.

× *MENTHA VERTICILLATA* L., var. *ADULTERINA* Briq. (*M. aquatica* × *arvensis*). Stems slender amongst other vegetation, stouter in exposure, subglabrous or thinly hairy below, densely hairy up-

wards, ± branched below the inflorescence, diffuse or ascending, 12-18 in. high, with internodes 2-7 cm. long. Leaves *small*, elliptic, tapering to both ends, obtuse to subacute and acute, moderately to rather densely hairy on both surfaces, especially the younger ones, finely and regularly serrate, and measuring 2.5-4.5 x 1-2.5 in surface area; serratures acute, directed forward, 0.25-1 mm. deep. Inflorescence of 7-9 verticillasters and sub-spicate at the apex, with 3-5 on the branches.

Easily recognised by the small, elliptic leaves, more or less densely hairy, tapering to both ends like many common forms of *M. arvensis*, and by its dense, subspicate inflorescence. Wokingham, Berks, G. C. DRUCE; North Holmwood, 1916, and Blackbrook, Dorking, Surrey, 1919, J. FRASER.

Var. *ATROVIRENS* Briq. = *M. atrovirens* Host, non Boreau. (*M. aquatica* x *arvensis*). Stem slender, simple or ± branched, sub-glabrous below, more hairy upwards, often densely, 16-20 in. high, with internodes 1.5-7 cm. long. Leaves small, ovate, sometimes oblong, with the primordial ones sometimes rotund, rounded at the base, usually densely hairy on both sides, or sometimes thinly hairy and thicker in texture, finely serrate, measuring 2-3.5 x 1.3-2 cm. in surface area; serratures numerous, closely arranged, directed forward, acute, or sub-acute, 0.25-0.75 mm. Inflorescence of 7-9 verticillasters, crowded and sub-spicate. Bracts small, ovate.

The features of the variety are the small, ovate, finely serrated leaves and subspicate inflorescence. Wokingham and Wantage, Berks; Caversham, Oxon, G. C. DRUCE; Newton Ferrers, S. Devon, T. R. ARCHER BRIGGS.

Var. *RUBRO-HIRTA* Briq. *M. rubro-hirta* Lej. & Court. *M. pulgoides* Dum. (*M. aquatica* x *arvensis*). Stem rather stout for the group, sub-glabrous below, densely hairy above, 1½-2 ft. high, erect, with internodes 2-5 cm. long. Leaves small, broadly ovate or sub-deltoid, sub-truncate at the base, hairy on both sides, varying from obtuse to acute on the upper part of the stem, measuring 3-3.5 x 1.8-2.5 cm. in surface area; serratures 5-9 on each margin, acute, tipped with a glandular mucro. Inflorescence dense, sub-spicate. Bracts cuspidate, small.

The variety is characterised by small sub-deltoid leaves with gland-tipped serratures, a sub-spicate inflorescence and small cuspidate bracts. Bungay, Suffolk, G. C. DRUCE.

Var. CAERULEA Briq. (*M. aquatica* × *arvensis*). Stem fairly stout, much branched, with ascending branches, thinly hairy below and only moderately hairy above, about 18 in. high, with internodes 2-6 cm. long. Leaves small, sub-glabrous on the lower part of the plant, thinly hairy on both faces towards the top of it, glaucous beneath, ovate, shortly cuneate, broadest a little above the base, convex on the margin, finely serrate, or many of the smaller leaves shallowly crenate, measuring 2.5-4 x 1.5-2.7 cm. in surface area; serratures acute or sub-acute, directed forward, with free tips 0.25-0.75 mm. deep. Bracts gradually smaller upwards. Flower clusters all separate.

The features of the variety are the much branched stem, the green foliage, with ± glaucous under-surface, and the shallow serratures. Winkfield, Berks, G. C. DRUCE.

Var. CRENATA Briq. (*M. aquatica* × *arvensis*). Stem erect or ascending, flexuous, 1½-2½ ft. high, with ± numerous, slender, flexuous, ascending or diffuse branches, ± hairy throughout but not densely so, with internodes 3-8 cm. long. Leaves of small to medium size, ovate, acute, shortly cuneate at the base (including the bracts), convex on the margin, shallowly crenate to finely serrate, thinly and usually shortly hairy on both sides; serratures directed forward, lying close to the margin, or the larger ones more salient, 0.25-0.75 mm. deep. Whorls of the inflorescence all separate, with gradually shortening bracts, or occasionally with the uppermost ones sub-spicate.

The small, short, crenate or crenate-serrate leaves, and usually slender stems and slender branches are the features of this variety; but under dry conditions the branches may be fewer and shorter. Wokingham and Early, Berks; Port Meadow, Oxon, G. C. DRUCE.

Var. LINTONII Briq., var. nov. (*M. aquatica* × *arvensis*). Stem about 1 ft. high, and simple apparently, sub-glabrous near the base, thinly and shortly hairy upwards, with internodes 1.5-3 cm. long. Lower leaves narrowly ovate-lanceolate, obtuse to sub-acute, shal-

lowly and acutely serrate, shortly cuneate at the base, thinly and very shortly hairy on both surfaces, measuring 3-3.5 x 1.5-2 cm. in surface area; bracts lanceolate, acute or sub-acuminate, more tapered to the base, the uppermost scarcely shorter; serratures 0.25-0.75 mm. deep, directed forward. Floral whorls all separate, and none amongst the upper leafy bracts. Calyx short, campanulate.

This was passed through the Botanical Exchange Club of the British Isles in 1887 as *M. arvensis* × *sativa* and has much the appearance of a narrow-leaved form of *M. arvensis*, with the same form of calyx, but with its teeth only slightly shorter than average forms of *M. sativa*. Shirley, S. Derbyshire, W. R. LINTON.

Var. OVALIFOLIA Briq. *M. ovalifolia* Opiz. (*M. aquatica* × *arvensis*). Stem erect, stout, or thinner and flexuous, 1-2 ft. high, usually freely branched below the main inflorescence, with ascending, or spreading, or diffuse branches according to the amount of moisture present or the rainfall, thinly hairy below, more densely so upwards, with internodes 1.5-6 cm. long. Leaves large, broadly oval, rounded at the base or far more often shortly cuneate, obtuse to sub-acute or acute, distinctly serrate, convex on the margin, measuring 2-4.5 x 1-3 cm. in surface area, thinly hairy on both faces, rarely sub-glabrous; serratures, directed forward, triangular, acute, 0.25-1.5 mm. deep. Bracts leaf-like at the base of the inflorescence, becoming gradually shorter upwards, broadly ovate acute, or sometimes cuspidate. Floral whorls all separate, rarely subspicate at the apex.

This common variety can be recognised by the large, oval, obtuse leaves, narrowing to both ends, and the triangular, usually well developed serratures. Briquet names a form as intermediate between the varieties *crenata* and *ovalifolia* by having shallow serratures to the leaves and sub-crenate bracts. It ramifies very freely, with long, diffuse branches when moisture is adequate. Another form has the lower bracts much longer and more gradually narrowed to the apex. A third form has lanceolate to narrowly oval, densely hairy leaves, and a short congested inflorescence of two to eight verticillasters. This is well worth a varietal name, and comes from Horton, Dorset, E. S. MARSHALL; Stonebridge, Dorking, Surrey, 1921, J. FRASER. The more typical forms have been found at Kint-

bury, Hurst, Radley, Lungmore, and Loddon, Berks, G. C. DRUCE; Milton, S. Hants, W. MOYLE ROGERS; Snodland, Boxley Abbey, New Hythe and R. Medway, Yalding, Kent, 1919, J. FRASER; Godstowe, Oxon, G. C. DRUCE; Stonebridge, Dorking, 1919, and Thames banks below Weybridge, Surrey, 1898, J. FRASER; Rescobie, Forfar, G. C. DRUCE.

Var. RIVALIS Briq. (*M. aquatica* × *arvensis*). Stems stout to moderately so, 1-3 ft. high, thinly hairy below, or sub-glabrous, more densely hairy upwards, simple when crowded, or when growing amongst rank vegetation, ± branched in exposure, with internodes 2-7 cm. long, more usually 2-3 cm. and leafy to the top. Leaves narrowly-ovate to ovate, broadest near the base, most convex in margin at the widest part, rounded or very shortly cuneate at the base, ± hairy on both faces, obtuse to acute, measuring 3-5.5 x 1.5-3.5 cm. in surface area; serratures acute, the larger ones triangular, 0.25-1.5 mm. deep. Floral whorls all separate, with seldom any amongst the uppermost bracts.

Ovate obtuse to acute, sharply serrated leaves, rounded or very shortly cuneate at the base are the features of the variety, so named by Briquet. Dropmore, Kintbury and Lungmore, Berks; Rotherthorpe, and Caudley, Yardley Gobion, Northants, G. C. DRUCE. Specimens from Bolder Meré, 1900, Godalming, 1904, and Holmwood, Surrey, 1916; and from Laleham, Middlesex, 1885, J. FRASER, which might be placed here, and may or may not be known to Briquet, are all characterised by *broadly ovate* leaves, very convex on the margin, and *truncate, rounded* or *sub-cordate* at the base. None of the above approach the narrowly ovate, acuminate leaves of Sole's Menth. Brit., t. 20.

Var. TRICHODES Briq. (*M. aquatica* × *arvensis*). Stem ± branched, hairy, about 1 ft. high or more, with internodes 2-4 cm. long. Leaves moderate in size, oblong, acute or cuspidate, more or less hairy on both faces, measuring 2-3.5 x 1.3-1.5 cm. in surface area; serratures triangular, acuminate to subulate, 0.5-2.5 mm. long, irregular and distant. Bracts lanceolate, acuminate, with 1-3 sharp or slender teeth on each margin. Floral whorls all separate.

The long, slender serratures are the feature of the variety. Hereford, G. C. DRUCE.

× *M. RUBRA* Huds., var. *CALLIMORPHA* Briq. (*M. verticillata* × *viridis*). Stem erect, red, simple or branched under the inflorescence, very thinly and shortly hairy, 2-4 ft. high. Leaves oblong to oval, shortly petiolate, suddenly pointed, obtuse or acute, dark green above, paler beneath, thinly hairy all over on both sides, 2-6 x 1.5-3 cm. in surface; serratures acute or sub-acute directed forward, 0.25-2 mm. deep, numerous and regular; bracts large, ovate, decreasing very gradually from 3.5-1.8 cm. in length at the eighth verticillaster, with full-sized serratures. Calyx short, campanulate, glabrous, teeth ciliate. Pedicels glabrous.

The large, ovate bracts of the inflorescence are the feature of the variety. The form here described is the rare one with *short, campanulate calyx*, extending towards the sub-species *Wirtgeniana* F. Schultz. South Derbyshire, Rev. W. R. LINTON.

Var. *DRUCEI* Briq., var. nov. (*M. verticillata* × *viridis*). Stem erect, flexuous, very thinly hairy below, with short hairs, more obviously hairy above, 2-3 ft. high, thinly branched above, with internodes 2.5-7 cm. long. Leaves oval, acute, ± cuneate at the base, minutely hairy along the midrib above, otherwise glabrous, thinly hairy on the nerves beneath; serratures 3-12 on each margin, acute, 0.75-1 mm. deep; petioles 7-13 mm. long. Bracts of the inflorescence ovate, 8-16 mm. long, acute or acuminate. Calyx short, broad, campanulate, glabrous, teeth ciliate, conspicuously lined with glands between the nerves.

The distinguishing features of the variety are the *oval, acute, finely serrated* leaves, the *long petioles*, the *small ovate bracts*, and the *short, campanulate calyx*. Canal side, Northampton to Blisworth, 1878, G. C. DRUCE. See *Fl. Northants*.

Var. *LAEVIFOLIA* Briq. (*M. verticillata* × *viridis*). Stem erect, flexuous, purple, simple or branched below the inflorescence, glabrous, or slightly hairy under the nodes, 2-5 ft. high, with internodes 2-6 cm. long. Leaves broadly ovate, obtuse or occasionally acute, shortly petiolate, rounded at the base, or slightly cuneate occasionally, glabrous, or having a few short scattered hairs on both surfaces, especially when young, 3-6 x 2-3.5 cm. in surface area; serratures triangular, directed forward, acute, 0.5-2.5 mm. deep, occasionally having a small tooth on the lower side. Bracts of the

inflorescence *sub-rotund, cuspidate*, or one or two lower pairs ovate, measuring 1.4 x 1.3-3.5 cm. in surface, or when growing in water, occasionally 6 x 3.4 cm. Calyx long, and tubular, glabrous, with ciliate teeth. Pedicels glabrous.

The almost completely glabrous character of the plant is the feature of this variety. Sennen, W. Cornwall; Foyleriding Farm, Limpsfield, 1906, Nutfield Marsh, 1916, and Brook, Albury, 1902, all in Surrey, J. FRASER.

VAR. RAMPILA Briq. (*M. verticillata* × *viridis*). Stem erect, flexuous, simple or branched under the inflorescence, ± hairy, with short hairs, 2-5 ft. high, with internodes 2-6 cm. long. Leaves ovate, obtuse, seldom sub-acute, shortly petiolate, rounded at the base, occasionally sub-cuneate, more or less *pilose on both surfaces*, measuring 3-6 x 1.5-3.5 cm. in surface; serratures much as in var. *laevifolia*. Bracts of the inflorescence *ovate*, acute, finely serrate, very small, the uppermost often shorter than the flowers, giving the inflorescence a sub-spicate appearance. Calyx and pedicels as in the species.

The thinly pilose stem and leaves, and the ovate bracts are the features of this variety. Haseley, Warwick, R. L. BAKER; Flint Hill, N. Holmwood, and Stonebridge, all south of Dorking, 1921, Westend Common, Esher, 1916, and Cobham, 1916, all in Surrey, J. FRASER.

× *M. GENTILIS* L., var. *RESINOSA* Briq. = *M. resinosa* Op. (*M. arvensis* × *viridis*). Stem 1½-2 ft. high, more or less branched, sub-glabrous below, thinly hairy upwards, with internodes 2.5-5 cm. long. Leaves elliptic acute, or shortly acuminate, narrowed at both ends, thinly hairy on both faces, 3-5 x 1.5-2.5 cm. in surface area, *incise serrate*, shortly petiolate; serratures *triangular subulate*, acute, directed forward, 1-3 mm. deep. Bracts similar in size and in serratures to the leaves, and only a little smaller at the apex of the inflorescence.

The incise serrate leaves are the feature of the variety. Damp pasture by a stream, Meavy, S. Devon, W. B. WATERFALL.

VAR. VARIEGATA Briq. (*M. arvensis* × *viridis*). Leaves elliptic or some of the lower ones oblong, acutely, but shallowly serrate, ir-

regularly *variegated* with yellow stripes fading to cream, along the course of the midrib and principal veins.

Ditch on a farm near St Ives, W. Cornwall, WILLIAM CURNOW; Tregaun, Cornwall, R. O. TELLOW.

Var. GRATA Briq. = *M. grata* Host (*M. arvensis* × *viridis*). Stem erect, simple or very slightly branched, thinly hairy with short hairs, red, slender, 12-15 in. high, with internodes 2-3 cm. long. Leaves lanceolate to ovate or elliptic, measuring 2-3 × 1-1.9 cm. in surface area, thinly hairy on both surfaces, with short adpressed hairs, finely and closely serrate; serratures acute, directed forward, 0.5-1 mm. deep. Bracts similar to the leaves, very gradually decreasing in size, and always longer than the pale to bright purple flowers.

The short, slender stems, small leaves and bracts and fine serration are features of the variety. Skelwith, Westmorland, H. E. Fox; River Wye, near Erwood, Radnor, 1920, W. C. BARTON.

Var. CARDIACA Briq. *M. gracilis* Sm., var. *cardiaca* Baker. (*M. arvensis* × *gentilis*). Stem erect, much branched from the base upwards, 12-16 in. high, glabrous or slightly puberulous beneath the nodes occasionally, with the internodes 1.5-5 cm. long. Leaves lanceolate to oblong-lanceolate, acute or shortly acuminate, glabrous, or having a few scattered hairs on the principal veins beneath, very shortly petiolate; serratures acute or sub-acute, directed forward, 0.25-2 mm. deep. Bracts similar to the leaves, gradually decreasing in length, but apparently always longer than the flowers.

The dwarf much branched stems, small leaves and the almost glabrous character of the whole plant are features of the variety. Huntley Common, Warwick, H. BROMWICH; near Ripley, Surrey, 1901, J. FRASER.

A form of the above with downy stems, shorter, more ovate, but small leaves, minutely hairy above and thinly hairy beneath, Jean Briquet has named "forma ad var. *gratam* vergens (*arvensis* × *viridis*)."  
Waste ground, Newbury, Berks, G. C. DRUCE.

*M. ARVENSIS* L., var. *SCRIBAE* Briq. *M. Scribae* F. Schultz. Stem erect, simple when crowded or growing amongst rank vegetation, or much branched in exposure, thinly hairy below, more densely so above, 12-18 in. high, with internodes 1.3-5.5 cm. long. Leaves

sub-rotund to broadly ovate, rounded at the apex or  $\pm$  obtuse, rounded or sub-truncate at the base, very shortly petiolate,  $\pm$  densely hairy on both faces, crenate to crenate-serrate, *very rugose* when fresh, measuring 1.5-3.5 x 1.5-3 cm. in surface area; crenatures and serratures directed forward, lying close to the margin or more salient and 0.25-1 mm. deep. Floral whorls 7-9, growing to the apex of the stem and branches. Bracts *broadly ovate to sub-rotund*, the uppermost sub-sessile, large, and gradually smaller upwards.

A variety that is very easy to recognise by its broad, obtuse leaves, rugose leaves and bracts. In exposure it is a very leafy plant. To all intents and purposes it is *M. agrestis* Sole. Headington, Oxon; Radley, Berks, G. C. DRUCE; Holmwood Common, Surrey, 1917, J. FRASER.

\*Var. ALLIONII Briq. = *M. Allionii* Boreau. Stem 6 in. high and erect, or 12-18 in. long and ascending or diffuse, according to surroundings, sub-glabrous below, thinly hairy above, with internodes 1.5-7 cm. long. Leaves elliptic obtuse to sub-acute, broadest about the middle, usually considerably tapered to both ends, very thinly hairy or sub-glabrous on both faces, finely crenate to crenate-serrate, measuring 3-6 x 1.5-3 cm. in surface area; crenatures directed forward, and serratures 0.25-1 mm. deep. Bracts as large as the leaves, similar, and but little smaller at the top. Floral whorls 8-15. Calyx sub-glabrous, with short teeth, and pedicels often glabrous.

Elliptic, sub-glabrous leaves, and short calyx teeth are characteristic of the variety. Briquet admits as forms plants with rather longer, more acute teeth, a more hairy calyx, and more or less hairy pedicels. Ifley, Oxon; Warfield, Berks; Yardley Gobion, Northants, G. C. DRUCE; Tonbridge, Kent, 1919, J. FRASER; Frampton Cotterell, W. Gloucester, 1924, Miss IDA M. ROFER.

Var. CUNEIFOLIA Lej. et. Court. Stems 1-2 ft. high, simple or branched according to environment, with ascending or divaricate branches according to their length, sub-glabrous below or thinly hairy, more hairy upwards, sometimes densely so, with internodes 2-12 cm. long. Leaves elliptic-lanceolate, much attenuated to both ends, obtuse to acute, broadest about the middle, with long petioles, sub-glabrous on both faces with short hairs or thinly hairy all over, especially the younger ones, pale apple green, crenate or finely ser-

rate, convex on the margin about the middle, measuring 4.5-6.5 x 1.5-2.5 cm.; crenatures obtuse, serratures obtuse to acute, 0.25-1 mm. deep, and 4-12 on each margin, all remote from the base. Bracts similar to the leaves, as large, scarcely smaller at the apex and flowerless. Calyx teeth long for *M. arvensis*, the two uppermost ones sometimes as long as those of forms of *M. verticillata*, ± hairy. Pedicels usually glabrous. A river bank and ditch Mint.

Easily recognised by its pale green colour, and elliptic-lanceolate leaves, attenuated to both ends. Lungmore, and Kintbury, Berks, G. C. DRUCE; Cubley, Derbyshire, W. R. LINTON; Milton, S. Hants, W. MOYLE ROGERS; Hatton, Warwickshire, H. BROMWICH; Thames banks, Middlesex, opposite Long Ditton, 1921; The Mole, Mickleham Vale, Surrey, 1923, J. FRASER.

A form with dark purple calyx, verging towards the var. *melanchroa*, has been gathered at Lungmore, Berks, and Applecross, W. Ross, G. C. DRUCE.

\*Var. DENSIFOLIATA Briq. Stems erect, branched from the base, with spreading and ascending branches, occasionally simple, ± densely hairy, with internodes 1.5-5 cm. long, usually about 3 cm. Leaves broadly ovate, obtuse, *broadest and rounded at the base*, ± densely hairy on both faces, crenate to obtusely serrate, occasionally acutely serrate, making a densely leafy plant, measuring 2-4 x 1.5-2.5 cm. in surface area, occasionally more in ditches; crenatures and serratures 0.25-0.75 mm. deep. Bracts similar to the leaves very gradually smaller as a rule, and the uppermost 2-5 pairs without flowers. Calyx more or less densely hairy, with triangular acuminate teeth, rather long for *M. arvensis*. Pedicels glabrous or more or less hairy.

The broadly ovate leaves, broadest and rounded at the base, and the densely leafy plant are the features of the variety. It grows in damp cornfields, occasionally in shallow, running water. Iffley and Radley, Berks, G. C. DRUCE; Fairdean, Coulsdon, 1902, The Rye, Ashtead Common (water form), Surrey, 1916, J. FRASER; Braunstone, Leicester, 1916, A. E. WADE; Yeldersley, S. Derbyshire (water form), W. R. LINTON.

\*Var. AUSTRIACA Briq. *M. austriaca* Jacq., non All. Stems slender, erect, simple or freely branched, thinly hairy below or sub-

glabrous in water,  $\pm$  densely hairy upwards, with internodes 1-4 cm. long, usually 2-3 cm. Leaves *small, elliptic*, obtuse, rather hairy on both sides, or less so in shade and water,  $\pm$  conspicuously ciliate, measuring 2-3.5 x 1-2 cm. in surface area; serratures acute, 0.25-0.75 mm. deep. Bracts generally acute, otherwise similar to the leaves, and gradually smaller, with 1-3 pairs without flowers. Calyx hairy, with triangular, acuminate teeth, rather long for *M. arvensis*, deep purple. Pedicels glabrous or usually so.

The small, elliptic leaves, purple calyx, and triangular, acuminate calyx teeth are the features of the variety. Virginia Water, Surrey, 1883; Mortimer, Berks (form), G. C. DRUCE; Ockham Common, Surrey, 1924, J. FRASER; Thornton Reservoir, Leicestershire, 1916, A. E. WADE.

Var. *OBTUSIFOLIA* Briq. Stems erect, simple or branched, with ascending branches or more or less diffuse when long, sub-glabrous below,  $\pm$  densely hairy upwards, with short hairs, and internodes 1.5-6 cm. long, 6-20 in. high. Leaves *elliptic obtuse*, suddenly narrowed to a large, triangular, obtuse tooth, and having a *very convex* margin, thinly hairy to sub-glabrous on both faces, rarely conspicuously hairy, measuring 2-6 x 1.2-3 cm. in surface area; serratures acute, 4-7 on each margin, 0.25-1 mm. deep. Bracts similar to the leaves, but often larger and forming most of the leafage at flowering time, the uppermost few sub-acute and not much smaller. Floral axis very long, with numerous verticillasters. Calyx hairy with triangular, acute teeth. Pedicels usually glabrous.

The broadly elliptic, obtuse leaves, with convex margin, and thin scattering of hairs are the features of the variety. The affinity is with the var. *Allionii*, but the leaves are less tapered to both ends, and the calyx teeth longer and more pointed. Castlethorpe, Bucks; Marcham, Berks; Glen Spean, Westernness, G. C. DRUCE; Thames banks, Middlesex, opposite Kingston, 1919, J. FRASER.

[Mr J. Fraser has kindly gone over a large set of Mints which had been sent in 1894 to M. J. Briquet of Geneva for his kind determination. They were forwarded to M. Buser at that city with a set of British Alchemillas at M. Buser's request. Despite repeated enquiries no reply was forthcoming so in 1897, when the Berkshire Flora was published, I was obliged to say (p. 393) that I was unable

“ to elicit any reply to my communications.” The account of the Berkshire Mints was therefore necessarily less complete than I had hoped. At intervals since that time attempts have been made to recover them, as I learned that M. Briquet had kindly named the *Menthae* and returned them to M. Buser. In 1924 our member, the Rev. F. Bennett, was in Geneva and he was able to call on M. Buser and to obtain the parcel. After thirty years the determinations of these Mints are now able to be published in our *Report*. It may be added that, so far, I have not been able to give the references to the places of publication of M. Briquet’s varieties other than those which are marked with an asterisk. These will be found noticed in Briquet’s *Les Labiées des Alpes Maritimes*, 1891. Perhaps the three new varieties given by him have not hitherto been published. Mr Fraser, with his well-known knowledge of this group, has kindly given us the above article so that members may have a description of these new additions to our flora. It may be remarked that his own gatherings were not among those which M. Briquet examined.—Ed.]

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## ADDITIONS TO THE FLORA ZETLANDICA.

G. CLARIDGE DRUCE, D.Sc., LL.D.

Rumours having reached me of the occurrence of some plants in the Zetlands which had hitherto been unobserved I made my third visit, in the dullest of dull summers, during August 1924 when nearly a month was spent with my friends Prebendary Burdon and Mr T. Churchill in exploring portions of the mainland not examined by me during my previous visits. The results scarcely repaid one for the trouble and time, but it had merit—it showed how little had been missed by Mr Beeby and myself on previous occasions. One, however, has to remember that the rarer plants of these islands are very local and exist in very small quantity so that future workers should not be deterred from continuing their investigations. The outlying isles have been practically unworked, and the loch vegetation has been inadequately examined since the absence of boats even on such large pieces of water as Girlsta renders dredging well nigh impossible. “ Waders ” are of little use since the water deepens

very rapidly in many lochs. The majority, it would seem, are practically destitute of Charas and Pondweeds.

To reach the Zetlands from Oxford is now quite easy. The train, leaving about seven in the evening, lands one at Aberdeen before eight in the morning, and one can leave by the S. Sunniva at three in the afternoon and, weather permitting, and that means much, reach Lerwick at nine in the morning. This we did. The Grand Hotel offers comfortable quarters and we had a good car and an excellent chauffeur, Mr Ratter, who was most thoughtfully kind, supplied by Mr Ganson for about ninepence a mile. The distances to reach the extremities of the mainland are long and this necessarily makes motoring expensive. One may add that Lerwick is "dry" so the ordinary botanist must take "something" with him since nothing can be sold by the hotels. One can, however, buy stout or beer wholesale, and we were perforce obliged to buy two dozen quart bottles of the former which was the minimum amount allowed to be sold—a *reductio ad absurdum* of prohibitive legislation. Oddly enough there is one house in the middle of the Island where drink can be supplied as before. The roads to it did not seem unworn.

Although on the mainland of Scotland August 1924 was one of the wettest on record yet it was not so in Zetland. It is true our first day's visit to the Scord of Tresta and Weisdale resulted in a thorough drenching. We climbed Weisdale Hill in search of *Dryas* and found it in quite an unlikely place as it is on acid rock for the most part peat-covered. We did not meet that day with anything else of interest, but the mist prevented a complete examination. The rest of the month, till our day of departure was free from rain or nearly so, but the temperature was low and mist frequently capped the tops of the hills and thus retarded botanical work. The vegetation seemed less developed and the flowers were—with few exceptions—not in evidence. The Orchids were well nigh over. Three plants, however, were in magnificent show—first the var. *ornatus* of *Senecio aquaticus* which was in great beauty, not only in rough pastures but in disturbed ground, derelict agrarian soil, and especially on the fixed dunes of Spiggie and Quendale. The plant is, perhaps, sub-specifically distinct. It is well marked by its compact inflorescence which is shaped like an inverted pyramid or rather cone, the very conspicuously ligulated blossoms being so closely massed

as to be nearly coterminous. The plants are low in stature, under a foot usually, and their abundance gladdens the eye and forms a welcome contrast to the rather sombre surroundings. Next to this, if indeed it is proper to accord it a subordinate position, is *Euphrasia borealis* which is generally scattered through Zetland but reaches its maximum of abundance on the sandy soil of the south at Scousburgh, Sumburgh and Quendale. It has a rich variety of colour from the richest royal purple to white, or white with violet markings, or in varying shades of lilac. It grows in such dense masses as to justify the simile used by Kerner of the Eyebright "forming a Milky Way of blossom." The Spanish name for the Milky Way is derived from the number of pilgrims who visited the shrine of St James at Compostella. Numerous as these were, they are outnumbered by the Eyebrights in Dunrossness or Whiteness. The third plant of great beauty is *Parnassia palustris* L., var. *condensata* Travis & Wheldon, which grew intermingled with the two former on the damper portions of the Spiggie Links. Its pure white, large petals and small stature made a most delightful addition to the Eyebright and Ragwort. Even an alpine meadow could scarcely be more beautiful. One may add that Mrs Bruce of Sumburgh told me that the Eyebright round her desmesne had much increased in recent years and that it was now much damaging the pasture. One cannot avoid reference to another striking plant of Scousburgh and Sumburgh Links—the distinct looking *Gentiana septentrionalis* which is like a stunted *Amarella*, but the flowers are, when expanded, uniformly of a white or palest lilac or rose-tint, and star-like. They are marked on the outside with pale reddish-purple. Although sometimes much branched from the base, it is often quite simple.

I have alluded to our first day on Weisdale Hill. On the way we examined the opposite side of the Voe and noticed an abundance of *Silene acaulis* near the coast-level. Much of it was barren and formed a close-set turf. A few plants were in fruit. Pure white *Gentiana campestris* was in the vicinity, as also a small quantity of *Alchemilla filicaulis* with a few plants of stunted *Gnaphalium sylvaticum*. The next day we motored to Aith Voe. A marsh at its head yielded *Schoenus nigricans*, var. *nanus*, *Selaginella*, *Orchis praetermissa* and *Scirpus pauciflorus*. Thence we drove by East Burra Firth to Gon Firth by the Loch of that name and then climbed, and

a long trudge it was, by Smirla Water to Bratta Field where grew *Thalictrum alpinum* on the higher rocks. *Salix herbacea*, *Euphrasia foulaensis* and *micrantha* were gathered on the way to Marrafield Water. Here a small form of *Pinguicula vulgaris* occurred, as well as *Drosera rotundifolia*, forma *pygmaea*. On the Holm grew *Rhinanthus groenlandicus* and *Juncooides sylvaticum*, which Churchill waded in for. The hills of the central part of the mainland are not high yet from the frequent mists, are bad places as one can so easily miss one's direction in the featureless moorland, and the ground is not easy walking. We returned by Olna Firth and Sandwater to Lerwick. On Sunday we visited the Sound and the Lerwick quarry to see the celebrated Corduroy fossil which has raised so much controversy, Professor Lang kindly showing it us *in situ*. We found good *Cochlearia danica* and *Taraxacum naevosum*. On Monday we had a long journey by the Olna Firth Whaling station where we added *Radicula islandica* to the Zetland list, but the Norge fishers may have accidentally brought it with them. Several large whales were being cut up, the carcasses and refuse attracting an enormous quantity of various kinds of gulls which are lethargically fat. The stench from the refuse-burning followed us for seven miles and made us retch with its horridness. We went by Busta Voe and Brae to Delting. From Scatsa we climbed Dalecord Hill where *Epilobium palustre* occurred as a large-flowered plant. *Lotus corniculatus*, too, had very large blossoms (the var. *grandifolia*). Here also were *Carex pitulifera* and *Festuca ovina*, var. *supina vivipara*. Garth's Voe was next visited. The peat here is very thick and contained the remains of a former woodland. On the adjacent shingle *Spergularia media* and *Cochlearia groenlandica* occurred. Another day was spent at Aith Voe where we got *Carex dioica*. Going thence to Walls we searched Kirkie Garth Loch vainly for *Zannichellia polycarpa* which Beeby found there. Growing and flowering some nine inches below the water-surface was a *Ranunculus* with flaccid leaves and small unopened flowers, certainly self-fertilised. The leaves were longer than those of the Forfarshire plant, but I am inclined to refer it to *R. Drouetii*. *Carex vesicaria* was plentiful near Grasswater.

Our next expedition was northwards by the gloomy and monotonous Petta Dale where, on the slope of Hoo Kame *Poa irrigata* was

gathered. Thence to Olna Firth, where the wind, blowing the stench of the whales away from us, we were allowed in comfort to enjoy the magnificent scenery of that extensive fiord. Then to Ell Wick and to the rocks of Mavisgrind and the Cliva Hill, where a Hawkweed *Hieracium Sommerfeltii* was obtained new for Zetland. *H. protractum* and *Sagina subulata*, var. *glabra* were in fine condition. As the road was under repair it required delicate driving to avoid a too rapid descent to the sea or a collision with the rock-cliffs. Cliva affords one of the best hunting grounds in Zetland. It was a long drive still to reach Eala Water, passing on our way Punds Water. Here we made a detour to the west, passing a burn which is the only known locality for *Hieracium subtruncatum*. At the interesting Ura Firth on the shingly strand grew splendid specimens of that most lovely plant *Pneumaria maritima*. *Matricaria inodora*, var. *phaeocephala* was in fine blossom and *Orchis praetermissa* grew in an adjacent march. We then went along the south shores of Ronas Voe getting a fine view of the cliffy base and rounded summit of Ronas Hill. We noticed the little croft of Feal which Beeby commemorates in *Hieracium fealense*. On the more western rocks grew a few plants of *Hieracium breve*, one of the rarest plants in the world. From Orrwick at the head of the Voe we returned by the east side of Eala Water, and then visited Ollaberry where *Thalictrum alpinum* grows near the coast-level and where *Elymus* abounds. On our homeward journey we saw Ivy growing on a house at Girlsta Loch. It also occurs on Fort Charlotte at Lerwick, but it is probably not a native plant in Zetland. A day was spent at Scalloway where we found that the place where *Euphrasia latifolia* grew had been swept and garnished but *Aira caryophyllea* still grew on the cliffs. We dredged Tingwall Loch with small success nothing new being obtained. The Charas were not as good as on the previous visits. *C. delicatula*, var. *annulata* was in small quantity but there was plenty of *Nitella opaca*, var. *brachyclema* and *Potamogeton filiformis*. *P. suecicus* we found only as drifted specimens and never came upon the main bed, but a strong wind made rowing and collecting a great difficulty. No sooner were you on a good bed of weeds than the wind blew you away. We spent a quiet day examining Clickimin Loch where *Mimulus guttatus* grows and visited the famous Brough on its borders. We then took a motor-boat from Lerwick

and went round the Isle of Bressay and then that of Noss. Although there was a slight swell on we were enabled to get close to the superb eastern cliffs, about 600 feet high, on the ledges of which nest innumerable birds. At our approach they rose in clouds and circled round making a deafening noise. So many are they that they almost obscure the evening light. It is a most wonderful sight and one is so close that one can identify on the rocks the snowy Kittiwakes in thousands, the Herring, Greater and Lesser Blackbacked Gulls, the Shags and Cormorants, Gannets and Guillemots, the comical Puffins, the graceful Terns and the piratical Skuas. Then rolling with the swell we passed the Giant's-leg, and went into the gloomy cave where lurked the Divers and Shags. On the rocks above grew *Matricaria* and *Silene maritima*.

On the Saturday we left Lerwick to spend a week at Spiggie in the south of the island. After the somewhat gloomy north it is a relief to come to the yellow sands of Scousburgh. The journey down is full of interest as we passed on the way the copper mines of Sandwick, the wonderful Brough of Mousa, the gorge, such as it is, of Channerwick and the *Jasione*-covered banks of Clayval. The flowers on the links were magnificent as we have already noticed as regards the four chief constituents, but there were also *Carex incurva* in great quantity, *Cerastium tetrandrum*, often very luxuriant, a few plants of *Ligusticum*, fewer still of *Pneumaria*, *Agropyron junceum*, *Festuca arenaria*, *Ammophila* and *Elymus*, fine beds of deep blue *Vicia Cracca* and here and there the snowy white pearls of *Sagina nodosa*. The corn crops afforded new plants to the Zetlands in *Viola lepida* and *V. obtusifolia* and there is much *Lycopsis*, *Galeopsis* and *Spergula sativa* with its strong valerianaceous smell. We met the children of the Headmaster of the School at Lerwick and their sharp eyes found several of these cornfield-weeds. Miss Hunter showed me a Poppy she had found at Sumburgh, and also *Chrysanthemum Leucanthemum*, an adventive in the Isles. The Prebendary found *Myrrhis* and I got *Archangelica* as relics of cultivation. The uses of these seemed to be unknown to the crofters. Boddam was visited to see the great bed of *Geranium Robertianum* which Beeby discovered. It is unknown elsewhere in the island. There, too, grew as garden-relics *G. pratense* and *Imperatoria* and quantities of *Filix-foemina* were in the vicinity. A most enjoyable walk was taken to Noss Hill

above the Wick of Shumie when *Euphrasia foulaensis*, *E. micrantha* and *Antennaria* were gathered. From the high cliff one looked down to the rocks in the sea on which fourteen seals were basking in the warm sunshine. On the way back I obtained fine fruiting specimens of *Callitriche polymorpha* from a ditch on the west side of Loch Spiggie. On Monday we motored to Clumlie Loch which gave little of interest except enormous *Equisetum limosum*. On Tuesday we dredged Spiggie and found *Potamogeton nitens*, *pectinatus* and *fliformis*, splendid *Ranunculus Baudotii*, masses of *Nitella opaca*, var. *brachyclema*, verging also into the type, *Chara aspera* and *contraria*, *Ruppia rostellata*, *Callitriche autumnalis* and other aquatics. Tuesday was spent in dredging Brou Loch which is rich in aquatics. Immense quantities of *Chara aspera* and *Nitella opaca*, var. *brachyclema* occurred. There was also *Utricularia major*, barren, but probably this. After much work *Elatine hexandra* in small quantity was obtained, a most interesting extension of its range. *Fleocharis acicularis* was seen. This definitely adds it to the Flora. Both species of *Isoetes* were also found. On the treacherous bog which lies between the two Lochs grew *Mimulus*, *Caltha radicans* and *Utricularia cchroleuca* but no vestige of *Carex limosa*. We drove in the afternoon to Huesbreck where *Tolypella nidifica* was scarce and in poor condition. *C. contraria* grew with it as well as *Potamogeton praelongus*, and there was much *Myosotis palustris*, var. *strigulosa* round its margin. There is a wonderful piece of fixed dune to the west on which grew *Carex incurva* and *Sagina nodosa* as the var. *monilifera* in plenty. Then Sumburgh was visited and we had a most enjoyable walk on the splendid links on which were masses of *Euphrasia borealis* and plenty of *Gentiana septentrionalis* with *Carex arenaria*, and *Galium verum*, var. *maritimum*. At Sumburgh the mystery of the Poppy was unravelled for on the foreshore it grew in some plenty as a very small, scarlet-flowered plant, the petals having a large black blotch fringed with white at the base. Calling at Mrs Bruce's house, she kindly took me round her beautiful garden where the poppy had been grown for some years and seeded freely. The specimen first shown me was without leaves and being so small and faded suggested a *Rhoeas* plant but it proved to be *P. somniferum*, var. *hortense*. The Carraway is common here. I then walked to Grutness where *Ranunculus Baudotii* is frequent and where *Ligust-*

*ticum* occurs. About Sumburgh, but rarely, grows *Bartsia Odonites*. Near Tolob, where the roar of Sumburgh Roost was much in evidence, *Archangelica* occurred and *Catabrosa* was noticed. Next Quendale was worked. We noticed on a crofter's house-roof *Amphila* and on the roadside white-flowered *Prunella*. A walk across the fixed dunes afforded an addition to the Flora in *Trifolium dubium*. On the way to Hillswell *Catabrosa* was noticed and much *Ranunculus hederaceus*, *Myosotis palustris*, var. *strigulosa* and *Carex incurva*. In the Loch grew *Potamogeton pectinatus*. A walk in the afternoon to the beautiful Bay of Clayval resulted in seeing *Nepeta hederacea*, an evident straggler from ancient culture. By the stream which once worked the corn-mill at Scousburgh *Mentha piperita* is abundantly naturalised. Moonwort grew locally plentifully. On one side of Brou Loch *Radiola Radiola* grew very sparingly.

A day was devoted to climbing Fitful Head from Quendale. The top is 928 feet high. It commands a distant view of Foula, and a glorious expanse of the Zetland coast. Fitful Head is composed of a clay-slate rock and is poor in vegetation though *Saxifraga oppositifolia* is recorded for it. We saw *Euphrasia foulensis*, *latifolia* and *micrantha*, *Dryopteris aristata*, var. *alpina*, *Deschampsia caespitosa*, var. *brevifolia*, *Luzula sylvatica*, var. *gracilis*, *Polypodium vulgare*, var. *breve*, *Cerastium tetrandrum*, var. *congestum*, *Polygala dubia* new to the Flora, *Jasione* in varying forms, *Carex binervis*, etc. The rock and sea views were magnificent but, alas, too soon came down the inevitable mist and obscured the views of scenery and even of the plants around us. Descending we found much *Sagina maritima* at the base in varying forms. On the way back from Spiggie to Lerwick Channel Wick was explored where there is *Filix-mas* and *Salix aurita*, and at Levenwick a form of *Mentha longifolia* is naturalised. Here, too, was *Glechoma* straggling from cultivation. We could see nothing of *Erodium* which Beeby once found there. An afternoon was devoted to Dales Voe where grow *Spergularia media* and *Cochlearia* but the gneissic rocks of this area are botanically barren. We had a delightful morning at Whiteness, Stromness Voe, and Weiss Voe where we found heaped up on the Voe-shingle quantities of the type *Zostera marina*, which Beeby failed to detect in Zetland and

with it its var. *angustifolia*. Here, too, grew *Ruppia rostellata* and on the low rocks, probably formed of a blue granular limestone, *Silene acaulis*, *Polygala vulgaris*, *Achemilla filicaulis*, *Rubus saxatilis* very small, and *Avena pubescens* along with much *Gentiana campestris*. An afternoon was spent at Gardie House in Bressay, the seat of Mrs Cameron, who showed us a silver beaker which had been taken from the El Gran Griffin, flagship of Admiral Don Juan Gomez de Medina, one of proud Spain's Armada galleons which was wrecked on Fair Isle. Here, too, we met with Miss Lester-Garland, the daughter of one of our valued distributors. In the extensive gardens occurred as weeds *Volvolvulus sepium* and *Convolvulus arvensis*. *Lythrum Salicaria* and white-flowered *Epilobium angustifolium* were effective garden plants. On the wayside grew *Symphytum peregrinum* and there was much *Glyceria distans*, var. *procumbens* about the pier.

Then we once more determined to visit the north as far as Nesting. We traversed the gloomy Dales Voe to Lax Firth and then went to Wadbister where we found a delightful ravine which has been cut through by the burn which issues from Girlsta Loch and works a corn-mill at its southern end. Here in the gorge we saw a Dog Rose in flower. It was too young to accurately classify, but Col. Wolley-Dod says it is probably a *subcristata* form. Here also grew *Alchemilla pratensis*, *Selaginella* and *Filix-foemina*. Then we visited the shingly coast where was good *Glyceria distans*, var. *prostrata*, *Cochlearia groenlandica*, etc. Next we went northwards to South, and then to North Nesting, over a rolling country with good sea views to Whalsay Island but met with few interesting plants. Some of the Lochs have *Spargania* in them, probably *S. affine*, but there was not much to excite botanical enthusiasm as we progressed to Laxo Voe. There the Laxo Burn comes in and following up this brawling stream we met with *Hieracium pulchelliforme* new to the mainland. It was hitherto known only from Unst. It was in good flower and near it grew *Salix aurita* and its var. *minor* as well as another barren willow. There was much *Filix-mas* too and a little *Polypodium vulgare*. We then took a roughish road to Voe and through dark Petta Dale to Lerwick. The following day for a change we went westwards to Tresta Voe, Bixter Voe, and by Aithsting to Clousta Voe a piece of water of considerable beauty. On low rocks

close to the sea grew *Thalictrum alpinum* and here we also got *Sagina subulata*, var. *glabrata* and *Orchis purpurella*, but this gneissic area is singularly barren. Here and there the true *Orchis maculata* is fairly frequent in varying shades of colour but showing no approach to *Fuchsii* which seems entirely absent.

We had been trying to keep a good day for Ronas Hill for fates hitherto had been most unkind. By the time we had reached the hill it had always put on its nightcap and a thick one too. However we made one more journey over ground we knew too well, traversed the dangerous (under repair) Mavinsgrind, saw the bright Hawkweeds on Cliva, the *Luzula* and *Angelica* on the holms of Punds Water, and so on past the disused Ronas Whaling Station to Colla Firth. Thence we ascended the Hill the highest point of which is 1475 feet. It is composed of a red disintegrated granite. The long trudge up Collafirth Hill and Ronas field offers little of interest except the views now and then obtained across the Voe. On the stiffer slope above the Grudburn where *Lonicera* and *Aucuparia* sparingly grow and in the gully of which *Pteridium aquilinum*, var. *lanosum* also occurs, a few alpines appear such as very dwarfed *Alchemilla alpina*, *Lycopodium alpinum* and *Selago*, and a tuft or two (literally) of *Juncoides spicatum*. *Juncus trifidus* was on the summit level where *Saussurea* grows in barren rosettes and *Statice planifolia* is very tiny, if indeed it be that species. There is dwarfed *Solidago* which is not *cambrica*, small *Leontodon autumnale* and *Salix herbacea* but the wind drives with such force over this exposed summit that the very soil is itself lifted into the air. The most interesting plant of this wind-swept ground is a *Plantago* which must, I think, be put under *Edmondstonii*, from which it differs in many particulars. Just as there was some chance of getting to the western rocks below us down came the mist and we had to retreat gathering on the way poor *Loiseleuria* and *Carex rigida*. On the eastern side I nearly came to a watery grave while trying to pick *Deschampsia setacea* which grew in deep water although it was only a tiny pool half sphagnum covered.

Our final day was occupied in going over the same ground to Collafirth thence under the Bergs of Skelberry to Burra Voe, then to Sand Voe and Isbister. About this remote homestead grew much *Matricaria suaveolens* which had been brought in with chicken-food

some years ago. There was also *Symphytum peregrinum*. Then I climbed to the Lee of Setter finding robust specimens of *Saxifraga oppositifolia*, *Carex pilulifera* and *Thalictrum alpinum* at low elevations. The plant of this area is *Hieracium zetlandicum* but I found the field known as Benegarth, its classic locality, where on my last visit there was good quantity, had just been mown and *zetlandicum* was being made into hay—if indeed the weather ever allows that to come about. I found that the lady raking the crop was none other than the Miss Hay who was Beeby's hostess on his Zetland visits. She carefully preserves the dried specimen he gave her of this new Hawkweed, and was most excited to find that I knew him well. I found a few small specimens on the Lee above and also the leaves of *Polygonum viviparum*, var. *alpinum* which he also gathered there. Then I pursued my lonesome way by the Lochs of Setter to the remote Fethaland and on that wide expanse of rocky coast and shimmering water with its innumerable facets of light flickering in the sun I said my good-bye to Ultima Thule.

Before one leaves the Zetland Flora allusion must be made to the extremely restricted habitat of many Zetland plants. *Hieracium breve* is limited to a few specimens on the north side of Ronas Voe, *H. subtruncatum* to a small burn near Eala Water, *Castalia* to a small loch in the Walls area, *Toypella nidifica* to a tiny loch in Dunrossness, *Melampyrum pratense* to the northern slope of Saxaford, *Geranium Robertianum* to a patch of shingle at Boddam, *Aira caryophyllea* to a cliff at Scalloway, *Lathyrus maritimus* to Unst, *Sagina saginoides* to a minute area, and so on.

In my previous Flora (p. 7) I mentioned that the plants then known to grow in the Zetlands comprised 446 native and 59 adventive species. 70 others had been recorded but mostly in error. In this list *Gnaphalium sylvaticum* should be inserted in place of *G. norvegicum*. This visit verified the occurrence as an alien of *Nepeta hederacea*. To the alien list it adds *Papaver somniferum*, *Radicula islandica*, *Brassica Rapa*, *Myrrhis*, *Archangelica*, *Petasites fragrans*, *Convolvulus arvensis*, *Mentha longifolia* and *piperita*, and *Salix viminalis*—12 species. Thirteen additional species or sub-species of native plants besides several varieties are added—*Viola Lejeunii* and *obtusifolia*, *Polygala dubia*, *Trifolium dubium*, *Hieracium Sommerfeltii*, *Taraxacum naevosum*, *Thymus pycnotrichus*, *britannicus*

and *glaber* and *Eleocharis acicularis* (confirmed) besides *Bursa luteo-tiana*, *concaua* and *sinuosa*.

The Zetland Flora thus consists of Native species, ...	456
Adventive, ...	73
	<hr/>
	529

Sixty-nine species have been recorded probably in error or were mistaken for other species. The three Bursae have not been included and several Taraxaca are awaiting identification. I have to offer warm thanks to Mr J. Campbell, Mrs Bruce, Mrs Cunningham Hay and Miss Hunter for kind help; and to Mrs Gregory, Mr A. Bennett, Mr J. Cryer, Mr C. E. Salmon, Dr Drabble, Col. Wolley-Dod, Herr Ronniger, Herr Dahlstedt, Prof. Danser and Dr Almqvist for critical assistance.

7. *THALICTRUM ALPINUM* L. Not rare. Within a few feet of the sea level at Clousta Voe; on Blatta Hill; Fethaland; Isbister.

20. *RANUNCULUS ACRIS* L. With very large flowers at Spiggie. Var. *RECTUS* (Bor.) seems the common form.

42. *R. BAUDOTII* Gren. Beautiful specimens in Loch Spiggie; Brou Loch, with submerged but no floating leaves; abundant at Grutness Voe.

46. *R. HEDERACEUS* L. Common about Hillswell, Quendale and Dunrossness.

47. *R. FICARIA* L. Gardie House, Bressay. Mrs Bruce tells me it is not rare about Sumburgh, but we were too late to see it in flower.

\*†79. *PAPAVER SOMNIFERUM* L. Alien. Hortal. On the foreshore at Sumburgh, an escape from the garden of Mrs Bruce where it seeds freely. It is not the type, but a garden variety with a deep black blotch at the base of the crimson scarlet petal. Many of the plants were very small and slender.

81. *P. DUBIUM* L. Sumburgh and Spiggie, in cat crops.

111. *FUMARIA OFFICINALIS* L. Scattered specimens at Levenwick and Spiggie.

\*126. *RADICULA ISLANDICA* (Oeder) Dr. Near the whaling station at Olna Firth perhaps introduced by the Norge whalers. I saw it nowhere else.

170. *COCHLEARIA GROENLANDICA* L. Aith Voe; Garths Voe; Dales Voe; Laxo; Scalloway; Urafirth.

†\*208. *BRASSICA RAPA* L. Alien. Sumburgh.

\*232. *BURSA LUTETIANA* (E. At.). Spiggie. New to Britain.

\*232. *B. CONCAVA* (E. At.). Scousburgh.

\*232. *B. SINUOSA* (E. At.). Scousburgh; Scalloway; Lerwick.

271. *CAKILE CAKILE* (L.). (*C. maritima* Scop.) Urafirth; Garths Voe.

274. *RAPHANUS RAPHANISTRUM* L., var. *FLAVUM* Gray, the common form. Occurred on sea sand at Spiggie.

293. *VIOLA SYLVESTRIS* Kit. Wadbister; Laxo.

294. *V. RIVINIANA* Reichb. Weisdale, and as a cleistogamous form.

*Forma MINOR* Greg. Fitful Head.

295. *V. RUPESTRIS* Sch., var. *GLABRESCENS* Neum. A not uncommon plant as at Laxo; Whiteness Voe; Ward of Scousburgh; Fitful Head; Sumburgh.

\* × *CANINA*. Lee of Setter.

296. *V. CANINA* L., \*var. *PUSILLA* Greg. Laxo; Marrafield; Ronas Hill.

301. *V. PALUSTRIS* L. Weisdale, etc. *Epipsila* not seen.

\*303. *V. VARIATA* Jord. Burrafirth; Tingwall.

\*303. *V. LEJEUNII* Jord. Cunningburgh; Spiggie; Setter.

- \*304. *V. OBTUSIFOLIA* Jord. Spiggie; Scousburgh.
308. *POLYGALA SERPYLLIFOLIA* Hose (*serpyllacea* Weihe). Weisdale; Scousburgh; Ronas Hill; Fitful Head; Wadbister.
309. *P. VULGARIS* L. Weisdale; Clousta Voe; Setter; Stromfirth.
- \*310. *P. DUBIA* Bellynck. Fitful Head.
334. *SILENE MARITIMA* Sm. Frequent on the coast. Urafirth; Spiggie; Fitful Head; Grutness; Clousta.
346. *S. ACAULIS* L. At the Sound, Lerwick; Stromfirth; Weisdale—here, at about 100 feet above sea-level, it forms a noticeable feature in the turf and was fruiting sparingly.
358. *LYCHNIS FLOS-CUCULI* L., sub-var. *RUBESCENS* Dr. Clickimin.
360. *L. DIOICA* L., var. *ZETLANDICA* (Compt.) Dr. Ollaberry; Urafirth; Collafirth; Burrafirth; Clousta Voe. Often a beautiful plant and sometimes cultivated in the gardens.
370. *CERASTIUM VULGATUM* L., forma *MACROPETALA* Dr. Clickimin; Ollaberry; Tingwall, etc.
374. *C. TETRANDRUM* Curt. Lerwick.  
Forma *CONGESTUM* Dr. Lerwick; Fitful Head.  
Forma *LUXURIANS* Dr. A foot high in the sheltered sand dunes near Spiggie.
379. *STELLARIA MEDIA* Vill., var. *MAJOR* Koch. Quendale.
384. *S. ULIGINOSA* Murray. Weisdale; Burravoe, etc.
393. *ARENARIA PEPLOIDES* L., var. *DIFFUSA* Hornem. Ollaberry.
399. *SAGINA NODOSA* Fenzl, as the var. *MONILIFERA* Lange. Spiggie; Quendale; Wadbister; Stromfirth, etc.
401. *S. SUBULATA* Presl. Ronas Hill.  
Var. *GLABRATA* Lange. Clousta; Cliva.

407. *S. MARITIMA* DON. Swina [not Surina] Ness; Grutness; Fitful Head.

Var. *PROSTRATA* TOWNS. Fitful Head.

408. *S. PROCUMBENS* L., \*var. *CORALLINA*. Lerwick.

410. *SPERGULA SATIVA* BOENN. Weisdale; Spiggie, etc.

412. *SPERGULARIA MEDIA* PRESL. Garth Voe; Voxter.

413. *S. SALINA* PRESL. Aith Voe; Dales Voe.

421. *MONTIA FONTANA* L., var. *BOREO-RIVULARIS* DR. Weisdale; Burga Water; Clousta Voe.

424. *ELATINE HEXANDRA* DC. The Shetland record rested on a floating specimen collected by Mr Beeby in Kirkiegarth Loch, where I was unable to find it. This year while dredging in Brou Loch we were fortunate to detect it in situ. This Loch is a long way from Beeby's locality.

432. *HYPERICUM PULCHRUM* L. Not uncommon. Ronas Voe; Cliva; Wadbister; Dalescord Hill.

Var. *PROCUMBENS* ROSTR. Fitful Head; Ronas Hill.

466. *RADIOLA RADIOLA* (L.) (*R. linoides*). Very rare. Brae side overlooking Brou Loch.

470. *LINUM CATHARTICUM* L., var. *DUNENSE* DR. Quendale.

†478. *GERANIUM PRATENSE* L. Alien. Hortal. Weisdale; Boddam; Burra Voe. With no pretensions to indigenuity.

488. *G. ROBERTIANUM* L. In Mr Beeby's locality at Boddam. There is a large patch on the shingle where it has been known for many years, but it was doubtless introduced there.

†537. *ULEX EUROPAEUS* L. Alien. Near Stromfirth.

599. *TRIFOLIUM PRATENSE* L., forma *ALBA*. Aith Voe.

†627. *T. HYBRIDUM* L. Alien. Quendale; Whiteness, etc.

628. *T. REPENS* L., var. *GRANDIFLORUM* PETERM. Hillswick Voe,

BEEBY; Tingwick; Spiggie; Balta. See also Erith's *White Clover* 116, 1924.

\*637. *T. DUBIUM* Sibth. Among the sand dunes near Quendale, native, and on a field-border at Scousburgh. In the latter place it looks introduced.

641. *ANTHYLLIS VULNERARIA* L., var. *MARITIMA* (Koch). Fitful Head.

647. *LOTUS CORNICULATUS* L., forma *GRANDIFLORUS*. Dalescord; Cliva, etc.

688. *VICIA SEPIUM* L. Lerwick; Ollaberry; Whiteness.

†748. *RUBUS IDAEUS* L. Alien. Escape at Busta.

879. *R. SAXATILIS* L. Whiteness; Stromfirth near the sea level, small plants.

890. *POTENTILLA ANSERINA* L., var. *NUDA* S. F. Gray. Lerwick; Quendale; Spiggie.

908 (2). *ALCHEMILLA MINOR* Huds., var. *FILICAULIS* (Buser). Brouster; Wadbister; Stromfirth.

912. *A. ARVENSIS* Scop. Spiggie, rare.

934. *ROSA SUBCRISTATA* Baker. Wadbister Glen but the specimens are too young to be absolutely certain.

975. *SAXIFRAGA OPPOSITIFOLIA* L. Lanchesto Hill. This is a stouter plant than the ordinary mountain one.

1000. *PARNASSIA PALUSTRIS* L. Aith Voe; Weisdale.  
Var. *CONDENSATA* Tr. & Whel. In magnificent flower at Spiggie.

1029. *DROSER A ROTUNDIFOLIA* L. Blatta Field; Dalescord; Fitful Head; Aith Voe. Often as diminutive plants.

1033. *MYRIOPHYLLUM ALTERNIFLORUM* DC. Clickimin; Sandness.

1035. *CALLITRICHE STAGNALIS* Scop., var. *SERPYLLIFOLIA* Lönnr.  
Spiggie; Boddam.

1035 (2). *C. PLATYCARPA* Kuetz. Petta Water.

1038. *C. POLYMORPHA* Lönnr. Clousta Voe; between Spiggie and Quendale in some quantity and in excellent condition. The long styles were a marked feature.

1039. *C. INTERMEDIA* L. Tingwall.

1054. *EPILOBIUM MONTANUM* L. Sumburgh House, as a garden weed; Scalloway.

1057. *E. PALUSTRE* L. Weisdale; Ollaberry.

Var. *FONTANUM* Hausskn. Delting.

1103. *CARUM CARVI* L. Abundant in fields about Spiggie, Tolob, Clayval, Grutness and Levenwick. It has all the look of a native plant, but its occurrence in and about kirkyards and houses indicates its use as a condiment. In Dunrossness and the south of Shetland it has a distinct claim to indigenuity.

†\*1116. *MYRRHIS ODORATA* Scop. Alien. Spiggie, about houses, Prebendary BURDON.

1126. *ANTHRISCUS SYLVESTRIS* Hoffm. Walls; Ollaberry; Quendale. All as the var. *ANGUSTISECTA* Dr.

1144. *LIGUSTICUM SCOTICUM* L. Lerwick; Grutness. Known to Mrs Bruce as Wild Celery.

1147. *ANGELICA SYLVESTRIS* L., var. *DECURRENS* Wallr. Weisdale; Delting.

\*†1148. *ARCHANGELICA ARCHANGELICA* (L.) Karst. Alien. Relic of cultivation. Formerly much cultivated, now its uses appear to have been forgotten. About houses and garths at Spiggie, Boddam and Tolob.

†1152. *PEUCEDANUM OSTRUTHIUM* Koch. Boddam, a relic of cultivation,

- †1172. *HEDERA HELIX* L. On Fort Charlotte, Lerwick; on a house at Girlsta.
- †1178. *SAMBUCUS NIGRA* L. Alien. Spiggie.
1198. *GALIUM PALUSTRE* L., var. *MICROPHYLLUM* Lange. Scatsa Water.  
Var. *WITHERINGII* (Sm.). Spiggie.
1199. *G. VERUM* L. Fitful Head.  
\*Var. *MARITIMUM* DC. On the sands near Quendale.
1237. *SCABIOSA SUCCISA* L. Benegarth; Spiggie, with pink flowers.
1243. *SOLIDAGO VIRGAUREA* L. Dalescord Hill; Cliva rocks; Collafirth.
1248. *BELLIS PERENNIS* L., forma *PROLIFERA*. The Hen-and-Chicken's Daisy. Dunrossness, Mrs SAXBY.
1270. *ANTENNARIA DIOICA* Gaertn. Benegarth; Weisdale; Spiggie; Fitful Head.
1275. *GNAPHALIUM SYLVATICUM* L. Isbister; Stromfirth; Dales Voe.
1329. *ACHILLEA MILLEFOLIUM* L., forma *ROSEA*. Quendale.
1353. *CHRYSANTHEMUM LEUCANTHEMUM* L. Very rare. Spiggie, Miss DORIS HUNTER.
1360. *MATRICARIA INODORA* L., var. *PHAEOCEPHALA* Rupr. Ura-firth; Noss.
- †1362. *M. SUAVEOLENS* Buch. Aith Voe; Ollaberry, etc. Very abundant at Isbister where it was originally introduced with chicken-corn.
- †1366. *TANACETUM VULGARE* L. Virkie; Clousta; Spiggie. A relic of cultivation.
1368. *ARTEMISIA VULGARIS* L., var. *COARCTATA* Fors. Weisdale; Spiggie; Grutness.

- \*†1387. *PETASITES FRAGRANS* Presl. Alien. Hortal. Weisdale.
1384. *TUSSILAGO FARFARA* L. Local. Lerwick; Spiggie.
1393. *SENECIO AQUATICUS* Hill, var. *PENNATIFIDUS* Gren. & Godr. Boddan; Virkie.
1433. *CIRSIIUM ARVENSE* Scop. Rare. Lerwick.  
Var. *MITE* Koch. Spiggie.
1451. *CENTAUREA OBSCURA* Jord. Lund, Unst, TATE, as *C. NIGRA*.
- \*1547. *HERACIUM SOMMERFELTII* Lindeb. Rare. Cliva Hill.
1619. *H. ZETLANDICUM* Beeby. In the place where Mr Beeby discovered it at Benegarth. The grass had just been cut so that most of the specimens were in the hay. A few small plants had escaped. It was at this farmhouse of Benegarth that Mr Beeby stayed for some time and where his original specimen is still preserved.
1621. *H. DEMISSUM* Stromf., var. *PULCHELLIFORME* W.R.L. This attractive Hawkweed occurred in some plenty by the river-side at Laxo. This is a new record for the Mainland.
1622. *H. PROTRACTUM* Lindeb. Rather frequent at Cliva.
1643. *LEONTODON AUTUMNALE* L., var. *TARAXACI* (L.). Weisdalé; Ronas Hill; Fitful Head; Marrafield.
1645. *TARAXACUM NAEVOSUM* Dahlst. Lerwick, etc.
1645. *T. NAEVOSIFORME* Dahlst. Lerwick.
1657. *SONCHUS ASPER* Hill, var. *INDIVISA*. Spiggie; Scousburgh.
1658. *S. OLERACEUS* L. Walls.  
Var. *LACERUS* Willd. Clayval.
1664. *LOBELIA DORTMANNA* L. Aith Voe; Brou Loch.
1666. *JASIONE MONTANA* L., forma *PALLIDA*. Fitful Head.

1685. *VACCINIUM MYRTILLUS* L. Fruiting at Wadbister.
1691. *ARCTOSTAPHYLOS ALPINA* Spreng. The altitudinal range of this on Ronas Hill is 200-1300 feet (not 1800 feet, as given in my Flora).
1693. *CALLUNA VULGARIS* Hull, \*var. *ERIKAE* Graebn. Near Levenwick, etc.
1721. *STATICE PUBESCENS* (Link) Dr. Very small tufts on Fitful Head.
1724. *PRIMULA VULGARIS* Huds. Rather frequent and occasionally flowering in August as at Clousta Voe, Whiteness, etc.
1740. *TRIENTALIS EUROPAEA* L. Bressay.
1741. *GLAUX MARITIMA* L. Clousta Voe.
1763. *GENTIANA AMARELLA* L. Scalloway.
- 1763 (2). *G. SEPTENTRIONALIS* Dr. = forma *MULTICAULIS* Lange, p.p. Very abundant about Spiggie; Scousburgh; Sumburgh; Quendale.
1765. *G. CAMPESTRIS* L. Isbister; Stromfirth; Dales Voe; Aith Voe; Ollaberry; Clousta Voe; Wadbister; Spiggie.  
Var. *ALBA*. Stromfirth, etc.
- \*+1792. *SYMPHYTUM PEREGRINUM* Ledeb. Bressay; Isbister.
1805. *LYCOPSIS ARVENSIS* L. Not unfrequent in oat crops at Weisdale; Ollaberry; Levenwick; Spiggie.
1811. *PNEUMARIA MARITIMA* Hill. In splendid flower at Ura-firth on a strip of shingle, some of the plants being a yard across; Ollaberry; Grutness.
1813. *MYOSOTIS PALUSTRIS* Hill. Clickimin.  
Var. *STRIGULOSA* Reichb. By Huesbreck Loch; Hillswick.
1814. *M. REPENS* Don, var. *ALBA*. Weisdale; near Fitful Head.
1815. *M. CAESPITOSA* F. Schultz. Spiggie.

1821. *M. VERSICOLOR* Sm. Weisdale; Quendale.
- †1831. *VOLVULUS SEPIUM* Jung. Bressay, as a garden weed.
- \*†1833. *CONVOLVULUS ARVENSIS* L. Garden weed at Bressay on the estate of Mrs Cameron.
1911. *VERONICA BECCABUNGA* L. Ollaberry.
1924. *V. AGRESTIS* L. Rare. Bressay.
1926. *V. HEDERIFOLIA* L. Spiggie
1932. *EUPHRASIA BOREALIS* Wetts. In astounding quantity and in great beauty on the light sandy soil about Spiggie, near Quendale and on the dunes about Sumburgh House where it is a pest to the grass crops. Its range of colour is considerable—from dark purple through lilac to white, with subtle combinations of colour. It bears out the epithet applied by Kerner to the Eyebright as the “Milky Way.”
1935. *E. CURTA* Fr., var. *GLABRESCENS* Wetts. Lee of Setter; Marrafield, etc.
1937. *E. LATIFOLIA* Pursh. Ronas Hill; Clousta.
1939. *E. MICRANTHA* Reichb. Weisdale; Dalescord; Brou Loch; Aith Voe; Fitful Head; Ronas Hill. = *E. gracilis* Fr.
1940. *E. SCOTICA* Wettst. Frequent. Dalescord; Aith Voe; Marrafield; Bratta Field; Fitful Head; Brou.
1948. *BARTSIA ODONTITES* Huds. Rare. Sumburgh.
1949. *PEDICULARIS PALUSTRIS* L. Weisdale; Aith Voe, etc.
1955. *RHINANTHUS MONTICOLA* Dr. Fitful Head.
1957. *R. DRUMMOND-HAYI* Dr. Aith Voe.
- 1957 (2). *R. GROENLANDICUS* Chab. Marrafield Water.
1976. *UTRICULARIA MAJOR* Schmidt. Brou Loch and marshes near, ,

1980. *Pinguicula vulgaris* L. and perhaps the var. *minor* Koch. Near Marrafield Water.

\*†1990. *Mentha longifolia* Huds. Levenwick, as a relic of cultivation.

\*†1993. × *M. piperita* (L.). In some quantity and completely naturalised along a small stream at Scousburgh. There are the remains of an old corn mill above the place where it grows.

1994. *M. aquatica* L. Huesbreck; Wadbister. Rarely flowering.

2008. *Thymus zetlandicus* Ronniger & Druce. Leaves 7-nerved, broadly elliptical, when fully grown 5 mm. long, 3 mm. broad, upper surface very hairy, the lower half of the margin bearing long (up to 2 mm.) cilia. Flowering shoots goniotrichous, upper hairs scattered and patent, almost as long as the diameter of the stem. Capitula large-flowered, 15-18 mm. in diameter. Peduncles closely covered with stiff hairs which are directed obliquely downwards. Calyx with thick nerves, long, villous, glabrous on the dorsal surface. It differs from sub-sp. *Drucei* in its strongly hairy leaves with their long cilia and approaches *T. arcticus* in its occasionally 5-nerved leaves (especially the dwarf forms from Ronas Hill). Scalloway; Fitful Head. As a forma *nana* with very small foliage, summit of Ronas Hill.

\*†2036. *Nepeta hederacea* Trev. About crofters' cottages at Levenwick and near houses at Couba. Doubtless an adventive herbal and perhaps once cultivated for medicinal use.

2044. *Prunella vulgaris* L., \*var. *alba*. Quendale, on a grassy bank.

2056. × *Stachys ambigua* Sm. Weisdale; Laxo.

2062. *Galeopsis tetrahit* L., var. *bifida* (Boenn.). Aith Voe; Spiggie, etc.

2073. *Lamium moluccellifolium* Fr. Weisdale.

2091. *Plantago maritima* L., var. *lanosa* (Edm.). Weisdale.

Var. PYGMAEA Lange. Fitful Head.

2091. P. EDMONDSTONII Dr. See *Flora Zetl.* 61. To this must, I think, be referred plants which grow in the disintegrated granite of the Ronas Hill summit.

2101. LITTORELLA UNIFLORA Asch. Marrafield Water; Sand-water; Brou Loch; Hillswell Loch, etc.

2124. CHENOPODIUM ALBUM L. Rare. Lerwick.

2144. ATRIPLEX PATULA L. Clousta Voe.

Var. BRACTEATA Wester. Spiggie.

2147. A. HASTATA L. Walls; Clousta; Aith Voe.

2149. A. GLABRIUSCULA Edmondst. Aith Voe; Ollaberry.

Var. BABINGTONII Dr. Urafirth; Ollaberry; Sumburgh.

2175. POLYGONUM PERSICARIA L. Rare. Scalloway; Brou Loch.

2184. P. AVICULARE L., var. LITORALE Koch. Spiggie.

2196. RUMEX LONGIFOLIUS DC. Weisdale; Spiggie.

× R. CONSPERSUS Hartm. Urafirth.

2200. R. OBTUSIFOLIUS L. Lerwick.

2225. EUPHORBIA HELIOSCOPIA L. Rare. Spiggie.

2250. URTICA DIOICA L. A distinct looking plant grew near Quendale with broader ovate leaves with large open teeth.

2251. U. URENS L. Clousta Voe.

\*†2267. SALIX PENTANDRA L. Planted at Girlsta. It is the narrow-leaved form.

\*†2273. S. VIMINALIS L. Alien. Hortal. Evidently planted, as at Weisdale.

2275. S. CAPREA L. Spiggie.

2276. S. AURITA L. Isbister; Lee of Setter; Laxo.

\*Var. MINOR. Ronas Hill; Laxo.

\* × VIMINALIS. Laxo.

2278. *S. REPENS* L. Isbister; Laxo.

\*Var. PROSTRATA (Sm.). Fitful Head.

Var. PARVIFOLIA. Spiggie; Ward of Scousburgh.

× AURITA = × *S. AMBIGUA* Sm. Laxo, with both parents, less hairy than usual.

2285. *S. HERBACEA* L. At 1470 feet on Ronas Hill; Brattafield.

2295. *EMPETRUM NIGRUM* L. Clousta Voe, at sea level; Fitful Head, etc.

2326. *ORCHIS INCARNATA* L., var. PULCHELLA Dr. Whiteness.

2326 (2). *O. PRAETERMISSA* Dr., var. PULCHELLA Dr. Aith Voe; Wadbister; Marrafield; Weisdale; Scatsa; Bressay.

2326 (3). *O. PURPURELLA* Steph. Urafirth; Aith Voe.

2327. *O. MACULATA* L. Weisdale; Aith Voe; Brattafield; Marrafield; Ronas Hill; Fitful Head, etc. Of varying colours but no passages to *O. Fuchsii* which seems to be absent.

2338. *HABENARIA GYMNADENIA* Dr. Near Boddam.

2340. *H. VIRIDIS* Br. Weisdale.

2408. *SCILLA VERNA* L. Abundant. Weisdale; Quendale; Stromfirth; Fethaland; Clousta Voe.

†2415. *LILIUM PYRENAICUM* Gouan. Alien. Hortal. By a stream near a house, Weisdale.

2429. *JUNCUS EFFUSUS* L., var. SPIRALIS M'Nab. Fitful Head; many plants approaching it on the moorlands near Lerwick; Petta Water, etc.

2440. *J. GERARDI* Lois. Virkie.

Var. GRACILIS Dr. Clousta.

[A rush from Urafirth may be *J. alpinus* Vill. or belong to the above but the fruits are immature.]

2448. *J. TRIFIDUS* L. Very rare. Only on the top of Ronas Hill.

2449. *JUNCOIDES SYLVATICUM* (Huds.). Marrafield Water; Cliva; Wadbister ravine; on a holm in Punds Water; Fitful Head.

2458. *J. SPICATUM* (L.) Dr. Very rare on Ronas Hill as a small form.

2464. *SPARGANIUM SIMPLEX* L., var. *LONGISSIMUM* Fr. Probably this, but barren, in Billister Loch.

2465. *S. NATANS* L. (*affine*). Pettadale.

2483. *TRIGLOCHIN PALUSTRE* L. Wadbister.

2485. *POTAMOGETON NATANS* L. Often with narrower leaves than the English plant.

2486. *P. POLYGONIFOLIUS* POUFR., var. *ERICETORUM* Syme. This is often found among the wet turf on the hillsides.

2493. *P. GRAMINEUS* L. Spiggie; Brou Loch.

2495. *P. NITENS* Web. Brou Loch.

\*Var. *SUBINTERMEDIUS* Hagstr. Spiggie.

2502. *P. PERFOLIATUS* L. Loch of Hostigates; Sandwater; Brou Loch.

2512. *P. PECTINATUS* L. Aith Voe; Hillswell Loch.

2513. *P. FILIFORMIS* Pers., \*forma *MAJOR* Tis. Brou Loch; Loch Spiggie; Loch Tingwall.

2516. *RUPPIA ROSTELLATA* Koch. Burra Voe; Whiteness Voe. Var. *NANA* Syme. Whiteness Voe.

2520. *ZOSTERA MARINA* L. Whiteness Voe. Beeby only saw the var. *angustifolia* in Zetland but the \*type was abundant here and the waves had piled up a mass of it along the coast.

Var. *ANGUSTIFOLIA* Hornem. With the above.

2529. *ELEOCHARIS PALUSTRIS* Br. Two feet high near Boddam; Clunlie Loch.

2529 (2). *E. UNIGLUMIS* Schultes. Spiggie.

2530. *E. MULTICAULIS* Br. Ollaberry; Ronas Voe.

\*2531. *E. ACICULARIS* Br. This is practically a new county record since Beeby's Queyhouse Loch specimen is a submerged form of *Juncus bulbosus*. I dredged it in small quantity but barren from Brou Loch and Loch Spiggie in 1924.

2539. *SCIRPUS PAUCIFLORUS* Lightf. Aith Voe.

2554. *SCHOENUS NIGRICANS* L. Aith Voe, with its var. *NANUS* Lange.

2564. *CAREX INFLATA* Huds. Laxo, etc.

2572. *C. BINERVIS* Sm. Fitful Head, etc.

2575. *C. FULVA* Host. Dalescord; Aith Voe.

2576. *C. FLAVA* L., var. *OEDOCARPA* Anders. Clousta Voe; Aith Voe; Ronas Hill.

× *C. XANTHOCARPA* Dég. Aith Voe.

2576 (2). *C. LEPIDOCARPA* Tausch. Stromfirth; Weisdale; Wadbister.

2587. *C. PILULIFERA* L. Dalescord; Laxo; Collafirth.

2591. *C. PANICEA* L. Lee of Setter; Brattafield; Aith Voe.

2608. *C. LEPORINA* L. After *diversicolor* and *Goodenowii* the commonest sedge. Lerwick; Clousta Voe; Ronas Voe; Boddam; Spiggie; Quendale.

2621. *C. ARENARIA* L. Quendale.

2625. *C. INCURVA* Lightf. Spiggie, among the dunes, locally abundant; Sumburgh, plentiful; in abundance about Hillwells

Some fine specimens, nearly six inches high, at Spiggie may go to the \*var. *ERECTA* Lange.

2628. *C. PULICARIS* L. Cliva; Channer Wick; Clousta Voe; Isbister.

2629. *C. DIOICA* L. Aith Voe.

\*2651. *PHALARIS CANARIENSIS* L. Alien. Foreshore, Grutness.

2655. *P. ARUNDINACEA* L. Not rare as the var. or forma\* *VIRIDIS*. Lerwick; Spiggie; Quendale; near Fitful Head.

2668. *ALOPECURUS GENICULATUS* L. Burra Voe, etc.

2673. *PHLEUM PRATENSE* L. Quendale, Spiggie, as the var. *INTERMEDIUM* (Jord.), which may be an introduction.

2684. *AGROSTIS ALBA* L., var. *STOLONIFERA* (L.). Aith Voe; Wadbister.

Var. *CCARCTATA* (Hoffm.). Quendale, etc.

Var. *MARITIMA* Meyer. Quendale.

2685. *A. CAPILLARIS* L., var. *PUMILA* (L.) Dr. Weisdale; Bratfield.

2687. *A. CANINA* L. Brou Loch.

Var. *MUTICA* (Gaud.) Dr. Spiggie.

2702. *AMMOPHILA ARUNDINACEA* Link. Quendale.

2709. *DESCHAMPSIA CAESPITOSA* Beauv., var. *BREVIFOLIA* (Parn.). Fitful Head.

2711. *D. SETACEA* Hack. In a small pool on the east side of Ronas Hill.

2712. *D. FLEXUOSA* Trin. Laxo, with large florets.

2714. *HOLCUS LANATUS* L., var. *ALBOVIRENS* Reichb. Spiggie.

†2719. *AVENA STRIGOSA* Schreb., var. *ORCADENSE* (Marquand). Aith Voe; Urafirth; Wadbister; Burra Voe; Spiggie; Clayval; Levenwick.

- †2720. *A. SATIVA* L. Lerwick; Spiggie; Grutness.
2722. *A. PUBESCENS* Huds. Stromfirth.
2724. *ARRHENATHERUM ELATIUS* M. & K. Spiggie.
2725. *A. TUBEROSUM* (Gil.) Dr. Walls; Wadbister.
2732. *SIEGLINGIA DECUMBENS* Bernh. Aith Voe.
2733. *PHRAGMITES PHRAGMITES* (L.). Delete the Dunrossness locality.
2738. *CYNOSURUS CRISTATUS* L. Weisdale.
2745. *MOLINIA CAERULEA* Moench, var. *DEPAUPERATA* (Lindl.). Whiteness; Aith Voe.  
Var. *MINIMA* Rabenh. Whiteness.
2746. *CATABROSA AQUATICA* Beauv. Brou Loch; Tolob. Very local.
2759. *POA IRRIGATA* Lindeb. Pettadale.
2761. *P. TRIVIALIS* L., var. *SEPTENTRIONALIS* Dr. Urafirth; Spiggie.
2772. *GLYCERIA FLUITANS* Br. Clickimin; Quendale, etc.  
Var. *TRITICEA* Fr. Sandwater.
2774. *G. DISTANS* Wahl. Lerwick; Boddam.  
Var. *PROSTRATA* Beeby. Lerwick; Catfirth.
2776. *G. MARITIMA* Wahl. Walls; Aith Voe; Garths Voe; Clousta Voe.
2785. *FESTUCA RUBRA* L., \*var. *ARENARIA* Osb. Spiggie, teste HOWARTH.  
Var. *PRUINOSA* = *GLAUCESCENS* (Hack.). Spiggie.
2787. *F. OVINA* L., var. \**SUPINA* Hack., forma *VIVIPARA*. Dalescord; Fitful Head, etc.
2811. *BROMUS HORDEACEUS* L. Whiteness; Quendale.

2827. *AGROPYRON JUNCEUM* Beauv. Spiggie.
2830. *A. REPENS* Beauv., var. *LEERSIANUM* Beauv. Ollaberry.
2855. *ELYMUS ARENARIUS* L. Ollaberry; Quendale.
2868. *EQUISETUM SYLVATICUM* L. Dalescord; Spiggie.
2878. *BLECHNUM SPICANT* With. Ronas Hill; Channer Wick.
2885. *ASPLENIUM ADIANTUM-NIGRUM* L. Ronas Voe; Cliva.
2889. *ATHYRIUM FILIX-FOEMINA* Roth. Boddam, locally plentiful; Channer Wick; Wadbister.  
Var. *CONVEXUM* Newm. Channer Wick.
2896. *DRYOPTERIS FILIX-MAS* Schott. Laxo, abundant.
2899. *D. ARISTATA* Dr. Wadbister; Laxo; Marrafield Water.  
Var. *ALPINA* Moore. Fitful Head; Bratta Field.
2907. *POLYPODIUM VULGARE* L. Marrafield Water.  
Var. *BREVE* Lange. Fitful Head.
2919. *BOTRYCHIUM LUNARIA* Sw. Quendale; Clayval; Ward of Scousburgh.
2924. *ISOETES LACUSTRIS* L. Spiggie; Brou Loch.
2927. *I. ECHINOSPORA* Dur. Brou Loch.
2931. *LYCOPODIUM SELAGO* L. Dalescord; Brattafield.
2932. *SELAGINELLA SELAGINOIDES* Link. Aith Voe; Wadbister; Clousta; Weisdale; Fitful Head.
2934. *NITELLA OPACA* Ag. Brou Loch.  
\*Var. *BRACHYCLEMA* Gr. & B.-W. Asta; Tingwall; Spiggie and Brou Lochs. In the last place with intermediate forms. It is liable to be mistaken for *translucens*, so large are the main stems.
- 2943 (2). *TOLYPELLA NIDIFICA* Leonh. Still in small quantity in Huesbreck Loch.

2949. *CHARA VULGARIS* L. Sandwater; Stromfirth; Wadbister; Busta Voe.

2950. *C. CONTRARIA* Braun. Spiggie.

2955. *C. ASPERA* Willd. In immense quantity in Brou Loch; Loch Spiggie.

2958 (2). *C. DELICATULA* Braun. The "robust tufted form" alluded to in *Fl. Zett.* p. 90 as growing on the margin of Tingwall and Asta Lochs is the \*var. *ANNULATA* recently described by Canon Bullock-Webster and Mr J. Groves.

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### AN IMPORTANT QUESTION.

(CONTINUATION.)

E. ALMQUIST.

In the *Report* for 1922 p. 807 I drew attention to the assault of some mendelists on the Linnean species. The allogams must be hybrid, they pretend, without regard to nature or literature. Already a long time ago Alexis Jordan treated this question experimentally and on a large scale. Jordan found the spontaneous small species constant in culture and discovered even that they do not cross spontaneously although growing in society. His discovery is very interesting but ought not to be generalised. These mendelists shut the eyes also to the results of De Vries' studies, not to mention also Linné's great experience.

In nature, I think, the constant forms take the lead in most groups plainly, while they have greatest chance to survive in a hard concurrence. Some groups behave quite differently. That was observed already by Linné.

Every new fact is welcome but faulty conclusions, with high pretensions, have no place in science. It is erroneous to think spontaneous and cultivated plants the same. In gardens and agriculture true selection rules. Man protects and selects the useful forms. Other factors rule in nature and long periods have fulfilled the work. The wild Linnean species are natural and created without human arbitrariness.

Speculative species may also have great value, but the different unities must not be confounded. It must be examined how far the new terms genotyp, biotyp, pure lines correspond to the older terms collective and small species. Nature's unities cannot be changed and will always keep their worth.

The pure lines should be the only sure constant forms. On the contrary all spontaneous plants, the autogams as much as the allogams, must be cultivated in order to prove their constancy. Many groups of spontaneous allogams keep without doubt their constancy quite as surely as the autogams in nature.

The floras must indicate the difference between occasional crossing and old hybrids, between fertile and sterile hybrids, between forms that everywhere produce hybrids and forms that in some districts are quite constant, as for instance *Quercus Robur* in Sweden.

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POTAMOGETON LANCEOLATUS SMITH.

ARTHUR BENNETT.

English Botany, t. 1895, February 1, 1809. Drawn from specimens gathered by Rev. H. Davies, August 1808. "Lakes of N. Wales."

This habitat seems strange as Rev. H. Davies in his specimens to Sir J. E. Smith at the Linnean Society gives, "Between Bodafan and Lligwy, Anglesea;" but in others to Dawson Turner (Kew Herb.) he gives "Lakes of N. Wales." Mr C. Bailey in the *Record Club Report* for 1875 p. 138 gives the actual place as "Growing in patches with *P. gramineus (heterophyllus)* and *P. perfoliatus* in a small brook (the River Lligwy) on Rhôs Lligwy, a quarter of a mile south of the New National School." The plant was gathered "here and again" until Babington in the *Journal of Botany* 1881, p. 54 gave a note on it. On this Mr Griffith of Bangor paid several visits to the station even as late as October to try and obtain fruits, but none had been produced.

On August 4th, 1880, I found the plant in a ditch on Burwell Fen, Cambridgeshire, growing with *P. heterophyllus*, the ditch being lined with *Scirpus acicularis* L., in all stages of growth and

flowering. When dried I took a good specimen to Kew. Showing it to Mr Baker he asked where I found it. On telling him he said "No, can't be *lanceolatus*, only *heterophyllus*." Rather crestfallen I took it to Prof. Oliver who followed Mr Baker's dictum. Still not satisfied I asked if Sir Joseph Hooker was there. He was, and I took it to him. He said "But have you or Baker or Oliver had the specimens out of the Herbarium. I said "No." He then went with me, got them out, and after looking at them said, "Most certainly the same, and a good find. Take up the genus, we know nothing about it, and we will help you." That is how I came to study Potamogeton. There is not much in it, only this, it shows how kindly disposed a botanist of Sir Joseph Hooker's position could be to a tyro.

Naturally enough when I wrote to Prof. Babington he doubted it (9/10/1880); but on 15/10/1880 he wrote, "Most certainly I was very sceptical about it; but I am now convinced that your plant is the same as the Angelsea one." I planted specimens in a small pond in my garden. These flourished remarkably and in a few years I had 200 specimens dried. These I distributed over Europe with a request that if the recipients had anything like it, would they communicate. None had but Nyman suggested "it might be a dying-out species." After many trials I succeeded in making it fruit, by placing glass on cork under the plants. The fruit was different to any known species in the genus.

The first to suggest its hybrid origin were Messrs Beeby and Fryer and after watching and drying it month after month I agreed with them. In Europe it had been looked on as something unknown. Chamisso and Schlechtendahl in *Linnaea* 1827, p. 233 remark "*P. lanceolatus* (Sm.) Eng. Bot. t. 1985 est *P. lanceolatus*, species recognoscenda."

In the forties Besser, Gorski and Wolfgang distributed many specimens of the genus, and in the Vienna Herbarium there is one named by Gorski, "*P. lanceolatus* Sm.\* This is a slender specimen of *P. alpinus* Balb.

Fries Mant. 3, 17 (1842) under *P. nigrescens* Fr., "*P. lanceolatus* Wilson in Hook Br. Fl. iv., p. 70, ? optime praeter spicam,"

\**Ann. Nat. Hofm. Wien*, vii., 290, 1892.

and adds "spica densiflora elongata, cylindrica (i.e. *nigrescens*) (nec elliptica, ut in *P. lanceolato*) &c." Hooker, quoting Wilson (ed. 5, 341, 1842), "Floating leaves are always found where the current is slow. The chain-like reticulations are only distinguishable near the midrib on the submersed leaves, the floating leaves being elegantly overspread by them."

After many years suggestions were made that a nearly similar plant was gathered by Gillot in France, i.e. "*P. rivularis*." It was certainly near to, and must be placed under it. I was indebted to Dr Gillot for a specimen from "The Rivière de Cure entre Montsauche et Goulieux (Nièvre), Saône et Loire, August 1883;" for another to the Paris Herbarium, and a third to M. Magnier of St Quentin. Fryer considered the English plant to be *heterophyllus* × *pusillus*, and Ascherson & Graeb. Syn. Fl. Mitt. Europ. 1, 348, 1897, make *P. rivularis* as "*gramineus* × *mucronatus*" (*heterophyllus* × *Friesii*).

Then in the Herb. Boissier I found a specimen, "*Potamogeton* in paludibus, Corfu, August 4, 1879, à Letourneau," Corfu being one of the Ionian Islands. The next came from Dr Fischer of Berne,—"Berne, Ditch, Eiholmoss, with *P. densus* L. and Charas." This is a more slender plant than either the French or English and may be called *P. helveticus*. Ascherson & Graeb., *l.c.*, seem to regard a plant from Lauenberg, ex Nolte, as *lanceolatus*, but in the 1923 edition they ignore it. In Fryer's *Potamogetons of the British Isles*, plate 39 excellently represents the Burwell plant.

Names that have been placed to it are as under:—

*P. lanceolatus*, β *subnatans* Roemer & Schultes Syst. iii., 507. (1818).

*P. lanceolatus*, β *fluitans* Hook. Br. Fl., ed. 3, 77, (1835).

*P. lanceolatus*, v. *homophyllus* Macreight Man. Brit. Bot. 224. (1837).

*P. lucens*, v. *lanceolatus* Benth. Hand. Brit. Flora, ed. 1, 493. (1858).

*P. rivularis* Gillot Bull. Soc. Dauph., t. 14, 584, (1887).

*P. rufescens* Schrad., sub-sp. *rivularis* Nyman Consp. Fl. Europ., Supp. 287, (1890).

I feel sure from cultivating the plant so long, and from the floating submerged leaves that *heterophyllus* and not *coloratus* is one of the factors of the English plant.

The Rev. H. Davies in his Welsh Botany (1813) gives as its Welsh name "Dyfr-llys-cut-ddail."

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### CANON JOHN VAUGHAN AND HIS HERBARIUM.

G. CLARIDGE DRUCE, D.Sc., LL.D.

In *Rep. B.E.C.* 708-712, 1922 I gave an obituary of this graceful writer, who was a devoted lover of flowers and their haunts. Through the kindness of his widow, his Herbarium has been given to me, and I have been through it in order to incorporate it with my own collection. Each sheet has been duly labelled "Herb. Canon J. Vaughan." The collection is a fairly representative one, but Canon Vaughan preferred to select typical specimens which he carefully dried and mounted. Varieties and forms he ignored. The plants were on the whole accurately named and in many cases were from classic habitats. A few of the new or more interesting localities are given below. In some cases they are new county records. North Hants gives the greater number of specimens but there are others from Portchester, Landridge and Droxford as well as from his father's home at Finchingfield in Essex, whence he paid his devotions at the shrine of John Ray at Black Notley and gathered Good King Henry and the Ground Ivy from his tomb. His kindness to Wychamists is evidenced by the Orchids which he gathered in their company. He had a wide circle of correspondents who sent him plants for identification or to fill up gaps in his collection. His Herbarium dates from 1885-1918. Its examination has been at once a pleasant and a sad task since it brought back memories of delightful excursions and conversations and has raised regrets that such an urbane and kindly colleague is no longer present in our ranks to stimulate others to follow his good example.

ANEMONE NEMOROSA L., represented also by the var. PURPUREA DC.  
from Monk Wood, Alton, N. Hants.

†A. APENNINA L. Near Lungmore, Hants.

MYOSURUS MINIMUS L. Gosport, S. Hants,

- ADONIS ANNUA L. Hasham Hill, Wilts, *G. Marryat*.  
 RANUNCULUS AURICOMUS L. Thedden Churchyard, N. Hants, a form  
 with perfect petals.  
 R. ACER L., var. BORAEANUS (Jord.). Finchingfield, Essex, 1884.  
 AQUILEGIA VULGARIS L. Between Hissenford and Downferry, E.  
 Cornwall, 1887, a white-flowered form.  
 †CAMMARUM HYEMALIS Greene. Manor Farm, Faringdon, Alton, N.  
 Hants, 1886.  
 †DELPHINIUM AJACIS L. Dunwich Priory, E. Suffolk, 1886.  
 †EPIMEDIUM ALPINUM L. Knypersley, Staffs, *H. E. Fox*, 1887.  
 †CAPNORCHIS CANADENSIS (DC.) Dr. Newland Vale, Cumberland,  
 1886, *H. P. Brunell*, wrongly named *Fumaria solida*.  
 PAPAVER RHOEAS L. Southwold, E. Suffolk. This is the var. CAUDA-  
 TIFOLIUM Fedde.  
 COCHLEARIA ALPINA Sw. Summit of Cairntoul, S. Aberdeen, *H. E.*  
*Fox*, 1885.  
 ARABIS PETRAEA Lam. At 2000 ft. near Torridon, W. Ross. I have  
 already reported it from Ben Eay in this area.  
 A. PERFOLIATA Lam. Worldham, near Alton, N. Hants, 1885.  
 RADICULA SYLVESTRIS Dr. Winchester Meads, S. Hants. A N.C.R.  
 EROPHILA VERNA Meyer. Alton, N. Hants, 1885. This is good  
 PRAEcox DC.  
 †HESPERIS MATRONALIS L. River side, Kingsley, N. Hants, 1887.  
 ERYSIMUM CHEIRANTHOIDES L. Portchester, S. Hants; Kingsley,  
 Selborne, N. Hants. Probably spreading in the county.  
 Townsend (*Fl. Hants*) says very rare.  
 VIOLA HIRTA L., var. PROPERA (Jord.) Gillot. Alton, N. Hants.  
 †DIANTHUS ARMERIA L. Auldgirth, Dumfries, *J. Finland*, 1886.  
 Given as an escape in the *Flora of Dumfries* for 72, 73 & 74.  
 \*D. DELTOIDES L. Parkdown, Oakley, N. Hants, *Miss M. A. Scott*,  
 1914. New to the County. See *Rep. B.E.C.* 862, 1914.  
 †SILENE DICHOTOMA Ehrh. In a clover field, Soberton, S. Hants,  
 1905.  
 S. NOCTIFLORA L. Botley, S. Hants, "very rare in the county."  
 S. GALLICA L. Rogate, W. Sussex.  
 †S. CRETICA L. Wycor, Portchester, S. Hants, 1894, with Flax.  
 SAGINA NODOSA L. Dunwich, East Suffolk; Bude Downs, Cornwall.  
 Both the var. MONILIFORMIS Lange.

- MONTIA LAMPROSPERMA, var. BOREO-RIVULARIS Dr. Shevenance, Co. Antrim, *Praeger*, labelled *M. fontana*, var. *rivularis*.
- HYPERICUM PERFORATUM L. Alton, N. Hants. The var. ANGUSTIFOLIUM DC.
- †MALVA PUSILLA With. Portchester, S. Hants, 1893, named by E. F. Linton as *nicaeensis*, but it is not that species.
- †GERANIUM PHAEUM L. Ely, Cambridge, 1886.
- ERODIUM PIMPINELLAEFOLIUM Sibth. Southwold, Suffolk.
- †IMPATIENS PARVIFLORA DC. St Osyth's, N. Essex.
- †MELILOTUS INDICA All. Kelvedon, Essex. The specimen is labelled *officinalis*.
- †COLUTEA ARBORESCENS L. St Helen's Spit, Isle of Wight, 1893. This precedes the Essex specimen gathered by the Rev. P. T. Corfe in 1903. Of course it is a planted shrub.
- †LOTUS SILIQUOSUS L. Forest of Bere Farm, S. Hants, 1886.
- VICIA LATHYROIDES L. Titchfield, S. Hants.
- PRUNUS INSITITIA L. Finchingfield, N. Essex.
- POTENTILLA REPTANS L. Alton, N. Hants, 1885. This is the var. MICROPHYLLA Tratt.
- ALCHEMILLA VULGARIS L. Finchingfield, N. Essex, 1885. This is the var. MINOR Huds.
- PYRUS MALUS L., var. MITIS Wallr. Alton, N. Hants; Machynleth, Montgomery, 1890.
- †P. PINNATIFIDA Ehrh. About Hall Park, near Shalford, N. Essex. Of course a planted tree.
- CHRYSOSPLENIUM ALTERNIFLORUM L. Finchingfield, N. Essex.
- †SEDUM DASYPHYLLUM L. \*Portchester Castle, S. Hants, 1907.
- ANGELICA SYLVESTRIS L. Alton, N. Hants. This is the var. DECURRENS Fisch.
- †AMMI MAJUS L. Felstead, Essex, 1884, *Gepp*.
- †LONICERA CAPRIFOLIUM L. Finchingfield, N. Essex, 1886.
- PETASITES PETASITES (L.) Karst. Near Rickmansworth, ? Herts or Middlesex, 1890, *F. W. Ward*. This is the var. HYBRIDA (L.) Dr., the sub-female plant.
- †DORONICUM PLANTAGINEUM L. Fifield, Finchingfield, Springfield, Great Baddow, N. Essex, 1886.
- †D. PARDALIANCHES L. Great Baddow, N. Essex, *G. Whyley*.

- †*SENECIO SARRACENICUS* L. Ashford, near Petersfield, N. Hants.  
 †*CREPIS SETOSA* Hall f. Finchingfield, N. Essex, 1885.  
*HYPOCHOERIS GLABRA* L. Teddington, Middlesex.  
*SONCHUS OLERACEUS* L. Alton, N. Hants. This is var. *LACERUS* =  
*CILIATUS* (Lam.).  
*S. ASPER* Hill. Alton, N. Hants. This is the var. *LACINIATUS* Wallr.  
 †*CAMPANULA RAPUNCULOIDES* L. Hedingham, N. Essex, on the rail-  
 way, 1881.  
*C. TRACHELIUM* L. Alton, N. Hants, the white-flowered plant.  
 †*LEGOUSIA SPECULUM-VENERIS* (L.) Fisch. Lillie Hoo, Hitchen,  
 Herts, 1907.  
 †*CYCLAMEN HEDERIFOLIUM* Ait. Plantation near Inworth Rectory,  
 N. Essex, 1892, quite established.  
*ANAGALLIS ARVENSIS* L. Alton, N. Hants, the pale-flowered form.  
*A. FEMINA* Mill. Portchester, S. Hants; in John Ray's Orchard at  
 Black Notley, N. Essex.  
 †*NYMPHEOIDES NYMPHEOIDES* (L.). Daventry Reservoir, Northants.  
 1887, *H. Powell*, but it was planted there by my friend, Col.  
 Clarke.  
*CENTAURIUM PULCHELLUM* Dr. One of the specimens is possibly a  
 hybrid with *C. vulgare*.  
 †*LAPPULA LAPPULA* (L.). Landridge, N. Hants, 1900.  
 †*PULMONARIA OFFICINALIS* L. Copse at foot of Worldham Hill, N.  
 Hants, "apparently wild, 1894.  
 †*POLEMONIUM CAERULEUM* L. Chalk-pit, Itchin Abbas, Hants, 1888;  
 Machynlleth, Montgomery, 1888.  
 †*SOLANUM ROSTRATUM* Dunal. Near Bulfield Mill, N. Essex, 1898.  
*LINARIA LINARIA* Karst., var. *PELORIA* Dr. Droxford, Hants, 1907.  
*L. REPENS* × *LINARIA*. Railway embankment, Kingsworthy, N.  
 Hants, *E. Williamsi*, a fine hybrid with large flowers.  
 \**OROBANCHE PURPUREA* Jacq. Shedfield, S. Hants, *D. Marryat*.  
 Practically new to the mainland, since the Goodyer locality  
 near Alton has not produced it for many years.  
*MENTHA SPICATA* L. Exmouth, Devon, 1884.  
*M. VERTICILLATA*, var. *SUBSPICATA* Becker. Frensham Pond, Surrey,  
 1889.  
*SALIX REPENS* L., var. *FUSCA*. Deal, E. Kent.

- ORCHIS PRÆTERMISSA Dr. Liss, Hants, 1884, labelled *O. latifolia* L.; Alton, N. Hants, 1884, labelled *O. incarnata* L.; Finchingfield, N. Essex, also labelled *O. incarnata*.  
 Var. PULCHELLA Dr. Upper Teesdale, Durham, *H. E. Fox*.
- O. FUCHSII Dr. Avington Park, N. Hants, labelled *O. maculata* L.
- O. MORIO. Finchingfield, Great Baddow, N. Essex; The Lyth, Selborne, N. Hants. These come under forma CHURCHILLII.
- OPHRYS APIFERA Huds. Bodean Downs, Hants, 1898, the white-flowered plant.
- ACERAS ANTHROPOPHORA Ait. Shanklin Down, Isle of Wight; near Winchester, 1907; Terling, N. Essex.
- HABENARIA GYMNA DENIA Dr. Bodean Down, Hants, the white-flowered plant.
- †NARCISSUS BIFLORUS Curt. Langley, Herts, 1887; copses about Torquay, S. Devon, 1894.
- LEUCOJUM ABSTIVUM L. Southwick, Titchfield River, S. Hants, 1894.
- †ORNITHOGALUM UMBELLATUM L. Portchester, S. Hants.
- \*MUSCARI RACEMOSUM Lam. Field three-quarters of a mile away from a house near Tachborne Downs, N. Hants, abundantly in 1917.
- †TULIPA SYLVESTRIS L. Froyle chalk-pit, N. Hants, quite naturalised; Portchester, S. Hants.
- POTAMOGETON DENSUS L. Finchingfield, N. Essex, as the var. SER-RATUS (Huds.).
- ZOSTERA MARINA L. Horsea Isle, S. Hants. This is the var. ANGUS-TIFOLIA Horn.
- CAREX EXTENSA Huds. Southport, Lancs. *D. W. Jephson*. The specimens are labelled *C. Oederi* which also grows there.
- C. LEPIDOCARPA Tausch. Lynch Hill, Alton, N. Hants, labelled *C. flava*.
- C. FLAVA L. Viverton Downs, Cornwall, 1887. These are the var. OEDOCARPA And.
- C. LEPORINA L. Prince's Wood, Worldham, N. Hants. These are the var. LONGIBRACTEATA Peterm., which suggests a diseased form rather than a variety.
- †PANICUM ISCHAEMUM Schreber. Portchester, S. Hants, labelled *P. glabrum*.
- †P. SANGUINALE L. Gosport, S. Hants, 1880.

- PHLEUM PRATENSE L. Alton, N. Hants. This is var. INTERMEDIUM (Jord.) Dr.
- DEYUXIA NEGLECTA Kunth. Oakmere, Cheshire, *Herb. Stuarti*; Watton, Caithness, *F. W. Ward*. These are both wrongly labelled *strigosa*.
- \*AVENA PRATENSIS L. Home Park, Hampton Court, Middlesex, *R. S. Hill*, 1843. Practically a record for the County.
- MOLINIA CAERULEA Moench, var. DEPAUPERATA Lindl., or near it. Shortheath, Alton, N. Hants, 1888.
- FESTUCA RUBRA L. Southwold, E. Suffolk; Alresford, N. Hants, as *pratensis*; Alton, N. Hants, as *duriuscula*; Portchester, S. Hants.
- Var. BARBATA Hack. Southwold, E. Suffolk. =F. DUMETORUM (L.) Howarth.
- Var. ARENARIA Osb. Exmouth, S. Devon.
- f. SUBGLABRA How. Lowestoft, E. Suffolk, 1886; Yarmouth, E. Norfolk, 1892.
- F. OVINA L., f. VIVIPARA. Ben Lomond, 1888; Cader Idris, Merioneth, 1890.
- × AGROPYRON HACKELII Dr. Southwold, E. Suffolk, labelled *repens*.
- LOLIUM PERENNE L. Finchingfield, N. Essex. This is the var. TENUIS (L.) Syme.
- \*ASPLENIDIUM SEPTENTRIONALE Hoffm. Dylife, Montgomery, 1890.

The foregoing extracts show that the critical genera formed no portion of the study of Canon Vaughan, *Capsella*, *Euphrasia*, etc. being represented by solitary examples. Nor were the Roses, Brambles, or Hawkweeds collected. He mainly worked with Bentham as a guide. Further notes will appear on the Thymes and Mints.

CORRECTED NAMES OF ROSES DISTRIBUTED IN THE PAST  
THROUGH THE BOTANICAL EXCHANGE CLUB  
OF THE BRITISH ISLES.

Lt.-Col. A. H. WOLLEY-DOD.

In the following list are set forth the names which I have given in the latest revise of my herbarium to all the specimens of Roses therein which have passed through the Botanical Exchange Club.

The localities are given as shortly as possible in order to save space, but it is hoped they will be intelligible.

The list is arranged in the alphabetical order of the names as they appear in the Reports, though these do not invariably agree with those on the labels. Thus a Rose named *R. arvensis*, var. *bibracteata* would appear under "a," but if named *R. bibracteata* it would come under "b." Roses sent unnamed appear at the end of the alphabetical arrangement.

The vice-county numbers are given in brackets after the locality. The year of the Report in which the Rose appears is that of the date of gathering, or if it differs, is cited in brackets after the collector's name. It has not always been easy to connect the specimens with any particular Report, and where there is doubt, a "?" follows the date. Where I have been unable to trace the Report at all, and for all Roses collected before 1875, I have inserted "(N.R.);" indicating that I can trace no record.

I have avoided all but the briefest comments or qualifications of the names given, since it is difficult to confine these to the space available.

It must be borne in mind that even the best rhodologists have sometimes distributed a mixture. There is therefore no certainty that the names I have given apply to every specimen distributed.

*R. affinis*. Ripon (64), July 1879, Nicholson (N.R.).—R. TOMENTELLA, var. SCLEROPHYLLA. This is the rose named *R. affinis* by Christ, but is not the same as f. *Nicholsoni*, as stated in the *Report* for 1879, p. 12.

*R. agraria*. Coughton (36), August 7, 1909, Ley.—Correct but my specimen is labelled *R. Lemaitrei*.

- R. agrestis*. Hog's Back (17), August 17, 1878, Groves (N.R.).—  
Var. *ARVATICA*. Specimens from this locality vary greatly and  
some of them might be labelled var. *TYPICA*.
- R. agrestis*. Gloddaeth (49), July 1887, Griffith.—Var. *ARVATICA*  
towards var. *TYPICA*. Specimens from this station also vary  
greatly.
- R. agrestis*, var. *inodora*. Whatcote (38), August 1, 1887, Bagnall.  
—*R. CANINA*, var. *BLONDAEANA*.
- R. andegavensis*. Sellack (36), September 22, 1883, Ley.—*R. DUMETORUM*, var. *INCERTA*.
- R. andegavensis*. Edge Green (58), July 15, 1905, W.-Dod.—*R. DUMETORUM*, var. *INCERTA*, f. *SUBGLABRA*.
- R. andegavensis*, var. *agraria*. Twinstead (19), September 1922,  
Druce.—Correct.
- R. Andrzejovii*. Dolygaer (42), July and September 1908, Ley.—  
*R. OMISSA*, var. *SHERARDI*.
- R. Andrzejovii*. Cwin Nes (43), September 10, 1908, Ley.—*R. OMISSA*, var. *SHERARDI*.
- R. Andrzejovii*, var. *pseudo-mollis*. Reeve Hill (36), August 29,  
1910, Ley.—*R. OMISSA*, var. *SHERARDI*, f. *SUBMOLLIS*, near typi-  
cal var. *SHERARDI*.
- R. Andrzejovii*, var. *pseudo-mollis*. Escley Valley (36), September  
9, 1907, Ley.—Correct.
- R. arvatica* or *Watsoni*. Jamestown (106), July 29, 1890, Bailey.—  
*R. CORIFOLIA*, var. *CELERATA*, a form without subfoliar glands.
- R. arvensis*, f. *Quenby* (55), August 1906, Horwood (1908?).—f.  
*SCABRA*.
- R. arvensis*, var. *Geddington Chase* (32), August 1, 1910, Ley.—  
Towards f. *MAJOR*.
- R. arvensis*, var. *bibracteata*. Sheviok (2), July 12, 1875, Briggs.—  
Var. *VULGARIS* or perhaps a *CANINA* hybrid.
- R. arvensis*, var. *bibracteata*. Sellack (36), August 16, 1904, Ley.—  
Var. *OVATA*.
- R. arvensis*, var. *gallicoides*. Caton (60). August 1900, Wheldon  
(1911?).—f. *MAJOR* or perhaps var. *GRANDIDENTATA*.
- R. arvensis*, var. *gallicoides*. Brampton Abbots (36), July 1911,  
Riddelsdell.—Correct.

- R. arvensis*, var. *gallicoides*. Stydd (57), October 3, 1888, W. R. Linton.—Correct.
- R. arvensis*, var. *gallicoides*. Chesterton Wood (38), September 1890, Bromwich.—Correct.
- R. arvensis*, var. *setosa*. Yeavely (37), September 28, 1887, Towndrow.—Var. GALLICOIDES.
- R. Beatricis*. Malden (17), June and September 1911, Britton.—*R. TOMENTELLA*, var. *ROTHSCHILDII*.
- R. Borreri*. Edge (58), August 15, 1907. W.-Dod.—Correct. My No. 1114 from Grange Farm, was, I believe, distributed wrongly labelled *R. caesia*, but it was from the same bush.
- R. Borreri*, var. Wadenhoe (32), July 1910, Ley.—*R. TOMENTELLA*, var. *ROTHSCHILDII*.
- R. Burnati*. Coughton (36), August 7, 1909, Ley.—*R. DUMETORUM*, var. *INCERTA*.
- R. canina*. Brailsford (57), June and September 1889, W. R. Linton (1893?).—Var. *DUMALIS*.
- R. canina*, var. S. Croxton (55), September 1907, Horwood.—Var. *TOURANGINIANA*.
- R. canina*, var. *andegavensis*. Pill (6), June and September 1885, White.—Var. *VERTICILLACANTHA*.
- R. canina*, var. *andegavensis*. Sellack (36), September 11, 1885, Ley.—*R. DUMETORUM*, var. *INCERTA*, f. *LAEVISTYLA*.
- R. canina*, var. *andegavensis*. St Weonards (36), July 19, 1884, Ley.—*R. DUMETORUM*, var. *INCERTA*, f. *LAEVISTYLA*.
- R. canina*, under *aspernata*. Dunsfold Common (17), September 13, 1894, Marshall.—f. *GLOBOSA*.
- R. canina*, var. *biserrata*. Brampton Abbots (36), August 13, 1909, Ley.—Correct.
- R. canina*, var. *biserrata*. Trusham (3), May and July 1879, Rogers.—Var. *VINACEA*.
- R. canina*, var. *caesia*. Solihull (38), July 1875, Bagnall (N.R.).—*R. TOMENTELLA*, var. *DECIPIENS*.
- R. canina*, var. *celerata*. Spylau (80), September 17, 1879, Brotherston.—*R. CORIFOLIA*, var. *BAKERI*.
- R. canina*, var. *dumalis*. Cerrig Haffes (42), July 12, 1908, Ley.—Var. *RECOGNITA*.

- R. canina*, var. *dumalis*. Odiham (12), June and August 1897, Palmer.—Var. BISERRATA, f. ERIOSTYLA.
- R. canina*, var. *dumalis*, f. *rubelliflora*. Linton (36), June and November 1908, Ley.—Var. VIRIDICATA, resembling *R. SALICIFOLIA* Vukot.
- R. canina*, var. *dumalis* or *subcristata*. Shirley (57), July 16, 1887, W. R. Linton.—Var. LUCANDIANA.
- R. canina*, var. between *dumalis* and *subcristata*. Shirley (57), August 30, 1888, W. R. Linton (N.R.).—Var. DUMALIS towards var. BISERRATA.
- R. canina*, var. *fallens*. Davenham (58), June 1911, Hodge.—*R. DUMETORUM*, var. GABRIELIS.
- R. canina*, var. *frondosa* × *coriifolia*. Ashbourne (57), September 1888, W. R. Linton.—*R. CORIIFOLIA*, var. IMPLEXA probably, but perhaps a LUTETIANA form.
- R. canina*, var. *globularis*. Horsepath (23), July 1923, Druce.—Var. SPHAEROIDEA.
- R. canina*, var. *hispidula*. Glewstone (36), August 9, 1908, Ley.—*R. DUMETORUM*, var. INCERTA, f. LAEVISTYLA.
- R. canina*, var. *implexa*? Yeldersley (57), September 29, 1888, W. R. Linton.—*R. DUMETORUM*, var. TYPICA.
- R. canina*, var. *Kosinsciana*. Bull in Oak Lane (55), September 1906, Bell.—Var. ROUSSELLII.
- R. canina*, var. *pruinosa*. Braemar (92), August 10, 1883, W. R. Linton (1883?).—Correct.
- R. canina*, var. *pruinosa*. Glenshee (89), August 19, 1884, W. R. Linton (N.R.).—Correct.
- R. canina*, var. *pruinosa*. Glenshee (89), August 2 (1883), E. F. Linton.—Correct.
- R. canina*, var. *psilophylla*. Longford (57), September 10, 1890, W. R. Linton.—Var. BISERRATA.
- R. canina*, var. *subcristata*. Strath Ascaig (105 or 106), September 1893, Fox.—Correct.
- R. canina*, var. *R. viridicata*. Saintfield (1), July 28, 1911, Waddell.—Correct.
- R. canina* × *micrantha*. Hogtrough Bottom (17), August 7, 1921, Britton.—Correct.

- R. canina* × *micrantha*. Hogtrough Bottom (17), August 21, 1924, Britton.—Correct.
- R. caerulea*. Holgate (Yorks), August 1889, Webster (N.R.).—Correct.
- R. caryophyllacea*. Ashton (32), September 1910 and June 1911, Druce (1911).—*R. TOMENTELLA*, var. *ROTHSCHILDII*. [*R. ROTHSCHILDII* Druce.]
- R. Carionii*. Gallantry Bank (58), July 27, 1908, W.-Dod.—*R. TOMENTELLA*, var. *BORRERI*.
- R. celerata*. Aysgarth (65), June 1896, Wheldon (1897).—*R. CANINA*, var. *BEATRICIS*, a very eglandular form.
- R. collina*. Calstock (2), July 4, 1879, Briggs (N.R.).—*R. DUMETORUM*, var. *DESEGLISEI*, a large-leafted form.
- R. collina*. Kew (17 or Hort.?), June 1878, Nicholson (1882).—*R. DUMETORUM*, var. *DESEGLISEI*, off type.
- R. coriifolia*, var. Bradley (57), August 19, 1889, W. R. Linton.—Var. *SUBCOLLINA*.
- R. coriifolia*, var. Garve (106), July 27, 1909, Shoolbred [No. 684 A].—f. *LINTONI*. My own specimen is Marshall's 3369, but is, I believe, the same gathering.
- R. coriifolia*, var. Yeldersley Lane (57), August 10, 1904, W. R. Linton.—f. *LINTONI*.
- R. coriifolia*, glabrate form. Shirley (57), August 27, 1904, W. R. Linton (N.R.).—Near var. *WATSONI* but probably a new form.
- R. coriifolia*, var. *Bakeri*. Buckie Braes (88), August 29, 1918, Barclay [No. 25/18] (1919).—f. *SETIGERA*.
- R. coriifolia*, var. *Bakeri*. Dumphail (95), August 4, 1898, Marshall.—Var. *CELERATA*.
- R. coriifolia*, var. *Lintoni*. Braemar (92), July 27, 1889, E. F. and W. R. Linton (1889 and 1890).—Correct.
- R. corymbifera*. Bently Wood (2), June and September 1880, Rogers.—*R. STYLOSA*, var. *DESVAUXIANA*.
- R. Crepiniana*. Chelsfield (16), September 14, 1901, Groves.—Correct.
- R. Crepiniana*. Chelsfield (16), August 28, 1880, Groves (N.R.).—Correct.
- R. cryptopoda*. Bourne (53), August 22, 1921, Webster.—*R. CANINA*, var. *LUTETIANA*, perhaps f. *LASIOSTYLIS*.

- R. cuspidatoides*. Aymestry (36), September 19, 1907, Ley.—*R. TOMENTOSA*, var. *PSEUDO-CUSPIDATA*.
- R. cuspidatoides*. Acomb (64), July 1883, Webster.—*R. TOMENTOSA*, var. *PSEUDO-CUSPIDATA*.
- R. cuspidatoides*, var. *britannica*. Aconbury (36), August 14, 1908, Ley.—*R. TOMENTOSA*, var. *TYPICA*.
- R. cuspidatoides*, var. *foetida*. Aconbury (36), August 14, 1908, Ley.—*R. TOMENTOSA*, var. *SYLVESTRIS*.
- R. Deseglisei*. Duckington (58), August 3, 1908, W.-Dod.—Correct.
- R. dumalis*. Cromarty Firth (106), July 31, 1890, Bailey (N.R.).—*R. GLAUCA*, var. *SUBCRISTATA*, f. *MYRIODONTA*.
- R. dumetorum*. Burwardsley (58), July 15, 1900, W.-Dod.—Var. *ERECTA*.
- R. dumetorum*. Knighton (43), August 8, 1899, W.-Dod.—Var. *ERECTA*.
- R. dumetorum*, var. *concinna*. Brampton Abbots (36), July 5, 1911, Riddelsdell.—Var. *DESEGLISEI*, off type.
- R. dumetorum*, var. *Deseglisei*. Brampton Abbots (36), August 10, 1908, Ley.—Correct.
- R. dumetorum*, var. *Deseglisei*. Brampton Abbots (36), August 12, 1909, Ley.—Correct.
- R. dumetorum*, var. *Gabrielis*. Kilpeck (36), August 5, 1908, Ley.—Var. *TYPICA*, f. *URBICA*.
- R. dumetorum*, var. *hemitricha*. Filton Meads (34), June and September 1919, Roper.—Var. *RAMEALIS*.
- R. dumetorum*, var. *incerta*. Ashton Common (6), June and August 1921, Roper.—Correct.
- R. dumetorum*, var. *semiglabra*. Middlewick (19), June and July 1923, Brown.—Correct.
- R. Eglantheria*. Arncliffe (64), May 17, 1918, Waterfall (1919).—Quite unnameable, but certainly not *EGLANTHERIA*. Possibly a *MOLLIS* f.
- R. Eglantheria*, var. Glen Peebles (78), September 1918, Druce.—Var. *APRICORUM*.
- R. Eglantheria*, var. *comosa*. Grey Abbey (1), September 2, 1918, Waddell.—Correct but towards var. *APRICORUM*.
- R. foetida*. Runsell Lane (38), August 20, 1881, R. L. Baker.—*R. TOMENTELLA*, var. *OBTUSIFOLIA*. (Probably some mixture.)

- R. foetida*. Penmaenmawr (49), August 1, 1906, W.-Dod.—Var. SCABRIUSCULA.
- R. foetida*. E. Horsley (17), September 7, 1913, Britton.—Var. BRITTONI.
- R. frondosa*. Chetnole (9), July 13, 1881, Rogers.—R. DUMETORUM, var. TYPICA, f. URBICA.
- R. frondosa*. Great Crosthwaite (70), September 16, 1882, Bailey.—R. DUMETORUM, var. HEMITRICHA.
- R. glabriuscula*. Norton (63), August 1883, Webster.—R. DUMETORUM, var. INCERTA, f. PSEUDO-INCERTA.
- R. glauca*. Staithes (62), August 1894, Groves (1906).—R. CORIFOLIA, var. BAKERI, f. LINTONI.
- R. glauca* f., near *Reuteri*. Yeldersley (57), September 14, 1888, W. R. Linton.—Var. REUTERI.
- R. glauca*, var. II. Yeldersley Lane (57), August 20, 1904, W. R. Linton.—f. TRANSIENS.
- R. glauca*, var. II. Shirley (57), September 6, 1904, W. R. Linton.—R. DUMETORUM, var. INCERTA, f. SUBGLABRA.
- R. glauca*, var. III. Yeldersley Lane (57), August 27, 1904, W. R. Linton (N.R.).—Near var. WATSONI but probably a new variety.
- R. glauca*, gr. *fugax*. Riv. Almond (88), September 15, 1917, Barclay.—Var. OENENSIS.
- R. glauca*, gr. *oenensis*. Buckie Braes (88), September 16, 1919 Barclay (1920).—Var. OENENSIS.
- R. glauca*, var. *transiens*. Tadmarton (23), August 1923, Druce.—Correct.
- R. hibernica*. Carnlough (1), August 1919, Waddell.—× R. GLABRA.
- R. hibernica*, var. *glabra*. Strath Brora (107), August 9, 1897, Marshall.—× R. GLABRA.
- R. hibernica*, var. *glabra*. Great Meols (58), August 22, 1877, Harbord Lewis (N.R.).—× R. GLABRA.
- R. hibernica*, var. *glabra*. Hoylake (58), August 5, 1899, W.-Dod.—× R. GLABRA.
- R. hispidula*. Glewstone (36), September 13, 1909, Ley.—R. DUMETORUM, var. INCERTA, f. LAEVISTYLA.
- R. hystrix*. Dartford Heath (16), August 26, 1894, W.-Dod.—Correct.

- R. implexa*. Shepperton (21), September 11, 1880, Groves (1906).—  
R. DUMETORUM, var. ERECTA.
- R. implexa*. Shepperton (21), July 4, 1887, Groves (N.R.)—  
R. DUMETORUM, var. ERECTA.
- R. inconspicua*. Mordiford (36), September 14, 1909, Ley.—Var.  
ASPERNATA, f. SUBGLOBOSA.
- R. insignis*. Leatherhead Downs (17), August 8, 1915, Britton  
(1916).—Var. MEDIOXIMA.
- R. involuta* f. Selkirk (79), June, August and October 1912, Hay-  
ward.—× R. SABINI.
- R. involuta* var. Auchterarder Station (88), September 5, 1918,  
Barclay.—× R. BARCLAYI.
- R. involuta*, var. *Doniana*. Halling (16), May 23, 1893, Marshall.  
—× R. SABINI.
- R. involuta*, var. *Doniana*. Woodloes (38), July 1887, Bromwich  
(N.R.).—× R. SABINI.
- R. involuta*, var. *gracilis*. Tachbrook (38), July 1887, Bromwich.—  
× R. SABINI.
- R. involuta*, var. *Robertsoni*. Kingston (17), Aug. 19, 1879, Groves  
(N.R.).—Correct.
- R. jactata*. Wadenhoe (32), August 1910, Ley.—Correct, but off  
type.
- R. Jundzilliana*. Lancaut (34), September 26, 1911, Riddelsdell.—  
R. TOMENTOSA, var. TYPICA.
- R. leucochroa*. Headley (17), July and August 1917, Britton.—R.  
STYLOSA, var. CHLORANTHA.
- R. leucochroa*. Bere Wood (9), July 19, 1887, Rogers.—R. DUME-  
TORUM, var. INCERTA, f. LAEVISTYLA.
- R. leucochroa*. Trusham (3), July and December 1879, Rogers.—R.  
DUMETORUM, var. INCERTA, f. LAEVISTYLA.
- R. Lucandiana*. Askern (63), August 1882, Webster.—Correct.
- R. lutetiana*, var. *aspernata*. Pill (6), June and August 1922,  
Roper.—Var. VERTICILLACANTHA, untypical.
- R. lutetiana*, f. *nitens*. Sutton Walls (36), September 14, 1909, Ley.  
—Var. LUTETIANA. May be NITENS, but difficult to say from a  
dried specimen.
- R. marginata*. Solihull (38), July and September 1876, Bagnall.—  
R. GLAUCA, var. STEPHANOCARPA. Also sent in September 1877.

- R. Melvini*. Madresfield (37), September 1905, Ley.—Correct. An alien.
- R. Melvini*. Madresfield (37), April and November 1886, Town-drow.—Correct. An alien.
- R. micrantha*. Whittlebury Forest (32), July 1922, Druce.—× *R. INELEGANS*.
- R. micrantha*. Pensby (58), August 9, 1876, Harbord Lewis (1879).—*R. TOMENTOSA*, var. *SYLVESTRIS*. My own specimen is labelled "*Rosa* ——" with *sylvestris* added in pencil.
- R. micrantha* var. Ivybridge (3), July 13, 1894, Marshall.—Var. *TYPICA*, but possibly a *CANINA* hybrid near × *R. LATENS*.
- R. micrantha*, var. *ped. nudo*. Egg Buckland (3), 1875, Briggs.—Doubtless var. *BRIGGSII*. My own specimen dated July 7, 1876, from Shalaford, Egg Buckland, is that variety.
- R. micrantha*, var. *Briggsii*. Hedzor (37), August 9, 1907, Waddell.—*R. TOMENTELLA*, var. *BORRERI*.
- R. micrantha*, var. *Briggsii*. Woodspring (6), July 15, 1882, White.—*R. AGRESTIS*, var. *ARVATICA*.
- R. micrantha*, var. *Briggsii*. St Thomas's Head (6), August 28, 1882, White.—I have no specimen distributed through the Club, but have one from this station labelled *R. inodora* Fr? June 27, 1881, which I believe is the same and certainly var. *ARVATICA*.
- R. micrantha*, var. *hystrix*. Limpley Stoke (7), July 27, 1893, Bailey.—Var. *TYPICA* but towards *HYSTRIX*.
- R. micrantha*, var. *permixta*. Minehead (5), August 27, 1909, Marshall.—Var. *TYPICA*.
- R. micrantha*, var. *permixta*. Cadbury Camp (6), June and September 1918, Roper.—Var. *TYPICA*.
- R. micrantha*, var. *trichocarpa*. Cadbury Hill (6), October 6, 1919, Roper (N.R.).—Under type.
- R. mollis*. Caer Caradoc (40), October 7, 1892, Bailey (N.R.).—*R. OMISSA*, var. *TYPICA*.
- R. mollis*. Caer Caradoc (40) (hedge on south side), October 8, 1892, Bailey (1893).—*R. OMISSA*, var. *SHERARDI*. I refer to the specimens labelled as indicated only. I have not seen the others mentioned in the *Report*, except the above.

- R. mollis*. Strathpeffer (106), July 28, 1890, Bailey [No. 6 or 228].  
—*R. OMISSA*, var. *SUBERECTA*, a weak form.
- R. mollis*. Harton Road (40), October 3, 1904, Painter.—*R. TOMENTOSA*, f. *EGLANDULOSA*.
- R. mollis*? Ayton Moor (62), August 12, 1911, Hodge.—Between f. *GLANDULOSA* and var. *PSEUDO-RUBIGINOSA*.
- R. mollis* var. Jamestown (106), July 29, 1890, Bailey [No. 10 or 229].—*R. OMISSA*, var. *SUBERECTA*.
- R. mollis*, var. *caerulea*. Cefn Hill (36), September 9, 1907, Ley.—Correct.
- R. mollis*, var. *caerulea*. Cerrig Haffes (42), July and August 1906, Ley.—Correct.
- R. mollis*, var. *glabrata*. Duncraig (105), August 1893, Fox.—*R. GLAUCA*, var. *SUBCRISTATA*.
- R. mollis*, var. *glabrata*. Strome Ferry (105), August 3, 1888, E. F. Linton.—*R. OMISSA*, var. *SUBERECTA*, f. *GLABRATA*.
- R. mollis*, var. *Grenierii*. Dyffryn Crawnnon (42), July and September 1908, Ley.—Var. *TYPICA*.
- R. mollis*, var. *pseudo-rubiginosa*. Strome Ferry (105), September 1893, Fox.—*R. OMISSA*, var. *WOODSIANA*, but untypical.
- R. mollis*, var. *recondita*. Mellte Glen (42), August 19, 1908, Ley.—*R. OMISSA*, var. *SUBMOLLIS*, but a mixture was distributed.
- R. mollis* × *pimpinellifolia*. Chee Dale (57), August 24, 1896, W. R. Linton.—× *R. SABINI*.
- R. mollis* × *spinosissima*. Pooley Bridge (70), August 7, 1912, W.-Dod.—× *R. SABINI*.
- R. mollissima* f. Between Burntisland and Aberdour (85), September 20, 1876, Webb.—*R. MOLLIS*, f. *GLANDULOSA*.
- R. mollissima*, var. *caerulea*. Currie (83), August 24, 1876, Webb.—Correct.
- R. omissa*. Aberpergwm (41), June and August 1911, Riddelsdell.—*R. MOLLIS*, f. *GLANDULOSA*.
- R. omissa*. Chilsbury (7), September 1922, Hurst.—Correct.
- R. omissa*. Hordesley, road to Marshbrook (40), July and September 1909, Ley.—Var. *TYPICA* f. with long peduncles. My specimen is labelled from “near Marshbrook” [Ref. No. 5], but has no B.E.C. stamp.

- R. omissa*. Portneathvaughan (41), June 28, 1911, Riddelsdell.—f. SUBMOLLIS.
- R. omissa* f. Longville (40), July and September 1909, Ley.—Var. SHERARDI or possibly f. SUBMOLLIS.
- R. omissa*, var. *resinosoides*. Sutton Walls (36), September 14, 1909, Ley.—Var. TYPICA, but towards f. SUBMOLLIS.
- R. omissa*, var. *resinosoides*. Glen Peebles (78), September 1918, Druce.—Correct.
- R. omissa*, var. *submollis*. Presthoke (40), July and September 1909, Ley.—Var. SHERARDI.
- R. omissa*, var. *submollis*. New Radnor (43), September 10, 1908, Ley.—Var. SHERARDI. My specimen is labelled “*Rosa*” only. It is from the B.E.C., but another specimen, not bearing the B.E.C. stamp, but from same place and date, is labelled “*R. submollis*.”
- R. omissa*, var. *submollis*. Gorsley (36), September 4, 1907, Ley.—*R. TOMENTOSA*, f. EGLANDULOSA.
- R. permixta*. Halling (16), August 19, 1894, W.-Dod.—*R. MICRANTHA*, var. TRICHOCARPA, a narrow-fruited form.
- R. pimpinellifolia* × *tomentosa* (*involuta*). Clonbur (1), June 11, 1896, Marshall.—× *R. SABINI*.
- R. platyphylla*. Biddulph (39), September 1885, Painter (1885?).—*R. DUMETORUM*, var. TYPICA, f. SEMIGLABRA.
- R. pomifera*. St Margarets (15), June 1919, Druce.—Correct.
- R. pomifera*. Deal (15), July 1903, Druce.—Correct.
- R. pomifera*. Kingsdown (15), September 1919, Fox.—Correct.
- R. pomifera*. Tidenham Chase (34), July 2, 1902, Shoobred.—Correct. Not *R. recondita* as stated in *Rept.* 1917, p. 222.
- R. pomifera*. Daren y Cwm (42), September 17, 1907, Riddelsdell (1911).—*R. MOLLIS*, var. TYPICA.
- R. pomifera*. Taren yr Esgob (42), July 20, 1909, Ley.—*R. MOLLIS*, var. TYPICA.
- R. pseudo-cuspidata*. Tutshill (34), September 28, 1911, Riddelsdell.—*R. OMISSA*, var. TYPICA, but fruit untypical.
- R. pseudo-cuspidata*. Horsley (17), September 5, 1915, Britton.—*R. TOMENTOSA*, var. BRITTONI, off type in fruit.
- R. pseudo-rusticana*. Hagler's Hole (8), September 1, 1888, Rogers.—Correct.

- R. ramealis*. Wadenhoe (32), July 1910, Ley.—f. JACTATA, off type.
- R. Reuteri*. Oyce of Firth (111), August 21, 1880, Johnston.—Correct.
- R. rhynchocarpa*. Crickhowell (42), August 23, 1909, Ley.—Correct.
- R. Robertsoni*. Ham Common (17), June and July 1894, W.-Dod.—Correct.
- R. Rothschildii*. Malden (17), 1911, Britton (1913).—Correct.
- R. rubella*. Mynde Park (36), July 2, 1888, Ley (1888?).—R. ALPINA × SPINOSISSIMA, not *R. rubella* Sm.
- R. rubelliflora*. Malden (17), June 13, 1911, Britton.—R. CANINA, var. DUMALIS, but may be f. RUBELLIFLORA.
- R. rubiginosa*. Near Forres (95), August 4, 1898, Marshall.—Var. APRICORUM with large leaflets.
- R. rubiginosa* var. Boxley Warren (15), July 31, 1894, Marshall [No. 1238].—Var. APRICORUM.
- R. rubiginosa* var. Boxley Warren (15), July 31, 1894, Marshall [No. 1236].—Var. JENENSIS.
- R. rubiginosa* var. Linton (36), September 16, 1891, Ley.—R. MICRANTHA, var. TRICHOCARPA, a narrow-fruited form.
- R. rubiginosa* × ? Kidnal (58), July 30, 1906, W.-Dod.—× R. TOMENTELIFORMIS.
- R. rubiginosa*, var. *apricorum*. Box Hill (17), September 11, 1880, Groves.—Correct.
- R. rubiginosa*, var. *comosa*. Sprouston (27), September 1886, E. F. Linton.—Correct. My specimen is dated September 2, 1887, but I think it is the same.
- R. rubiginosa*, var. *comosa*. Littlesea (9), August 27, 1889, E. F. Linton (N.R.).—Correct.
- R. rubiginosa*, var. *echinocarpa*. Drayton (27), September 17, 1884, E. F. Linton.—Correct.
- R. rubiginosa*, var. *echinocarpa*. Sprowston (27), July 2, 1884, E. F. Linton.—Nearest this but with very different fruit and probably a new variety. Also sent to B.E.C. in 1883 and 1885 but not in the *Reports*.
- R. Sabini*. Straidkilly (1), August 18, 1910, Waddell.—Correct.
- R. scabriuscula*. Coldsborough Park (36), September 25, 1888, Ley.—R. OMISSA, var. WOODSIANA.

- R. scabriuscula*. Burwardesley (58), July 15, 1900, W.-Dod.—Correct.
- R. scabriuscula*. Whittlebury Forest (32), July 1922, Druce.—Var. SYLVESTRIS but untypical.
- R. scabriuscula* or *sylvestris*. Marshbrook (40), July and September 1909, Ley.—Var. SYLVESTRIS towards SCABRIUSCULA. My specimen bears the Ref. No. 16 but no B.E.C. stamp.
- R. sepium*. Buckden (31), September 5, 1884, W. R. Linton.—R. ELLIPTICA, var. BILLIETII.
- R. sepium*. Beckley (23), September 5, 1887, Rogers.—Var. ARVATICA with small leaflets. Probably restricted var. SUBCUNEATA Rouy, which I make synonymous.
- R. sphaerica*. Chetnole (9), July 1881 and October 1879, Rogers (1881).—Var. SENTICOSA, f. AMANSII.
- R. sphaeroidea*. Stow Wood (23), July 1923, Druce.—Var. VERTICILLACANTHA, f. LEMAITREI.
- R. spinosissima*, var. *rubella*. St Ouen's (C), June 1923, Druce.—f. ROSEA, not *rubella*.
- R. spinosissima*, with yellow petals. Selkirk (79), August 1919, Druce (1920) —Probably R. LUTEA Mill.
- R. spinosissima* × *dumetorum*, f. *Margerisoni*. Kettlewell (65), no date, Druce (1911).—Correct.
- R. spinosissima* × *mollis*. Chee Dale (57), July 5, 1898, E. F. Linton.—× R. SABINI.
- R. stylosa*. Killpale (35), June 23, 1910, Shoolbred.—Var. SYSTYLA.
- R. stylosa* var. Tutshill (34), September 27, 1911, Riddelsdell.—Var. VIRGINEA.
- R. stylosa*, var. *evanida*. Ham Common (17), August 19, 1910, W.-Dod.—R. CANINA, var. POUZINI, f. SIMPLICIDENS.
- R. stylosa*, var. *leucochroa*. Bigbury (3), July 7, 1894, Marshall.—R. DUMETORUM, var. INCERTA, f. LAEVISTYLA.
- R. subcristata*. Lancaut (34), October 6, 1911, Riddelsdell.—R. CANINA, var. VIRIDICATA, off type.
- R. subcristata*. Burntisland (85), August 1, 1876, Webb.—Correct.
- R. subcristata*. Oyce of Firth (111), August 1880, Boswell (N.R.).—Correct.
- R. subcristata*. Headley (17), September 17, 1916, Britton.—Correct.

- R. subcristata*. Gisburn (64), September 23, 1889, Bailey.—f. MYRIODONTA.
- R. suberecta*. Hartsop (69), July 6, 1910, Ley.—Correct, but off type near SUBMOLLIS.
- R. suberecta*. (1) Kylesku (108), July 20, 1918; (2) Inchnadamp (108), July 25, 1908, Marshall (1909).—Both correct.
- R. systyla*. Dineham (35), June 23, 1910, Ley.—Correct.
- R. systyla*. Ham Common (17), July 7, 1894, W.-Dod.—Var. LAN-CEOLATA.
- R. tomentella*. Horsepath (23), July 1923, Druce.—f. CARIONII. My specimen is labelled *R. obtusifolia*, var. CARIONII.
- R. tomentella*. Bridgerule East (4), August 3, 1882, Rogers (1883).—Var. OBTUSIFOLIA.
- R. tomentella*, f. *Nicholsoni*. Ripon (64), October 6, 1879, T. Nicholson.—Correct. This must not be confounded with G. Nicholson's specimen of var. SCLEROPHYLLA from the same station which was labelled *R. affinis* by Christ.
- R. tomentosa*. (a) St Ippollitts (20), June 18, 1911; (b) Royston (20), June 15, 1911, Little.—Probably both var. TYPICA.
- R. tomentosa*. Saintfield (1), July 20, 1911, Waddell.—Var. TYPICA.
- R. tomentosa*. Marden Park (17), September 6, 1914, Britton.—f. EGLANDULOSA.
- R. tomentosa*. Newport (3), June 6, 1922, D'Urban.—f. EGLANDULOSA.
- R. tomentosa*. Thames Ditton (17), September 1, 1877, Groves (1906).—Var. PSEUDO-CUSPIDATA towards var. FOETIDA.
- R. tomentosa*. Bourne (53), August 24, 1921, Webster.—Var. SYL-VESTRIS.
- R. tomentosa* var. Shirley (57), Sept. 12, 1888, W. R. Linton (1888?).—*R. coriifolia*, var. BAKERI, f. LINTONI.
- R. tomentosa* var. Hawthornden (83), August 8, 1876, Webb.—*R. coriifolia*, var. PRUINOSA.
- R. tomentosa* var. Allt-Goch (43), July 11, 1889, Ley.—*R. mollis*, var. TYPICA.
- R. tomentosa* var. Aysgarth (65), June 1896, Wheldon (1897).—*R. mollis*, var. TYPICA.
- R. tomentosa* var. Ham Common (17), July 8, 1905, W.-Dod.—*R. omissa*, f. RESINOSIDES.

- R. tomentosa* var. Dalmally (98), August 10, 1893, Marshall (N.R.).  
—*R. OMISSA*, f. *SUBMOLLIS*. On another label, bearing the same reference number [972], Marshall calls this *R. mollis* var.
- R. tomentosa* var. Ashbourne (57), July 13, 1887, W. R. Linton (1888).—Var. *TYPICA*, towards *R. FARINOSA*.
- R. tomentosa* var. Burntisland (85), September 2, 1876, Webb.—  
Var. *PSEUDO-CUSPIDATA*.
- R. tomentosa* var. Ingarsby (55), September 1907, Horwood.—Var. *DUMOSA* but resembling some *CORIFOLIAN* form.
- R. tomentosa* f. Saintfield (1), July 29, 1911, Waddell.—*R. GLAUCA*,  
var. *STEPHANOCARPA*.
- R. tomentosa* f. Ape's Tor (39), September 1889, Purchas.—My specimen of this date and place, labelled *R. tomentosa*, var. *subglobosa* Ref. No. 2 but with no B.E.C. stamp, is *R. OMISSA*,  
var. *TYPICA*.
- R. tomentosa* f. Saintfield (1), August 13, 1909, Waddell (1911).—  
f. *EGLANDULOSA*.
- R. tomentosa* agg. Kingston (23), July 1923, Druce.—Var. *BRITTONI*.
- R. tomentosa* × *canina*. Gallantry Bank (58), August 15, 1902, W.-Dod.—*R. TOMENTELLA*, var. *DECIPIENS*.
- R. tomentosa*, var. *cuspidatoides*. Loch Carron and Loch Reraig (105 or 106), August 1893, Fox.—Both *R. OMISSA*, var. *SUBERECTA*.
- R. tomentosa*, var. *farinosa*. Westhope Hill (36), July 2, 1888, Ley.—Var. *TYPICA*, f. *EGLANDULOSA*.
- R. tomentosa*, gr. *omissa*. Auchterarder (88), September 5, 1918, Barclay.—*R. OMISSA*, var. *TYPICA*, towards var. *WOODSIANA*.
- R. tomentosa*, var. *pseudo-cuspidata*. Chinnor (24), July 1923, Druce.—Var. *TYPICA*. The label reads *R. tomentosa* agg.
- R. tomentosa*, var. *pseudo-mollis*. Boar's Hill (22), June 1893, Druce (1894).—Correct.
- R. tomentosa*, var. *Sherardi*, f. *leiostyla*. Twinstead (19), September 1922, Druce.—Var. *TYPICA*, f. *EGLANDULOSA*.
- R. tomentosa*, var. *subglobosa*. Between Borgue and Girthon Kirk (73), September 18, 1889, Bailey.—*R. MOLLIS*, f. *CAERULEA*.
- R. tomentosa*, var. *subglobosa*. Church Stretton (40), July 1897, Purchas.—*R. OMISSA*, var. *SHERARDI*.

- R. tomentosa*, var. *subglobosa*. Glanyrn (43), August 1894, Stuart (N.R.).—*R. OMISSA*, f. *SUBMOLLIS*.
- R. tomentosa*, var. *sylvestris*. Strath Ascaig (105 or 106), September 1893, Fox (N.R. or 1893).—*R. OMISSA TYPICA*, a long-peduncled form.
- R. tomentosa*, var. *sylvestris*. Menai (49), July 25, 1871, Harbord Lewis (N.R.).—*R. TOMENTOSA*, var. *NOVA*.
- R. tomentosa*, var. *sylvestris*. Thornbury (36), August 16, 1901, Ley.—Var. *PSEUDO-CUSPIDATA* towards gr. *SCABRIUSCULAE*.
- R. tomentosa*, var. *uncinata*. Llys y Gwynt (49), September 25, 1884, Bailey (1887).—Correct.
- R. tomentosa*, var. *uncinata*. Llys y Gwynt (49), July 31, 1906, W.-Dod.—Correct.
- R. uncinata*. Marshbrook (40), July and September 1909, Ley.—Var. *SHERARDI*.
- R. uncinata*. Cerrig Haffes (42), July 13, 1906, Ley (N.R.).—*R. TOMENTOSA*, f. *EGLANDULOSA*.
- R. verticillacantha*. Bradley Valley (58), July 22, 1905, W.-Dod.—Var. *VINACEA*.
- R. verticillacantha* var. Littlehope (36), August 19, 1891, Ley.—Var. *ASPERNATA*, f. *GLOBOSA*.
- R. verticillacantha*, var. *aspernata*. Pinley Green (38), July and August 1889, Bagnall.—Var. *VERTICILLACANTHA*.
- R. Wilsoni*. Menai Straits (49), June and July 1886, Cosmo Melvill (1911).—Correct.
- R. Wilsoni*. Menai Straits (49), September 1875 and July 1877, Fisher (N.R.).—Correct.
- R. Wilsoni*. Menai Straits, September 7, 1888, Bailey (1914).—Correct.
- R. vinacea*. Cliffbank (58), August 26, 1906, W.-Dod.—Correct.
- R. virginea*. Horsebridge (11), August 1876, Groves.—Var. *GARROUTEI*.
- R. virginea*. Tutshill (34), October 1911, Riddelsdell.—Var. *GARROUTEI*.
- R. Watsoni*. Kelso (80), July 1876 and Roxburgh Castle (80), September 1876, Brotherston.—Var. *PRUINOSA*.
- R.* — [Ref. No. 9]. Toome (1), August 18, 1909, Waddell (1911).—*R. CANINA*, var. *BISERRATA*,

- R.* — Near Wadenhoe (32), August 1910, Ley.—*R. DUMETORUM*, var. *INCERTA*. The label of my specimen bears the L.C. No. 588.
- R.* — [Ref. No. 2029]. Dovedale (57), August 22, 1913, W.-Dod.—*R. DUMETORUM*, var. *MERCICA*.
- R.* — [Ref. No. 252]. Atlow (57), July 4 and August 22, 1890, W. R. Linton.—*R. CORIFOLIA*, var. *SUBHISPIDA*.
- R.* — Bradley (57), September 20, 1888, W. R. Linton (Label marked "goes under *Watsoni* it seems to me. J. G. B.")—*R. CORIFOLIA*, var. *BAKERI*, f. *LINTONI*.
- R.* — [Ref. No. 253]. Bradley (57), August 23, 1890, W. R. Linton.—*R. CORIFOLIA*, var. *BAKERI*, f. *SETIGERA*.
- R.* — [Ref. No. 697 A]. Garve (106), July 23, 1909, Shoolbred.—*R. CORIFOLIA*, var. *OBOVATA*. My own specimen is Marshall's No. 3364, which is the same Rose.
- R.* — [Ref. No. 221]. Wraysbury (22), July 1882, Nicholson.—*R. TOMENTELLA*, var. *ROTHSCHILDII*.
- R.* — [Ref. No. 205]. Wimbledon (17), August 12, 1882, Nicholson. [Ref. No. 2], Wimbledon (17), September 4, 1881, Nicholson (1882).—Both *R. TOMENTELLA*, var. *ROTHSCHILDII*. I have two specimens of No. 2, both bearing the B.E.C. stamp, one dated September 6, 1879, the other July 1881, but all are the same variety.
- R.* — [Ref. No. 786]. By the Beverley Brook, Combe (17), July 25, 1912, Britton.—*R. TOMENTELLA*, var. *ROTHSCHILDII*.
- R.* — [Ref. No. 836]. Open ground, Malden (17), August 19, 1912, Britton.—*R. TOMENTELLA*, var. *ROTHSCHILDII*.
- R.* — Craig Cille (42), July 3, 1908, Ley.—*R. MOLLIS*, var. *TYPICA*. My specimen is labelled *R. POMIFERA* [Ref. No. 3], August 23, 1909, but Ley told me it was the same.
- R.* — Mountain pasture near Combe Scar (65), July and September 1919, Wilson.—*R. MOLLIS*, f. near *CAERULEA*.
- R.* — [Ref. No. 1]. Bellair Hill (1), August 9, 1910, Waddell.—*R. OMISSA*, var. *RESINOSOIDES*.
- R.* — Northants and Hunts (31 and 32), August 1910, Ley.—*R. OMISSA*, var. *SHERARDI*. I refer to my own specimen labelled "near Buckden, Hunts, August 11, 1910." I cannot speak for the others.

- R.* — Braunstone (55), September 1908, Bell.—*R. omissa*, var. *pseudo-mollis*.
- R.* — [Ref. No. 682 A]. Garve (106), July 23, 1909, also [Ref. Nos. 680 A and 681 A] Kyle of Loch Alsh (105), July 21, 1909, Shoolbred.—*R. omissa*, var. *suberecta*, most probably. Marshall and Shoolbred made many gatherings together of this variety and its f. *glabrata* in E. and W. Ross. My own specimens are Marshall's Nos. 3355, 3362, 3363 and 3365, and are certainly var. *suberecta*, but I cannot be sure that all Shoolbred's are the same. Some may be f. *glabrata* or even  $\times$  *R. shoobredi*.
- R.* — Linton Ridge (36), September 1907 and June 27, 1908, Ley (1911).—*R. tomentosa*, f. *eglandulosa* with very untypical fruit.
- R.* — Mardale (69), July 1 and September 1910, Ley.—*R. tomentosa*, f. *eglandulosa*.
- R.* — Cowleigh Park (36), August 23, 1910, Ley.—*R. tomentosa*, var. *confusa*.
- R.* — [Ref. No. R. 7139]. Noke (23), August 1918, Druce.—*R. tomentosa*, var. *scabriuscula*.

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 DUPLICATED BINOMIALS.

G. CLARIDGE DRUCE, D.Sc., LL.D.

Among the resolutions passed at the Imperial Botanical Congress in 1924 was one which suggests the revoking of the Article 55 by which such names as *Linaria Linaria* were rejected as invalid—*i.e.*, *Linaria vulgaris* Mill was chosen rather than *L. Linaria* (L.) Karst. The latter name it is now suggested should be valid. Article 55 was not carried at the Vienna Congress without opposition — one of the arguments [sic] which appeared to have weight was that duplicated names excited the risibility of Engler's students, whose mirthful tendencies did not appear to be awakened by such names as *Sagina saginoides* or *Cerastium cerastoides*. Though tardily, British botanists now appear to be willing to adopt the use of duplicated names, which has the advantage of doing away with the reproach that while in the Zoological

side of the British Museum such names had long been in use yet in the Botanical Department of the same Institution they were barred. The suggested plan, therefore, tends towards a unity of method among biological students, and it also avoids competing trivials, e.g., the Swine's Cress which has been named *Coronopus Ruellii*, *C. procumbens*, *C. verrucarius*, *C. squamatus*, etc., whereas *C. Coronopus* has, and could have, no rival. We welcome the change. It was the plan which I at first followed in my MS. for the *Flora of Berkshire* but which, under pressure, I unfortunately did not publish.

Schinz and Thellung have published a list of Duplicated Binomials in Mitt. aus d. Bot. Mus. der Univ. Zurich 172, 1924, but in Karst. Pharm. Med. Bot. many of these combinations had been already given.

The following species, with their varieties, which have been found in Britain, have such duplicated names. These will be adopted in the forthcoming edition of the *British Plant List*.

- GLAUCIUM GLAUCIUM (L.) Karst., *l.c.* (Chelidonium Glaucium L.),  
vice *G. flavum* Cr.
- BARBAREA BARBAREA (L.) M'Mill. (Erysimum Barbarea L.), vice *B.*  
*lyrata* Asch. et *B. vulgaris* Ait.  
Var. *b. campestris* (Fries) Dr.  
Var. *c. silvestris* (Fries).  
Var. *d. transiens* (Dr.).  
Var. *e. decipiens* (Dr.)  
Var. *f. arcuata* (Reichb.) Dr.  
Var. *g. brachycarpa* (Jacks.).
- NASTURTIUM NASTURTIUM (L.) (Sisymbrium Nasturtium-aq. L.),  
vice *N. officinalis*.  
Var. *b. siifolium* (Reichb.).  
Var. *c. latifolium* (Bouv.).  
Var. *d. microphyllum* (Crantz).  
We, however, use the older generic name RADICULA NASTURTIUM  
(L.) Dr.
- ERUCA ERUCA (L.) S. & T. (Brassica Eruca L.), vice *E. sativa* Crantz.  
Var. *b. lilacina* Dr.
- CAKILE CAKILE (L.) Karst. (Bunias Cakile L.), vice *C. maritima*  
Scop.

- Var. *sinuatifolia* (DC.) comb. nov.
- CORONOPUS CORONOPUS (L.) Karst. (*Cochlearia Coronopus* L.), vice  
C. *squamata*; C. *Ruellii*; C. *verrucarius*; C. *procumbens*, etc.
- RADIOLA RADIOLA (L.) Karst. (*Linum Radiola* L.), vice R. *Milleg-  
rana*; R. *Linoides*, etc.
- LABURNUM LABURNUM (L.) Karst. (*Cytisus Laburnum* L.), vice L.  
*vulgare* et L. *anagyroides*.
- ONOBRYCHIS ONOBRYCHIS (L.) Karst., vice O. *viciifolia* et O. *sativa*.
- LENS LENS (L.) Karst. (*Ervum Lens* L.), vice *Lens culinare* et L.  
*esculenta*.
- COTONEASTER COTONEASTER (L.) Karst. (*Mespilus Cotoneaster* L.),  
vice C. *vulgaris*; C. *integerrima*, etc.
- CYDONIA CYDONIA (L.) Karst. (*Pyrus Cydonia* L.), vice *Cydonia vul-  
garis*.
- ANTHRISCUS ANTHRISCUS (L.) Karst. (*Scandix Anthriscus* L.), vice  
A. *Scandix*, A. *vulgaris*, etc.
- FOENICULUM FOENICULUM (L.) Karst. (*Anethum Foeniculum* L.),  
vice F. *vulgare* et F. *officinale*.
- SILAUS SILAUS (L.) Karst. (*Peucedanum Silaus* L.), vice S. *flaves-  
cens*; S. *pratense*, etc.
- MEUM MEUM (L.) Karst. (*Athamanta Meum* L.), vice M. *Athamanti-  
cum* Jacq.
- LEVISTICUM LEVISTICUM (L.) Karst. (*Ligusticum Levisticum* L.), vice  
L. *officinale* et *paludapifolium*.
- ARCHANGELICA ARCHANGELICA (L.) Karst. (*Angelica Archangelica* L.),  
vice A. *officinarum* Hoffm.
- DIERVILLA DIERVILLA (L.) S. & T. (*Lonicera Diervilla* L.), vice D.  
*trifida*.
- PULICARIA PULICARIA (L.) Karst. (*Inula Pulicaria* L.), vice *Pulicaria  
prostrata* et P. *vulgaris*.
- PETASITES PETASITES (L.) Karst. (*Tussilago Petasites* L.), vice P.  
*ovatus*; P. *vulgaris*; P. *hybrida* et P. *officinale*.  
Var. b. *hybrida* (L.).
- MARIANA MARIANA (L.) Hill (*Carduus Mariana* L.), vice M. *lactea* et  
*Silybum Marianum*.
- GALACTITES GALACTITES (L.) S. & T. (*Centaurea Galactites* L.), vice  
G. *tomentosa* Mönch.

CRUPINA CRUPINA (L.) Karst. (*Centaurea Crupina* L.), vice *C. vulgaris* Pers.

RHAGADIOLUS RHAGADIOLUS (L.) Dorfler (*Lapsana Rhagadiolus* L.), vice *R. edulis*.

TARAXACUM TARAXACUM (L.) Karst. (*Leontodon Taraxacum* L.), vice *T. vulgare*; *T. Dens-Leonis*; *T. officinale*, etc.

And the following varieties, *tanylepis* (Dahlst.); *valdedentatum* (Dahlst.); *naeviferum* (Dahlst.); *subundulatum* (Dahlst.); *latis-pina* (Dahlst.); *decipiens* (Raunk.); *proximum* (Dahlst.); *Ar-rhenii* (Palmg.); *simile* (Raunk.); *chloroleucum* (Dahlst.); *Gelertii* (Raunk.); *copidophyllum* (Dahlst.); *polyodon* (Dahlst.); *longisquameum* (Lindb. f.); *bracteatum* (Dahlst.); *lingulatum* (Dahlst.); *unguilobum* (Dahlst.); *tenebricans* (Dahlst.); *dis-simile* (Dahlst.); *expallidum* (Dahlst.); *Kjellmani* (Dahlst.); *sublacinosum* (Dahlst.); *angustisquameum* (Dahlst.); *intrica-tum* (Lindb. f.); *hamatum* (Raunk.); *laeticolor* (Dahlst.); *cro-ciiflorum* (Dahlst.); *dilatatum* (Lindb. f.); *alatum* (Lindb. f.); *fasciatum* (Dahlst.); *duplidens* (Lindb. f.); *Dahlstedtii* (Lindb. f.); *erythrospermum* (Andr.); *laevigatum* (DC.); *laetum* (Dahlst.); *oxoniense* (Dahlst.); *fullviforme* (Dahlst.); *fulvum* (Raunk.); *brachyglossum* (Dahlst.) et *laciniatum* (Dahlst.).

OXYCOCCUS OXYCOCCUS (L.) M'Mill. (*Vaccinium Oxycoccus* L.), vice *O. palustris* Pers. et *O. quadripetalus* Gil.

Var. b. *microcarpus* (Rupr.).

Var. c. *pyriformis* (Dr.).

HYPOPITYS HYPOPITYS (L.) Small (*Monotropa Hypopitys* L.), vice *H. Monotropa* Cr.; *H. multiflora* Scop.

Var. b. *glabra* (Roth) comb. nov.

LIMONIUM LIMONIUM (L.) Dr. (*Statice Limonium* L.), vice *L. vulgare* Mill.

Var. b. *pyramidale* (Dr.).

× *humile* = *Neumanni* (C. E. Salm.).

CENTAURIUM CENTAURIUM (L.) (*Gentiana Centaurium* L.), vice *C. umbellatum* Pers.

Var. b. *capitatum* (Koch).

Var. c. *ellipticum* (Dr.).

- NYMPHOIDES NYMPHOIDES (L.) comb. nov. (*Menyanthes Nymphoides* L., *N. nymphaeoides* Britton), vice *N. peltatum*; *N. orbiculata*, etc.
- OMPHALODES OMPHALODES (L.) comb. nov. (*Cynoglossum Omphaloides* L.), vice *O. verna* Mönch.
- LAPPULA LAPPULA (L.) comb. nov. (*Myosotis Lappula* L.), vice *L. echinata* Gilib.
- LYCOPERSICON LYCOPERSICON (L.) Karst. (*Solanum Lycopersicon* L.)  
= *Lycopersicum Lycopersicum* S. & T., vice *L. esculentum* Hill.
- LINARIA LINARIA (L.) Karst. (*Antirrhinum Linaria* L.), vice *L. vulgaris* Mill.  
Var. b. *latifolia* (Bab.).  
Var. c. *prostrata* (Domin).  
Var. d. *pulchella* (Dr.).  
Var. e. *peloria*.  
× *repens* = *L. sepium* (Allm.).
- ANARRHINUM ANARRHINUM (L.) comb. nov. (*Antirrhinum Anarrhinum* L.), vice *A. bellidifolium* Desf.
- ODONTITES ODONTITES (L.), Wettst. (*Euphrasia Odontites* L.), vice *O. serotina*, etc.  
Var. b. *verna* (Reichb.); c. *longifolia* (Corb.); d. *litoralis* (Reichb.); e. *serotina* (Bert.); f. *divergens* (Balb.); g. *rotundata* (Ball.).
- CALAMINTHA CALAMINTHA (L.) comb. nov. (*Melissa Calamintha* L.),  
(but *C. Calamintha* Karst. is used in the sense of *C. officinalis*),  
vice *C. silvatica* Bromf.
- FAGOPYRUM FAGOPYRUM (L.) Karst. (*Polygonum Fagopyrum* L.),  
vice *F. sagittatum* Gil. = *F. esculentum* Mönch.
- ALNUS ALNUS (L.) (*Betula Alnus* L.), vice *A. glutinosa* Gaertn. et  
*A. rotundifolia* Mill.  
Var. *laciniata* (Ehrh.).  
Var. *macrocarpa* (Loud.).  
Var. *microcarpa* (Uechtr.).  
× *incana* = *A. hybrida* (A. Br.).
- CASTANEA CASTANEA (L.) Karst. (*Fagus Castanea* L.), vice *C. sativa*  
Mill; *C. vesca* Gaertn. et *C. vulgaris* Lam.
- CORALLORRHIZA CORALLORRHIZA (L.) M'Mill. (*Orphrys Corallorrhiza*  
L.), vice *C. trifida* et *C. innata* Ait.

- EPIPOGON EPIPOGIUM (L.) Druce (Satyrium Epipogium L.) = Epipogon Epipogon Kerner, vice E. aphyllum Sw. et E. Epipogon Huth.
- HELLEBORINE HELLEBORINE (L.) (Serapias Helleborine L.), vice H. latifolia Dr.  
 Var. b. viridiflora (Lint.).  
 Var. c. angustifolia (Dr.).  
 × atropurpurea = H. Crowtheri (Dr.).
- POLYGONATUM POLYGONATUM (L.) Jiras. (Convallaria Polygonatum L.), vice P. odoratum (Mill.) Dr.; P. officinale All., etc.  
 Var. b. intermedium (Syme) comb. nov.
- DAMASONIUM DAMASONIUM (L.) Druce in Fl. Berks, 1897 (Alisma Damasonium L.), vice D. Alisma Mill; D. stellatum, etc.
- SORGHUM SORGHUM (L.) (Andropogon Sorghum L.), vice S. saccharatum Mönch et S. vulgare.
- CALAMAGROSTIS CALAMAGROSTIS (L.) Karst. (Arundo Calamagrostis L.), vice C. lanceolata et C. canescens.
- PHRAGMITES PHRAGMITES (L.) Karst. (Arundo Phragmites L.), vice P. vulgaris et P. communis.  
 Var. b. subuniflora (DC.); c. stolonifera (Meyer); d. pseudodonax (Rabh.); e. flavescens (Custer); f. tenella (Nolte); g. coarctata (Raunk.) (densior Dr.); h. effusa (A. & G.).
- ERAGROSTIS ERAGROSTIS (L.) Karst. (Poa Eragrostis L. et Briza Eragrostis L.), vice E. minor Hbst. et E. poaeoides Beam.
- LARIX LARIX (L.) Kern. & Wetts. (Pinus Larix L.), vice L. decidua Mill et L. europea DC.
- ABIES ABIES (L.) (Pinus Abies L.), vice Abies excelsa DC.
- PHEGOPTERIS PHEGOPTERIS (L.) Underw. (Polypodium Phegopteris L.), vice P. polypodioides Fée.
- CETERACH CETERACH (L.) Karst. (Asplenium Ceterach L.), vice C. officinarum L. & DC.  
 Var. b. crenatum (Milde).

## ARCTIUM VULGARE (HILL) EVANS.

A. H. EVANS, M.A., D.Sc.

Dr Druce has asked me to restate very shortly the most important of the conclusions arrived at in my articles on the genus *Arctium* (*Journ. Bot.* 51, p. 113; 53, p. 145) and the results of another twelve years' work on the group.

1. *Arctium Lappa*, with its solid petiole, large heads and distinct habit of growth, is quite unmistakable; *A. minus*, with its heads contracted in fruit, and its tall branched growth is equally so.

2. The only other British species is intermediate in the size of the heads, which may either be stalked or almost sessile. The two forms or sub-varieties are quite inconstant. I have twice kept under observation a large colony of plants, which one year came up with long-stalked heads, another year with "sessile." In most years they were shortly stalked. Smaller patches gave similar results, which were due to climatic influences—wet seasons causing long stalks. Similarly we find in our damper British counties to the westward nothing but the fine large reddish form with very long stalked heads (typical *intermedium* Lange), in our drier counties to the eastward nothing but the short-stalked form (typical *nemorosum* auct. ang.) except in wet seasons. In 1924 every specimen I have seen has had stalks to the head, some quite long.

3. *A. Lappa* and *A. minus* are seldom very arachnoid; but a neat low-growing form has the heads entirely covered with white "wool." This is the plant named by Babington *A. pubens*; but he soon recognised the fallacy of separating a form on one variable characteristic and reverted to *intermedium*.

4. We have twice had a type specimen of Lejeune's "*nemorosum*" in England on loan. It is a portion of a branch only and is in any case too doubtful to give a name to. It might easily be a heavily pruned specimen of *minus*, but I prefer to consider that it belongs to the larger plant.

5. Fortunately there is no doubt that there is an earlier name (*vulgaris*) given by Hill, "Vegetable Kingdom," vol. iv. (1762), p. 28, pl. 25, fig. 1. Fig. 2 on the same plate does not concern us, but is probably meant for either *Lappa* or "*pubens*." Fig. 3 is *minus*, or as Hill calls it, *minor*. Fig. 1 is the plant which in its

various forms has been called *intermedium* and *memorosum*. The figure is very fair, according to eighteenth century standards, and the description very accurate. But, of course, it must be remembered that Hill's plant would doubtless be the easterly form, with short-stalked heads. This is, in most cases, perfectly green and hardly ever red, when growing on dry road-sides, near Cambridge, London, etc., etc. The plant of damper situations and climates is equally certain to be reddish, but as I have said (under par. No. 2) it cannot be kept apart as a species but only as a climatic form.

6. *Arctium vulgare*, *A. Lappa*, and *A. minus* vary in the colour of the flowers from palest pink to crimson, *A. Lappa* being usually pale.

7. I have for a second time found the hybrid *A. Lappa* × *vulgare* with both parents, at Wicken Fen.

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#### Mrs DELANY AND BUCKS PLANTS.

G. CLARIDGE DRUCE, D.Sc., LL.D.

Mrs Delany, daughter of Robert Granville, brother of Lord Lansdowne, was born at Coulton, Wilts, May 14, 1700, and married in 1717-8 to Alex. Pendarves, "a fat, snuffy and sulky old man" of 60, who died in 1724. In 1743 she married the Rev. Patrick Delany, afterwards Dean of Down, who died in 1774. This second marriage led to some family estrangement. In 1774 she began a "herbal" by cutting out with fine scissors portions of coloured paper which were afterwards gummed on to a paper—usually with a black surface—and this was so artistically done as to give a truthful and not inartistic representation of the plant. She received the praise of Erasmus Darwin in his "Love of the Plant." Many of them were prepared at the residence of her friend, the Duchess of Portland, at her mansion at Bulstrode in Buckinghamshire. The Duchess, herself an accomplished and ardent botanist, had for her domestic chaplain the Rev. Dr Lightfoot, the author of the *Flora Scoïica*. The Duchess had a very large collection of living plants at Bulstrode, including *Danaa cornubiensis*, which had been sent her by the Bishop of Carlisle, Dr Goodenough, and some, such as *Lysimachia thyrsoflora*, still linger there. These figures thus prepared by Mrs Delany at Bulstrode might rank as the first evidence

of their occurrence in the county, as they were executed from 1773-83 only it is difficult to say which were garden and which native species. Such plants as *Gentiana Amarella* and *Euphrasia officinalis* (*nemorosa*) are almost certainly from a wild station. Altogether she prepared ten volumes with about 100 plants in each, and these have been presented to the nation by Lady Llanore, and are now in the Print Room at the British Museum. One may add that Mrs Delany's eyesight failed her in 1784, that she died on April 15, 1788, and was buried at St James', Westminster. Her last years were rendered comfortable by King George the Third granting her a house at Windsor, and a pension of £300 per annum. She was on intimate terms of friendship with the Royal Family. Her picture by Opie, now at Hampton Court, was painted to the King's order. The following plant-figures by Mrs Delany were prepared at Bulstrode between the years 1773-1783, and many of these are presumably of wild plants gathered in that neighbourhood in Buckinghamshire. They slightly precede in date the paintings of plants made by the Countess of Aylesford at Denham from 1780-90. *Clematis Vitalba* L., 1776; *Ranunculus repens* L.; *R. acris* L., 1781; *Berberis vulgaris* L., 1774; *Nymphaea lutea* L.; *Castalia alba* Wood, 1776; *Papaver Rhoeas* L., 1777; *Fumaria officinalis* L., 1779; *Erysimum cheiranthoides*, 1773; *Diplotaxis muralis* DC., 1779 (the plant was perhaps sent to her); *Bursa pastoris* Web., 1777 (beautifully done); *Silene Cucubalus*, 1780; *Helianthemum Chamaecistus* Mill., 1779; *Lychnis alba* Mill.; *L. Githago* Scop., 1779; *Stellaria Holostea* L., 1780; *Hypericum pulchrum* L., 1770; *H. perforatum* L.; *H. humifusum* L., 1780; *Malva moschata* L., 1776; *M. sylvestris* L., 1781; *Geranium pratense* L., 1778; *G. pyrenaicum* Burm. f., 1781; *G. lucidum* L., 1780; *G. Robertianum* L., 1779; *Oxalis Acetosella* L. and its var. *sub-purpurascens* DC., 1775; *O. corniculata* L., not native; *Ilex Aquifolium* L., 1775; *Ulex europaeus* L., 1776; *Trifolium pratense* L., 1782; *T. fragiferum* L., 1781; *Onobrychis Onobrychis* (L.), 1773; *Vicia Cracca* L., no date; *Lathyrus pratensis* L., 1782; *Spiraea Ulmaria* L. and *S. Filipendula* L., 1780; *Rubus caesius* L., 1777; *Fragaria vesca* L., 1777; *Potentilla procumbens* Sibth., 1782; *Rosa canina* L., 1777; *Crataegus monogyna* (labelled *Oxyacantha*), an excellent representation but undated; *Saxifraga granulata* L., 1775; *Sedum Telephium* L.,

1781; *Lythrum Salicaria* L., 1779; *Epilobium hirsutum* L. (as *ramosum* Huds.), 1781, excellent; *Circaea lutetiana* L., 1779; *Bryonia dioica* Jacq., 1777; *Pimpinella Saxifraga* L., 1779; *Peucedanum palustre* Moench, 1775, this was also collected at Bulstrode by Lady M. Markham; *Viburnum Opulus* L., 1777; *Asperula odorata* L. and *A. cynanchica* L., 1779; *Sherardia arvensis* L.; *Scabiosa Succisa* L., 1781; *S. arvensis* L., 1782; *Solidago Virgaurea* L., 1778; *Bellis perennis* L., 1776; *Erigeron acris* L.; *Pulicaria dysenterica* Gaertn., 1781; *Achillea Millefolium* L., 1776 (this is var. *conspicua* Dr.); *Anthemis arvensis* L., 1779; *Chrysanthemum Leucanthemum* L., 1774; *Senecio Jacobaea* L., 1782; *Carduus nutans* L.; *Cirsium lanceolatum* Scop., 1776; *C. acaule* Weber, 1779; *Serratula tinctoria* L., 1782; *Centaurea Cyanus* L., 1779; *C. nigra* L., 1782; *Cichorium Intybus* L., 1776; *Hieracium Pilosella* L., 1781; *Leontodon hispidus* L., 1781; *L. autumnalis* L., 1780; *Sonchus asper* Hill, 1779; *Campanula Trachelium* L., 1780; *C. glomerata* L., 1779; *C. rotundifolia* L., 1776; *Lysimachia thyrsoiflora* L., 1780 (this still grows by the ornamental water to which it was originally introduced by the Duchess of Portland); *L. vulgaris* L., 1778; *L. Nummularia* L., 1779; *Anagallis arvensis* L., 1776; *A. tenella* Murr., 1777 (perhaps introduced); *Ligustrum vulgare* L., 1780; *Vinca minor* L., 1782; *Blackstonia perfoliata* Huds., 1777; *Centaureium Centaurium* (L.) Dr., 1774; *Menyanthes trifoliata* L., 1775; *Symphytum officinale* L., 1780; *Borago officinalis* L., 1782; *Volvuia sepium* Jung., 1776; *Solanum Dulcamara* L., 1775; *S. nigrum* L., 1780; *Atropa Belladonna* L., 1781; *Verbascum nigrum* L., 1776; *Linaria Linaria* (L.) Karst.; *L. repens* Mill., 1776, the Henley Toadflax; *L. spuria* Mill., 1779; *L. Cymbalaria* Mill., 1776; *Antirrhinum Orontium* L., 1781 (named wrongly); *Digitalis purpurea* L., 1776; *Veronica scutellata* L., 1779; *Euphrasia nemorosa* Mart., September 1778; *Lamium album* L., 1779; *Humulus Lupulus* L., 1781; *Hydrocharis Morsus-ranae* L., 1778; *Stratiotes Aloides* L., 1780, these two probably introduced; *Spiranthes spiralis* Rich., 1776; *Orchis Fuchsii* Druce, 1777, excellently done; *O. pyramidalis* L.; *O. militaris* L., 1780; *O. ustulata* L., 1779; *Aceras anthropophora* Ait., 1777; *Ophrys apifera* Huds., 1779; *O. muscifera* Huds., 1780; *Habenaria virescens* Druce, 1779 (as *bifolia*); *Iris Pseudacorus* L., 1777; *Tamus communis* L., 1777; *Ruscus aculeatus* L.,

1779; *Sparganium ramosum* Huds., no date; *Arum maculatum* L., 1782; *Sagittaria sagittifolia* L., 1777; *Butomus umbellatus* L., 1778. The collection is really an extraordinary exhibition of industry, the result of taste and patience. Some of the sheets are quite beautiful. Perhaps her greatest failure was in trying to represent the Fritillary. Others are quite realistic as, for example, the Willow-herbs where the four-cleft stigma is shown.

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NOMENCLATORIAL NOTE.

Proposition by George Claridge Druce, M.A., D.Sc. (Oxon.), LL.D., to delete from the list of Nomina Conservanda the following generic names, which are inserted in defiance of the Rule of Priority, since earlier, well-defined and unexceptionable generic names are extant which have been used or revived by Botanists in important scientific works.

Therefore it is suggested to substitute the following names by others which comply with the Rule of Priority, and which are free from ambiguity:—

*Cammarum*, Hill, 1756, to replace *Eranthis*, Salisb., 1807.

*Cervicina*, Delile, 1813, to replace *Wahlenbergia*, Schrader, 1814.

*Dondia*, Adans., 1763, to replace *Suaeda*, Forskol, 1775.

*Pneumaria*, Hill, 1764, to replace *Mertensia*, Roth, 1797.

*Pubilaria*, Rafinesque, 1836, to replace *Simethis*, Kunth, 1843.

*Unifolium* (Haller) Adans., 1763, to replace *Maianthemum* Weber, 1780.

*Cammarum* was well described by Hill in the *British Herbal*, p. 47, 1756, and figured on plate 7; the differences between this and the allied genera are clearly stated. The name has been used in the ninth edition of Babington's *Manual of British Botany*, by Greene and others. It is 51 years earlier than Salisbury's genus *Eranthis*. *Cammarum hyemale*, Greene, is the type.

*Cervicina*, established by Delile in the important *Flore d'Egypte*, p. 150, 1813, where the genus is well defined, and a species is described and figured on plate 5, tab. 2. It is one year earlier than the genus *Wahlenbergia* of Schrader, which was printed in the comparatively unimportant *Cat. Pl. Hort. Goett.* of 1814. *Cervicina*

has been used in Babington's *Manual*, l.c., p. 274, in Druce's *Flora of Berkshire*, p. 324, 1897, by Britten in *Bot. Cook's Voyage*, p. 56, by Moore in *Journ. Bot.*, p. 492, 1903, by Hiern in *Cat. Welw. Afr. Plants*, i., p. 631, etc. *Cervicina campanuloides*, Delile, is the type.

*Dondia*, founded by Adanson in the *Familles des Plantes*, p. 261, 1763, twelve years prior to Forsköl's genus *Swaeda*. *Dondia* is employed in Britton and Brown's *Flora of the North. United States*, i., p. 584, by Small in *Bull. New York Garden*, by Heller in *Cat. N. A. Plants*, by Nelson in *Coulter's Bot. Gazette*, by Druce in *Ann. Scot. Nat. Hist.*, p. 42, 1896, etc. *Dondia maritima*, Druce, is the type.

*Pneumaria* was established by Hill in the *Vegetable System*, vii., p. 40, 1764; it is thirty-three years earlier than Roth's *Mertensia*, and has been used in Babington's *Manual*, p. 295, in *American Check List*, etc. *Pneumaria maritima*, Hill, is the type.

*Pubilaria*, Rafinesque, published in the *Fl. Tellur.*, ii., 27, 1836, with one species described. It is seven years earlier than *Simethis*, Kunth. The name is used in Babington's *Manual*, p. 422, in Druce's *List of British Plants*, etc. The type is *Pubilaria planifolia* (*P. bicolor*, Rafin.).

*Unifolium*, founded by Haller in 1746, and established by Adanson in the *Familles des Plantes*, ii., p. 101, 1763, was also used by Allioni in the *Flora Pedemontana*, i., p. 114, 1785, and is used by Britten and Greene in *Bull. of Torrey Club*, p. 287, 1888, by Kuntze in *Rev. Gen. Pl.*, p. 18, 1891, etc. It is 17 years earlier than *Maianthemum* of Weber. The type is *Unifolium Bifolium*, Kuntze.

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#### PERSONAL NOTES.

THE VICOUNTESS WOLSELEY has given a Library of Horticultural Books to Hove in memory of her father.

GREGORY, Sir RICHARD, the Editor of *Nature*, presided at the twenty-ninth annual congress of the South-Eastern Union, at Guildford, on May 28-31 inclusive.

TRAIL, Professor JAMES W. The Memorial Plaque has been placed in the Cruickshank Botanic Garden at Aberdeen. The fund

was raised by Dr Macgregor Skene and amounted to £324 19/-, and was sufficient to pay for the well-deserved memorial to a most industrious recorder and investigator of the Scottish Flora. It is a great pity that the mass of Scottish records which he accumulated could not be published in one volume. Miss Alice B. Woodward designed the mural Tablet. "The head is surrounded by a wreath of oak leaves, acorns and galls, the galls of Scotland having proved a favourite object of studies. The decorative panel represents a dragon-fly and a water spider, representatives of his zoological interests, and a bladderwort representative of his work of the Scottish Flora. The whole is flanked by two Brazilian Palms, the family which was the subject of his first important scientific work after his return from the Amazon." The tablet is inscribed, "He knew and loved the realm of living nature, and inspired successive generations of students with his desire for deeper knowledge."

HANBURY, F. J., F.L.S., V.M.H. The Gardens, Brockhurst, East Grinstead (Printed for private circulation). Folio, pp. xvi., including two reprints from *Country Life*. This gives admirable photographs of one of the finest rock gardens in Britain. There is also a heath garden and there are few places where *Erica vagans* grows more luxuriantly than at Brockhurst. Rhododendrons are magnificent and in considerable variety. The garden is remarkable for the number of rare British plants it contains and Mr Hanbury is anxious that members will send him seeds or cuttings of rare native species. He will defray costs of postage.

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#### VARIOUS NOTES.

THE Centenary of the Royal Botanic Garden at Edinburgh was celebrated in June 1924. But the Edinburgh Garden dates back to 1661 when the Governors of Heriot's Hospital were alive to the value of such an institution and gave orders that a portion of the land under their control should be used for such a purpose. Two eminent physicians, Sir Andrew Balfour and Sir Robert Sibbald, shortly after obtained some ground close to Holyrood Palace and there founded the first Botanic Garden in Scotland. Balfour

had visited the Duke of Orleans' garden at Blois where he met the celebrated botanist, Dr Robert Morison, afterwards the first Regius Professor of Botany at Oxford. Sibbald was the author of "Scotia Illustrata," published in 1684, which contains the first published records of many Scottish plants. Linnaeus named the Rosaceous genus *Sibbaldia* in his honour, but it is now merged into *Potentilla*.

HATFIELD FOREST, which had been given to the nation by Mr E. N. Buxton and his family, was formally opened by the Viscount Ulleswater in May 1924.

LINNAEUS. We learn (*Gardeners' Chronicle*, 363) that a Linnean Museum has been made at Upsala in the old greenhouse of the restored Linnaean Gardens. Among other exhibits shown are his silver strawberry bowl, furniture, table china, some of his linen, and his razor.

AMONG the Botanical Meetings of the year, in addition to the Conference and our own excursion to Llanberris in May, the Mycological Society visited Betty y Coed in September, and the Bryological Society were at Llanberris, when a new genus to Britain was discovered.

KEN WOOD. One hundred and twenty acres have been purchased of this estate by public subscription and the land vested in the London County Council. We trust the Council will exhibit all vigilance in order to prevent any damage being done to the existing flora which comprises the very local *Unifolium Bifolium*, *Anemone apennina*, etc. This acquisition will now increase the total area of Hampstead Heath to 804 acres. The cost of the whole amounts to £577,000.

CAMBRIDGE UNIVERSITY PRESS. Volume xix. of the Royal Society's *Catalogue of Scientific Papers*, covering the letters T-Z during the years 1884-1900, will shortly be published by the Cambridge University Press. This volume, the publication of which completes the great work of cataloguing the scientific papers of the nineteenth century, contains 46,811 entries of titles of papers by 7992 authors, with the addition of anonymous papers, and brings

the total number of entries for the period 1884-1900 to no less than 384,478, the authors numbering 68,577.

SOCIETY FOR THE PROMOTION OF NATURE RESERVES HANDBOOK FOR 1924. This Society has had very severe losses in the death of its founder, the Hon. N. Charles Rothschild, later of Mr W. R. Ogilvie-Grant, who acted as its first Hon. Secretary, and quite recently of the Hon. E. S. Montague. The seal of the Society consists of a representation of the Kite drawn by Mr G. E. Lodge from an illustration by Mr Thorburn in the beautiful and costly book on the Birds of the British Isles by Lord Lilford. The Kite, according to the poet Clare, was frequent in Northamptonshire at the beginning of the nineteenth century. The President is Viscount Ulleswater. Several additional areas have been obtained.

IBERIAN BIOLOGICAL CONGRESS AT OPORTO, 1921. It adopted in the main the rules of Botanical Nomenclature passed at the Vienna Congress, with some important modifications—(1) unrestricted priority subsequent to 1753; (2) all family names end in *aceae*; (3) generic names are invalid unless used binomially after 1753, if they express positive error, if they are generic names ending in *oides* or beginning with *pseudo*; (4) after 1753 the use of a generic name binomially, or a binomial combination, invalidates its use in a different category; (5) in generic changes the specific name adopted should be the oldest valid one not forming a homonym; (6) on the splitting of a group the original name must be retained for one of the new groups.

LORD DARLING in "The Oxford Circuit" writes on the depredations upon our wild flowers:—

Alas! loud our wail is for thee *aestivalis*,

*Spiranthes*—you herald no longer the day;

Near Lyndhurst they spied thee—they cut thee, they dried thee.

The flowers of the forest are all stolen away.

Thy flowers, *calycinum*, they pluck and they twine,

With damp *humifusum*—they found thee near Sway.

The bright *Pyrus Malus* next spring-time must fail us:

For flowers of our forest are all borne away.

Wherever there grows a *Lastrea spinulosa*,

*Filix dilatata*—next Bank Holiday

Learn'd 'Enry and 'Arriet will cut, and will carry it—

The flowers of New Forest are all torn away.

SUGGESTIONS FOR LABELLING HERBARIUM SPECIMENS BY COL. A. H. WOLLEY-DOD.—Labels should not be less than  $3\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. They should not be affixed to the specimen or to the sheet. The following information should be given:—

- (1) In the top left hand corner, The Catalogue or List Number, indicating which Catalogue or List it is taken from.
- (2) In the top right-hand corner, the Collector's Reference Number, which should always be given at least for critical plants.
- (3) The Name of the Specimen, including the author of the name, to which may be added "fide ——" if the name has been given by some other person than the collector.
- (4) The Place of Gathering, followed by the Name of the Vice-County in which it was found. The number of the V.C. is not necessary in addition to the name.
- (5) The Date of Gathering, not the month only.
- (6) The Name of the Collector.

LAWSON, MARMADUKE. In my notice of the Oxford Botanic Garden Tercentenary, in treating of Professor Lawson's work, I am afraid I unintentionally minimised its usefulness. He had to carry on without much assistance from the University authorities, and he left Oxford to take up the more congenial position as Government Botanist to the Government of Madras, to superintend two or three Botanic Gardens in the Nilgiris as Director, and also to be superintendent of the extensive and valuable Government Cinchona Plantations. There, as Mr Gamble tells us, he worked hard in both capacities though naturally hampered by becoming the Head when he had no experience of work in the lower grades. He found a useful Herbarium of Madras plants already existing containing not only those sets of plants collected by Wight, Cleghorn, Bidée and others, but also the very important Beddome Herbarium. He set to work, in the intervals of leisure from his other duties, and collected largely, many a foray being in company with Mr Gamble in

the search of specimens. This herbarium is being used for Mr Gamble's work on the Madras Flora. It is a very fine one and very well kept, and has since been added to by such collectors as Dr Barber and Messrs Rangachari and Tadulingam. Mr Gamble finds in it many new species which are to be dedicated to Lawson, who was not merely a botanist but a very well read man. His literary tastes undoubtedly appealed to Sir Mountstuart Grant-Duff quite as much as his energies in re-organising two departments that he found badly in need of it. One is grateful to have these details supplied by Mr Gamble and to know that in a larger sphere Lawson was so useful. It will always be greatly to his credit that he instituted the sale of packets of quinine at the lowest price, at the local post-offices, so that the natives could have this fever remedy within their reach.

THE IMPERIAL BOTANICAL CONFERENCE was opened in London on July 7 at the Imperial College under the Presidency of Sir David Prain. The proceedings are fully reported in the *Gardeners' Chronicle* for July, August and September. Among those who took part were Prof. J. Percival, who contributed a delightful paper in which he suggested that plant-breeders should periodically pay some attention to the wild flora of their country. "Nowhere among the natural vegetation are found the large and luscious fruits of the garden, the big edible roots of the Carrot and Beet, or the long-well-filled pods of the Pea and Bean. The all-important cereal crops are also absent. The contrast between the crops of the field and garden and the natural flora is arresting, and when it is realised that the cultivated crops are the descendants of plants once wild the imagination is enlivened and stimulated. The time and exact mode of origin of our cultivated plants is not known. Most of them have been cultivated for not less than three or four thousand years. Though not a single food plant of first-class importance has been added to our fields or gardens within historic time nevertheless, with a few exceptions, the wild prototypes from which the cultivated crops have been derived can be more or less clearly recognised." He then went on to speak of "pedigree selection followed by the progeny test. It is being taught that the single initial selection in self-fertilised plants is alone of value. Once obtain your improved variety and further selection is superfluous.

This is to be regretted, for hereditary variations, mutations, or whatever they may be called do occur in such lines, and it is only by renewed selection that these are discovered and isolated. Even if we were quite certain that the causes which produce fluctuations do not affect the hereditary mechanism of the plant we should be justified in the practice of repeated selections on this account. Variations in one or more of these conditions frequently cause extensive modifications in the yield of a crop. Yields of the same line of cereals grown in different localities often differ very widely; yields even from plots of equal area side by side often differ by 20 to 30 per cent., and yields of neighbouring plants on the plots differ by so much as 100 to 500 per cent." Professor R. G. Stapleton followed with a paper concerning the value of Selection Work in Herbage Plants. He alluded to the fact that Red and White Clover are to all intents and purposes self-sterile. Late-flowering strains in the main tend to be dense, leafy, hardy and persistent—the early-flowering strains lax, less leafy, less hardy, and less persistent, and under natural conditions extreme strains have but little opportunity for cross fertilisation. Dr Professor J. H. Priestly read a paper on Vegetative Propagation. A Session was devoted to the Biological problems of Cold Storage of Apples. A stored apple, unlike the seven ages of man, has but three stages—unripe, ripe and rotten, and one has been always struck in every-day life that the middle stage is comparatively so rare. The speakers included Dr D. Haynes, Dr Franklin Kidd and Dr Cyril West. At the simultaneously-running meeting Dr W. Brown, Mr R. Barnes and others took part treating mainly of fungoid problems relating to the storage of apples. The Best Means of Promoting a Complete Botanical Survey of the Different Parts of the Empire was discussed, Dr A. W. Hill reading the first paper. Lt.-Col. A. T. Gage, I.M.S., also spoke. He showed how much had been done and was still being done in India and evidenced the formation of the Indian Botanical Society and the founding of the Journal of Indian Botany. Professor S. Schönland dealt with some difficulties of the Botanical Survey of the Union of South Africa, and on this Dr I. B. Pole Evans, C.M.G., also contributed a paper. Sylviculture and the relation to it of forest pathology was the subject of a paper contributed by Dr A. W. Borthwick, and a valuable contribution was made by Mr W.

E. Hiley. Dr J. W. Munro's paper treated principally of insect attacks.

ADDITIONS AND CORRECTIONS.

Report 1923.

- p. 35. Line 11. Add " See P. MALUS, var. APETALA A. & G., *Nature*, Jan. 29, 714, 1921.
- p. 37. Line 8. Dr Thellung thinks the picture of *Heracleum villosum* in *Gard. Chron.* 52, 1923, may be *H. persicum* Desf.
- p. 38. Line 11. Dr Thellung thinks it is doubtful if the deposits in which fruits of *Xanthium spinosum* were found near Sofia are of Neolithic origin. He adheres to the geographical origin of the species given in the *Flore Avenice de Montpellier*.
- p. 64. Line 15. For "PRATERMISSA" read "PRAETERMISSA."
- p. 167. Line 14. For "Llanyfelach" read "Llangyfelach."
- p. 173. Line 14. For "Lhwydcleod" read "Lhwydcoed."
- p. 175. Lines 13 and 20. For "Raglan" read "Baglan."
- p. 178. Lines 25 and 26. For "Raome and Keighley" read "Ravine and Keighton."
- p. 182. Line 26. For "Binscarth" read "Upper Dowscarth."
- p. 184. Line 20. For "SPURUM" read "SPURIUM."
- p. 186. Line 5. For "Pirton" read "Pinton."
- p. 193. Line 11. Add " Found by Dr D. SCOTT."
- p. 197. Line 16. For "Tun" read "Fur."  
Line 27. For "Rhyador" read "Rhuyadder."
- p. 200. Line 2. For "H. L. GREEN" read "BOYS."  
Line 6. For "Knocking" read "Knotting."  
Line 13. For "BOYS" read "GREEN."
- p. 210. Line 6. For "Blackhill" read "Blackpill."  
Line 26. For "Eyton" read "Egton."
- p. 223. Line 7. For "Hopsham" read "Topsham."
- p. 328. Line 17. After "in size" add "of the kernel."
- p. 335. The beautiful photo blocks illustrating this paper on the Oxford Botanic Garden were kindly lent by the proprietors of the "Chemist and Druggist."